

Operation Code Comparison Final Report

APRIL 2003

A comparison of the adopted provisions of the CBC and CFC with the provisions in the IBC, NFPA 5000 and NFPA 1



INTRODUCTION

The Office of State Fire Marshal (SFM) produced this document to provide the State Board of Fire Services and the Fire & Life Safety Building Standards Advisory Board with information regarding the regulatory differences between the 2001 California Building Code (CBC), the 2001 California Fire Code and the following documents:

- ◆ 2003 Draft International Building Code (IBC)
- ◆ 2003 National Fire Protection Association (NFPA) 5000
- ◆ 2003 Draft International Fire Code (IFC)
- ◆ 2003 ROC Draft NFPA 1, Uniform Fire Code

The comparison was designed to give support to the above mentioned SFM advisory boards and assist with their recommendation to the SFM a proposed base code for the California Code of Regulations, Title 24, Parts 2, California Building Code and 9, California Fire Code. Draft documents were utilized during the project's operational period (January 17-March 31, 2003) where the final, published documents were unavailable.

Based on time constraints the task groups did not review every model code provision but concentrated only on selected provisions relating to targeted SFM regulated occupancies. In most cases, only the provided base documents were used, so comparisons were not made using additional referenced documents.

In order to accomplish this sizable task within limited time constraints, the SFM utilized the Incident Command System, developed an Incident Action Plan, and implemented "**Operation Code Comparison**". Under the leadership of the Incident Commander, Gini Krippner and Branch Directors Joe Garcia and Bill Carmack, ten task groups were formed. Nine of the task group's critical mission was to compare each code document to the existing regulatory requirements of the 2001 California Building and Fire Codes. These task groups were assigned specific provisions of each of the subject model codes as they may relate to the SFM's existing regulated occupancies.

The tenth task group reviewed, compared and identified the differences between the ICC's and NFPA's code development process. These ten task groups were made up highly motivated and dedicated individuals. Without their energy, the comparisons and the resulting document could not have been produced to assist in decisions of such great magnitude.

The comparisons made within this document are not necessarily the opinions or position of the Office of the State Fire Marshal, but are a compilation of work completed by individuals working within assigned task groups.

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Agency Representative: Brian Heyman

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Office of Statewide Health Planning and Development

Agency Representative: Don Harris

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A OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>202-A and 303 Occupancy Classification Divides occupancy into subdivisions based on occupant load. SFM has also added sound and production stages where a live audience is present under this occupancy.</p>	<p>303.1 Occupancy Classification Redefines the occupancy sub-classifications excluding areas with less than 750 square feet and accessory to another occupancy or for assemblies in E occupancies.</p>	<p>3.3.371.1 Occupancy Classification Reiterates the definition found in CBC Section 303. Occupancy sub-classifications are not identified but are determined by occupant load in Table 11.3.1.2.</p>	<p>NFPA treats A-occupancies holistically, the CBC and IBC subdivides categories treating each as their own occupancy type.</p>
<p>Division 1- 1,000 or more people with a legitimate stage.</p>	<p>A-1 Fixed seating for viewing live performance or movies, including theaters, radio and television studios.</p>	<p>Additional requirements are specified depending on the occupant load.</p>	
<p>Division 2- 1,000 people or less with legitimate stage.</p>	<p>A-2 for food and drink consumption.</p>		
<p>Division 2.1- 300 people or more without a legitimate stage.</p>	<p>A-3 for the worship, recreation, or amusement.</p>		
<p>Division 3- 300 people or less w/o a legitimate stage.</p>	<p>A-4 Viewing indoor sporting event</p>		

A OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Division 4- Stadiums, reviewing stands, and amusement parks.	A-5 Participating or viewing outdoor activities.		

A OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Construction</p> <p>Based on construction type (material) and respective fire resistive rating.</p> <p>One-hour construction can be substituted with sprinklers in type II, III and IV, when sprinklers are not already required</p>	<p>Construction</p> <p>Uses the same construction types as the CBC but specifies fire resistance rating for building components which provide a lower level of protection than the CBC.</p> <p>Sprinklers can be used to substitute construction in one-hour construction unless sprinklers are already required for the occupancy.</p>	<p>Construction</p> <p>Relies on fire resistance rating of building components.</p> <p>Ratings overall provide a higher level of protection than the CBC.</p>	
<p>Height</p> <p>Restrictions on height predicated on building construction and type.</p>	<p>Height</p> <p>Like the CBC restrictions are based on construction type.</p> <p>Height limitations are more restrictive than the CBC.</p>	<p>Height</p> <p>Also based on construction type and sprinkler equivalency</p>	

A OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Allowable Area</p> <p>Is the least restrictive (more area per construction type) than the other codes.</p>	<p>Allowable Area</p> <p>Provides a higher level of protection than CBC in that the requirements are more restrictive.</p> <p>Section 507.5: For A-3 one-story buildings of type I and II construction, allowable area is unlimited as long as certain criteria are met.</p>	<p>Allowable Area</p> <p>Provides a higher level of protection with regard to allowable area in that less allowable area is permitted for select building types and materials.</p>	
<p>Location on Property</p> <p>The CBC is the only code with a specific section titled "Location on Property.</p> <p>Comparative analysis of fire resistive ratings and opening protection between codes is possible.</p>	<p>Location on Property</p> <p>No significant difference.</p>	<p>Location on Property</p> <p>No significant difference.</p>	<p>Fire resistive ratings of exterior walls and openings were used for comparative analysis. No significant difference exists between code documents.</p>

A OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Table 3-B Occupancy Separations	Table 302.3.3 Occupancy Separations	Table 6.2.4.1 Rated Separations	IBC provides a higher level of protection than CBC.
With other "A" occupancies No requirement	With other "A" occupancies 2 hour separation	With other "A" occupancies No requirement	NFPA provides equal protection than CBC.
From "B" occupancies None for smaller assemblies- up to three hours for A1	Two hour separation required	One hour for less than 300 occupants Two hour for more than 300 occupants	IBC provides a higher level of protection than CBC, with the exception of A1 occupancies where the CBC is more restrictive. NFPA provides a higher level of protection in some cases. In CBC the separation from A1 occupancies is more restrictive.
From "E" occupancies No requirements	From "E" occupancies two hour separation	From "E" occupancies two hour separation	Both IBC & NFPA provide a higher level of protection than the CBC.
From "F" occupancies None for smaller assemblies- up to three hours for A1	From F1 occupancies three hour separation From F2 assemblies two hour separation	Identical to IBC	Both IBC & NFPA provide a higher level of protection than the CBC.
From "I" occupancies Three hour separation required unless less than 300 in "A"	From "I" occupancies two hour separation required	From "I" occupancies two hour separation required	The NFPA and ICC provide a lower level of protection than the CBC
From "M" occupancies None for smaller assemblies- up to three hours for A1	From "M" occupancies two hour separation required	From "M" occupancies two hour separation required in malls and three hours in "bulk retail"	Both IBC & NFPA provide a higher level of protection than the CBC.
From "R" occupancies One hour separation required	From "R" occupancies two hour separation required	From "R" occupancies two hour separation required	Both IBC & NFPA provide a higher level of protection than the CBC.
Upon first look it appears that both IBC and NFPA are more restrictive in the separation walls that are required. However, both allow for reduction in the hours in certain occupancies. In many instances sprinklers will be required and the reduction will be routine.			

A OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.2 & Table 10-A Occupant Load</p> <p>Predicated on the means of egress provided for the occupants.</p> <p>Determined from Table 10-A limits the occupant load to specified square footage per occupant. Auditoriums for example are limited to 7 square feet per person, whereas a conference room is limited to 15 square feet per person.</p>	<p>Section 1004.1 & Table 1004.1.2 Occupant Load</p> <p>Predicated on the means of egress provided for the occupants.</p> <p>Determined from Table 1004.1.2 also limits the occupant load to a specified square footage similar to the CBC. This table shows a few increases the square footage per person vs. the CBC. For example bowling centers are increased from 4 square feet per person to 7 square feet per person.</p>	<p>Section 16.1.6 & Table 11.3.1.2 Occupant Load</p> <p>Occupancy is defined by use. Assembly occupancies are in Chapter 16 which cross references Chapter 11 Table 11.3.1.2 for occupant load. The square footage per person requirements is similar to CBC.</p>	<p>IBC and NFPA provide an equivalent level of protection to that of the CBC.</p>
<p>Section 1003.2.2.2.1 Occupant Factors</p> <p>Includes all areas of the occupancy with the exception of accessory use areas.</p>	<p>Section 1004.1.1 Occupant Factors</p> <p>Uses the actual number of occupants for each space and floor.</p>	<p>Section 16.1.6.1 & 16.1.6.2 Occupant Factors</p> <p>Categorizes occupant space according to use specific to A-occupancies. Waiting areas for example are given 3 square feet per person. Large occupant loads of over 6,000 are predicated on a life safety survey determined by the specific event and types of emergencies anticipated.</p>	<p>NFPA uses a prescriptive/performance approach to determining occupant load, whereas the IBC and CBC use a prescriptive approach.</p>

A OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.2.2.2 & 1004.3.2.2 Areas w/out Fixed Seating</p> <p>Based on occupant load per square feet.</p>	<p>Section 1004.1 & 1024.8 Areas w/out Fixed Seating</p> <p>Based on design occupant load.</p>	<p>Section 16.2.5.5 & 16.2.5.7 Areas w/out Fixed Seating</p> <p>Based on design occupant load. Non-fixed seating is described for exiting purposes but not used to calculate occupant load.</p>	<p>IBC and NFPA provide an equivalent level of protection to that of the CBC.</p>
<p>Section 1003.2.2.2.3 Fixed Seating</p> <p>Determined by the number of fixed seats</p>	<p>Section 1004.7 Fixed Seating</p> <p>Same requirements as CBC</p>	<p>Section 2.5.6.1 Fixed Seating</p> <p>Defines aisle width and spacing for fixed seating but is not used to determine occupant load but exiting requirements.</p>	<p>IBC and NFPA provide an equivalent level of protection to that of the CBC.</p>
<p>Section 1003.2.2.2.3 Outdoor Areas</p> <p>Requires exiting to meet the requirements of chapter 10.</p>	<p>Section 1004.7 Outdoor Areas</p> <p>Same requirements as CBC</p>	<p>Outdoor Areas</p> <p>Is not specifically addressed, but would be based on design requirements for the occupancy.</p>	<p>IBC and NFPA provide an equivalent level of protection to that of the CBC.</p>
<p>Section 1003.2.2.2.5 & 1008 Reviewing Stands/Bleachers</p> <p>Specific requirements are detailed in this chapter according to §1003.2.2.2.5.</p>	<p>Section 1024.1.1 Reviewing Stands/Bleachers</p> <p>Specific requirements are referenced to ICC 300.</p>	<p>Section 16.4.8.3, 16.4.8.4 & 16.4.8.5 Reviewing Stands/Bleachers</p> <p>Contains specific requirements for: wood grandstands portable grandstands and space underneath grandstands.</p>	<p>The IBC and NFPA provide a lower level of protection than the CBC for requirements for Reviewing Stands, Bleachers and Grandstands. The IBC and NFPA provide an equivalent level of protection for treads, risers, handrails, and aisle width.</p>

A OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 10032.2.3.1 Maximum Occupant Load</p> <p>Occupant load cannot exceed the requirements for areas without fixed seating with the exception of building authority approval provided the occupant load doesn't exceed the exiting capacity.</p>	<p>Maximum Occupant Load</p> <p>Is not specific but predicated on actual number of people the occupancy was designed for.</p>	<p>Maximum Occupant Load</p> <p>No specific requirement but predicated on actual number of people the occupancy was designed for.</p>	<p>The ICC and NFPA provide the same level of protection at the CBC.</p>
<p>Chapter 10 Exiting General</p> <p>Overall exiting requirements are found in Chapter 10.</p>	<p>Chapter 10 Exiting General</p> <p>The same requirements as the CBC are found in IBC Chapter 10.</p>	<p>Chapter 11 and 16 Exiting General</p> <p>General exiting requirements are found in Chapter 11; however these requirements are also reiterated in Chapter 16 for A Occupancies.</p>	<p>The IBC and NFPA provide an equivalent level of protection.</p>
<p>CBC Section 1007 Specific Exiting Requirements</p>	<p>IBC Section 1024 Specific Exiting Requirements</p> <p>Combines elements of the CBC with</p>	<p>NFPA Chapter 16 Specific Exiting Requirements</p> <p>Requires a main exit for assemblies.</p>	<p>The IBC is more comprehensive than the CBC by adding additional requirements borrowed from NFPA.</p>

A OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Assemblies shall have panic hardware, a main exit, and side exits and posted occupant load.	requirements from NFPA.		The CBC with state amendments is less restrictive in regards to panic hardware.
<p>Section 1007.2.2 Balconies & Mezzanines</p> <p>Balconies and mezzanines shall have access to two exits for 10 or more.</p>	<p>Section 10204.5 Balconies & Mezzanines</p> <p>Two exits from balconies and mezzanines for 50 or more</p>	<p>Section 16.2.4.3 Balconies & Mezzanines</p> <p>Increased occupant load to 50 for two exits from balconies and mezzanines.</p>	The IBC and NFPA provide a lower level of protection than the CBC.
<p>Section 1007.2.4 Multi-Theater</p> <p>Multi-theater exits shall provide enough width for half of the total occupants.</p>	<p>Multi-Theater</p> <p>In terms of A occupancies in general code is the same as CBC.</p>	<p>Section 16.2.3.3 Multi-Theater</p> <p>General exiting requirements same as CBC.</p>	The IBC and NFPA provide an equivalent level of protection to the CBC.
<p>Floor Level Signs</p> <p>(SFM) Floor level exit signs and path marking are required unless protected by a sprinkler system.</p>	<p>Floor Level Signs</p> <p>No provisions</p>	<p>Floor Level Signs</p> <p>No provisions</p>	The IBC and NFPA provide a lower level of protection than the CBC.

A OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 904.2.3.8, 905, 1008.7.3 Smoke Protected Seating</p> <p>Required in assemblies with walls and ceilings, and covered by a sprinkler system.</p>	<p>Section 1024.6.2 Smoke Protected Seating</p> <p>Same as CBC</p>	<p>Section 16.4.2 Smoke Protected Seating</p> <p>Same as CBC</p>	<p>The IBC and NFPA provide an equivalent level of protection as the CBC.</p>

A OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 303.9 Fire Alarm Systems</p> <p>Fire Alarm is required if occupant load is greater than 300</p>	<p>Section 907 Fire Alarm and Detection Systems</p> <p>Same as CBC But manual pull stations are not required if building protected with sprinklers</p>	<p>Section 16.3.4 Detection, Alarm, and Communication Systems</p> <p>Same as CBC But manual pull stations are not required if fire detectors or sprinkler protection throughout the building Positive alarm sequencing is specifically allowed</p>	<p>The three codes are similar. NFPA provides a slightly lower level of protection in that it specifically allows “positive alarm sequencing”.</p>
<p>Section 408.5 Alarm Systems</p> <p>Amusement buildings require a smoke detection system with public address</p>	<p>No special requirements</p>	<p>No special provisions</p>	<p>CBC is more restrictive than NFPA and IBC.</p>
<p>Voice activated systems not addressed in CBC, but found in CFC.</p>	<p>Section 907 Fire Alarm and Detection Systems</p> <p>Voice system required if over 1000 occupants</p>	<p>Not addressed</p>	<p>NFPA provides a lower level of protection than the CBC. The CFC requires the voice system requirements making the CBC and IBC similar.</p>

A OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1006 Fire Alarm Systems</p> <p>Fire alarm is required if occupant load is greater than 300 Manual is not required if “A” is protected by sprinklers</p>	<p>Section 907 Fire Alarm and Detection Systems</p> <p>Same as CBC But manual pull stations are not required if building protected with sprinklers</p>	<p>Section 13.7.2 Where Required</p> <p>Fire alarm is required if occupant load is greater than 300 and in theaters with more than one viewing room</p>	<p>The ICC and NFPA provide an equivalent level of protection</p>
<p>Section 1006</p> <p>Pre-recorded message required if occupant load greater than 1000</p>	<p>Section 907</p> <p>Voice system required if occupant load greater than 1000</p>	<p>No special provisions</p>	<p>IFC provides an equivalent level of protection NFPA provide a lower level of protection.</p>

A OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 904 Sprinklers</p> <p>Sprinklers required in the “A” occupancy</p> <ol style="list-style-type: none"> (1) Greater than 5000 square feet & alcohol served (2) Basements greater than 1500 square feet (3) Exhibition rooms greater than 12000 square feet (4) Stairs serving occupant loads greater than 300 (5) Multi-theater complexes, amusement buildings and smoke protected seating. 	<p>Section 903 Sprinklers</p> <p>In “A” occupancy</p> <ol style="list-style-type: none"> (1) If more than 300 occupants (2) If the “A” is located on a floor other than that of the exit discharge <p>If the “A” occupancy is located above or below the level of discharge, all levels between the “A” and the discharge level must be protected</p>	<p>Section 16.3.5.1 Sprinklers</p> <p>In “A” occupancy if more than 300 occupants</p> <ol style="list-style-type: none"> 1. Throughout the story 2. Throughout all stories below the “A” 3. If “A” is below exit discharge, all stories to and including the exit discharge level <p>A few notable exceptions are:</p> <ol style="list-style-type: none"> 1. Churches 2. Gyms, ice rinks, etc with stands for less than 300 occupants 3. Engineering analysis proves ceiling too high. 	<p>NFPA generally provides a higher level of protection in most structures than the CBC.</p> <p>IBC provides a higher level of protection than the CBC.</p>

A OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 9A Standpipes Some sort of standpipe required</p> <ol style="list-style-type: none"> 1. 4 stories 2. Occupant load over 1000 and no sprinklers 3. Exhibit hall over 5000 square feet 4. Stages greater than 1000 square feet 	<p>Section 905 Standpipes Some sort of standpipe required</p> <ol style="list-style-type: none"> 1. if occupiable level over 30 feet above FD access 2. Over 1000 occupants in a building not protected by sprinklers 3. Stages over 1000 square feet 	<p>Section 16.3.5.2.2 Standpipes Some sort of standpipe required</p> <ol style="list-style-type: none"> 1. 4 stories 2. If occupiable level over 30 feet above fire department access 3. If occupiable area more than 150 feet from FD access 4. Stages greater than 1000 square feet 	<p>All three codes have similar restrictions. The NFPA and ICC provide a slightly higher level of protection.</p>

A OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1003.2.3 Group A Occupancies</p> <p>Sprinklers required in the “A” occupancy</p> <ol style="list-style-type: none"> (5) Greater than 5000 square feet & alcohol served (6) Basements greater than 1500 square feet (7) Exhibition rooms greater than 12000 square feet (8) Stairs serving occupant loads greater than 300 (9) Multitheater complexes. 	<p>Section 903 Automatic Sprinkler Systems</p> <p>Sprinklers required in the “A” occupancy</p> <ol style="list-style-type: none"> 1 if more than 300 occupants 2 If the “A” is located on a floor other than that of the exit discharge <p>If the “A” occupancy is located above or below the level of discharge, all levels between the “A” and the discharge level must be protected</p>	<p>Section 13.3.2.4.1 New Assembly Occupancies</p> <p>In “A” occupancy if more than 300 occupants</p> <ol style="list-style-type: none"> 1. throughout the story 2. Throughout all stories below the “A” 3. If “A” is below exit discharge, all stories to and including the exit discharge level. <p>A few notable exceptions are:</p> <ol style="list-style-type: none"> 1. Churches 2. Gyms, ice rinks, etc. with stands for less than 300 occupants 3. Engineering analysis proves ceiling 	<p>NFPA provides a higher level of protection in most structures than CBC.</p> <p>IFC provides a higher level of protection than the CFC.</p>
<p>Section 1004 Standpipes</p> <p>Class I, II or III standpipe required</p> <ol style="list-style-type: none"> 5. 4 stories 6. Occupant load over 1000 and no sprinklers 4. Exhibit hall over 5000 square feet <p>Stages greater than 1000 square feet</p>	<p>Section 905 Standpipe Systems</p> <p>Class I, II or III standpipe required</p> <ol style="list-style-type: none"> 1. If occupiable level of 30 feet above FD access 2. Over 1000 occupants in a building not protected by sprinklers 3. Stages over 1000 square feet 	<p>Not specifically addressed in NFPA 1, but the provisions are found in NFPA 5000.</p>	<p>All three codes have similar restrictions. The NFPA 5000 and the IFC provide a slightly higher level of protection than CFC.</p>

A OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 408 Amusement Buildings</p> <p>Amusement buildings of 50 or more.</p>	<p>Section 411.1 Amusement Buildings</p> <p>Same As CBC</p>	<p>Section 16.4.7 Amusement Buildings</p> <p>Any amusement building regardless of occupant load.</p>	<p>NFPA provides a higher level of protection.</p> <p>IBC provides equal protection.</p>
<p>Section 408.3 Means of Egress Amusement Buildings</p> <p>Defined by the fire official and in conformance with Chapter 10.</p>	<p>Section 408.3 Means of Egress Amusement Buildings</p> <p>Adds new language for low level exit markings.</p>	<p>Section 16.4.7.5 Means of Egress Amusement Buildings</p> <p>Same as IBC</p>	<p>The NFPA and IBC provide an equivalent level of protection.</p>
<p>Section 408.4 & 904.2.3.6 Automatic Fire Extinguishing Systems-Amusement Buildings</p> <p>Shall have an approved and electronically supervised system.</p>	<p>Section 411.4 Automatic Fire Extinguishing Systems-Amusement Buildings</p> <p>Same as CBC</p>	<p>Section 16.4.7.2 Automatic Fire Extinguishing Systems-Amusement Buildings</p> <p>Same as CBC</p>	<p>The NFPA and IBC provide an equivalent level of protection.</p>
<p>Section 408.5 & 408.5.3 Alarm Systems-Amusement Buildings</p> <p>A smoke detector or other device shall activate the fire alarm.</p> <p>With the activation of two or</p>	<p>Section 411.3 & 411.5 Alarm Systems-Amusement Buildings</p> <p>Same as CBC</p>	<p>Section 16.4.7.4 Alarm Systems-Amusement Buildings</p> <p>Required</p>	<p>The NFPA and IBC provide an equivalent level of protection.</p>

A OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
more smoke detectors. Stop sounds, activate directional markings, and illuminate means of egress.			
<p>Section 408.5.4 Public Address Systems-Amusement Buildings</p> <p>Required</p>	<p>Section 411.6 Public Address Systems-Amusement Buildings</p> <p>Same as CBC</p>	<p>Public Address Systems-Amusement Buildings</p> <p>Not included</p>	<p>The IBC provides an equivalent level of protection as the CBC.</p> <p>NFPA does not address it, therefore provides a lower level of protection.</p>

E OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 3 - Section 305.1 Group E occupancies Defined.</p> <p>This section addresses the requirements for Group E Occupancies as follows:</p> <ul style="list-style-type: none"> • Division 1 – Any building use for educational purposes through 12th grade by 50 or more persons for 12 hours a week or 4 hours a day. • Division 2 - Any building use for educational purposes through 12th grade by less than 50 persons for 12 hours a week or 4 hours a day. • Division 3 – Any building used for day-care purposes for more than 6 children/persons. 	<p>Chapter 3 - Section 305.1 Educational Group E.</p> <p>This section addresses the requirements for Group E Occupancies as any building used or a portion thereof used by 6 or more persons at any one time for educational purposes through the 12th grade.</p>	<p>Chapter 17 - Section 17.1 General requirements.</p> <p>The requirements of this section apply to new buildings used as an educational occupancy.</p> <p>Section 17.1.1.3 indicates that educational facilities that do not meet the following definition of an educational occupancy are not required to comply with chapter 17. The definition of an educational occupancy is as follows:</p> <ul style="list-style-type: none"> • An occupancy used for educational purposes through the 12th grade by 6 or more persons for 4 or more hours a day or more than 12 hours a week. <p>This section also indicates that educational facilities that do not meet this definition shall comply with the following chapters:</p>	<p>The 2001 CBC provides for three separate E Occupancies definitions as shown in the 2001 CBC column. However, under the Health & Safety Code, the SFM has the statutory authority to amend the definition for educational facilities.</p> <p>The 2003 IBC provides one definition for E Occupancies as shown in the 2003 IBC column.</p> <p>The 2003 NFPA 5000 provides a multifaceted definition that incorporates multiple occupancies as shown in the 2003 NFPA 5000 column.</p> <p>The 2001 CBC provides one definition for day care facilities in E Occupancies as shown in the 2001 CBC column. However, under the Health & Safety Code, the SFM has the statutory authority to amend the definition for educational and day care facilities.</p> <p>The 2003 IBC provides one definition for day care facilities in E Occupancies as shown in the 2003 IBC column.</p>

E OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Division 3 also includes any residential occupancy used for day-care purposes for more than 14 persons. Division 3 includes the following licensing categories:</p> <ul style="list-style-type: none"> • Adult Day Care Facilities • Family Day Care Homes • Adult Day Support Center • Day Care for Mildly Ill Children • Infant Care Center • School-Age Child Day Care Center 	<p>Section 305.2 Day care.</p> <p>This section addresses the requirements for buildings used for educational, supervision or care of more than 5 children older than 2.5 years old.</p>	<ul style="list-style-type: none"> • Chapter 28 – business occupancy. • Chapter 28 – classrooms under 50 persons, business occupancy. • Chapter 16 – classrooms over 50-assembly occupancy. • Chapter 28 – laboratories, instructional - business occupancy. • Chapter 29 - laboratories, non-instructional - business occupancy. <p>Section 17.1.2. Multiple Occupancies.</p> <p>This section addresses the requirements for multiple occupancies. Multiple occupancies are defined in section 6.2 as a building in which two or more classes of occupancy exist. The following is a list of multiple occupancies:</p>	

E OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<ul style="list-style-type: none"> • Section 17.1.2.2 – Assembly & Educational. • Section 17.1.2.3 Dormitory & Classrooms. • Section 17.1.3 – Classification of Occupancy. 	
<p>SMOKE BARRIER Consists of walls, Partitions, floors, and openings there -in as will prevent the transmission of smoke or gases through the construction. See Section 905.</p>			
<p>Chapter 2 Definitions</p> <p>Section 201 General:</p> <p>Terms shall have the meaning as given in this chapter. Terms not defined shall be defined as within the context of the Webster's Third New</p>	<p>Chapter 2 Definitions</p> <p>Section 201 General:</p> <p>Terms shall have the meaning as given in this chapter. Terms not defined shall have ordinary accepted meanings as the context implies.</p>	<p>Chapter 3 Definitions</p> <p>Section 3. 2 NFPA Official Definitions.</p> <p>Terms shall have the meaning as given in this chapter. Terms not defined shall be defined as within the context of the Webster's</p>	<p>The 2001 CBC and 2003 NFPA 5000 reference Webster's Third New International Dictionary of the English Language as document acceptable for the defining of terms not published in each respective code.</p> <p>The 2003 IBC does not specifically reference a document to be used for terms not published in their code.</p>

E OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
international Dictionary of the English Language.		Third New international Dictionary of the English Language.	
<p>The 2001 CBC does not define the term Authority Having Jurisdiction. Section 203 provides a definition for building official, which indicates that this means the officer or other authority charged with the administration and enforcement of this code. The SFM amends this section based on Health and Safety Code section 13143 for SFM regulated occupancies.</p>	<p>The 2003 IBC does not define the term Authority Having Jurisdiction.</p>	<p>Section 3.2.2 Authority Having Jurisdiction (AHJ).</p> <p>The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.</p>	<p>The 2003 NFPA 5000 is more specific in defining the term AHJ and the associated responsibilities.</p> <p>The 2001 CBC and 2003 IBC both reference to the building official as the officer or other authority charged with the administration and enforcement of this code.</p>

E OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 3 Use or Occupancy</p> <p>Section 305.2 – Construction Height & Allowable Area:</p> <p>This section addresses the requirements for the type of construction, allowable floor area and height of the buildings classified as an E occupancy.</p> <p>This section indicates that Table 5B – Basic Allowable Building Heights shall be used to determine the allowable height and floor area. This table specifies the following:</p> <ul style="list-style-type: none"> • Type I - FR may be 4 floors in height w/ 45,200 sq.ft. • Type II – One-Hr. may be 2 floors in height w/ 20,200 sq.ft. 	<p>Chapter 5 General Building Heights & Areas</p> <p>Section 501 – General:</p> <p>This section addresses the requirements for the control of height and area of buildings and additions to existing buildings.</p> <p>This section refers to Table 503 Allowable Building Heights. This table specifies the following:</p> <ul style="list-style-type: none"> • Type I - A the floor area and building height is unlimited. • Type I - B may be 5 floors in height w/ unlimited floor area. • Type II - A may be 3 floors in height w/ 26,500 sq.ft. • Type II - B may be 2 floors in height w/ 	<p>Chapter 7 - Construction Types & Height & Area Requirements:</p> <p>Section 7.4 Height & Area Limitations:</p> <p>This section addresses the requirements for the type of construction, allowable floor area and height of the buildings.</p> <p>This section refers to Table 7.4.1 Height and Area Requirements. This table specifies the following:</p> <ul style="list-style-type: none"> • Type I – (442) is unlimited in floor area and building height for both sprinklered and non-sprinklered buildings. • Type I – (332) is unlimited in floor area and limited to 420 ft. in height for a sprinklered bldg. And 400 ft. height for a 	<p>The bases of allowable height and floor area in the 2001 CBC are based on the building's type of construction as shown in Table 5-B. The following characteristics must first be identified to determine the allowable height and or floor area:</p> <ul style="list-style-type: none"> • Type of Construction, which would include all building components or elements of construction. • Fire rating required per use of building and or the type of construction required. <p>Once these characteristics have been identified this table identifies the allowable height and floor area allowed in each type of construction.</p> <p>Example; Type I - FR may be 4 floors in height w/ 45,200 sq.ft. The structural frame shall be fire rated at 3 hours and roofs shall be fire rated at 2 hours.</p> <p>The bases of allowable height and floor area in the 2003 IBC are based on the building's type of</p>

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<ul style="list-style-type: none"> • Type II –N may be 1 floor in height w/ 13,500 sq.ft. • Type III – One-Hr. may be 2 floors in height w/ 20,200 sq.ft. • Type III – N may be 1 floors in height w/ 13,500 sq.ft. • Type IV – H.T may be 2 floors in height w/ 20,200 sq.ft. • Type V – One-HR. may be 2 floors in height w/ 15,700 sq.ft. • Type V – N may be 1 floor in height w/ 9,100 sq.ft. <p>This section also indicates that that a 50% area increase is allowed if the travel distance specified in section 1004.2.5 are reduced by 50%.</p>	<p>14,500 sq.ft.</p> <ul style="list-style-type: none"> • Type III - A may be 3 floors in height w/ 26,500 sq.ft. • Type III - B may be 2 floors in height w/ 14,500 sq.ft. • Type IV – H.T. may be may be 3 floors in height w/ 25,500 sq.ft. • Type V - A may be 1 floor in height w/ 18,500 sq.ft. • Type V - B may be 1 floor in height w/ 9,500 sq.ft. 	<p>non-sprinklered buildings.</p> <ul style="list-style-type: none"> • Type II – (222) is unlimited in floor area with a maximum bldg. height of 420 ft. for a sprinklered bldg. and 400 ft. for a non-sprinklered building. • Type II – (111) is limited to 26,500 sq.ft. with a maximum bldg. height of 85 ft. not exceeding 4 floors for a sprinklered bldg. and 26,50 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 3 floors for a non-sprinklered building. • Type II – (000) is limited to 14,500 sq.ft. with a maximum bldg. height of 75 ft. not exceeding 3 floors for 	<p>construction as shown in Table 503. The following characteristics must first be identified to determine the allowable height and or floor area:</p> <ul style="list-style-type: none"> • Type of Construction, which does not include all building components or elements of construction. <p>Building elements are expressed as such items as columns, girders, floor joist, etc. Each element as shown in Table 601 is shown to have a fire rating based on the type of construction.</p> <p>Example; Type 1-A requires that the structural frame be fire rated at 3 hours. The floor construction is required to be fire rated at 2 hours and the roof construction including supports are required to be fire rated at 1.5 hours.</p> <p>The bases of allowable height and floor area in the 2003 NFPA 5000 is based on the building's type of construction and whether the building is a sprinklered or non-sprinklered as shown in Table 7.4.1.</p> <p><i>Example; Type I – (442) is unlimited</i></p>

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>a sprinklered bldg. and 14,500 sq.ft. with a maximum bldg. height of 55 ft. not exceeding 2 floors for a</p> <p>non-sprinklered building.</p> <ul style="list-style-type: none"> • Type III – (211) is limited to 23,500 sq.ft. with a maximum bldg. height of 85 ft. not exceeding 4 floors for a sprinklered bldg. and 26,500 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 3 floors for a non-sprinklered building. • Type III – (200) is limited to 14,500 sq.ft. with a maximum bldg. height of 75 ft. not exceeding 3 floors <p>for a sprinklered bldg. and 14,500 sq.ft. with a maximum bldg.</p>	<p><i>in floor area and building height for both sprinklered and non-sprinklered buildings.</i></p> <p>Type I – (332) is unlimited in floor area and limited to 420 ft. in height for a sprinklered bldg. and 400 ft. height for non-sprinklered buildings.</p> <p>Table 7.2.2 specifies the following example of fire rating based on construction type:</p> <ul style="list-style-type: none"> • Type 1(442) Exterior bearing walls supporting more than one floor, column shall have a 4-hour fire rating. Interior bearing walls supporting more than one floor, column shall have a 4 hour fire rating and interior bearing walls supporting only one floor or roof shall have a 3-hour fire rating. • Type 1(332) Exterior bearing walls supporting more than one floor, column shall have a 3-hour fire rating. Interior bearing walls supporting more than one floor, column shall have a 3 hour fire rating

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>height of 55 ft. not exceeding 2 floors for a non-sprinklered building.</p> <ul style="list-style-type: none"> • Type IV – (2HH) is limited to 25,500 sq.ft. with a maximum bldg. height of 85 ft. not exceeding 4 floors for a sprinklered bldg. and 25,500 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 3 floors for a non-sprinklered building. • Type V – (111) is limited to 18,500 sq.ft. with a maximum bldg. height of 70 ft. not exceeding 2 floors for a sprinklered bldg. and 18,500 sq.ft. with a maximum bldg. height of 50 ft. not exceeding 1 floor for a non-sprinklered building. 	<p>and interior bearing walls supporting only one floor or roof shall have a 2-hour fire rating.</p>

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<ul style="list-style-type: none"> • Type V – (000) is limited to 9,500 sq.ft. with a maximum bldg. height of 60 ft. not exceeding 2 floors for a sprinklered bldg. and 9,500 sq.ft. with a maximum bldg. height of 40 ft. not exceeding 1 floor for a non-sprinklered building. 	
<p>Chapter 3 Use or Occupancy</p> <p>305.3 Location on Property:</p> <p>This section specifies that Group E occupancies shall front directly on a public street or an exit discharge not less than 20 ft. in width. At least one exit shall be located on a public street or an exit discharge.</p>	<p>Chapter 5 General Building Heights & Areas</p> <p>Section 506 Area Modifications:</p> <p>Section 506.2 specifies that every building shall adjoin or have access to a public way to receive an area increase for frontage.</p> <p>Section 506.2.1 specifies that the width shall be at least 20 ft. This section identifies the following sections</p>	<p>Chapter 7 - Construction Types & Height & Area Requirements:</p> <p>Section 7.1.3 Location and Property.</p> <p>This section specifies that buildings are subject to Chapter 37 Exterior Wall Construction and section 7.3 Exterior Walls for openings in exterior walls.</p> <p>Section 7.4 Height and Area Limitations</p> <p>addresses such</p>	<p>The 2003 IBC provides an equivalent level of protection as that of the 2001 CBC.</p> <p>The bases of allowable height and floor area in the 2003 NFPA 5000 is based on the building's type of construction and whether the building is sprinklered or non-sprinklered as shown in Table 7.4.1.</p>

E OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>as applying to this topic:</p> <ul style="list-style-type: none"> • 503.1.2 Special Industrial Occupancies. • 507 Unlimited Area Buildings. • 508 Special Provisions. <p>Section 506.2.2 addresses open space limits by specifying that the space shall be on the same lot or dedicated for public use and accessed from the public street.</p> <p>Section 506.3 addresses the requirements for area increases when the building is protected by an automatic sprinkler system per section 903.3.1.1. Area increases to the requirements of Table 503 are as follows:</p> <ul style="list-style-type: none"> • 200% for multistory buildings 	<p>requirements for buildings based on their intended use and type of construction as indicated in Table 7.4.1.</p>	

E OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<ul style="list-style-type: none">• 300% for single story buildings		

E OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 5-A Exterior Wall and Opening Protection Based on Location.</p> <p>This section specifies that a Type V 1 Hr. and V-N Hr. Not permitted less than 5 ft. Protected less than 10 ft.</p>	<p>Chapter 7 Fire Resistance-Rated Construction.</p> <p>Section 704.8 Allowable Area of Openings:</p> <p>This section specifies that the allowable area of unprotected or protected openings in an exterior wall of any story shall not exceed Table 704.8.</p>	<p>Chapter 7 - Construction Types & Height & Area Requirements:</p> <p>Section 7.3.2.1 requires exterior walls to have a fire resistive rating based on Tables 7.2.2 & 7.3.2.1.</p> <p>Section 7.3.5.1 Openings Protectives, specifies that the area of unprotected openings in an exterior wall is expressed as percentage of the area of the exterior wall per Table 7.3.5(a).</p>	<p>The 2003 IBC provides that the allowable area of unprotected or protected openings in an exterior wall of any story shall not exceed Table 704.8.</p> <p><i>Example: Unprotected openings in an exterior wall with a fire separation distance of 0 to 3 ft. is not permitted unless the exterior of the building is not required to be fire-resistive construction, then unlimited unprotected openings are allowed.</i></p> <p>The 2003 NFPA 5000 specifies that the fire resistive rating for exterior walls be expressed in hours and the horizontal separation in feet.</p> <p><i>Example: Protection of openings in an exterior wall of educational occupancies shall have a fire rating of 1 hour if the building is within 0 to 5 feet of the property line or other buildings.</i></p> <p>The allowable area for unprotected openings is expressed as follows:</p>

E OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
			If the horizontal separation is 5 ft. and the maximum area of the exposing front is 200 ft ² , the percentage of allowable area for unprotected openings is 10% of the exposing front exterior wall.

E OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 302 Mixed Use or Occupancy:</p> <p>Separation from other occupancies required per Section 302.4</p>	<p>Section 302.3.2 Separated Uses.</p> <p>Use of fire barriers or horizontal assemblies with fire-resistance rating.</p>	<p>Section 17.1.2.1 Multiple Occupancies.</p> <p>This section addresses the requirements for multiple occupancies. Multiple occupancies are defined in section 6.2 as a building in which two or more classes of occupancy exist. The following is a list of multiple occupancies:</p> <ul style="list-style-type: none"> • Section 17.1.2.2 – Assembly & Educational. • Section 17.1.2.3 Dormitory & Classrooms. • Section 17.1.3 – Classification of Occupancy. 	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC in that the IBC utilizes fire barrier walls or horizontal assemblies to provide separation and the NFPA 5000 specifies fire-resistive assemblies and occupancy separations.</p>

E OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 302.3 Types of Occupancy:</p> <p>Occupancy separations shall be classed as:</p> <p>Four-hour fire resistive Three-hour fire resistive Two-hour fire resistive One-hour fire resistive</p> <p>Section 305 requirements for Group E</p> <p>Occupancies refer to section 302 for the requirements of a particular occupancy separation.</p> <p>Table 3B only requires a one-hour occupancy separation between an E and B occupancy.</p> <p>Group E occupancies mixed with other occupancy classifications may require separation.</p>	<p>Section 302 Classification:</p> <p>Section 302.1.1.1 specifies that Table 302.1.1 Incidental Use Areas shall be used to determine the required separation between occupancies.</p> <p>Section 302.3 Mixed Occupancies, refers to Table 302.3.3, Required Separation of Occupancies as the table to use in determining separation between mixed occupancies.</p> <p>Table 302.3.3 indicates that a two-hour separation is required between a Group E and an assembly use that is accessory to the Group E because such assembly use is not considered a separate occupancy.</p> <p>A two- hour separation is required between the following occupancies:</p>	<p>Section 17.1.2 Multiple Occupancies:</p> <p>Refers to;</p> <p>Section 6.2.2.3 Separated Occupancy:</p> <p>This section refers to Table 6.2.4.1 Separated by fire resistance-rated assemblies.</p> <p>An occupancy separation is required for E occupancies.</p> <p>A two- hour separation is required between the following occupancies:</p> <ul style="list-style-type: none"> • A with more than 300 occupants • A with 300 to 1000 occupants • A with more than 1000 occupants <p>This section identifies several additional</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a higher level of protection than that of the 2001 CBC.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<ul style="list-style-type: none">• A-1• A-2• A-3• A-4• A-5• B	occupancies that require a two-hour separation.	

E OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 10 Means of Egress</p> <p>Section 1007.3.1 Definitions for Group E Occupancies.</p> <p>This section defines 'room', 'interior room' and 'separate means of egress system'.</p> <p>Section 1007.3.2 specifies that a Separate Means of Egress requirements- Required at occupant load of 300, max of 2 exits into same egress system.</p>	<p>Chapter 10 Means of Egress</p> <p>The 2003 IBC does not provide a definition for room or interior room.</p> <p>The IBC does not specifically address a separate means of egress for E Occupancies.</p> <p>However, the IBC does address the term "Common Path of Travel."</p> <p>Triggered by lower occupant load, 50. Allows maximum 75 feet of common path in exit system.</p>	<p>Chapter 11 Means of Egress</p> <p>Chapter 17 Educational Occupancies</p> <p>Section 17.2 refers to Chapter 11 for exiting requirements.</p> <p>The 2003 NFPA 5000 does not provide a definition for room or interior room.</p> <p>However, the NFPA does address the term "Common Path of Travel."</p>	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC.</p>
<p>Section 1007.3.4 Intervening Rooms:</p> <p>No hazardous areas, if</p>	<p>Section 1004.2.3 Egress through Intervening Spaces:</p>	<p>Section 17.2.5.4 Exit Access:</p> <p>One intervening room is</p>	<p>The 2003 NFPA 5000 provides a similar level of protection as that of the 2001 CBC.</p>

E OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
only one exit is required then it may go through one intervening room if smoke detectors are provided, specific exceptions are permitted.	Allowed only if intervening room is accessory No hazardous areas. No special rules for E occupancies.	permitted provided the travel distance is reduced to 75 feet and smoke detection or fire sprinklers are provided.	The 2003 IBC is more restrictive regarding the use of the intervening spaces for exiting. However, over all on this topic the 2003 IBC is provides a lower level of protection that that of the 2001 CBC.
Section 1007.3.5 Hallways, Corridors, & Exit Balconies: Adds 2 ft. to the standard width requirement and sets a minimum of 6 ft. Changes in elevation less than 2 ft. must be made by a ramp.	Section 1005 Exit Width: Adds 2 ft. to the standard width requirement and sets a minimum of 6 ft. changes in elevation less than 2 ft. must be made by a ramp.	Section 17.2.3.2 Minimum Corridor Width: This section requires a 6ft. minimum clear width. Section 17.2.7 requires the exit discharge to comply with section 11.7, which addresses ramps as a component of the exit discharge.	The 2003 IBC and NFPA 5000 provide a similar level of protection as that of the 2001 CBC.
Section 1007.3.6 Stairways: A minimum width increased to 5 feet when occupant load 100 or more.	Section 1003.3.3 Stairways: This section addresses the requirements for the use of stairs as a component of the means of egress. A minimum width of	Section 17.2.2.3: References Section 11.2.2 Stairs for the use of stairs as a component of the means of egress.	The 2003 IBC and NFPA 5000 provide lower level of protection than that of the 2001 CBC.

E OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	shall not be less than 44 inches as determined by sections 1003.2.3.1. and 1003.2.13.2.		
<p>Section 1007.3.7 Exits serving auditoriums in E-1 occupancies:</p> <p>An auditorium can be considered an accessory use if not occupied at same time as other rooms.</p>	<p>The 2003 IBC does not address exits serving auditoriums in E-1 occupancies.</p>	<p>Section 17.1.2.2 Assembly and Educational</p> <p>Indicates that the total occupant load must be accommodated if simultaneous use is allowed.</p>	<p>The 2003 IBC and NFPA 5000 provide lower level of protection than that of the 2001 CBC.</p>
<p>Section 1007.3.8 Laboratories:</p> <p>Extra egress requirements for labs over 200 sq. ft.</p>	<p>Section 302.1.1 Incidental use areas:</p> <p>Requires a 1-hour separation or sprinklers unless considered accessory use. If accessory is less than 10% of main occupancy and not an H- occupancy.</p>	<p>Section 17.3.2 Hazardous Area Protection:</p> <p>Requires a 1-hour separation from the remainder of the building and an automatic sprinkler system.</p>	<p>The 2003 NFPA 5000 provides a higher level of protection than that of the 2001 CBC.</p>

E OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.3.9 Basements:</p> <p>Exit stairways from the basement must be direct exits and path does not re-enter building.</p>	<p>Section 405 Underground Buildings:</p> <p>This section applies to buildings having spaces for human occupancy more than 30 ft. below the lowest level of exit discharge. These areas are required to be of Type 1 construction and sprinklered.</p>	<p>Section 31.2 Underground Structures:</p> <p>This section specifies that underground structures with an occupant load of more than 50 persons shall be protected by an automatic sprinkler system.</p>	<p>The 2003 IBC and NFPA 5000 provide a higher level of protection than that of the 2001 CBC.</p>
<p>Section 1007.3.10 Panic Hardware:</p> <p>Panic hardware is required for occupant load 50 or more and in corridors.</p>	<p>Section 1008.1.9 Panic and fire exit hardware:</p> <p>Panic and fire exit hardware are required in E occupancies at occupant load of 100.</p>	<p>Section 17.2.2.2.2 Doors.</p> <p>Panic hardware required occupant load of 100.</p>	<p>The 2003 IBC and NFPA 5000 provide a higher level of protection than that of the 2001 CBC.</p>
<p>Section 1007.3.11 Fences and gates: The perimeter of the property must be fenced and gated, but openings must be sized to permit access by emergency vehicles.</p>	<p>Section 1003.3.2.2 Educational uses: Schools grounds are permitted to be fenced and gates used with locks, provided that a safe dispersal area is</p>	<p>The 2003 NFPA 5000 does not specifically address fences and gates about E Occupancies. Area of refuge is addresses in section 17.2.2.10 and 11.2.12.</p>	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC in that the CBC requires that the openings in the fence and or gate must permit access by emergency vehicles.</p>

E OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>provided.</p> <p>Section 1005 is referenced for requirements of a safe dispersal area.</p>		
<p>Section 1007.3.12 Floor level exit signs:</p> <p>This section is a SFM regulated subject based on Health and Safety Code section 13143.</p> <p>Signs are required at interior rated doors. Exception: Where direct exits are provided from each classroom.</p>	<p>1003.2.10 Exit Signs:</p> <p>This section specifies that exit signs shall be placed in such a manner that no point of in an exit access corridor is less than 100 ft. from the nearest sign. Section 1003.2.10.4 requires that exit signs are to be illuminated and emergency power</p> <p>be provided. The 2003 IBC does not specifically address floor-level exit signs.</p>	<p>Section 17.2.10 Marking of Means of Egress:</p> <p>Refers to section 11.10 Marking of Means of Egress, for the requirements regarding exit signage. Section 11.10 specifies that exit signs shall be placed in such a manner that no point of in an exit access corridor is less than 100 ft. from the nearest sign.</p> <p>Section 11.10.1.5 Floor proximity exit signs address the requirements for when required, the placement of exit signs not more than 18 inches above the finished floor.</p> <p>Section 11.10.1.6 addresses the requirements for floor proximity egress path marking.</p>	<p>The 2003 NFPA 5000 provides a similar level of protection as that of the 2001 CBC.</p> <p>The 2003 IBC provides a lower level of protection than that of the 2001 CBC in that floor level exit signs are not specifically addressed.</p>

E OCCUPANCIES

Fire Alarm Systems Fire Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Article 10 Fire Protection Systems and Equipment</p> <p>Section 1006.2.4.1 Group E Occupancies:</p> <p>Group E occupancies are required to have a fire alarm system per section 1006.2.4.</p> <p>Group E-1 and E-3 having an occupant load of 50 or more shall be provided with a manual fire alarm system.</p> <p>Section 1006.2.4.1 specifies that automatic sprinklers or smoke detectors</p> <p>are required to be interconnected. Alarm system shall be both automatic & manual.</p>	<p>Chapter 9 Fire Protection Systems</p> <p>Section 907.2.3 Group E:</p> <p>All Group E occupancies are required to have a manual fire alarm system installed.</p> <p>When automatic sprinklers or smoke detectors are installed, they shall be connected to the building fire alarm system.</p>	<p>Chapter 13 Fire Protection Systems</p> <p>Section 13.3.2.6 New Educational Occupancies:</p> <p>Every portion of a new educational occupancy below the level of exit discharge or with unprotected openings shall be protected by an automatic sprinkler system.</p> <p>Section 13.3.2.7 Existing Educational Occupancies:</p> <p>Where the occupancy is below the level of exit discharge or with</p> <p>unprotected openings shall be protected by an automatic sprinkler system.</p>	<p>The 2003 IFC and NFPA 1 provide a lower level of protection than that of the 2001 CBC.</p>

E OCCUPANCIES

Fire Alarm Systems Fire Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.2.4.1.1</p> <p>This section is regulated by the SFM under Health and Safety Code section 13143. This section specifies that when more than one alarm control unit is used, they shall be interconnected and operate all indicating devices.</p> <p>Exceptions to this section are as follows:</p> <ol style="list-style-type: none"> 1. Minimum 20 ft. separation per the CBC. 2. Communication between classroom & administration offices shall be provided. 	<p>Section 907.2.3 Group E.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. If the occupant load is less than 50; Manual fire alarm boxes may be eliminated if conditions met. <p>The 2003 IFC does not specifically address the interconnection of multiple alarm control units.</p>	<p>Section 13.7.2.4 Existing Educational Occupancies:</p> <p>This section specifies that Educational Occupancies shall be provided with a fire alarm system.</p> <p>Exceptions to these requirements are when the building is less than 1000 sq. ft with a single classroom that is 50 ft. away from buildings.</p>	<p>The 2003 NFPA 1 and IFC provide a lower level of protection than that of the 2001 CBC in that the CBC specifically requires a 20 ft. separation between buildings and fire alarm indicators, communication between classrooms and Administration Office.</p>

E OCCUPANCIES

Fire Alarm Systems Fire Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.2.4.1.2 School Fire Alarms:</p> <p>This section is regulated by the SFM under Health and Safety Code section 13143. This section specifies that Group E Occupancies shall have fire alarm system.</p> <p>Exceptions to this requirement is privately owned trade or vocational schools or any company that provides instruction to its employees.</p>	<p>Section 907.2.3 Group E:</p> <p>All Group E occupancies are required to have a manual fire alarm system installed.</p>	<p>Section 13.7.2.4 Existing Educational Occupancies:</p> <p>This section specifies that Educational Occupancies shall be provided with a fire alarm system.</p>	<p>The 2003 NFPA 1 provides a similar level of protection as that of the 2001 CBC.</p> <p>The 2003 IFC provides a lower level of protection as that of the 2001 CBC in that Group E occupancies are required to have a manual fire alarm system installed and no interconnection is specifically addressed.</p> <p>However, neither the 2003 IFC or the NFPA 1 address requirements for fire alarm systems in privately owned trade or vocational schools or any company that provides instruction to its employees.</p>

E OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 305.7 Sprinkler and Standpipes Systems</p> <p>Shall be installed per;</p> <p>Chapter 9 Automatic Fire-Extinguishing systems:</p> <p>This section requires that an automatic fire-extinguishing system be installed per section 904.2.4 Group E Occupancies.</p> <p>An automatic fire-extinguishing system shall be installed throughout all build- containing a Group E, Division 1 Occupancy.</p> <p>Exceptions to this requirement are:</p> <ol style="list-style-type: none"> 1. Room has at least one exterior exit at ground level. 2. Two hour area or occupancy separation 	<p>Section 903.2.2 Group E.</p> <p>Sprinklers are required throughout all Group E fire areas greater than 20,000 sq. ft.</p> <p>Sprinklers for every portion of Group E building below the level of exit discharge.</p> <p>Exception to this requirement: is where each classroom has at least one exterior exit door at ground level.</p>	<p>Section 17.3.5 Extinguishing Requirements.</p> <p>Educational Occupancies with a fire compartment exceeding 20,000 sq. ft. shall be protected by a supervised automatic sprinkler system.</p>	<p>The 2003 IBC and NFPA 5000 similarly provide that all educational occupancies exceeding 20,000 sq. ft. shall be protected by a supervised automatic sprinkler system.</p> <p>CBC is more restrictive. The 2001 CBC requires that an automatic fire-extinguishing system shall be installed throughout all buildings containing a Group E, Division 1 Occupancy. However, the CBC exempts Group E-Division 1 from these requirements if the building is subdivided into compartments of less than 20,000 sq.ft. providing the separation is a minimum of 2-hour fire rated assembly.</p>

E OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
subdivides building / floor area not greater than 20,000 sq. ft.			
<p>904.2.4.2 Basements:</p> <p>An automatic sprinkler system shall be installed in all basements classified as an E-1 occupancies.</p>	<p>Section 405 Underground Buildings:</p> <p>This section applies to buildings having spaces for human occupancy more than 30 ft. below the lowest level of exit discharge. These areas are required to be of Type 1 construction and sprinklered.</p>	<p>Section 31.2 Underground Structures:</p> <p>This section specifies that underground structures with an occupant load of more than 50 persons shall be protected by an automatic sprinkler system.</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a lower level of protection than that of the 2001 CBC in that the IBC's requirements are triggered when the occupancy is located 30 ft. below the lowest level of exit discharge.</p> <p>The NFPA's requirements are trigger when the occupant load exceeds 50 persons.</p>
<p>Section 904.2.4.3 Stairs:</p> <p>Automatic sprinklers shall be installed in enclosed usable space below or over a stairway in Group E-1 Occupancies.</p>	<p>The 2003 IBC does not specifically address the protection of stairs in E Occupancies.</p>	<p>The 2003 NFPA 5000 does not specifically address the protection of stairs in E Occupancies.</p> <p>Section 17.2.2.3 refers to Section 8.12 Vertical Openings as the section that stair are to comply with.</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a lower level of protection than that of the 2001 CBC.</p>

E OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 305.2.4 Special Hazards:</p> <p>Laboratories, vocational, and similar areas separated from each other by not less than one-hour occupancy separation.</p>	<p>Section 414 Hazardous Materials</p> <p>Section 414.1 General:</p> <p>Provisions shall apply to all buildings and structures for the manufacturing, processing, dispensing, use or storage of hazardous materials.</p>	<p>Section 17.3.2 Hazard Area Protection:</p> <p>Rooms or spaces used for hazardous use shall be separated by 1-hour fire barriers or protected by fire sprinkler system.</p>	<p>The 2003 NFPA 5000 provides a higher level of protection than that of the 2001 CBC in that NFPA 5000 requires 1-hour fire barriers or fire sprinklers.</p> <p>The 2003 IBC does not specifically address the protection requirements for hazardous materials areas. The IBC does refer to the IFC and the International Mechanical Code for additional requirements.</p>

H-1 OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.1.1 Occupancy Class H-1 Explosive and blasting agents Unclassified Detonable organic Peroxides Class 4 oxidizers Class 3 or 4 unstable oxidizers Manufacture of fireworks Class 1.4G</p>	<p>Sec.415.3.1 Occupancy Group H-1 Explosive and blasting agents Unclassified Detonable organic Peroxides Class 4 oxidizers Class.3.or.4 Unstable oxidizers Manufacture of fireworks Class 1.4G</p>	<p>Sec.34.3.1.1 High Hazard Level 1 Buildings containing quantities of hazardous materials exceeding the maximum allowable quantities of high hazard Level 1 contents permitted in control areas shall comply with applicable regulations for Protection Level 1, as set forth in 34.3.3.</p>	<p>Same definitions in IBC, NFPA 5000, & CBC</p>

H-1 OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.2.1, Construction Table 5-B	Chapter 6 Types of Construction, Chapter 5, Table 503	Chapter 7, Table 7.4.1	IBC provides equal protection as CBC NFPA 5000 provides a lower level of protection as CBC
Type I FR through Type II-N	Type I through Type V-1hr	Type I through Type V-I hr	IBC & NFPA 5000 provided a lower level of protection as CBC
Sec. 506 Height Chapter 5, Table 5-B I story	Sec. 506 Height Chapter 5, Table 503 I Story	Chapter 7, Table 7.4.1 I Story	IBC & NFPA 5000 provide same level of protection as CBC
(Allowable Area) Chapter 5, Table 5-B Type II-N at 3,000 sq ft	Chapter 5, Table 503 Type V-I hr 7,500	Chapter 7, Table 7.4.1 Type V-I hr 7,500 sq ft	CBC provide a lower level of protection than IBC and NFPA 1
Property line setbacks Table 5-A Exterior Wall	Table 602		
Not less that 75ft and not less than required by Table 3-F	Exterior wall <30 ft type IIB, VB	Not occupancy specific	CBC has a higher level of protection

H-1 OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 302.4, Table 3-B Occupancy separation	Table 302.3.3 Occupancy separation	Table 34.3.2.3 Occupancy separation	IBC & NFPA 5000 provide equal levels of protection as CBC

H-1 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 1007.4 Exiting Number of exits from a room 2 exits when lab. Is over 200 sq. ft.</p>	<p>Sec. 415.8, Table 1014.1 Exiting 2 exits when max. occupant load is 10</p>	<p>Sec. 34.3.2.5.3 Exiting Number of exits for high protection levels 1, 2, 3, & 4 shall have not less than 2 exits exception:</p> <ul style="list-style-type: none"> • Room 200 sq. ft. • < 25ft travel • occupant load < 3 	<p>IBC & NFPA 5000 provide a lower level of protection than CBC</p>
<p>Sec.1007.4.2.1 Exiting Travel maximum travel distance is 75ft An exit or exit access. The travel distance may be increase by 100ft if the last part of the travel is a corridor.</p>	<p>Table 1015.1 Exiting Maximum length of exit travel from the most remote area 75 ft with sprinklers.</p>	<p>Table 34.3.2.5.1 Exiting Travel distance to an exit 75 ft.</p>	<p>IBC & NFPA 5000 provides a low level of protection than CBC</p>
<p>Sec. 1007.4.2.3 Exit Doors Corridor doors not less than 45 minute.</p>	<p>Sec. 415.3 Exit Doors N/A</p>	<p>Table 34.3.2.3 N/A</p>	<p>IBC & NFPA 5000 provides a lower level of protection than CBC</p>
<p>Sec.1003.2.8.2 Corridors Internally or externally illuminated</p>	<p>Sec. 1011.1 Corridors</p>	<p>Sec. 11.10.5 Corridors</p>	<p>IBC & NFPA 5000 provide the same level of protection as CBC</p>

H-1 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. Sec. 1007.4.5 Panic hardware Panic hardware required.	Same	Sec. 34.3.2.5.5 Panic hardware Panic hardware required > 5 occupants.	IBC & NFPA 5000 provides equal level of protection as CBC.
Sec.1007.4.4 Exit doors Exit doors must swing in the direction of exit travel.	Sec. 1008.1.2 Exit doors Same	NFPA 101, Sec. 7.2.1.4.3 NFPA 1 Sec. 14.5.1.3 Same	IBC & NFPA 5000 provides equal level of protection as CBC
Sec. 1004.3.4.3 Fire rated corridors Fire rated corridors are required if the exit-access design requirements cannot be satisfied by complying with the intervening room, travel distance or exit separation.	Sec.1016.1, Table 1016.1 Fire rated corridors Same as CBC	Sec.11.1.3.1 N/A	IBC & NFPA 5000 have a lower level of protection than CBC CBC has a lower level of protection. CBC fire rated corridor construction is not occupant load-driven.

H-1 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.2.6 Stand by power Provide requirement for standby power</p>	<p>Sec.414.5.4 Stand by power Same as CBC</p>	<p>Sec. 34.3.2.8.1 Standby power Where mechanical ventilation, treatment systems, temperature control, alarm, detection, or other electrically operated this Code or NFPA 1 requires safety systems, such systems shall be provided with standby power or emergency power as required by 34.3.2.8. Exception No. 1: The requirement of 34.3.2.8.1 shall not apply to storage areas for Class 1 and Class 2 oxidize</p>	<p>NFPA 5000 provides a higher level of protection than CBC or IBC</p>

H-1 OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.9 Manual Fire Alarm Manual fire alarm system is required when working with organic coatings. Approved smoke detection is required when the rooms are used for storage, dispensing, use and handling of hazardous materials.</p>	<p>Sec. 907.2.5 Manual Fire Alarm Manual fire alarm system is required when working with organic coatings. Smoke detection required for highly toxic gases, organic peroxides and oxidizers.</p>	<p>NFPA 55, 430 Manual Fire Alarm .</p>	<p>IFC provides same level of protection as CFC. NFPA 1 provides a lower level of protection than CFC.</p> <p>CFC Sec. 8003.6.1.6 smoke detection system is required where liquid/solid oxidizers are stored.</p> <p>CFC Sec. 8003.7.1.7 smoke detection system is required where organic peroxides are stored.</p>

H-1 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 8003.3.1.7 Supervised smoke detection system required liquid/oxidizer storage areas	Refers to IBC for requirements	Refers to NFPA 5000 for requirements	NFPA provides a lower level of protection than CFC

H-1 OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 904.2.6 Automatic Fire Sprinkler Automatic fire-extinguishing system required.	Sec. 903.2.4.1 Automatic Fire Sprinkler Automatic fire sprinkler system required.	Sec. 34.3.2.1 Automatic Fire Sprinkler Automatic fire sprinkler system required.	IBC & NFPA 5000 provide same level of protection as CBC

H-1 OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 1003.2.6.1 Automatic Fire Sprinkler Automatic fire sprinkler system required.	Sec. 903.2.4.1 Automatic Fire Sprinkler Automatic sprinkler system required	Sec. 13.3.2 Automatic Fire Sprinkler Automatic sprinkler system required Reference In NFPA 5000 Sec. 34.3.2.1	ICF & NFPA 1 provide the same level of protection as CFC

H-1 OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.1.1 Quantities of materials in excess of those listed in Table 3-D that presents a high explosion hazard.	Sec. 307.3 Quantities of materials in excess of those listed in Table 307.7 (1) that presents a detonation hazard.	Sec. 34.3.1.1 Quantities of materials in excess of those listed for control area Table (34.1.3.1) that presents a detonation hazard.	IBC & NFPA 5000 provide same level of protection as CBC

H-2 OCCUPANCY

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.1.1 – H-2 Occupancy Defined. H2 includes combustible dust, operations w/ explosion potential and materials exceeding 3-D quantities which present <u>moderate explosion hazard</u> or <u>accelerated burning</u></p>	<p>Sec. 307.4 – H-2 Defined Provides for materials presenting deflagration hazard or accelerated burning.</p>	<p>Sec. 6.3.2.4.3, High hazard level 2 contents.</p> <p>No like occupancy. Each material or process present a hazard are addressed separately.</p>	<p>ICC and CBC address the associated hazards in a like manner.</p> <p>NPFA does not address hazards as an occupancy class; instead the associated hazards are addressed individually as the hazards appear in other occupancy classifications.</p>

H-2 OCCUPANCY

Construction, Height Allowable Area, Location On Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 5-B, HEIGHT Type I – Unlimited Type IIFR – 2 stories Type II 1hr- 1 story Type II N - 1 story Type III 1 hr -1 story Type IIIN - 1 story Type IV - 1 story Type V 1 hr- 1 story Type VN - 1 story Sec. 506 No increase for sprinklers</p>	<p>Table 503, HEIGHT Type 1A ...Unlimited Type 1B...3 stories Type 2A...2 stories Type 2B...1 story Type 3A...2 story Type 3B...1 story Type 4 ...2 stories Type 5A...1 story Type 5B...1 story Sec. 504.2 Ex.2, no increase for sprinklers</p>	<p>No comparable occupancy. Construction type, height and area based on primary use of building</p>	<p>ICC and NFPA are less restrictive than the CBC.</p>
<p>Table 5-B, AREA Type I – 15,000 Type IIFR – 12,400 Type II 1hr- 5,600 Type II N - 3,700 Type III 1 hr –5,600 Type IIIN - 3,700 Type IV - 5,600 Type V 1 hr- 4,400 Type VN - 2,500 Sec. 503.3 No increase for sprinklers</p>	<p>Table 503, AREA Type 1A ...21,000 Type 1B...16,500 Type 2A...11,000 Type 2B...7,000 Type 3A...9,500 Type 3B...7,000 Type 4 ...10,500 Type 5A...7,500 Type 5B...3,000 Sec. 506.3 Ex.1, no increase for sprinklers</p>	<p>No comparable occupancy. Construction type, height and area based on primary use of building</p>	<p>ICC and NFPA are less restrictive than the CBC.</p>

H-2 OCCUPANCY

Construction, Height Allowable Area, Location On Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Location on Property 307.3, Not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall. 503.4.5, >1,000 s.f. not less than 30 feet from property lines</p>	<p>Location on Property Table 602, Allows occupancy to be less than 30 feet from property line. Exterior walls rated according to distance to property line.</p>	<p>Sec. 34.3.4.2 Location on Property Not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall.</p>	<p>Meets the same level of protection.</p>
<p>Table 3-F, where explosives are present. Distance to property line ranges from 70 feet to 2275 feet depending on quantity of explosive material and the material's equivalence to TNT.</p>	<p>Sec. 415.3.1, 30 feet from property line when not in a required detached building. 50 feet when explosives are present in a required detached building.</p>	<p>Sec. 34.3.4.3, not less than 30 feet when not in detached buildings. 50 feet when in required detached building If explosives are present, 75 feet minimum required per 34.3.3.3.</p>	<p>NFPA provides a higher level of protection. ICC provides lower level of protection.</p>

H-2 OCCUPANCIES

Occupancy Separation

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 302.1 Mixed Use Occupancy to be separated per Table 3-B. Exception #1, spray booths need not be separated.	Sec. 302.3 same	Sec. 34.3.2.3 same	Equal level of protection
Sec. 302.2, Occupancy Separations Occupancy Separations may be vertical or horizontal.	Sec. 302.3.2 same	Sec. 8.4.5.1 same	Equal level of protection
Sec. 302.3 Types of Occupancy Separations 4 hour / no openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 60 min. opening	Sec. 302.3.2, 706.7, 714 same 4 hour / no openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 60 min. opening	Sec. 8.4.2.1, 8.7 Fire Barriers 4 hour / 4 hr openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 45 min. opening	NFPA has lower level of protection. IBC has equal level of protection.

H-2 OCCUPANCIES

Occupancy Separation

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 3-B Occupancy Separation H-2 / A-1 = 4 HR H-2 / A-2 = 4 HR H-2 / A2.1 = 4 HR H-2 / A-3 = 4 HR H-2 / B = 2 HR H-2 / E = 4 HR H-2 / F-1 = 2 HR H-2 / F-2 = 2 HR H-2 / H-1 = NP H-2 / H-3 = 1 HR H-2 / H-4 = 1 HR H-2 / H-5 = 1 HR H-2 / H-6 = 2 HR H-2 / H-7 = 2 HR H-2 / I = 4 HR H-2 / M = 2 HR H-2 / R-1 = 4 HR H-2 / S-1 = 2 HR H-2 / S-2 = 2 HR H-2 / S-3 = 2 HR H-2 / S-5 = 2 HR H-2 / U-1 = 1 HR</p>	<p>Table 302.3.3 Occupancy Separation H-2 / A-1 = 4 HR H-2 / A-2 = 4 HR H-2 / A2.1 = 4 HR H-2 / A-3 = 4 HR H-2 / A-5 = 4 HR H-2 / B = 2 HR H-2 / E = 4 HR H-2 / F-1 = 2 HR H-2 / F-2 = 2 HR H-2 / H-1 = NP H-2 / H-3 = 1 HR H-2 / H-4 = 2 HR H-2 / H-5 = 2 HR H-2 / I = 4 HR H-2 / M = 2 HR H-2 / R-1 = 4 HR H-2 / R-3 = 4 HR H-2 / S-1 = 2 HR H-2 / S-2 = 2 HR H-2 / U-1 = 1 HR</p>	<p>Table 34.3.2.3 – Protection level 2 Apartments / 4hr Assembly / 4 hr (all occupant loads) Business / 2 hr Daycare / 4 hr Detention / 4 hr Dwellings / 4 hr Educational / 4 hr Hazard level 3 / 1 hr Hazard level 4/ 2 hr Hazard level 5/ 2 hr Healthcare / 4 hr Hotels-Dorms/ 4 hr Industrial / 2hr Lodging / 4 hr Mercantile / 2 hr Storage / 2 hr</p>	<p>Equal level of protection.</p>

H-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 1007.4.1 Access to Exit Requires 2 exits when greater than 200 s.f.	Table 1014.1 Two exits required with occupancy load >3	Sec.34.3.2.5.3 , Not less than 2 exits for spaces exceeding 200 sq. ft.	IBC is less restrictive than the NFPA and CBC.
Sec.1007.4.2.1 Corridor Doors Max. distance to exit or exit access, 75 ft	Table 1015.1 , Max distance 100 ft to exit access	Table 34.3.2.5.1 , Max. 100 feet distance to an exit.	IBC and NFPA are less restrictive than the CBC.
Sec. 1007.4.3, Travel Within a Room , Doors on one hour corridors, 45 min.	Table 715.3 & 1016.1 , Corridors are one hour partitions w/ 20 min. doors.	Not addressed specific to this use	IBC and NFPA are less restrictive than the CBC
Sec. 1007.4.4 Door Swing , Doors shall swing in direction of travel	Sec. 1008.1.2 , Doors shall swing in direction of exit travel	Not addressed specific to this use.	CBC and IBC have equal protection
Sec. 1007.4.5 Door Hardware , Panic hardware required	Sec. 1008.1.9 Panic hardware required	Sec. 34.3.2.5.5 Panic hardware required	Equal protection provided
Sec. 1007.4.6, Incinerator Rooms no openings permitted between a Group H and an incinerator room	No like requirement	No like requirement.	IBC and NFPA are less restrictive than the CBC.

H-2 OCCUPANCIES

Fire Alarm-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.9 Fire Alarm Approved manual fire alarm shall be provided in accordance with the fire code. CFC Sec.1006.2.6.4 requires automatic smoke detection.	Chapter 4 No requirement, 907.2.5 No requirement.	Chapter 34 Per NFPA 1	CBC appears to have a higher level of protection.

H-2 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 1006.6.4 When required by Article 80, rooms or areas used for storage, dispensing, use or handling of highly toxic compressed gases, liquid solid oxidizers, and class I, II, III or IV Organic peroxides shall be provided with an automatic smoke-detection system</p>	<p>Sec.907.2.5 Automatic smoke detection system shall be installed for highly toxic gases, organic peroxides and oxidizers</p>	<p>Sec. 63.3.8.7 Automatic smoke detection system shall be installed for highly toxic gases.</p>	<p>CFC/IFC has a higher level of protection whereby addressing organic peroxides and oxidizers.</p>

H-2 OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 904.2.6.1 Automatic fire extinguishing system Automatic fire extinguishing system required.	Sec. 903.2.4.1 Same	Sec. 34.3.2.1 Same	Meets the same level of protection.

H-2 OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 1003.2.6.1 Automatic fire sprinkler system Automatic fire sprinkler system required.	Sec. 903.2.4.1 (Same)	Sec. 13.3.2 (Same) Reference In NFPA 5000 Sec. 34.3.2.1	Meets the same level of protection

H-2 OCCUPANCY

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.8 Special Hazards Dust collection required for explosive dust or fibers. Greater than 500cf of dust storage requires one hour separation.</p>	<p>Sec. 415.7.1.2 Special Hazards Requires 2 hour separation for room up to 3,000 sf 4 hr for rooms over 3,000 sf. Ref. To NFPA for other requirements.</p>	<p>6.4.2.13 Reference to NFPA 654. Sec. 2-3.4 provides for one hour wall when walls are provided for the purpose of containing fire. Sec. 2-2.3.2, requires separation from other operations of 30 feet,</p>	<p>IBC more restrictive than the CBC and NFPA.</p>

H-3 OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.1.1 – H-3 Occupancy. Where flammable solids, other than combustible dusts are manufactured, used or generated, in excess of the amounts in table 3-D <u>High physical hazard and common fireworks, class “C”</u>.</p>	<p>Sec. 307.5, H-3, Occupancy. With materials that readily support combustion or present a <u>physical hazard</u>.</p>	<p>No like occupancy. 6.3.2.4.4, High hazard level 3 contents.</p>	<p>IBC and CBC address the associated hazards in a like manner. NFPA does not address hazards as an occupancy class; instead the associated hazards are addressed individually as the hazards appear in other occupancy classifications.</p>

H-3 OCCUPANCIES

Construction, Height, Allowable Area, Location On Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 5-B, HEIGHT Type I – Unlimited Type IIFR – 5 stories Type II 1hr- 2 story Type II N - 1 story Type III 1 hr -2 story Type IIIN - 1 story Type IV - 2 story Type V 1 hr- 2 story Type VN - 1 story Sec. 506 No increase for sprinklers</p>	<p>Table 503, HEIGHT Type 1A ...Unlimited Type 1B...6 stories Type 2A...4 stories Type 2B...2 story Type 3A....4 story Type 3B...2 story Type 4 ...4 stories Type 5A...2 story Type 5B...1 story Sec. 504.2 Ex.2, no increase for sprinklers</p>	<p>No comparable occupancy. Construction type, height and area based on primary use of building</p>	<p>IBC and NFPA are less restrictive than the CBC.</p>
<p>Table 5-B, AREA Type I – Unlimited Type IIFR – 12,800 Type II 1hr- 11,200 Type II N - 7,500 Type III 1 hr –11,200 Type IIIN - 7,500 Type IV - 11,200 Type V 1 hr- 8,800 Type VN - 5,100</p>	<p>Table 503, AREA Type 1A ...Unlimited Type 1B...60,000 Type 2A...26,500 Type 2B...14,000 Type 3A....17,500 Type 3B...13,000 Type 4 ...22,500 Type 5A...10,000 Type 5B...5,000 Sec. 506.3 Ex.1, no increase for sprinklers</p>	<p>No comparable occupancy. Construction type, height and area based on primary use of building</p>	<p>IBC and NFPA are less restrictive than the CBC.</p>
<p>Location on Property 307.3, Not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall. 503.4.5, >1,000 s.f. not less than 30 feet from property lines</p>	<p>Sec. 415.3, 25 percent of the perimeter wall shall be an exterior wall. Table 602, Allows occupancy to be less than 30 feet from property line. Exterior walls rated according to distance to property line</p>	<p>Sec. 34.3.5.2 Not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall.</p>	<p>Equal protection provided.</p>

H-3 OCCUPANCIES

Occupancy Separation

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 302.1 Mixed Use Occupancy to be separated per Table 3-B. Exception #1, spray booths need not be separated.	Sec. 302.3 same	Sec. 34.3.2.3 same	Equal level of protection
Sec. 302.2, Occupancy Separations Occupancy Separations may be vertical or horizontal.	Sec. 302.3.2 same	Sec. 8.4.5.1 same	Equal level of protection
Sec. 302.3 Types of separation: 4 hour / no openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 60 min. opening	Sec. 302.3.2, 706.7, 714 Types of Separation 4 hour / no openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 60 min. opening	Sec. 8.4.2.1, 8.7 Fire Barriers 4 hour / 4 hr openings 3 hour / 3 hr opening 2 hour / 90 min. opening 1 hour / 45 min. opening	NFPA has lower level of protection. ICC has equal level of protection.

H-3 OCCUPANCIES

Occupancy Separation

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 3-B</p> <p>H-3 / A-1 = 4 HR H-3 / A-2 = 4 HR H-3 / A2.1 = 4 HR H-3 / A-3 = 4 HR H-3 / B = 1 HR H-3 / E = 4 HR H-3 / F-1 = 1 HR H-3 / F-2 = 1 HR H-3 / H-1 = NP H-3 / H-2 = 1 HR H-3 / H-4 = 1 HR H-3 / H-5 = 1 HR H-3 / H-6 = 1 HR H-3 / H-7 = 1 HR H-3 / I = 4 HR H-3 / M = 1 HR H-3 / R-1 = 3 HR H-3 / R-3 = 3 HR H-3 / S-1 = 1 HR H-3 / S-2 = 1 HR H-3 / S-3 = 1 HR H-3 / S-5 = 1 HR H-3 / U-1 = 1 HR</p>	<p>Table 302.3.3</p> <p>H-3 / A-1 = 3 HR H-3 / A-2 = 3 HR H-3 / A2.1 = 3 HR H-3 / A-3 = 3 HR H-3 / A-5 = 3 HR H-3 / B = 1 HR H-3 / E = 3 HR H-3 / F-1 = 1 HR H-3 / F-2 = 1 HR H-3 / H-1 = NP H-3 / H-2 = 1 HR H-3 / H-4 = 1 HR H-3 / H-5 = 1 HR H-3 / I-1 = 4 HR H-3 / I-2 = 3 HR H-3 / I-3 = 3 HR H-3 / I-4 = 3 HR H-3 / M = 1 HR H-3 / R-1 = 3 HR H-3 / R-3 = 3 HR H-3 / S-1 = 1 HR H-3 / S-2 = 1 HR H-3 / U-1 = 1 HR</p>	<p>Table 34.3.2.3 – Protection level 2</p> <p>Apartments / 3hr Assembly / 3 hr (all occupant loads) Business / 1 hr Daycare / 3 hr Detention / 3 hr Dwellings / 3 hr Educational / 3 hr Hazard level 2 / 1 hr Hazard level 4/ 1 hr Hazard level 5/ 1 hr Healthcare / 4 hr Hotels-Dorms/ 3hr Industrial / 1hr Lodging / 3 hr Mercantile / 1 hr Storage / 1 hr</p>	<p>NFPA and CBC have equal level of protection.</p> <p>IBC has lower level of protection.</p>

H-3 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 1007.4.1 Access to Exit Requires 2 exits when greater than 200 s.f.	Table 1014.1 Two exits required with occupancy load >3	Sec.34.3.2.5.3 , Not less than 2 exits for spaces exceeding 200 sq. ft.	IBC is less restrictive than the NFPA and CBC.
Sec.1007.4.2.1 Corridor Doors Max. distance to exit or exit access, 75 ft	Table 1015.1 , Max distance 100 ft to exit access	Table 34.3.2.5.1 , Max. 150 feet distance to an exit.	IBC and NFPA are less restrictive than the CBC.
Sec. 1007.4.3,Travel Within a Room , Doors on one hour corridors, 45 min.	Table 715.3 & 1016.1 , Corridors are one hour partitions w/ 20 min. doors.	Not addressed specific to this use	IBC and NFPA are less restrictive than the CBC
Sec. 1007.4.4 Door Swing , Doors shall swing in direction of travel	1008.1.2 , Doors shall swing in direction of exit travel	Not addressed specific to this use.	CBC and IBC have equal protection
Sec. 1007.4.5 Door Hardware , Panic hardware required	1008.1.9 Panic hardware required	34.3.2.5.5 Panic hardware required	Equal protection provided
1007.4.6, Incinerator Rooms no openings permitted between a Group H and an incinerator room	No like requirement	No like requirement.	IBC and NFPA are less restrictive than the CBC.

H-3 OCCUPANCIES

Fire Alarm-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.9 Fire Alarm System Approved manual fire alarm shall be provided in accordance with the fire code.	Chapter 4 No requirement, 907.2.5 no requirement.	Chapter 34 Per NFPA 1	IBC provides lower level of protection than CBC or NFPA. CFC Sec.1006.2.6.4 requires automatic smoke detection.

H-3 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 1006.6.4 Fire Alarm System Requirement When required by Article 80, rooms or areas used for storage, dispensing, use or handling of highly toxic compressed gases, liquid solid oxidizers, and class I, II, III or IV Organic peroxides shall be provided with an automatic smoke-detection system</p>	<p>Sec. 907.2.5 Fire Alarm System Requirement Automatic Smoke detection system shall be installed for highly toxic gases, organic peroxides and oxidizers</p>	<p>Sec. 63.3.8.7 Automatic smoke detection system shall be installed for highly toxic gases</p>	<p>CFC/IFC has a higher level of protection whereby addresses organic peroxides and oxidizers.</p>

H-3 OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 904.2.6.1 Automatic fire extinguishing system Automatic fire extinguishing system required.	Sec. 903.2.4.1 Same	Sec. 34.3.2.1 Same	Meets the same level of protection.

H-3 OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 1003.2.6.1 Automatic fire sprinkler system Automatic fire sprinkler system required.	Sec. 903.2.4.1 (Same)	Sec. 13.3.2 (Same) Reference In NFPA 5000 Sec. 34.3.2.1	Meets the same level of protection

H-3 OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.8 Special Hazards. Dust collection required for explosive dust or fibers. Greater than 500cf of dust storage requires one hour separation.	Sec. 415.7.1.2 Special Hazards. Requires 2 hour separation for room up to 3,000 sf 4 hr for rooms over 3,000 sf. Ref. To NFPA for other requirements.	6.4.2.13 Reference to NFPA 654. Sec. 2-3.4 Provides for one hour wall when walls are provided for the purpose of containing fire. Sec. 2-2.3.2, requires separation from other operations of 30 feet,	IBC is more restrictive than the CBC and NFPA.

H-4 OCCUPANCIES REPAIR GARAGE

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. Definition 208-G A building or portion thereof in which a Motor vehicle Containing flam. Liquid or gas in its Tank is stored, Repaired or kept.</p>	<p>Sec. Definition: 2201.2 A building, Structure or Portion thereof Used for servicing Or repairing Motor vehicles.</p>	<p>Definition: 3.3.100 Classification A building or a portion of A building in which one or More self-propelled Vehicle carrying volatile Flammable liquid for fuel Or power are kept for use, Sale, storage, rental, Repair, exhibition, or Demonstrating purpose.</p>	<p>IBC provides equal protection as CBC NFPA 5000 provides higher protection than CBC NFPA wraps everything in a Single definition including Fueling of motor vehicles Making it more restrictive in Some issues and less Restrictive in others.</p>
<p>Classification: 307.1 H-4 Occupancy Repair Garage not Classified as S-3. Welding is allowed In an H-4 not S-3 2903 stays within Contents relating to The building for Repair to vehicles.</p>	<p>Classification: 311 S-1 Storage group Moderate hazard Storage: Table 307.3(1), maximum Allowable quantities No restriction for Cutting and welding Does not include Motor-fuel Dispensing facilities</p>	<p>Classification: 3.3.371.2 Special Purpose Industrial Occupancy Industrial Occupancy with Mixed uses. Refer to NFPA 101 (30A.7.4.3) refers to NFPA 52: Vehicle fuel Systems, not the building For repair garages and Then refers to 30A.7.4.2</p>	<p>IBC provides same level of protection as CBC NFPA 5000 provides lower level of protection than CBC CBC divides repair garages Into two occupancy categories.</p>

H-4 OCCUPANCIES REPAIR GARAGES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.2.1: Construction Limited construction type Table 5-B</p>	<p>Sec. 406.6.1 Construction Refers to IFC</p>	<p>Sec. Table 7.4.1 6.4.2.4.6: Constructed according to NFPA 30A for fuel disp. & repair.</p>	<p>IBC provides the same level of protection as CBC NFPA 5000 provides a lower level of protection than CBC Type V-N building, Type II-N building</p>
<p>Sec. 503.4.7: Property Location 2 Hr. < 5 ft. 2500 sq. ft. 1 hr. < 20 ft. exterior walls.</p>	<p>Table 602 Property Location Same</p>	<p>Table 7.3.2.1 Property Location</p>	<p>IBC & NFPA 5000 provide a lower level of protection than CBC</p>
<p>Sec. 307.2.10 Table 5B Allowable Floor Area Height floor area <2500 sq. ft. ext. walls <2 hr FR < 20 ft. property line.</p>	<p>Table 503 Allowable Floor. Height Area Less restrictive than CBC</p>	<p>Table 7.4.1 Allowable Floor Area Height</p>	<p>IBC & NFPA 5000 provide a lower level of protection than CBC</p>
<p>Sec. 505.3. Area Increase 100% for > 3 stories 200% for < 3 stories Table 5B</p>	<p>Sec. 506.3. Area Increase 200% for > multiple story building. 300% for 1 story</p>	<p>Area Increase 200% for > 2 story 300% for 1 story Increase permitted for building containing high hazard contents.</p>	<p>IBC provides a higher level of protection than CBC NFPA 5000 provides a lower level of protection than CBC</p>

H-4 OCCUPANCIES REPAIR GARAGE

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 3B H Occupancies More restrictive than other codes.</p>	<p>Table 302.3. H Occupancies Less restrictive than CBC. 1) 2 hr on H-4 and A occupancy 2) Other areas 1 hr difference.</p>	<p>Table 6.2.4.1 Less restrictive. NFPA Standard 88B, Chapter 2.1: Repair garage used for any other purpose and located within or attached to a building, will be separated by partitions/wall or floor ceiling assembly with 2 hr. fire resistance. Parts storage shall be 2 hr. separation.</p>	<p>IBC & NFPA 5000 provide a lower level of protection than CBC</p>

H-4 OCCUPANCIES REPAIR GARAGES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 1007.4.1H-4 Occupancy. (exception) Floor area < 1000 sq. ft./ exit access doors same as IBC travel distance. Based on floor occupancy.	Sec. 1015.1 S-1 Occupancy Table 1016.1 < restrictive than CBC. IBC based on occupancy load and travel distance.	Sec. 29.1.1.2 Industrial Occupancy Special Purpose Occupancy. refers to NFPA 101, Chapter 11 and 29.4.1.1.	IBC provides an equal level of protection as the CBC NFPA 5000 provides a lower level of protection for exits travel distance, but provides a higher level of protection for the number of exits in this occupancy
Sec. 1004.2: Travel distance with sprinklers 250 ft no sprinklers 200 ft.	Table 1015.1: same	Table 29.2.6: Travel distance and number of exits. 29.2.4.1 is more restrictive.	IBC provides equal levels of protection as CBC NFPA provides a lower level of protection than CBC
Sec. 1007.4.4 Door Swing Door swing always in direction of travel.	Table 1014.1 Direction of travel < than 49 persons.	Sec. 11.2.1.4.2 Doors shall swing in high hazards contents.	IBC & NFPA Provides a lower level of protection than CBC
Sec. 1005.3.4.6 Dead end corridors 20 ft.	Sec. 1016.3 same		NFPA 5000 has a higher level of protection than CBC IFC provides equal levels of protection as CBC
Sec. 1007.4.1 Requires 2 exits for H-4 when 1001 > sq ft. of floor space.	Sec. 2211.4.2 Exit in pits and below-grade work	30.4 Requirements for Special Purpose Industrial	IBC provides equal protection as CBC NFPA 5000 provides lower level of

H-4 OCCUPANCIES REPAIR GARAGES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	areas (chap. 10)	Occupancy. NFPA 101,	protection than CBC
	Sec. 1004.2.1 2 exits required: 30 > occupant load of 75 ft > of travel distance. common path travel distance is 100 ft. with sprinklers and 75 ft without sprinklers	NFPA 101 Sec. 29.2.5.3 Table 29.2.6 Special Purpose Industrial Occupancy, travel distance shall not exceed 400 ft. with sprinklers. 300 ft. without sprinklers	IBC provides equal protection as CBC NFPA 5000 provides lower level of protection than CBC
Sec. 1004.2.2 May use intervening Rooms or adjoining Rooms to direct Access if the building Is equipped with Automatic sprinklers With smoke and heat Ventilation.	Sec. 1004.2.2 Same as CBC	NFPA 88B, chapter 2.2.7 Pits minimum 2 Unobstructed means of Egress.	IBC & NFPA 5000 provide equal protection as CBC Special Occupancies NFPA 500 has a lower level of protection.

H-4 OCCUPANCIES REPAIR GARAGE

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 908.5 Fuel gas protection not required.</p>	<p>Sec. 908.5 A flammable gas detection system for repair garages for vehicles fueled by non odorized gasses. Other than this a system is not required.</p>	<p>Sec. 29.3.4.1 Fire alarm system not required if building is < 100 persons and < 25 persons are above or below level of exit discharge. If system is required: 1) Provide occupant notification system. 2) Audible and visible signal at constantly attended location.</p>	<p>IBC & NFPA 5000 provide a higher level of protection than CBC IBC and NFPA 500 have more restrictive or higher level of protection for servicing fuel gas vehicles</p>

H-4 OCCUPANCIES REPAIR GARAGE

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Not Required	Sec. 908.5 & 908.2 IBC language IFC 2211.7.2 Requires a flammable gas detection system for vehicles fueled by non-odorized gas.	Sec. 29.3.4.1 Fire alarm system not required if building is less 100 person and less 25 persons are above or below of exit discharge	IFC & NFPA 1 provide a higher level of protection than CFC Equal level of protection for IFC and NFPA except where fuel gasses are used.

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H-4 OCCUPANCIES REPAIR GARAGE

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 904.3.6.2 Automatic fire extinguishing system shall be installed in group H Division 1,2,3 and 7 occupancies Refers to 1003.2.6.1	Sec. 903.2.8.1 Equal language to IFC. Refers to 903.8.1	Sec. 29.3.5.1 Low hazard occupancies not required sprinklers. Refers to NFPA Standard 88B, Chap. 4.	IBC provides equal level of protection as CBC NFPA 5000 provides a lower level of protection than CBC

H-4 REPAIR GARAGE OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec.1003.2.6.1: Automatic fire extinguishing system in occupancies with floor area > 3000 sq. ft.</p>	<p>Sec. 903.2.8.1 Group S-1: Automatic sprinkler system shall be provided where:</p> <ol style="list-style-type: none"> 1) Fire area 1 story > 12,000 sq. ft. 2) Fire area, including basement 2 > stories > 10,000 sq. ft. 3) Servicing vehicles parked in basement. 	<p>Reference NFPA Standard 88B, Chap 4-1: Sprinkler 1 story < 15,000 sq. ft. type I construction. < 12,000 sq. ft. type II construction or type III construction. < 6,000 sq. ft. type V construction. All below grade floors ceiling 2 ft above grade.</p>	<p>IFC & NFPA 1 provide a lower level of protection than CFC</p>

H-4 OCCUPANCIES REPAIR GARAGE

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>307.8 Devices that glow, spark or flammable shall be 18 inches above the floor level. Combustible fiber storage room not > 500 cu. ft. requires a 2 hr. separation.</p>	<p>406.6 Repair garage: This does not include motor fuel dispensing facilities. Does not include non-odorized gases.</p>	<p>8.15.1 General hazard protection for any occupancy. References to: NFPA Standard 30.2.3 NFPA 52, CNG fuel. NFPA 57 LNG fuel. NFPA 58 LPG fuel. No mention of Hydrogen fuel.</p>	<p>IBC & NFPA 5000 provide equal level of protection as CBC</p> <p>Hydrogen fuels NFPA lower level of protection.</p>
<p>CFC 2903 Natural Gas, LPG, and Hydrogen fuels.</p>	<p>IFC 2211.3 18 inches above floor for ignition devices.</p>		
	<p>IFC 2211.7 Vehicle repairs for CNG, LNG, and Hydrogen or lighter than air fuels. including system design. 406.6.6</p>		

H-5 OCCUPANCIES AIRCRAFT REPAIR

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Definition: 307.1.1 Building or structure, portions, that involve mfg. Processing, generation or storage of material that constitute a high fire, explosion or health hazard.</p>	<p>Definition Chap 3 311.2: Moderate hazard storage group S-1, Aircraft Repair Hangers: buildings occupied for storage. Uses which are not classified as group S-2. Aircraft hanger not repair hanger.</p>	<p>Definition Chap 1-3 NFPA Standard 409 and 410 Chap 2-1.5</p>	<p>IBC provides equal level of protection as CBC NFPA 5000 provides lower level of protection than CBC</p>
<p>Classifications H-5: Aircraft Repair hangers not classified as Group S Division 5 and heliports.</p>	<p>Classifications S-1 same as repair garages. Table 705.4, 412 Aircraft related occupancies.</p>	<p>Classifications 29.1.3.1 Special Purpose Industrial Occupancy. A.3.3.371: Industrial Occupancy.</p>	<p>IBC & NFPA 5000 provide lower level of protection than CBC</p>
<p>Sec. 307.1.32 Paint Facilities: H-2 classification</p>	<p>Sec. 412.4.1 Paint Facility H-2 classification</p>	<p>Standard 409 Paint Hangers</p>	<p>NFPA 5000 provides lower level of protection than CBC IBC provides equal level of protection than CBC</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 5A More restrictive than IBC but less restrictive than NFPA for property location. Type I or Type II construction.</p>	<p>Sec. 412.2 Exterior walls: Lower level of protection. Table 412.1.2 Area and height limits.</p>	<p>NFPA Standards 409 Section 40.6 and Section 42.6. NFPA Standard 410, chapter 5</p>	<p>IBC provides equal level of protection as CBC</p> <p>NFPA 5000 provides a lower level of protection than CBC</p>
<p>Table 5B Building heights and allowable floor area.</p>	<p>Table 503 Lower height limits and floor area.</p>	<p>Chap. 7 and 3 7.4 and 3.6.2: 1 story only: equal language</p>	<p>NFPA 5000 provides a lower level of protection than CBC</p>
<p>Chap 5 506 Height: Exception #2: Height of 1 story aircraft hanger no limit if sprinklers are throughout with yards > than 1 ½ times height.</p>	<p>Table 705.4 Construction: Fire walls with fire resistance rating of 3 hours. Fire barrier assembly: 3 hours.</p>	<p>Chapter 6 6.4.2.5 construction to NFPA 40 standards.</p>	<p>IBC residential hangers has a higher level of protection.</p> <p>NFPA has a higher level of protection in general construction.</p>
<p>Sec. 505.1.3 1 story area increase not to exceed 500 percent.</p>	<p>Sec. 412.3.6 Residential Hangers: Not to exceed 2000 sq. ft. & 20 ft. in height.</p>	<p>NFPA Standard 409 Not mentioned</p>	<p>NFPA lowest level of protection for residential hangers.</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 505.2 No limit if building is provided with an automatic sprinkler system & surrounded and adjoined by public way or yards not less than 60 ft.</p>	<p>Sec. 507.1 S-2: No limit for area for 1 story if surrounded and adjoined by public ways and yards more than 60 ft.</p>	<p>NFPA Standard 409 Equal</p>	<p>Equal protection for general requirements, except clusters.</p>
<p>Sec. 505.1.3 Group S, Division 5 Aircraft storage: Storage hangers not > 1 story high, may exceed 100 percent increase in floor area.</p>			

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Table 3B 4 hr. except Occupancies S, M, U, H-6, H-7, and H-8. R occupancies 3 hr.	Sec. 412.2 Exterior walls < than 30 ft, not < 2 hr. fire resistance rating.	Table 6.2.4.1 3 hr. fire resistance rating.	IBC & NFPA 5000 provides lower level of protection than CBC
Table 3B S Division 5	Sec. 412.3.2 1 hr. fire resist if attached to dwelling.	Standard 410 Chapter 5: 5.3.3 Chapter 8: 8.2.1 Chapter 9: 9.9.3	IBC provides equal level of protection as CBC NFPA 5000 provides higher level of protection than CBC
	Table 603 Fire resistance rating	Standard 409 Table 5.3.3 Table 5.3.2	IBC provides equal level of protection as CBC NFPA 5000 provides higher level of protection than CBC

H-5 OCCUPANCIES AIRCRAFT REPAIR

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 10:1004.2.2 Exception #5, intervening rooms for exiting. Access to 2 required exits thru joined/intervening room</p>	<p>Chap 4: 412.3.3 Egress: 2 means of egress for residential hangers.</p>	<p>Chapter 29.2.4 Not < 2 egress every story each service area. Chap. Refers to NFPA 101.</p>	<p>IBC & NFPA 5000 provide equal level of protection as CBC</p>
<p>Sec.1007.41 Floor area > 200 sq. ft. access to 2 or more separate exits.</p>	<p>Sec.1013.3 Common Path: Egress travel > 100 ft. w/sprinklers 75 ft no sprinklers</p>	<p>Chap. 29.6.2.3 Horizontal exits at intervals > 100 ft.</p>	<p>NFPA 5000 provide higher level of protection than CBC IBC provides equal level of protection as CBC</p>
<p>Sec.1004.2.5.2.5 Travel distance not to exceed 300 ft. without sprinklers, 400 ft. with sprinklers with smoke and heat ventilation. For a 1 story building</p>	<p>Sec.Table 1015.1 Exit Travel distance: Sprinklers- 250 ft. No sprinkler-200 ft. (remote point to exit discharge)</p>	<p>Chap. 29.6.3.1 Travel distance nearest exit any point on mezzanine > 75 ft.</p>	<p>IBC & NFPA 5000 provide lower level of protection than CBC</p>
<p>Sec.1007.4.4 Doors always swing in direction of travel</p>		<p>Chap 29.2.2 Not less than 2 means of egress. 29.6.2.1 Servicing Areas exit interval 150 ft. or less</p>	<p>IBC provides equal level of protection as CBC NFPA 5000 provides lower level of protection than CBC</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>IFC Art. 24 Same level of protection dead end 20 ft.</p>	<p>Sec. 10:1016.3 Dead end equal protection 20 ft.</p>	<p>Chap 29.6.4 Dead ends > 50 ft, areas high hazard contents > max. allowable quantities. 29.6.4 Servicing areas exit > 150 ft. intervals on exterior wall.</p>	<p>IBC provides equal level of protection as CBC</p> <p>NFPA 5000 provides lower level of protection than CBC</p>
<p>IFC: 1004.2.2 IFC Article 24. Same level of protection</p>	<p>IFC: Chap. 11 Same level of protection.</p>	<p>Standard 410 NFPA Standard 410 Chap. 5, Chap. 8: 8.8 and Chap 9: 9.1.3</p>	<p>IBC provides equal level of protection as CBC</p> <p>NFPA 5000 provides lower level of protection than CBC</p>
		<p>40.6 Special Provisions for aircraft servicing hangers exits not to exceed 150 ft</p>	<p>This section only addressed in NFPA 5000</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
No requirement for Fire Alarm in aircraft repair hanger	Sec. 907.2 Fire Alarm Refers to NFPA 72, required by reference.	Standard 410 Chap. 6: 6.2.8 Detection systems referenced to NFPA 72	NFPA provides higher requirements than CBC IBC provides equal level of protection as CBC
No requirement for fire alarm in aircraft hanger	Sec. 907.2.21 Fire Alarm Required for residential hanger	Chapter 29 Refer to Chapter 55.6 that refers to NFPA 72	NFPA provides higher requirements than CBC IBC provides equal level of protection as CBC
		Standard 410 Chapter 7: 7.7.1 Un-fueled aircraft Detection system required refer to NFPA 72 Foam system exempt.	Not addressed in CBC or IBC

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 1001.9 Special hazards: May be deemed as a special hazard by the chief requiring a fire alarm system.</p>	<p>Sec. 907 Have no requirements for specific hazards in aircraft repair hanger.</p>	<p>Sec. 21.22.6.2 A fire alarm and communication system required by NFPA 101: 8.3.4. Standard 409: 7.7 Type I hanger 6.4 Type II hanger</p>	<p>NFPA 1 provides high level of protection than CFC IFC provides equal level of protection as CFC</p>
<p>Chapter 24 No general requirement.</p>	<p>Sec. 412.3.4 IBC Smoke detection required in hangers.</p>	<p>Sec. 21.22.6.2 See above</p>	<p>NFPA 1 provides high level of protection than CFC IFC provides equal level of protection as CFC</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec 506 Height 1 story aircraft hanger if automatic sprinkler system is installed. Refer to chapter 9.</p>	<p>Sec. 903.2.8 Reference to NFPA 409 and 903.3.1.1, refers to NFPA 13</p>	<p>Sec.30.3.4.1 With exceptions refer to chapter 55.2, referring to NFPA 13. Standard 409, chapter 6: Group 1 aircraft except Un-fueled aircraft. Reference to NFPA 13, chapter 7: Housing Un-fueled aircraft.</p>	<p>IBC & NFPA 5000 provide equal protection as CBC</p> <p>CBC has lower level of protection over 1 story.</p>
	<p>Sec. 412.2.6 Refer to NFPA 409 (fire suppression)</p>		
	<p>Sec. 903.2.8 Group S-1 Automatic sprinkler: 1) Area > 1200 sq ft. 2) Gp-S, fire area located > 3 stories. 3) Combined area Gp -1 >24000 sq ft.</p>		

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 1001.9 Special Hazards: May be required by chief if deemed a special hazard.</p>	<p>Sec. 903.2.8 Exceptions make less fire resistance, reference to NFPA 13.</p>	<p>Sec. 21.2.6.1 Refer to NFPA 13 and Standard 409</p>	<p>IFC & NFPA 1 provide higher level of protection than CFC</p>
<p>Chap 24 No general requirements.</p>	<p>Chapter 9. No general requirements</p>	<p>Chapter 13 General requirements make references to NFPA 13.</p>	<p>NFPA 1 provides higher level of protection than CFC & IFC</p>

H-5 OCCUPANCIES AIRCRAFT REPAIR HANGER

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chap. 307.8 Special Hazards Devices that generate a glow or capable of igniting vapors must be installed 18" above ground.</p>	<p>Chapter 4, Sec. 412.4 Heating equipment shall be placed in another room separated by 2-hour fire resistive construction.</p>	<p>NFPA Standard 409 Sec. 2-12.2 No heating employing open flame or glowing element shall be installed in aircraft storage and servicing areas.</p>	<p>NFPA has a higher level of protection. CFC open flames, flame producing devices and other sources shall be permitted in approved locations or 50 feet of aircraft</p>

H-6 OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec 307.1.1 H-6 Semiconductor fabrication and comparable research and development areas.	Sec 307.7 H-5 Same	Sec 34.3.1.5 High Hazard Occupancy Protection Level 5	NFPA provides a lower level of protection than CBC and IBC. NFPA by definition does not address "comparable research and development areas".

H-6 OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec 307.2.1 Construction Table 5-B, Type I FR through Type V-N</p>	<p>Sec 503.1 Construction Table 503, Type I A,B through Type V A, B</p>	<p>Sec 7.2.2 Construction Table 7.4.1, Type I through Type V, classifications are different</p>	<p>Difficult to compare, IBC and NFPA appears to meet the same level of protection as CBC</p>
<p>Sec 506 Height No increase for sprinklers, Type IIN , 2 stories; Type IIIN, 2 stories; Type VN, 1 story</p>	<p>Sec 504 Height No increase for sprinklers, Type IIB 3 stories; Type IIIB, 3 stories; Type VB, 2 stories</p>	<p>Sec 7.4 Height No increase for sprinklers; Type II000, 3 stories; Type III000, no requirements; Type V000, 2 stories</p>	<p>IBC and NFPA provide a lower level of protection than CBC</p>
<p>Sec 504 Allowable Area Type IIFR, 39,900 was allowable area</p>	<p>Sec 503.1 Allowable Area Type IB, UL; for all other types of construction provides for larger allowable areas than CBC</p>	<p>Sec 7.4.1 Allowable Area For all types of construction provides for larger allowable areas than CBC</p>	<p>IBC and NFPA provide a lower level of protection than CBC</p>
<p>Sec 307.3, Table 5-A Location on Property 4 hour rated, < 5 ft</p>	<p>Table 602 Location on Property 3 hour rated, < 5 ft</p>	<p>Table 7.3.2.1 Location on Property Refers to Chapter 34, couldn't find location for Protection Level 5</p>	<p>IBC and NFPA provide a lower level of protection than CBC</p>

H-6 OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec 302, Table 3-B; Sec 307.11.2.1 Separation Separation varies, not less than 1 hour, up to 4 hour depending on occupancy	Sec 302.3, Table 302.3.3; Sec 415.9.2.2 Separation Same	Sec 34.3.2.3, Table 34.3.2.3 Separation Same	NFPA 5000 provides the same level of protection as CBC and IBC.

H-6 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec 1007.4.1 Exiting 2 exits required for area \geq 200 sq ft</p>	<p>Sec 1014.1 Exiting 2 exits required when occupant load >10</p>	<p>Sec 34.3.2.5.3 Exiting 2 exits required for area >200 sq ft Exception: < 200 sq ft ≤ 3 occupant load travel distance to room door < 25 ft</p>	CBC is more restrictive
<p>Sec 1007.4.2.1 Exiting Travel Distance Within fab, travel distance to an exit ≤ 100 ft</p>	<p>Sec 1015.1 Exiting Travel Distance Maximum length of exit access travel is 200 ft</p>	<p>Sec 34.3.2.5.1 Exiting Travel Distance Same as IBC</p>	CBC is more restrictive
<p>Sec 307.11.4 Exiting Max Travel Distance Max travel distance to an exit in a service corridor ≤ 75 ft; ≥ 2 exits required</p>	<p>Sec 415.9.4 Exiting Max travel Distance Same as CBC</p>	<p>Sec 34.3.7.2.3.3 Exiting Max Travel Distance Same as CBC</p>	Meets the same level of protection
<p>Sec 307.11.5.3 Exits If ≥ 2 exits required for an HPM room, one exit shall be outside of the bldg</p>	<p>Sec 415.9.5.5 Exits Same as CBC</p>	<p>Sec 34.3.7.2.4.2 Exits Same as CBC</p>	Meets the same level of protection
<p>Sec 1007.4.3 Corridor Doors Corridor doors $\geq \frac{3}{4}$ hr rating</p>	<p>Sec 415.9.2.2 Corridor Doors Same as CBC</p>	<p>Sec 34.3.7.2.4.3 Corridor Doors Same as CBC</p>	Meets the same level of protection

H-6 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec 1007.4.4 Door Swing Door swing in direction of egress	Sec 1008.1.2 Door Swing Same as CBC	Sec 11.2.1.4.2 Door Swing Same as CBC	Meet the same level of protection
Sec 1007.4.5 Panic Hardware Panic hardware required	Sec 1008.1.9 Panic Hardware Same as CBC	Sec 34.3.2.5.5 Panic hardware required if occupant load >5	NFPA has a lower level of protection than IBC and CBC
Sec 1003.2.8.4 Exits sign Standard for illumination of exit signs	Sec 1011.2 Exit signs Same as CBC	Sec 11.10.5 Exit signs Same as CBC	Meet the same level of protection
Sec 307.2.7 Emergency Power Emergency power system required	Sec 415.9.10 Emergency Power Same as CBC	Sec 34.3.7.3.7 Emergency Power Same as CBC	Meet the same level of protection

H-6 OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec 307.11.5.5 Manual Fire Alarm Manual fire alarm required	Sec 415.9.8 Manual Fire Alarm Same	Sec 34.3.7.3.5 Manual Fire Alarm Same	IBC and NFPA 500 provides the same level of protection as CBC
Sec 307.11.5.5 Alarms and Monitoring Alarms and monitoring	Sec 415.9.8 Alarms and Monitoring Same	Sec 34.3.7.3.5 Alarms and Monitoring Same	IBC and NFPA 500 provides the same level of protection as CBC
Sec 307.11.5.5 Emergency Alarms Emergency alarms requirements	Sec 415.9.5.8 Emergency Alarms Same	Sec 34.3.7.3.6 Emergency Alarms Same	IBC and NFPA provides the same level of protection as CBC
Sec 307.11.5.6 Smoke Detection Smoke detection required for specific chemicals by reference to IFC 907.2.5	Sec 907.2.5 Smoke Detection Smoke detection required for specific chemicals	Sec 34.3.7.1 Smoke Detection Required by reference to NFPA 318	NFPA provides a higher level of protection than CBC and IBC

H-6 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 1006.2.6.3 Manual Fire Alarm Manual fire alarm required	Sec 907.2.5 Manual Fire Alarm Same	NFPA 318 Sec 2.7.3 Manual Fire Alarm Same	IBC and NFPA 5000 provides the same level of protection as CBC
Sec 5101.10.2 Alarms and Monitoring Manual fire Alarm system and monitoring is required.	Sec 1803.10.5 Alarms and Monitoring Same	NFPA 318 Sec 2.2.3 Alarms and Monitoring Same	IBC and NFPA 5000 provides the same level of protection as CBC
Sec 5101.10.3 Emergency Alarms General emergency alarm is required.	Sec 1803.12 Emergency Alarms Same	NFPA 318 Emergency Alarms No provisions	CFC provides a higher level of protection
Sec 1006.2.6.4 Smoke Detection Smoke detection required by reference to Article 80 for specific chemicals. <ul style="list-style-type: none"> • Toxic gases • Oxidizers • Organic peroxides 	Sec 907.2.5 Smoke Detection Same	NFPA 318 Sec 2.3.1 Smoke Detection Required for fab	NFPA 5000 provides a higher level of protection than CFC and IFC. Smoke detection system shall be provided in the clean room return airstream at a point before dilution.

H-6 OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec 904.2.6.3 Automatic Fire Extinguisher Automatic fire extinguisher system required	Sec 903.2.4.2 Automatic Fire Sprinkler System Automatic sprinkler system required	Sec 34.3.2.1 Automatic Fire Sprinkler Automatic fire sprinkler system required	CBC more flexible, extinguishing system required vs. sprinkler system
Sec 904.3 Supervision Supervision required ≥100 heads	Sec 903.4 Supervision Supervision required ≥20 heads	Sec 34.3.7.1 Supervision Supervision required by reference to NFPA 318 Sec 2.2	NFPA 5000 provides a higher level of protection than IBC which provides a higher level of protection than CBC
Sec 307.11.2.4 Exhaust Ducts References 1202.2.5 which references Mechanical Code; does not address combustible, non metallic ducts not conveying flammable vapors or fumes	Sec 415.9.11 Exhaust Ducts Protection of exhaust ducts for HPM	Sec 34.3.7.3.8 Exhaust Ducts Same as IBC	CBC provides a lower level of protection than IBC and NFPA 5000
Sec 307.11.3 Pass Through Protection Pass through protection	Sec 415.9.3 Pass Through Protection Same	Sec 34.3.7.1.2.2 Pass Through Protection Same	NFPA provides the same level of protection as CBC and IBC

H-6 OCCUPANCY

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 1003.2.6.3 Automatic Fire Extinguisher Automatic fire extinguishing system required	Sec 903.2.4.2 Automatic Fire Sprinkler Automatic sprinkler system required	NFPA 318 Sec 2.1.1 Automatic Fire Sprinkler Automatic sprinkler protection required	CFC more flexible, extinguishing system required vs. sprinkler system
Sec 5101.10.1 Sprinkler System Monitoring and Alarms Sprinkler system monitoring and alarms	Sec 1803.10.5 Sprinkler System Monitoring and Alarms Same	NFPA 318 Sec 2.2.1 Sprinkler System Monitoring and Alarms Same	NFPA 1 provides the same level of protection as CFC and IFC
Sec 5101.11.2 Workstation Protection Workstation protection requires automatic fire sprinkler system	Sec 1803.10.1 Work Station Protection Same	NFPA 318 Sec 2.1.2.6.6 Does not address surface protection of sinks or tools	CFC and IFC have a higher level of protection.
Sec 5101.11.3 Gas cabinet / exhausted enclosure protection	Sec 1803.10.2 Same	NFPA 318 Sec 2.1.2.3 Required for flammable gas cabinet only, no exhausted enclosure	CFC and IFC have a higher level of protection.
Sec 5101.11.4 Protection of Pass Through Protection of pass through	Sec 1803.10.3 Protection of Pass Through Same	NFPA 318 Sec 2.1.2.7 Protection required for combustible chemicals only	CFC and IFC have a higher level of protection.
Sec 5101.11.5 Exhaust Duct Protection Exhaust duct protection	Sec 1803.10.4 Exhaust Duct Protection Same	NFPA 318 Sec 2.1.2.6 Does not address metallic duct or non combustible non metallic duct protection	CFC and IFC have a higher level of protection.

H-7 OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307 Occupancy Class H-7's Occupancies exceeding quantities of materials in table 3-E.</p> <ul style="list-style-type: none"> • Corrosives • Toxic • Highly toxic materials • Sensitizers • Other health hazards 	<p>Sec. 307.6 High-Hazard Group H-4 's Building and Structures which contain materials of health hazards which exceeds Table. 307.7</p> <ul style="list-style-type: none"> • Corrosives • Toxic materials • Highly toxic materials 	<p>Sec. 6.3.2.4.5 High Hazard Level 4 Building and Structures which contain materials of health hazards which exceeds Table 34.1.3.2</p> <ul style="list-style-type: none"> • Corrosives • Toxic materials • Highly toxic materials 	<p>CBC addresses several additional classifications. Therefore it is more restrictive</p>

H-7 OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>(Construction) Sec. 307.2.1, Table 5-B Type I FR Through Type V-N</p>	<p>Chapter 6 Types of Construction, Chapter 5, Table 503 Type I through Type V-N</p>	<p>Chapter 7, Table 7.4.1 Type I through Type V-N</p>	<p>Appears to meet the same level of protection as CBC.</p>
<p>(Height) Chapter 5, Table 5-B Sec. 506 Type I FR Limited to 3 stories fire sprinklers cannot add additional story.</p>	<p>Chapter 5, Table 503 Type I Unlimited</p>	<p>Chapter 7, Table 7.4.1 Type I Unlimited</p>	<p>CBC is more restrictive</p>
<p>(Allowable Area) Chapter 5, Table 5-B Type V NR at 8,000 sq ft @ 1 story with sprinklers.</p>	<p>Type V NR 6,500 sq ft @ 2 stories with sprinklers.</p>	<p>Chapter 7, Table 7.4.1 Type V NR 6,500 sq ft @ 3 stories with fire sprinklers</p>	<p>CBC is more restrictive</p>

H-7 OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Location on Property Line)Chapter 5, Table 5-A Exterior wall 4 hours fire rated <5 ft Property line	Chapter 6, Table 602 Exterior wall 3 hour party wall <5 ft	Chapter 7, Table 7.3.2.1 (Cross reference chapter 34) Not occupancy specific	IBC has a lower level of protection

H-7 OCCUPANCIES

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 3-B Occupancy Separation Fire rated approved assembly must be provided between the various groups and divisions. The hourly rating ranges from 1 to 4 hours.</p>	<p>Table 302.1.1 Fire-resistance – rated separation, Fire-resistance – rated separation the incidental use area must be separated with a fire barrier the fire rating ranges from 1 to 4 hours</p>	<p>Section 34.3.1, 34.3.2.3 Fire-resistance – rated separation Buildings and portions where high hazard contents are stored, used, or handled shall comply with the protection levels as set forth noted above. The fire rated separations ranges from 1 to 4 hours.</p>	<p>IBC/NFPA have the same level of protection.</p>
<p>Section 302.4 Fire separation for highly toxic gases. Not addressed</p>	<p>Sec. 415.8 Fire separation for highly toxic gases. Gas room not less than 1 hour fire barrier. Highly toxic solids and liquids require 1-hour fire-resistance rating.</p>	<p>Sec. 34.3.6.1 Fire separation for highly toxic gases. Toxic gases 2 hour barrier wall and horizontal assembly > 300 sq ft < 300 sq ft. 1 hour barrier</p>	<p>NFPA has a higher level of protection</p>

H-7 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 1007.4 Number of exits from a room 2 exits when lab. Is over 200 sq. ft.</p>	<p>Sec. 415.8, Table 1014.1 2 exits when max. occupant load is 10</p>	<p>Sec. 34.3.2.5.3 Number of exits for high protection levels 1, 2, 3, & 4 shall have not less than 2 exits exception:</p> <ul style="list-style-type: none"> • Room 200-sq. ft. • < 25ft travel • occupant load < 3 	<p>IBC/ NFPA have a lower level of protection.</p>
<p>Sec.1004.2.5.1, 1007.4.2 Travel distance to an exit door, horizontal exit, passageway, enclosed stair, or exit corridor shall not exceed 100 ft. Travel distance can be increased.</p>	<p>Table 1015.1 Maximum length of exit travel from the most remote area 175 ft.</p>	<p>Table 34.3.2.5.1 Travel distance to an exit 175-ft.</p>	<p>IBC/NFPA have a higher level of protection.</p>
<p>Sec. 1007.4.2.1 Corridor doors not less than 45 minute.</p>	<p>Sec. 415.8-IFC Table 2703.8.3.2 Control doors from 1-1/2 hour to ¾ hours.</p>	<p>Table 34.2.4.2, Table 8.7.2 Control doors from 3 hour to ¾ hours.</p>	<p>CBC has a lower level of protection.</p>

H-7 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.2.7 Emergency power required	Sec.414.5.4 Standby or Emergency power	Sec. 34.3.2.8 Same	CBC has a higher level of protection
Sec.1003.2.8.2 Internally or externally illuminated	Sec. 1011.1 Same	Sec. 11.10.5 Same	Meets the same level of protection as CBC.
Sec. Sec. 1007.4.5 Panic hardware required.	Sec. 1008.1.9 Not required	Sec. 34.3.2.5.5 Panic hardware required > 5 occupants.	CBC is more restrictive.
Sec.1007.4.4 Exit doors must swing in the direction of exit travel.	Sec. 1008.1.2 Same	NFPA 101, Sec. 7.2.1.4.3 NFPA 1 Sec. 14.5.1.3 Same	Meets the same level of protection as CBC.
Sec. 1004.3.4.3 Fire rated corridors required if the exit-access design requirements cannot be satisfied by complying with the intervening room, travel distance or exit separation.	Sec.1016.1, Table 1016.1 Fire rated corridor required if occupant load > 30	Sec.11.1.3.1 Occupant load > 30	CBC has a lower level of protection. CBC fire rated corridor construction is not occupant load-driven.

H-7 OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 307.9 (Cross references CFC Sec.8003.3.1.7 Automatic smoke detection system in rooms with highly toxic compressed gases	Sec. 907.2.5 Automatic smoke detection system in rooms with highly toxic compressed gases. Organic peroxides and oxidizers.	Sec. 34.3.6.1 (Cross references NFPA 55, Sec. 7-2.3) Automatic smoke detection system in rooms with highly toxic compressed gases, flammable and pyrophoric.	IBC and NFPA have a higher level of protection. IBC/NFPA have additional classifications.

H-7 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 8003.3.1.7 Automatic smoke detection system required in rooms with highly toxic compressed gases	Sec. 4004.1.6 (Same)	Sec. 70.2.4.9.2 Addresses automatic fire sprinkler system	NFPA appears to be silent on requiring a smoke detection system for highly toxic gases

H-7 OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 904.2.6 Automatic fire-extinguishing system Automatic fire-extinguishing system required.	Sec. 903.2.4.1 Automatic fire sprinkler system Automatic fire sprinkler system required.	Sec. 34.3.2.1 Automatic fire sprinkler system Automatic fire sprinkler system required.	Meets the same level of protection

H-7 OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 1003.2.6.1 Automatic fire sprinkler system required.	Sec. 903.2.4.2 (Same)	Sec. 13.3.2 (Same) Reference In NFPA 5000 Sec. 34.3.2.1	Meet the same level of protection

H-7 OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.1.1 Quantities of materials in excess of those listed in Table 3-E that are health hazards:</p> <ul style="list-style-type: none"> • Corrosives • Toxic and highly toxic materials • Irritants • Sensitizers • Other Health Hazards 	<p>Sec. 307.6 Not classified</p> <ul style="list-style-type: none"> • Irritants • Sensitizers other Health Hazards 	<p>Sec. 6.3.2.4.5 (same)</p>	<p>IBC and NFPA does not address Irritants, sensitizers other Health Hazards. IBC and NFPA have a lower level of protection.</p>

H-8 OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.1.1 Labs Labs for experimentation or research with amounts not in excess of Table-3 D.1</p>	No like occupancy	No like occupancy, specific to research. Use of like materials addressed for use in any occupancy group, on any floor.	<p>ICC and NFPA do not contain this hazard classification. This is a California occupancy classification.</p> <p>NFPA would not preclude the use of hazardous materials within any educational occupancy provided certain construction provisions are incorporated into the building.</p>

H-8 OCCUPANCIES

Construction Height Allowable Area, Location On Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Table 5-B, HEIGHT Type I – 10 stories Type IIFR – 3 stories Type II 1hr- 3 story Type II N - 2 story Type III 1 hr -3 story Type IIIN - 2 story Type IV - 3 story Type V 1 hr- 3 story Type VN - 1 story Sec. 506 No increase for sprinklers	Table 503, HEIGHT No like occupancy	Sec. 7.2.2 No like occupancy	CBC more restrictive
Table 5-B, AREA Type I – Unlimited Type IIFR – 39,900 Type II 1hr- 18,000 Type II N - 12,000 Type III 1 hr –18,000 Type IIIN - 12,000 Type IV - 18,000 Type V 1 hr- 14,000 Type VN - 8,000 Sec. 505.3, No increase for sprinklers	Table 503, AREA No like occupancy	No like occupancy	CBC more restrictive

H-8 OCCUPANCIES

Construction Height Allowable Area, Location On Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sec. 307.3 Location on property as referenced to Table 3-F. Distance to property line ranges from 70 feet to 2275 feet depending on quantity of explosive material and the material's equivalence to TNT.</p>	<p>Sec. 415.3 Location on property No like occupancy</p>	<p>No like occupancy</p>	<p>State of California occupancy. No like occupancy to compare.</p>

H-8 OCCUPANCIES

Occupancy Separation

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
H-8 Occupancy unique to the California Code.	No comparable occupancy	No comparable occupancy	

H-8 OCCUPANCIES

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 1006.6.4 When required by Article 80, rooms or areas used for storage, dispensing, use or handling of highly toxic compressed gases, liquid solid oxidizers, and class I, II, III or IV Organic peroxdes shall be provided with an automatic smoke-detection system</p>	N/A	N/A	No comparable occupancy California specific

H-8 OCCUPANCIES

Fire Protection Systems – Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Sec. 904.2.6.4 Automatic fire extinguishing system Automatic fire extinguishing system required.	No like occupancy	Sec. 34.3.2.1 Automatic fire extinguishing system Automatic extinguishing system required for any occupancy containing like hazards.	NFPA meets the same level of protection as CBC. ICC has no comparable occupancy.

H-8 OCCUPANCIES

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 1003.2.6.1 Automatic fire sprinkler Automatic fire sprinkler system required.	N/A	N/A	Occupancy H-8 is specific to California.

I OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 308.1 Group I Division 1.1</p> <p>Nurseries for the full-time care of children under the age of six; hospitals, sanitariums, nursing homes or homes, where medical care is provided for <u>non-ambulatory</u> patients or guest.</p> <p><u>Accommodating more than six persons.</u></p>	<p>Section 308.3 Group I-2</p> <p>Child Care on a 24 hour basis for children 21/2 years of age or less for medical, surgical psychiatric, nursing or custodial care on a 24-hour basis includes hospitals, nursing homes, mental hospitals, detoxification facilities, for persons who are not capable of self-preservation (<u>non-ambulatory</u>).</p> <p><u>Accommodating more than five persons.</u></p>	<p>Section 6.1.5.1 Health Care Occupancy</p> <p>Provides medical or other treatment, occupants are mostly incapable of self-preservation (<u>non-ambulatory</u>) due to age, physical or mental disability or because of security measures.</p> <p><u>Accommodating four or more persons</u></p>	<p>NFPA provides less protection than the CBC or IBC.</p> <p>Both CBC and IBC describe this type of occupancy for persons requiring full-time/24 hour care; NFPA does not define length of stay.</p>
<p>Section 308.1 Group I Division 1.2</p> <p>Health care centers for <u>ambulatory patients receiving outpatient</u> medical care that may <u>render the patient incapable of unassisted self-preservation</u>, each tenant space.</p>	<p>Not Addressed</p> <p>Clinics/out patient/ambulatory centers classified as B-occupancy</p>	<p>Section 6.1.6.1 Ambulatory Health Care Occupancy</p> <p>(Out-Patient) On an outpatient basis, provides treatment for patients that renders them <u>incapable of taking action for self-preservation under emergency conditions without assistance</u> (kidney dialysis) and anesthesia that renders patients incapable</p>	<p>IBC provides less protection than CBC or NFPA.</p>

I OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p><u>Example:</u> Ambulatory Surgery Centers</p> <p>Accommodating <u>more than five patients.</u></p>		<p>of taking action for self-preservation under emergency conditions without assistance of others. Example: Foot Surgery</p> <p>Accommodating <u>four or more patients.</u></p>	
<p>Section 308.1 Group I Division 2</p> <p>Nursing home, homes for children six years of age or older, guests homes, and similar buildings for <u>ambulatory patients</u>, children and guest and where medical care is provided.</p> <p><u>Accommodating more than six patients, children, guest ...</u></p>	<p>Section 308.2 Group I-1</p> <p>24- hour Residential board & care, assisted living, and social rehabilitation facilities, half-way, convalescent, and group homes, housing, persons, due to age, mental disability or other reasons, who are capable of responding to an emergency situation without physical assistance (<u>ambulatory</u>),</p> <p><u>Accommodating more than 16 persons.</u></p>	<p>Section 6.1.5.1 Health Care In-Patient</p> <p>Treated as in patient care.</p>	<p>The CBC provides more protection than IBC or NFPA.</p> <p>NFPA treats all inpatient ambulatory and non-ambulatory patients under same occupancy.</p>

I OCCUPANCIES

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 308.1 Group I Division 2</p> <p>Honor farms and conservation camps housing inmates that are not restrained.</p> <p><u>Accommodating more than six inmates.</u></p>	<p>Section 308.4 & 308.4.1 Group I-3, Condition #1</p> <p>Detention centers, prerelease center, etc. in which free movement is allowed and exterior egress is allowed without restraint.</p> <p><u>Inhabited by more than five persons.</u></p>	<p>Section 21.1.1.3, 21.1.1.4, 21.1.3.1(A)</p> <p>Detention and correctional facilities occupied by persons who are not prevented from taking self-preservation actions are classified as a Use Condition 1, free egress and fall under the requirements of residential occupancies of this code.</p>	<p>No significant difference</p>
<p>Section 308.1 Group I Division 3</p> <p>Mental hospitals, mental sanitariums where personal liberties are restrained.</p> <p><u>Accommodating 1 or more persons as defined in Section 219.</u></p>	<p>Section 308.3 Group I-2</p> <p>Mental hospitals are found in section 308.3 as I-2 occupancy as previously noted.</p> <p><u>Accommodating more than five persons.</u></p>	<p>Section 6.1.5.1</p> <p>Mental hospitals are found in section 6.1.5.1. as a Health Care Occupancy.</p> <p><u>Accommodating four or more persons</u></p>	<p>CBC provides more protection.</p>

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>Section 308.2.1 General. Various exceptions to Table 5-B.</p> <p>Restraint is only permitted in buildings constructed in accordance with section 308.2.2.2.</p>	<p>Section 308.1 Defines I Occupancies Table 503 is essentially the same as CBC Table 5-B and contains area increases for side yards AND sprinklers.</p>	<p>Chapter 7 Provides for Construction Types, Height and Area Requirements. Table 7.4 is similar to IBC Table 503. There are numerous area and height increase allowances</p>	<p>No significant difference.</p>
<p>Section 308.2.2.1 Group I, Division 1.1 smoke barriers. Required on floor levels used by inpatients for sleeping or treatment or having an occupant load of 50 or more.</p> <p>Continuous from outside wall to outside wall, smoke barrier to smoke barrier, floor to roof, continuous through all concealed spaces including above suspended ceilings, interstitial structural and mechanical spaces.</p> <p>Max area 22,500 sf, width and length shall not exceed 150'.</p> <p>Area shall not be less than needed to accommodate the occupant load of the zone</p>	<p>Section 407.4 Required locations for smoke barriers are the same as CBC.</p> <p>709.4 Smoke barrier continuity requirements are same as CBC except not required in interstitial spaces where ceilings and walls are constructed as required for smoke barriers.</p> <p>Maximum area is 22,500 sf. Maximum travel distance within smoke barriers is 200 feet. No maximum dimension.</p> <p>Section 709.5 Smoke barrier openings. Cross-corridor doors are</p>	<p>Section 19.3.7 Subdivision of Building Spaces Not less than 2 smoke compartments required on every story used by inpatients for sleeping or treatment, or having an occupant load of 50 or more.</p> <p>Size not to exceed 22,500 sf.</p> <p>Travel distance within the smoke barrier shall not exceed 200 feet.</p> <p>Smoke barriers not required: Stories not containing a health care occupancy located above the health care occupancy.</p> <p>Areas not containing a health care occupancy that are</p>	<p>The CBC provides more protection. The CBC limits the dimensions of the smoke compartment to 150 feet max, while IBC and NFPA limit travel distance within the smoke compartment to 200 feet.</p> <p>Neither IBC nor NFPA require latching doors in smoke barriers. CBC provides more protection.</p> <p>Neither IBC nor NFPA require smoke dampers in smoke barriers. CBC is more restrictive here.</p>

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>plus any adjacent zone. Provide 30 sf for bed and litter patients and 6 sf for other occupants.</p> <p>Smoke barrier doors shall: Be 20-minute smoke and draft control assemblies.</p> <p>Be opposite swinging doors at cross-corridor doors.</p> <p>Have vision panels at cross-corridor doors.</p> <p>Not have undercuts, louvers or grilles.</p> <p>Have stops at head and jambs. Cross-corridor doors require rabbets or astragals at meeting edges.</p> <p>Be positive latching.</p> <p>Be automatic closing.</p> <p>At least 2 means of egress shall be provided from each smoke zone. Means of egress may pass through adjacent zones, but may not return through zone of origin.</p>	<p>required to have vision panels; undercuts are not allowed, are not required to be positive latching.</p> <p>Section 716.5.5 Smoke dampers are not required if ducts are steel and serve one smoke compartment only.</p> <p>Section 407.4 Areas required to accommodate occupants of adjacent compartments is same as CBC.</p> <p>Section 407.4.2 A means of egress shall be provided without having to pass through the zone where the means of egress originates.</p> <p>Section 407.5 Smoke zones with patient sleeping rooms shall be equipped with quick response or residential sprinklers.</p> <p>Section 407.6 Corridors in nursing homes shall have automatic smoke</p>	<p>separated by a 2 hour fire barrier.</p> <p>Stories not containing a health care occupancy more than one story below the health care occupancy.</p> <p>Smoke dampers not required if HVAC system is fully ducted and building is sprinklered.</p> <p>Area for occupants same as CBC.</p> <p>Doors must be "substantial doors" or 20-minute construction.</p> <p>Horizontal sliding doors are allowed for cross-corridor doors.</p> <p>Vision panels required. Positive latching is not required.</p>	

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>Exit doors at</p> <p>Smoke zone boundaries shall have vision panels.</p>	<p>detection.</p> <p>Section 407.2 Corridor doors are not required to be rated, do not require closers. They must limit the passage of smoke and be positive latching. Roller latches are not permitted.</p> <p>Waiting and similar areas of unlimited area are permitted to be open to corridors. Gift shops open to corridors are limited to 500 sf.</p>		

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>Section 402.2 Smoke control system Smoke control systems are required in the atrium and areas open to the atrium. Smoke control system shall operate automatically upon actuation of automatic sprinkler systems.</p>	<p>Section 404.4 Smoke control systems shall be installed in accordance with Section 909. This section addresses size of fire, stack effect, various formulas for calculating minimum and maximum pressure differences, exhaust rates, smoke barrier wall construction, system controls, ducts, stair pressurization, power, etc.</p>	<p>Section 8.12.3.(5) and (6) When an engineered smoke control system is installed, it must be independently activated by each of the following: Activation of the sprinkler system in the atrium or in the areas opens to the atrium, or manual controls that are readily accessible to the fire department.</p>	<p>No significant difference.</p>
<p>Section 403.1.1 Hospitals are specifically exempted from high-rise requirements.</p>	<p>Section 403 Hospitals are not exempted from high-rise requirements.</p>	<p>Section 19.4.2 Health care occupancies must comply with high-rise requirements.</p>	<p>The IBC and NFPA provide a higher level of protection than the CBC. The CBC is less restrictive because of a statutory amendment.</p>
<p>Section 504.1 Allowable Area One story areas shall not exceed the limits in Table 5-B.</p>	<p>Section 503.1 Allowable Area Area per floor shall not exceed the areas in Table 503.</p>	<p>Section 7.4.2 Allowable Area Allowable area per floor shall not exceed the area permitted by Table 7.4.1.</p>	<p>The CBC provides more protection. Allowable areas in IBC and NFPA are much greater than allowed in the CBC. NFPA allows much larger areas than IBC, especially for ambulatory health care.</p>

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>Section 504.2 Areas of buildings over one story shall not exceed twice the area for a one-story building; no floor shall exceed that for a one-story building.</p>	<p>Section 506.4 Area determination. Multiply the allowable area of the first floor by the number of the floors, up to 3.</p>	<p>Section 7.6.2.3 Maximum area of a building is determined by multiplying the allowable area by the number of stories up to three stories.</p> <p>Section 7.6.2.3.1 The maximum floor area for a building more than three stories in height shall not exceed that permitted for a three-story building.</p>	<p>The CBC provides more protection.</p> <p>In buildings over 2 stories, areas are three times that allowed for a single story building in IBC and NFPA. CBC doubles the area in multi-story buildings. This results in 50% larger buildings in IBC and NFPA.</p>
<p>Section 504.6 Area Separation Walls Create separate buildings. SFM amendment prohibits area separation walls for creating separate buildings for the purpose of fire sprinklers.</p>	<p>Section 705 Fire Walls Considered to create separate buildings.</p>	<p>Section 8.3 Fire Walls Considered to create separate buildings.</p>	<p>All meet the same level of protection.</p>
<p>Section 5051.1 Allowable Area Increases. Separation on 2 sides. 1-1/4% increase per foot for each foot over 20', increase shall not exceed 50%</p>	<p>Section 506 Area Modifications. Area increases are allowed using the formulas in 506.1 and 506.2 and unlimited area increases in section 507.1 for types of construction.</p>	<p>Section 7.6 Area Increases Permitted. Total allowable area is basic allowable area plus frontage increase plus sprinkler increase.</p>	<p>The CBC provides a higher level of protection.</p> <p>IBC and NFPA allow "frontage increases" based on percentage of the perimeter that is open, rather than "sides" as in the CBC.</p> <p>IBC and NFPA are less restrictive than the CBC.</p>
<p>Section 505.1.2 Separation on 3 sides. 2-1/2% increase per foot for</p>	<p>Section 506 Area Modifications. Area increases are</p>	<p>Section 7.6.2.1 Frontage Increase. Based on a complicated series</p>	<p>The CBC provides more protection. Max increase in CBC is 100%.</p>

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
each foot over 20', increase shall not exceed 100%	allowed using the formulas in 506.1 and 506.2	of formulas. Uses a percentage of the perimeter of the building instead of sides.	Max increase in IBC and NFPA is 75% CBC is more restrictive because basic allowable areas in IBC and NFPA are much greater.

I OCCUPANCIES

Construction, Height, Allowable Area, Location on Property

2003 IBC Draft	2001 CBC	2003 NFPA 5000	Comments/References
<p>Section 505.1.3 Separation on all Sides. 5% increase per foot for each foot over 20', increase shall not exceed 100%</p>	<p>Section 506 Area Modifications Area increases are allowed using the formulas in 506.1 and</p>	<p>Section 7.6.2.1 Frontage Increase. Based on a complicated series of formulas. Uses a percentage of the perimeter of the building instead of sides.</p>	<p>CBC provides more protection.</p>
<p>Section 506 Maximum Height of Buildings and Increases. Maximum height and number of stories in shown on Table 5-B. The limits in Table 5-B may be increased by one story if the building is protected with an approved automatic sprinkler system throughout.</p> <p>Shall not apply when sprinklers are required in H-8 occupancies, atria, or for I-1.1 and I-2 occupancies used for hospitals, nursing homes or health care centers in Type II 1-hour, Type III 1-hour, Type IV or Type V 1-hour construction.</p>	<p>Section 506.2 Height Modifications. Table 503 provides the basic allowable area and height. Section 504.2 allows for height increase for fire sprinklers.</p>	<p>Section 7.4.3 Height and Number of Stories. Shall not exceed the limits specified in Table 7.4.1.</p>	<p>CBC provides more protection than IBC and NFPA.</p> <p>NFPA is far less restrictive especially in ambulatory health care facilities.</p>

I OCCUPANCIES TYPES OF CONSTRUCTION

Types of Construction:

2001 CBC		I-FR	II-FR	II-1 hr	II-N	III-1 hr	III-N	IV-HT	V-1 hr	V-NR
'03 IBC Draft		I-A	I-B	II-A	II-B	III-A	III-B	IV-HT	V-A	V-B
'03 NFPA 5000	I-442	I-332	II-222	II-111	II-000	III-211	III-200	IV-2HH	V-111	V-000

Maximum Building Height (feet) (CBC Table 5-B)

2001 CBC			I-FR		II-FR		II-1 hr		II-N		III-1 hr		III-N		IV-HT		V-1 hr		V-NR	
'03 IBC Draft			I-A		I-B		II-A		II-B		III-A		III-B		IV-HT		V-A		V-B	
'03 NFPA 5000	I-442		I-332		II-222		II-111		II-000		III-211		III-200		IV-2HH		V-111		V-000	
	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N
CBC			UL		160		65		55		65		55		65		50		40	
IBC			UL	UL	180	160	85	65	75*	55	85*	65	75*	55	85*	65	70*	50	60*	40
NFPA	UL	UL	420	400	180	160	85	65	75	55	85	65	75	55	85	65	70	50	60	40

* height increase is not permitted in Group I-2 occupancies of Type IIB, III, IV or V construction.

I OCCUPANCIES TYPES OF CONSTRUCTION

Maximum Height and Area Table (CBC Table 5-B)

Maximum Building Height (stories)
Maximum Area (per floor)

S = Sprinklered N = Non Sprinklered UL = Unlimited NP = Not Permitted

2001 CBC	NA		I-FR		II-FR		II-1 hr		II-N		III-1 hr		III-N		IV-HT		V-1 hr		V-NR		
2003 IBC Draft	NA		I-A		I-B		II-A		II-B		III-A		III-B		IV-HT		V-A		V-B		
2003 NFPA 5000	I-442		I-332		II-222		II-111		II-000		III-211		III-200		IV-2HH		V-111		V-000		
	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	
CBC I- 1.1, I-1.2			U L	N P	3 (5*) N P		1 (3*) N P		NP (1*) N P		1 N P		NP N P		1 N P		1 N P		NP N P		NP N P
			U L		15,10 0		6,800		NP (13,500*)		6,800		NP		6,800		5,200		NP		
IBC I-2			U L	N P	4 N P		2 N P		1 N P		1 N P		NP N P		1 N P		1 N P		NP N P		NP N P
			U L		UL		15,00 0		11,000		12,00 0		NP		12,00 0		9,500		NP		
NFPA Health Care	U L	N P	U L	N P	12 N P		3 N P		1 N P		1 N P		NP N P		1 N P		1 N P		NP N P		NP N P
	U L		U L		UL		15,00 0		11,000		12,00 0		NP		12,00 0		9,500		NP		
CBC I-2			U L	N P	3 N P		2 N P		NP** N P		2 N P		NP** N P		2 N P		2 N P		NP** N P		NP** N P
			U L		15,10 0		6,800		NP**		6,800		NP**		6,800		5,200		NP**		

I OCCUPANCIES TYPES OF CONSTRUCTION

IBC I-1			U L	N P	9	N P	5	N P	3	N P	5	N P	3	N P	5	N P	3	N P	2	N P
			U L		55,000		19,000		10,000		16,500		10,000		18,000		10,500		4,500	
NFPA Amb. HC	U L	UL	U L	UL	12	11	6	5	5	1	6	5	5	1	6	5	4	3	3	1
	U L		U L		UL		37,500		23,000		28,500		19,000		36,000		18,000		9,000	
CBC I-3			U L	N P	2	N P	NP***	N P	NP	N P	NP***	N P	NP	N P	NP	N P	NP***	N P	NP	N P
			U L	N P	15,100	N P	NP***	N P	NP	N P	NP***	N P	NP	N P	NP	N P	NP***	N P	NP	N P
IBC I-3			U L		4		2		1		2		1		2		2		1	
			U L		UL		15,000		11,000		10,500		7,500		12,000		7,500		5,000	
NFPA Detentio n	U L	7	U L	7	12	7	2	2	2	N P	2	2	2	N P	2	2	2	2	2	N P
	U L		U L		UL		15,000		10,000		10,500		7,500		12,000		7,500		5,000	

* Exceptions to Section 308.2.1 permit an increase above the table heights as shown.

** Exception 5 to Section 308.2.1 permits buildings housing protective social-care homes or facilities in I-2 occupancies to not be of 1-hour fire resistive construction when not more than 2 stories in height. Floor areas shall not exceed 3,000 sf.

*** Section 308.2.2.2 permits I-3 occupancies in one-story buildings not exceeding 5,200 sf.

I OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
308.2.2 Required on all floors with inpatients and any floor with occupancy load of 50 or more.	407.4 Same as CBC	19.3.7.1 Same as CBC, has exceptions for non patient use floors	NFPA less restrictive then CBC and IBC
308.2.2 At least 2 compartments per floor, 22,500 sf max 150 X 150 max. dimensions	407.4.2 At least 2 compartments, 22,500 sf, no limit on dimensions. Limit travel distance to 200 feet to smoke barrier door from any point in compartment	19.3.7.1 Same as IBC	IBC and NFPA are less restrictive
308.2.2.1 Shall be one hour construction, 20 minute doors, positive latching, vision panels, opposite swing when across a corridor	709.4 one hour construction, 715.3.3, 20 min. doors, no req. for vision panel or opposite swing across corridors	19.3.7.3, one hour const. No smoke dampers required where sprinklers are present. 20 minute doors, opposite swing when across corridors. 19.3.7.7, Vision panels required. 19.3.7.8, positive latching not required	IBC and NFPA are less restrictive
308.2.2.1 At least two means of egress from each smoke zone, one may exit through adjoining compartment.	407.4.2 independent egress – both exits may exit through adjoining compartment	19.2.2.10, Both exits may exit through adjoining compartments	IBC and NFPA are less restrictive
308.2.2.1, refuge area, 30 sf per bed patient, 6 sf for all others	407.4.1 refuge area, 30sf per patient, 6 sf for all others	19.3.7.4 Same as IBC and CBC	All are equal

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.2 Occupant Load. Table 10-A: Health Care Facilities sleeping rooms 1 person per 120 square ft.</p>	<p>Section 1004.1 and Table 1004.1.2 Institutional sleeping areas 1 person per 120 square ft. Inpatient treating areas 1 person per 240 sq. ft.</p>	<p>Section 19.1.7, Table 11.3.1.2 Occupant Load sleeping 120 sq. ft. per person Inpatient 240 sq. ft. per person</p>	<p>Meet same level of protection</p>
<p>Table 10-A Two exits required for 7 or more in homes for the aged; Two exits require for 7 or more in sleeping rooms of health care facilities</p>	<p>Section 1013.2.2 Two exits for patient sleeping rooms of 1,000 sq. ft. or more. Two exits for other than patient sleeping rooms of 2,500 sq. ft. or more.</p>	<p>Section 19.2.4 Two exits for each floor or fire section Section 19.2.5.2 Patient sleeping rooms of 1,000 sq ft. or more requires two exits. Section 19.2.5.3 For other than patient sleeping rooms two exits required for 2,500 sq. ft. or more.</p>	<p>IBC and NFPA have a lower level of protection than CBC. CBC requires two exits for 7 or more. IBC and NFPA would require two exits for 8 or more.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.3 Width. Width Based upon factors in Table 10-B: I-1 occupancy: 0.3 for stairways and 0.2 for other egress components;</p>	<p>Section 1005.1 and Table 1005.1 0.3 for stairways and 0.2 for other egress components.</p>	<p>Table 11.3.3.1 Sprinkler protected health care: 0.3 for stairways and 0.2 for other egress components</p>	<p>Since sprinkler protection is generally required, IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1003.2.4, and 1007.5.1 Height. Clear height of means of egress shall be seven ft. minimum. For I-1.1 Occupancies ceilings shall have a clear height of not less than 8 ft. from the finished floor.</p>	<p>Section 1003.2 Ceiling height not less than 7 ft. Protruding objects permitted in exit system for up to 50 % of ceiling area with minimum head room of 80 “.</p>	<p>Section 11.1.5 Not less than 7 ft., 6 “, with projections not less than 6 ft., 8 “. Minimum ceiling height shall be maintained for at least 2/3 of ceiling area of any room or space</p>	<p>CBC provides a higher level of protection than IBC and NFPA which are less restrictive than the CBC.</p>
<p>Section 1003.2.5 Exit Continuity. Exit shall be maintained and not interrupted by any building component other than a means of egress component.</p>	<p>Section 1003.6 Path of egress shall not be interrupted</p>	<p>Section 11.1.3.2.2 Exit enclosure shall provide a continuous protected path of travel to an exit discharge.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1003.2.6 Changes in Elevation. (specific to I-1.1) Any change in elevation of the floor in a means of egress serving non-ambulatory persons shall be by means of a ramp.</p>	<p>Section 1003.5 Any change in elevation in a corridor serving nonambulatory persons in an I-2 occupancy shall be by means of a ramp or sloped walkway. Where changes in elevation of less than 12 “exist in the means of egress, sloped surfaces</p>	<p>Section 11.1.6.2 changes in elevation shall be by a ramp or stair. Where slope is greater than 1 in 20 ramps shall be used.</p>	<p>IBC and CBC provide a higher level of protection from the NFPA.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5 %), ramps shall be used.		
<p>Section 1003.2.8.2 Where required. Visual exit signs required in I-1.1 serving 50 or more (exception 4 applies). Signs shall clearly indicate direction of exit travel and no point shall be more than 100 ft. from the nearest visible sign. Graphics, Section 1003.2.8.3: Block letters 6 " in height, 3/4 " stroke, reading "exit"</p>	<p>Section 1011.1 Exit and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. Access to exits shall be marked by ready visible exit signs in cases where the exit or path of travel is not immediately visible to the occupants. Exit sign placement shall be such that no point in an exit access corridor is more than 100 ft. or the listed viewing distance for the sign whichever is less from the nearest visible sign. Exit signs are not required in rooms/areas which require only one exit or exit access.</p>	<p>Section 19.2.10 Exit signs shall be provided; viewing distance not more than 100 ft.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1003.2.8.4 Illumination. Internally or externally illuminated at intensity not less than 5 foot-candles from either of two electric lamps.; self-luminous minimum of 0.06 foot Lambert;</p>	<p>Section 1011.2 Internally or externally illuminated, Internally illuminated per manufacturer's instructions. Externally illuminated at 5 foot-candles.</p>	<p>Section 11.10.6.3 Externally illuminated at not less than 5 foot candles, internally illuminated based upon listing</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.8.5 Power Source. Power supply to exit signs for continued duration of 90 minutes in primary power loss. For high-rise, six hours (Sections 403.1.1 and 403.8.1)</p>	<p>Section 1011.2 90 minute power supply</p>	<p>Sections 11.10.4 and 11.9.2.1 90-minute power supply.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>
<p>Section 1003.2.8.6.1 Where Required. Tactile exit signs required at each grade level exterior door, exit doors leading to grade, exterior door, exit access doors, horizontal exit doors.</p>	<p>Section 1011.3 Tactile exit signs shall be provided adjacent to each door to an egress stairway, an exit passageway, and the exit discharge.</p>	<p>Sections 19.2.10 and 11.10.1.3 Tactile exit signs shall be provided at each exit door requiring an exit sign.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>
<p>Section 1003.2.9 Means of Egress Illumination. The means of egress shall be illuminated to not less than 1 foot-candle. Sleeping rooms in Group I occupancies are exempt. Emergency power to illumination required in Group I-1.1 occupancies</p>	<p>Section 1006.1 Same as CBC: 1 foot-candle, sleeping rooms of I occupancies exempt.</p>	<p>Section 11.8.1.1 Illuminated at 1 foot candle minimum</p>	<p>CBC and IBC meet same level of protection. NFPA has a higher level of protection; there is no exemption for sleeping rooms.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.1.2 Special doors. Revolving, sliding and overhead doors shall not be used as required exit doors when serving 10 or more occupants</p>	<p>Section 1008.1.3.1 Revolving doors permitted for not more than 50 % of egress capacity with conditions, providing no individual revolving door is credited with more than a 50-person capacity.</p> <p>Section 1008.1.3.3 Horizontal sliding doors, when power operated and capable of being manually operated upon power failure are permitted with other conditions.</p>	<p>Sections 19.2.2.2.10, 11.2.1.4.1 Exception 3 and 11.2.14 Horizontal sliding doors permitted with no special knowledge or effort, and force limitations.</p> <p>Section 11.2.1.4.1 Exception 5, and 11.2.10 Revolving doors permitted for not more than 50 person capacity nor more than 50 % of egress width.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sections 1003.3.1.3 and 1003.3.1.4 Door Width and Height When serving an occupant load of 10 or more the exit doorway shall be of a size to permit the installation of a door not less than 3 ft. in nominal width and not less than 6 ft., 8 " in nominal height. The clear width opening shall be not less than 32 ". A single leaf shall not be greater than 4 ft..</p> <p>Section 1007.5.1 Clear width of means of egress components serving bed or litter patients shall be such to allow ready passage of beds or gurneys and similar equipment, but shall not be less than 44".</p>	<p>Section 1008.1.1 Clear width of 32 "for any door in means of egress. Maximum width of a single leaf 48 ". Height of doors not less than 80 "(6 ft., 8 ").</p> <p>Section 1008.1.1.1 Projections are permitted into clear width not exceeding 4 "are permitted between 34 "and 80 "above the floor.</p> <p>Section 1008.1.1 Clear width of doors in an occupancy used for movement of beds shall be 41-1/2 ".</p>	<p>Section 19.2.3.5 Minimum width 41.5 " for hospitals and skilled nursing facilities for sleeping rooms, diagnostic and treatment areas</p> <p>Section 19.2.3.5 Minimum door width 32 "clear width for non health care occupants.</p> <p>Section 19.2.3.5 Doors to exit stair enclosures minimum 32 ".</p> <p>Section 11.2.1.2.1 Projections not more than 3-1/2" at each side of the doorway at a height not more than 38" are permitted.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>IBC and NFPA doors serving bed/gurney 41-1/2 clear width; other exit components may be 32.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.1.5 Swing and force to Open. Exit doors serving an occupant load of 10 or more shall be of the pivoted, balanced, or side-hinge swinging type. Exit doors shall swing in the direction of exit travel when serving an occupant load of 50 or more.</p>	<p>Section 1008.1.2 Egress doors shall be side-hinged swinging.</p> <p>Revolving doors, horizontal sliding and power operated doors permitted by exception.</p> <p>Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more.</p>	<p>Section 11.2.1.4.2 Doors shall swing in direction of exit travel when serving 50 or more, part of an exit enclosure, or high hazard.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>
<p>Section 1003.3.1.6 Floor Level at Doors. Floor or landing required on each side of a door. The threshold shall not exceed 1 "(1/2 "for accessibility). Landings shall be level; exterior landings may have a slope not exceeding 2 %.</p>	<p>Section 1008.1.4 landing level, except exterior may have slope not exceeding 2 %.</p> <p>1008.1.6 threshold shall not exceed 1/2 ".</p>	<p>Section 11.2.1.3 threshold shall not vary by more than 1/2-"</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.1.7 Landings at Doors. Landings at doors shall have a width not less than the width of the door or the width of the stairway served. Doors in the open position shall not reduce the required width by more than 7 ". Where a landing serves 50 or more persons, the door in any position shall not reduce the required landing dimension to less than ½ its required width. Landings shall have a length measured in the direction of exit travel, not less than 44 ".</p>	<p>Section 1005.2 Doors shall not project more than 7 " into required width when fully open nor reduce the required width to less than one-half during the course of the swing</p> <p>Landings shall have a width not less than width of stairway or door.</p> <p>When serving 50 or more door shall not reduce landing by more than ½ width. Landings shall have length in direction of travel not less than 44 ".</p>		<p>CBC and IBC meet the same level of protection. It appears this subject is not addressed in the NFPA.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.1.8 Type of lock or latch. Regardless of the occupant load served, exit doors shall be operable from the inside without the use of a key or any special knowledge or effort.</p>	<p>Section 1008.1.8 Egress doors shall be readily operable from egress side without the use of a key or special knowledge or effort.</p>	<p>Section 19.2.2.2.1 No locks on patient room doors, with limited exceptions.</p> <p>Section 19.2.2.2.4 No latch or tool that requires special knowledge or effort.</p> <p>Sections 19.2.2.2.2 and 11.2.1.5.1 Readily operable from egress side.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>
<p>Section 1003.3.1.8 Type of Lock or Latch. Manually operated flush bolts are prohibited.</p>	<p>Section 1008.1.8.4 Same as CBC.</p>	<p>Silent (implied?)</p>	<p>IBC and CBC have the same level of protection.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.1.10 Special egress-control devices. When approved by the bldg official, doors may be equipped with special egress control devices of the time-delay type with complete automatic sprinkler protection and an approved automatic smoke detection system. Deactivate upon actuation of the sprinkler system, detection system or upon loss of electrical power. Deactivate from a switch at an approved location. Irreversible process deactivates the device when manual force of not more than 15 pounds is applied for two seconds. The deactivation time not to exceed 15 seconds.</p>	<p>Section 1008.1.8.6 Delayed egress locks permitted in I occupancies, with:</p> <ul style="list-style-type: none"> - sprinkler system OR smoke/heat detection system throughout <p>Remainder of conditions same as CBC, except irreversible process starts after one second and if approved a 30 second delay is permitted.</p>	<p>Sections 19.2.2.2.4 and 11.2.1.6.1 Delayed egress permitted for Health Care with sprinkler protection or fire detection Irreversible process starts after 3 seconds</p> <p>15 second delay or if approved 30 second delay.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>NFPA and IBC allow either suppression or detection. CBC requires suppression <u>and</u> detection, as well as specific approval from the building official for this installation.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.3.2 Stairway Width. The width of stairways shall not be less than 44 ". Stairways serving an occupant load less than 50 shall not be less than 36 "in width. Stairways serving areas occupied by bed or litter patients in Group I-1.1 occupancies shall have a clear width of not less than 44 ". There shall be no projection into the clear width to a height of 80 "above the walking space.</p>	<p>Section 1009.1 Stairways shall not be less than 44 ". For an occupant load of 50 or less stairways shall not be less than 36 ".</p>	<p>Table 11.2.2.2.1 Not less than 44 ", or 36 "where serving less than 50.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>For acute care, SNF and ICF facilities, the CBC prohibits projections into the 44 "of stairway width. NFPA and IBC allow handrail and stringer projections in the minimum width criteria.</p>
<p>Section 1003.3.3.2 Handrails not permitted to project into minimum required clear width of stairway in I-1.1 occupancies</p>	<p>Section 1003.3.3 and 1009.11.7 Handrails serving stairs and ramps are permitted to protrude 4.5 "from wall.</p>	<p>Section 11.2.2.4 Projection into the required width not found.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>Section 1003.3.3.3 Rise and Run. The rise of steps shall not be less than 4 "nor more than 7 ". Riser height shall not vary by more than 3/8-" in a flight. The run shall not be less than 11 ". Run shall not vary by more than 3/8-" within a flight of stairs.</p>	<p>Section 1009.3 Same as CBC. There is an exception for top or bottom riser to be reduced to less than 4 "in height with a marking stripe.</p>	<p>Table 11.2.2.2.1 Max riser 7 "; min riser 4 "; min tread 11 " 11.2.2.3.6 no variation of risers or treads in excess of 3/8-" in any flight. Exception for height of bottom riser at public way.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>
<p>Section 1003.3.3.4.</p>	<p>Section 1009.2</p>	<p>Section 11.1.5 Stairways at</p>	<p>IBC and NFPA meet same level</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Stairway Headroom. Every stairway shall have a headroom clearance of 6 ft., 8 in.</p>	<p>Stair headroom clearance 80 in.</p>	<p>6 ft., 8 "</p>	<p>of protection as CBC.</p>
<p>Section 1003.3.3.5 Stairway Landings. Landing at the top and bottom of each stairway or stair run. Landings shall have a dimension measured in the direction of exit travel not less than the width of the stairway. Such dimension need not exceed 44 "when the stair has a straight run. Intermediate landings shall be provided for each 12 ft. of vertical stairway rise.</p>	<p>PAGE MISSING; SECTION 1009.4</p>	<p>Table 11.2.2.2.1 Maximum height between landings is 12 ft.. Section 11.2.2.3.2 Dimension in direction of travel not less than the width of the stair. Not required to exceed 4 ft. in direction of travel for a straight run.</p>	<p>IBC not available. NFPA and CBC have equal level of protection.</p>
<p>Section 1003.3.3.6 Handrails. Stairways shall have handrails on each side, at every stairway required to be more than 88" in width shall be provided with not less than one intermediate handrail for each 88".</p>	<p>1009.11.1 Handrail height same as CBC. 1009.11.2 intermediate handrails are required so that all portions of the stairway are within 30" of a handrail.</p>	<p>Section 11.2.2.4.1.1 Handrails on both sides. Handrails within 30 "of all portions of required egress.</p>	<p>IBC and NFPA have a higher level of protection than CBC. CBC requires handrails every 88". IBC and NFPA require handrails every 60".</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.3.8.1 Circular Stairways May be used. The minimum width of a run shall not be less than 10 “and the smaller stairway radius shall not be less than twice the width of the stairway.</p>	<p>MISSING PAGE 205 FOR CIRCULAR, WINDERS, AND SPIRAL STAIRS.</p>	<p>Section 11.2.2.2.2 Curved stairs and winders permitted if depth of tread not less than 11 “at a point 12” from the narrower end and smallest radius not less than twice width of stairway</p>	<p>NFPA and CBC meet the same level of protection. IBC unknown.</p>
<p>Section 1003.3.3.9 Interior Stairway Construction. Interior stairways shall be constructed based upon the type of construction. Except where enclosed useable space under stairs is prohibited, the walls and soffits of such spaces shall be protected as required on the enclosed side as one-hour fire-resistive construction.</p> <p>Stairways exiting directly to the exterior of a building four or more stories in height shall have a means for fire department emergency entry access.</p>	<p>Section 1019.1.5 The walls and soffits within an enclosed useable space under enclosed and unenclosed stairways shall be protected by 1 hour fire rated construction or the fire-resistance of the stairway enclosure whichever is greater.</p> <p>Access to the enclosed useable space shall not be directly from within the stair enclosure.</p>	<p>Section 11.1.3.2 One hour stair enclosure serving 3 stories or less, two hour enclosure for four stories or more. Supporting construction to have equal rating.</p>	<p>The CBC and IBC provide a higher level of protection than NFPA.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.3.12 Roof Hatches. All required interior stairways that extend to the top floor in buildings four or more stories shall have an operable hatch to the roof not less than 16 square ft. in area, with the least dimension not less than 2 ft..</p>	<p>IBC no requirement other than one stair to roof in 1009.12.</p>	<p>No requirement other than one stair to roof when four or more stories.</p>	
<p>Section 1003.3.4 Ramps. Width of ramps shall not be less than 44". Ramps serving an occupant load less than 50 shall not be less than 36" in width. Ramps serving areas occupied by bed/litter patients in Group I-1.1 occupancies shall have a clear width of not less than 44". There shall be no projection into the clear width to a height of 80" above the walking surface.</p>	<p>Section 1010.5.1 Width of ramps shall comply with requirements for corridors in section 1016.2 The minimum width shall not be less than 44 ". The minimum width shall not be less than 36 "with a required occupant capacity of 50 or less. The minimum width shall not be less than 96 "in I-2 occupancy areas required for bed movement. 1010.5.1The clear width of a ramp between handrails shall be 36 ".</p>	<p>Section 11.2.5, Table 11.2.5.2 and 19.2.2.6 Width 44 ", projections up to 4-1/2 "allowed on each side at or below handrail height.</p>	<p>NFPA has a lower level of protection than the CBC. Projections are permitted within the 44-" required width. IBC has a higher level of protection than the CBC. The minimum width of ramps in areas required for bed movement is 96 ".</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.3.4.3 Ramp Slope. The slopes of ramps in an accessible route shall not be steeper than 1 unit vertical in 12 units horizontal (8.3 %). The slope of other ramps shall not be steeper than 1 unit vertical in 8 units horizontal (12.5 %).</p>	<p>Section 1010.2 Ramps in means of egress shall have a slope not steeper than 1 unit vertical in 12 units horizontal.</p> <p>Other ramps shall not be steeper than 1 unit vertical in 8 units horizontal.</p>	<p>Table 11.2.5.2 Maximum slope 1 in 12</p>	<p>NFPA and IBC meet the same level of protection as CBC</p>
<p>Section 1003.3.4.4 Ramp Landings. Ramps having slopes steeper than 1 unit vertical in 20 units horizontal (5 %) shall have landings at the top and bottom, and at least one intermediate landing shall be provided for each 5 ft. of vertical rise.</p> <p>Top and intermediate landings shall have a dimension measured in the direction of ramp run of not less than 5 ft... Landings at the bottom of ramps shall have a dimension measured in the direction of ramp run of not less than 6 ft... Doors in any position shall not reduce the minimum dimension of</p>	<p>Section 1005.2 Doors shall not project more than 7 " into required width when fully open nor reduce the required width to less than one-half during the course of the swing</p> <p>Section 1010.4 The rise for any ramp run shall be 30 " maximum</p> <p>Section 1010.5.3 Projections into the required ramp and landing shall not reduce the clear width to less than 42 ".</p> <p>Section 1010.6 Ramps shall have landings at the bottom and top of each ramp, points of turning, entrance, exit and at doors.</p>	<p>Table 11.2.5.2 Maximum rise for a single ramp 30 ".</p> <p>Section 11.2.5.3.2 Landings at top and bottom. Slope of landing not steeper than 1 in 48. Landing width not less than width of ramp. Landing shall not be less than 60 "long in direction of travel.</p>	<p>For bottom landings, NFPA and IBC have a lower level of protection than CBC. CBC requires 6 ft. in direction of travel. NFPA and IBC require 5 ft. for bottom landings in direction of travel.</p> <p>For landing locations, NFPA and IBC have a higher level of protection than CBC.</p> <p>NFPA and IBC require landings at 30 "of elevation change. CBC requires intermediate landings for 5 ft. of vertical rise.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
the landing to less than 42 “and shall not reduce the required width by more than 7 “.	The landing length shall be 60 “minimum. Where landings are provided at change in direction the landing shall be 60 “by 60 “minimum.		
Section 1003.3.4.5 Ramp Handrails. Ramps having slopes steeper than 1 unit vertical in 20 units horizontal (5 %) shall have handrails as required for stairways, except that intermediate handrails shall not be required.	Section 1010.8 Ramps with a rise greater than 6 “shall have handrails on both sides.	Section 11.2.5.4 Handrails required on both sides when rise is greater than 6 “	NFPA and IBC meet same level of protection as CBC
Section 1003.3.4.6 Ramp Guardrails. Ramps open on one or both sides shall have guardrails.	Sections 1010.10 and 1012 Guardrails shall be provided on open sides of ramp where located more than 30“above floor or grade below.	Section 11.2.5.4 Guards are required.	NFPA and IBC meet same level of protection as CBC
Section 1003.3.4.7 Ramp Construction. Ramps shall be constructed as required for stairways.	Section 1010.7 Ramps used as an exit shall conform to applicable requirements for vertical enclosures.	Section 11.2.5.5 Ramps shall be enclosed or protected as required for stairways.	NFPA and IBC meet same level of protection as CBC
Section 1003.3.4.8 Ramp Surface. The surface of ramps shall be roughened or shall be of slip resistant materials.	Section 1010.7.1 Similar to CBC.	Section 11.1.6.4 Walking surfaces shall be slip resistant materials.	IBC and NFPA meet the same level of protection as CBC.
Section 1004.2.2 Travel through Intervening	Section 1013.2 Egress from a space shall	Section 19.2.5.1(2) Exit access for not more	CBC provides a higher level of protection than NFPA and IBC.

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Rooms. Exits shall not be interrupted by intervening rooms:</p> <p>Several Exceptions that can be applied to I-1.1: Access to exits may occur through foyers, lobbies and reception rooms;</p> <p>Where only one exit is required from a space exit access may occur through an adjoining or intervening room which provides direct access to an exit or to a corridor that provides direct access to an exit;</p> <p>Rooms with a cumulative occupant load of less than 10 may access exits through more than one intervening room;</p> <p>Where access to more than one exit is required from a space, one required exit may be accessed through an intervening room, which provides direct access to an exit or corridor that provides direct access to an exit;</p>	<p>not pass through adjoining or intervening rooms or areas, except where accessory to areas served and not a high-hazard occupancy.</p> <p>An exit access shall not pass through a room that can be locked to prevent egress.</p> <p>Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to an exit access corridor, except: Rooms with exit doors opening directly to the outside at ground level patient sleeping rooms are permitted to have one intervening room if the intervening room is not used as an exit access for more than 8 patient beds; Special nursing suites are permitted to have one intervening room where the arrangement allows for direct and constant visual supervision by nursing personnel;</p>	<p>than 8 patient sleeping rooms can pass through one intervening room.</p>	

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Exits will not pass thru any room subject to locking	For rooms other than patient sleeping rooms, suites of rooms are permitted to have one intervening room if the travel distance within the suite to the exit access door is not greater than 100 ft. and are permitted to have two intervening rooms where the travel distance within the suite to an exit access door is not greater than 50 ft..		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.2 Travel through Intervening Rooms. Interior courts enclosed on all sides shall be considered as interior intervening rooms. Except courts not less than 10 ft. in width and not less than the required width and providing direct access to an exit.</p>	Not Addressed	Not Addressed	
<p>Section 1004.2.2 Travel through Intervening Rooms. A means of egress shall not pass through kitchens, storerooms, restrooms, closets or spaces used for similar purposes.</p>	<p>Section 1013.2 Egress shall not pass through kitchens, storerooms, closets or spaces used for similar purposes.</p>	<p>Sections 11.5.1.8 and 19.3.2.1 Exit access shall not pass through areas identified as hazardous area protection.</p>	<p>IBC and CBC meet the same level of protection. NFPA has different hazardous area examples.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.3.2 Access to Exits From Individual Floors. Every occupant on the first story shall have access to not less than one exit and not less than two exits when required by Table 10-A. Table 10-A requires two exits for sleeping rooms or treatment rooms of health care facilities when the number of occupants served is 7 or more.</p> <p>One exit is permitted on the second floor serving an ambulatory occupant load of less than 10.</p>	<p>Section 1018.1</p> <p>Section 1018.2 Only one exit shall be required in buildings per Table 1018.2 Group I occupancies, one-story, 10 occupants, 75 ft. travel distance.</p>	<p>Section 11.4.1.1 Two means of egress shall be provided from any balcony, story, mezzanine, with few exceptions.</p> <p>Section 19.2.4.1 Two exits from each floor or fire section of building.</p>	<p>CBC and NFPA provide a higher level of protection than NFPA and IBC.</p> <p>CBC and NFPA are more restrictive than the IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.3.3 From Individual spaces. All occupied portions of the building shall have access to not less than one exit or exit-access doorway. Access to not less than two exits, exit-access doorways or combination thereof shall be provided when the individual or cumulative loads served by a portion of the exit access is equal to or greater than that listed in Table 10-A. Table 10-A requires two exits for sleeping rooms or treatment rooms of health care facilities when the number of occupants served is 7 or more.</p> <p>Elevator lobbies may have access to only one exit or exit-access doorway provided the use of such exit or exit access doorway does not require special knowledge or effort for use.</p> <p>Storage rooms, laundry rooms, maintenance offices not exceeding 300 sq. ft. in area may have access to only one exit or exit-access doorway.</p>	<p>Section 1004.1.3 Where occupants from accessory spaces egress through a primary area, the calculated occupant load for the primary space shall include the total occupant load from the primary space plus the number of occupants egressing through it from the accessory space.</p>	<p>Section 19.2.4.1 Not less than two exits shall be provided for each floor area or fire section of the building.</p> <p>Section 19.2.4 Not less than one exit from each floor or fire section shall be one of the following: Door leading directly to the outside, stair, smokeproof enclosure, ramp, or exit passageway.</p>	<p>CBC and NFPA provide a higher level of protection than IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.3.4 Additional access to exits. Access to not less than 3 exits, exit-access doorways or combination thereof shall be provided when the individual or cumulative load served by the exit access is 501 to 1,000.</p> <p>Access to not less than 4 exits, exit-access doorways or combination thereof shall be provided when the individual or cumulative load served by the exit access exceeds 1,000.</p>	<p>Table 1018.1 Access to 3 exits for 501-1,000 occupants.</p> <p>access to 4 exits for more than 1,000 occupants.</p>	<p>Section 11.4.1.2 501 to 1,000 occupants 3 exits</p> <p>access to 4 exits for more than 1,000 occupants</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1004.2.4 Separation of exits or exit-access doorways. Where two or more exits or exit-access doorways are required from any level or portion of the building access doorways shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area served.</p>	<p>Section 1014.2.1 Separated by one-half diagonal dimension.</p> <p>With sprinkler protection separation shall not be less than 1/3 diagonal dimension</p>	<p>Section 11.5.1.4 Where two exits or exit access doors are required, they shall be separated by one-half the diagonal in non-sprinkler protected buildings.</p> <p>In sprinkler protected buildings the separation shall be not less than 1/3 the diagonal dimension.</p>	<p>IBC and NFPA have a lower level of protection than CBC.</p> <p>With sprinkler protection IBC and NFPA allow separation of exits to be minimum of 1/3 separation. CBC requires separation of 1/2 diagonal dimension with sprinklers or without sprinklers.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sections 1004.2.5.2 and 1007.5 Maximum Travel Distance. All portions of Group I-1.1 shall be within 200 ft. of an exit.</p>	<p>Section 1013.2.2 Travel distance between any point in a Group I-2 occupancy and an exit access door in the room shall not exceed 50 ft. The travel distance between any point in a suite of sleeping rooms and an exit access door of that suite shall not exceed 100 ft.</p> <p>The common path of travel shall not exceed 75 ft...</p> <p>Table 1015.1 exit access travel distance maximum 200 ft.</p>	<p>Section 19.2.6.2 Travel distance between any room door required as an exit access and an exit shall not exceed 150 ft.</p> <p>Section 19.2.6.2 Travel distance between any point in a room and an exit shall not exceed 200 ft.</p> <p>Section 19.2.6.2.3 Travel distance between any point in a health care sleeping room and an exit access door in that room shall not exceed 50 ft.</p> <p>Section 19.2.6.2.4 Travel distance between any point in a suite and an exit access door shall not exceed 100 ft.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.6 Dead Ends. Where more than one exit or exit-access is required, the exit access shall be arranged such that there are no dead ends in hallways and corridors more than 20 ft. in length.</p>	<p>Section 1016.3 Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 ft. in length.</p> <p>A dead-end corridor shall not be limited in lengths where the length of the dead end corridor is less than 2.5 times the least width of the dead-end corridor.</p>	<p>Section 19.2.5.10 Dead ends may not exceed 30 ft.</p>	<p>IBC meets the same level of protection as CBC.</p> <p>NFPA has a lower level of protection than CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sections 1004.3.3, 1004.3.3.3 and 1007.5.3 Hallways. Non-fire-resistive Hallways permitted for less than 7 occupants. Hallways serving any area caring for one or more non-ambulatory persons shall not be less than 8' in width. Ambulatory only: Not less than 44". If serving less than 50, not less than 36".</p> <p>The required width of hallways shall be unobstructed. Doors when fully opened may reduce the required width by not more than 7". Doors in any position shall not reduce required width by more than 1/2".</p>	<p>Section 1003.3.3 Projections up to 4 "between height of 27 "and 80 "above walking surface permitted into the clear width.</p> <p>Section 1005.2 Doors shall not project more than 7" into required width when fully open nor reduce the required width to less than 1/2 during the course of the swing</p>	<p>Sections 19.2.3.3, 19.2.3.4, A.19.2.3.3 and 11.3.2 Not less than 8' in width for hospitals or nursing homes. Not less than 6' for limited care facilities. Projections of 4-1/2" permitted on each side at a height lower than 38".</p> <p>Does not apply to exit access in a suite.</p>	<p>For hospitals and SNF's, CBC, IBC and NFPA meet same level of protection except for small difference in handrail projections: 3-1/2" for CBC, 4" for IBC and 4-1/2 " for NFPA</p>
<p>Section 1004.3.3.4 Hallway Openings. There is no restriction on quantity of openings into hallways, unless protection of openings is required by another section of code.</p>	<p>Not Addressed</p>	<p>Not Addressed</p>	
<p>Sections 1004.3.4.1 and 1007.5.4 Corridors General/Width. Corridors serving areas caring for one or more non-ambulatory persons shall not be less than 8' in width.</p>	<p>Section 1003.3.3 projections up to 4 "between height of 27" and 80" above walking surface permitted into the clear width.</p>	<p>Sections 19.2.3.3, 19.2.3.4, A.19.2.3.3 and 11.3.2 Not less than 8' in width for skilled nursing. Not less than 6' for limited care facilities. Projections of 4-1/2" permitted on each side</p>	<p>For hospitals and skilled nursing facilities, CBC, IBC and NFPA meet same level of protection except for small difference in handrail projections: 3-1/2 " for CBC, 4" for IBC and 4-1/2 " for NFPA</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Ambulatory only not less than 44". If serving less than 50, not less than 36".</p> <p>Width of corridors shall be unobstructed. Doors fully opened may reduce the required width by not more than 7".</p>	<p>Section 1005.2 Doors shall not project more than 7" into required width when fully open nor reduce the required width to less than one-half during the course of the swing</p> <p>Section 1016.2 The minimum width shall not be less than 44". The minimum width shall not be less than 36" with a required occupant capacity of 50 or less. The minimum width shall not be less than 96" in I-2 occupancy areas required for bed movement.</p>	<p>at a height lower than 38".</p> <p>Does not apply to exit access in a suite.</p>	
<p>Sections 1004.3.4.3, 1004.3.4.3.1 and 1007.5.4 Corridor Construction. Corridors serving an occupant load of 7 or more for an I-1.1 occupancy shall be fully enclosed by walls, a floor, a ceiling and permitted protected openings.</p> <p>The corridor shall be a one-hour fire-resistive enclosure at walls and ceiling. (See 1004.3.4.3.1 for discussion of</p>	<p>Section 1016.1 and Table 1016.1 Send user to section 407.2; which states corridors in I-2 occupancies shall be constructed as smoke partitions, which sends user to section 710.</p> <p>710. Smoke partitions are not required to have a fire-</p>	<p>Section 19.3.6.2 No fire resistance rating required for corridor walls. Shall resist the passage of smoke.</p> <p>Section 19.4.3.6 If in non sprinklered building,</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>“fire-resistive materials”) The floor is not required to be of fire-resistive construction unless required by another provision of code.</p> <p>Section 1007.5.4 Nurses stations protected by automatic sprinkler protection, constructed as required for corridors and waiting areas with direct visual supervision by staff, smoke detection system, non-obstructed access to exits constructed as required for corridors, need not be separated from corridors.</p>	<p>resistance rating. Smoke partitions shall extend from the floor to the underside of the floor or roof deck above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.</p> <p>Table 1016.1 Applies to all I-2 occupancies regardless of occupant load, sprinklers required in I-2.</p>	<p>walls shall be ½ hour rated, floor to underside of deck, and resist the passage of smoke.</p>	
<p>Section 1007.5.4 Corridors. In fully sprinklered buildings, door closers need not be installed on corridor doors to sleeping or treatment rooms.</p>	<p>Section 407.3.1 Corridor doors shall not have a required fire protection rating and shall not be required to be equipped with self- or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching.</p>	<p>Section 19.3.6.3 Doors shall be constructed to resist the passage of smoke. No fire rating required. No automatic closing device required unless the doors serves as a required exit or smoke partition. 19.3.6.4, Doors in non sprinklered buildings shall be rated 20 minutes, in labeled or steel frames, roller latches permitted to remain if they can resist a force of 5 lbf.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.4 Corridors. In fully sprinklered buildings, fixed fully tempered glass or laminated glass may be used in corridor walls provided the glazed area does not exceed 25 % of the area of the corridor wall of the room.</p>	<p>No glazing limits in smoke partitions.</p>	<p>No glazing limits in corridor walls.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>Section 1007.5.4 Corridors. In fully sprinklered buildings, the total area of glass in corridor walls is not limited when the glazing is fixed 1/4-” thick wired glass in steel frames and the size of the individual glazed panel does not exceed 1,296 sq. in.</p>	<p>Sections 407.3.1 > 715.3 No glazing limits in smoke partitions</p>	<p>No glazing limits in corridor walls.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.4 Corridors. In fully sprinklered buildings corridor doors other than those to laboratories with hazardous materials, laundries greater than 100 sq. ft., paint shops with hazardous materials physical plant maintenance shop, soiled linen room, storage rooms more than 100 sq. ft. for combustible materials trash collection rooms or for the enclosing of a vertical opening or an exit is not required to be fire-rated provided the doors are tight fitting smoke- and draft-control assemblies, with a gasket and positive latching.</p>	<p>Section 407.3.1 Corridor doors other than those in a wall required to be rated by other sections or for the enclosure of a vertical opening or an exit, shall not have a required fire protection rating and shall not be required to be equipped with self-closing or automatic closing devices</p>	<p>Section 19.3.6.3 Corridor doors not required to comply with NFPA 80, not required to be rated, closing devices not required, positive latching is required. 19.4.3.6.2 For non sprinklered buildings, 1-3/4 "solid core, 20 minute rating required. Frames shall be labeled or of steel construction.</p>	<p>IBC and NFPA provide less protection than the CBC in sprinklered buildings.</p> <p>NFPA addresses nonsprinklered existing buildings where the CBC and IBC do not.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.3.4.3.2.1 Corridor Doors. Doors that are required to open to a corridor in an I-1.1 occupancy shall be protected by a tight-fitting smoke- and draft-control assembly with a fire protection rating not less than 20 minutes.</p>	<p>Section 407.3.1 Corridor doors shall not have a required fire protection rating and shall not be required to be equipped with self- or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching.</p>	<p>Section 19.3.6.3 Corridor doors not required to comply with NFPA 80, not required to be rated, closing devices not required, positive latching is required. 19.4.3.6.2 For non sprinklered buildings, 1-3/4 "solid core, 20 minute rating required. Frames shall be labeled or of steel construction.</p>	
<p>Section 1004.3.4.3.2.2 Corridor Windows. Windows that are not addressed by Section 1007.5.4 opening to corridor walls are required to be protected by fixed glazing listed and labeled or marked for fire protection rating of not less than 45 minutes.</p> <p>The total area of windows in a corridor shall not exceed 25% of the area of a common wall with any room.</p>	<p>Sections 709.5, 715, 715.4, Table 715.4 45 minute window assembly required in one hour corridor walls. 715.4.7.2 Limited to 25 % of the area for a common wall with any room</p>	<p>Table 8.7.2 Fire barriers</p>	
<p>Sections 1004.3.4.3.2.3, 713.10 and 713.11 Duct Openings. Combined smoke/fire dampers are required for duct openings in corridors.</p>	<p>708.9 and 1016.1</p>		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.3.4.4 Intervening Rooms. Corridors shall not be interrupted by intervening rooms, except foyers, lobbies or reception rooms constructed as required for corridors.</p>	<p>Section 1016.5 Fire-resistance rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms. Foyers, lobbies, or reception rooms constructed as required for corridors shall not be construed as intervening rooms.</p> <p>(Does not apply, corridors not required to be fire-resistance rated in I-2)</p>	<p>Section 19.2.5.9 Corridors shall not pass through any intervening room other than corridors or lobbies.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1004.3.4.5 Elevators. Elevators opening into a corridor shall be provided with an elevator lobby.</p>	<p>Section 707.14.1 Elevator lobbies shall be provided when opening to lobby.</p>	<p>Section 11.2.13.3 On every floor served by an elevator there shall be a lobby. One hour smoke barrier.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.2.1 Separation of exits. Separated by one-half the diagonal of the area served.</p>	<p>Section 1014.2.1 Separated by one-half the diagonal of area served. If automatic sprinklers installed separate by one-third diagonal.</p>	<p>Section 11.5.1.4 Separated by one-half the diagonal, with sprinklers separated by one-third diagonal</p>	<p>IBC and NFPA have a lower level of protection than CBC.</p>
<p>Section 1005.2.3 Travel Through Intervening Rooms. Exits shall not be interrupted by intervening rooms. Horizontal exits may lead to exit-access elements. In I-1.1 nursing homes, a maximum of 50 % of the exits may pass through a street floor lobby, provided the street floor is protected with an automatic sprinkler system.</p>	<p>Section 1018.3 Exits shall be continuous from the point of entry into the exit to the exit discharge.</p>	<p>Section 11.1.3.2.2. An exit enclosure shall provide a continuous protected path to discharge.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.1 Exit Enclosures General. Interior stairways, ramps or escalators shall be enclosed. No exception for I occupancies for these elements serving only one adjacent floor.</p>	<p>Section 707.2 Vertical enclosure required. No exception for I-2</p>	<p>Sections 19.3.1 and 8.12 Allow penetrations with a communicating floor.</p>	<p>NFPA has a lower level of protection than CBC. IBC meets the same level of protection as CBC.</p>
<p>Section 1005.3.3.2 Exit Enclosures Construction. In buildings other than Type I or II construction and buildings less than four stories, the exit enclosure shall not be less than one hour fire-resistive construction.</p>	<p>Section 1019.1 Exit enclosures shall have a fire-resistance rating of not less than 1 hour where connecting less than four stories.</p>	<p>Sections 11.2.2.5.1 and 11.1.3.2 One hour for 3 stories or less; 2 hours for four or more stories</p>	<p>IBC and NFPA have a lower level of protection than the CBC. IBC and NFPA would allow a one hour enclosure for non-combustible and fire-resistive buildings 3 stories or less, while the CBC would require 2 hour enclosures for this condition (I and II const.)</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.2 Exit Enclosures Construction. In buildings of Type I or II construction and buildings four or more stories in height, the enclosure shall not be less than two hours fire-resistive construction.</p>	<p>Section 1019.1 Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four or more stories.</p>	<p>Sections 11.2.2.5.1 and 11.1.3.2 One hour for 3 stories or less; 2 hours for four or more stories</p>	<p>IBC and NFPA have a lower level of protection than the CBC. IBC and NFPA would allow a one hour enclosure for non-combustible and fire-resistive buildings 3 stories or less, while the CBC would require 2 hour enclosures for this condition (Type I and II const.)</p>
<p>Section 1005.3.3.3 Extent of Enclosure. Exit enclosures shall be continuous and fully enclose all portions of the stairway or ramp, exit directly to the exterior of the building or shall include an exit passageway on the ground floor leading to an exterior door. In Group I-1.1 nursing homes a maximum of 50 % of the exit may pass through a street floor lobby provided the entire street floor is protected with an automatic sprinkler system.</p>	<p>Section 1003.6 Path of egress shall not be interrupted</p>	<p>Section 11.1.3.2.2 Exit enclosure shall provide a continuous protected path of travel to an exit discharge.</p>	<p>IBC and NFPA meet the same level of protection as the CBC.</p>
<p>Section 1005.3.3.4 Stairway Barrier. A stairway continuing below grade level shall include a barrier to prevent persons from accidentally continuing to the basement.</p>	<p>Section 1019.1.6 Stairs continuing require a barrier</p>	<p>Section 11.7.3 Stairs continuing beyond floor of discharge require a barrier.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.5 Stairway openings and penetrations. Openings in an exit enclosure are limited to those necessary for egress from normally occupied areas and those necessary for egress from the enclosure.</p>	<p>Section 1019.1 Openings in exit enclosures other than unexposed exterior openings shall be limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the enclosure.</p>		
<p>Section 1005.3.3.5 Stairway openings and penetrations. One-hour door assemblies are required for a one-hour exit enclosure. Doors shall be self- or automatic closing.</p>	<p>Table 715.3 One-hour door assembly required in one-hour fire barrier for stair shaft.</p>	<p>Table 8.7.2 45-minute door in one-hour stair</p>	<p>IBC meets the same level of protection as CBC. NFPA has a lower level of protection than CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.5 Stairway openings and penetrations. Penetrations into or through an exit enclosure are prohibited except for those serving the exit enclosure such as duct work for stairway pressurization, sprinkler/standpipe piping, and electrical conduit terminating in maximum 16 sq. in. junction boxes. Penetrations and communicating openings between exit enclosures is not permitted.</p>	<p>Section 1019.9 Penetrations into and openings through an exit enclosure are prohibited except for required exit doors, equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for FD communication and electrical raceway serving the enclosure and terminating in a steel box not exceeding 16 sq. in. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.</p>	<p>Section 11.1.3.2 Limits penetrations to equipment serving exit enclosure</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.5 Stairway openings and penetrations. 90-minute door assemblies are required for a two-hour exit enclosure. Doors shall be self- or automatic-closing.</p>	<p>Table 715.3 90-minute door assembly required in two-hour fire barrier for stair shaft.</p>	<p>Table 8.7.2 90-minute doors for two-hour stair.</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1005.3.3.6 Use of Space Under Stairway or Ramp. There shall not be enclosed useable space under stairways or ramps in an exit enclosure. The open space under such stairways shall not be used for any purpose.</p>	<p>Section 1019.1.5 No useable space beneath stairway unless separated by same rating as stair enclosure</p>	<p>Section 11.2.2.5.3 No useable space beneath stairway unless separated by same rating as stair enclosure.</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.3.7 Pressurized Enclosure. In high-rise buildings all required exit enclosures shall be pressurized. Pressurized enclosures shall be provided with a pressurized entrance vestibule. Vestibules shall have two-hour fire-resistive walls, floors, and ceilings. The door from the building into the vestibule shall be not less than 90-minutes fire-resistance. The door from the vestibule to exit enclosure shall be not less than 20-minutes fire-resistance and be a tight fitting smoke and draft control assembly.</p>	<p>Section 1019.8 Smokeproof enclosures.</p> <p>Two hour enclosure.</p> <p>Access by way of vestibule or exterior balcony.</p> <p>Section 1019.1.3 Ventilation. Ductwork separation requirements from rest of building.</p> <p>Pressurized enclosures addressed in section 909.20</p>	<p>Section 11.2.3 Two hour enclosure. If a vestibule stair door 20 minutes, vestibule door 90-minutes.</p> <p>Access by vestibule or balcony.</p>	<p>IBC and NFPA provide a higher level of protection than CBC.</p> <p>CBC no longer addresses smokeproof enclosures.</p> <p>IBC and NFPA have similar requirements, and pressurization is an option for smokeproof enclosures.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.4.2 Exit passageways Width. In I-1.1 occupancies shall have a clear width of not less than 44 ". There shall be no projections in the clear width to a height of 80 "above the walking surface.</p> <p>The required width of hallways shall be unobstructed. Doors when fully opened may reduce the required width by not more than 7 ".</p>	<p>Section 1005.2 Doors shall not project more than 7 " into required width when fully open nor reduce the required width to less than one-half during the course of the swing</p> <p>Section 1020.2 Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 "on each side.</p> <p>Section 1020.2 Width shall not be less than 44", except that exit passageways serving less than 50 shall not be less than 36".</p>	<p>Section 19.2.2.7 and 11.2.6 Width adequate to accommodate the aggregate required capacity of all exits that discharge through it.</p>	<p>CBC provides a higher level of protection than NFPA and IBC. IBC has a lower level of protection than CBC. Projections into the minimum required width are permitted up to 1.5 "on each side.</p> <p>NFPA does not specify minimum width of exit passageways, but rather relies on other components of egress leading to the exit passageway.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.4.3 Exit Passageway Construction. Exit passageways less than 400 ft. in length shall have walls, floors, and ceilings of not less than one-hour fire resistive construction. Exit passageways 400 ft. or more in length shall have walls floors and ceilings of not less than two-hour fire-resistive construction.</p>	<p>Section 1020.3 Exit passageway enclosures shall have walls, floor, and ceilings of not less than 1-hour fire-resistance rating and not less than required for any connecting exit enclosure. Exit passageways shall be constructed as fire barriers.</p>	<p>Section 11.2.6.2, 11.1.3.2.1 and 8.4 Not less than one-hour construction where the exit connects three stories or less. Not less than two-hour construction where the exit connects four or more stories. 11.2.6.3 Not less than same fire-resistance rating as any connecting exit enclosure.</p>	<p>NFPA and IBC meet the same level of protection as CBC. Except if an exit passageway is 400 ft. or more and not connecting an exit enclosure serving four or more stories, than the CBC has a higher level of protection than IBC or NFPA.</p>
<p>Section 1005.3.4.4 Exit Passageway Openings and Penetrations. Openings in an exit passageway shall be limited to those necessary for egress from normally occupied areas and those necessary for egress from the enclosure. Elevators shall not open into an exit passageway.</p>	<p>Section 1020.4 Openings in exit passageways other than those unexposed exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway. Elevators shall not open into an exit passageway.</p>	<p>Section 11.1.3.2 Limits penetrations to equipment serving exit enclosure</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>
<p>Section 1005.3.4.4 Exit Passageway Openings and Penetrations. One-hour door assemblies are required for a one-hour exit passageway.</p>	<p>715 one-hour doors for one-hour enclosure. 715 90-minute door for two hour enclosure</p>	<p>Section 8.4 and Table 8.7.2 Openings in one-hour construction, 45-minutes fire-resistance. Openings in two-hour construction 90-minutes</p>	<p>IBC meets same level of protection as CBC. NFPA has a lower level of protection than CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>90-minute door assemblies are required for a two-hour exit passageway. Doors shall be self- or automatic closing.</p>			
<p>Section 1005.3.4.4 Exit Passageway Openings and Penetrations. Penetrations into or through an exit enclosure are prohibited except for those serving the exit passageway such as duct work for stairway pressurization, sprinkler/standpipe piping, and electrical conduit terminating in maximum 16 sq. in. junction boxes.</p>	<p>Section 1020.5 Penetrations into or through an exit passageway are prohibited except for those serving the exit passageway such as duct work for stairway pressurization, sprinkler/standpipe piping, and electrical conduit terminating in maximum 16 sq. in. junction boxes. Penetrations and communicating openings between exit passageways is not permitted.</p>	<p>Section 11.1.3.2 Limits penetrations to equipment serving exit enclosure</p>	<p>IBC and NFPA meet the same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 1005.3.4.5 Exit Passageway Intervening Rooms. Exit passageways shall not be interrupted by intervening rooms.			
Section 1005.3.4.6 Exit Passageway Dead Ends. Where an exit passageway is used and more than one exit is required, exit doors shall be arranged so that it is possible to go in either direction from any point in the exit passageway to a separate exit door, except for dead ends not exceeding 20 ft. in length.			

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.5 Horizontal Exits. A horizontal exit shall not serve as the only exit from the exit access. Where two or more exits are required from the exit access, not more than one half the total number of exits or total exit width may be provided by horizontal exits.</p>	<p>Section 1021.1 Similar to CBC</p> <p>Exception reads:</p> <p>Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.</p>	<p>Section 19.22.5.2 Horizontal exits may be two-thirds of required exits in Health Care Facilities.</p>	<p>CBC provides a higher level of protection than NFPA and IBC. NFPA and IBC have a lower level of protection. NFPA and IBC allow two-thirds of required exits to be horizontal exits. CBC allows only one half the total number of exits to be horizontal exits.</p>
<p>Section 1005.3.5.2 Horizontal Exits, Construction. Walls shall be not less than two-hour fire-resistance and extend from exterior wall to exterior wall and from floor to underside of floor or roof above. Structural support shall be of equivalent fire-resistance.</p>	<p>Section 1021.2 Two-hour walls continuous from exterior wall to exterior wall The horizontal exit separation shall extend vertically through all levels of the building, unless floor assemblies are of 2-hour fire-resistance with no unprotected openings. A horizontal exit wall is not required at horizontal exits between a building and pedestrian walkway provided that the distance between connected buildings is more than 20 ft...</p>	<p>Section 11.2.4.3 Two hour walls, continuous to ground, except when floor and other supporting and separating members are same degree of fire-resistance as horizontal exit</p>	<p>No significant differences.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1005.3.5.4 Horizontal Exits, Refuge Area. The floor area of the exit access to which a horizontal exit leads (area of refuge) shall be of sufficient size to accommodate 100 % of the occupant load of the exit access from which refuge is sought, plus 100 % of the normal load of the exit access serving as the refuge areas. The capacity shall be determined by allowing a net 15 sq. ft. floor area for ambulatory occupants and 30 sq. ft. floor area for nonambulatory occupants in I-1.1 occupancies.</p> <p>The exit access design of the refuge area shall be based upon the normal occupant load of the area and need not consider the increased load of persons entering the refuge area.</p>	<p>Section 1021.4 Similar to CBC, requirements for I-2 same as CBC, skilled nursing and intermediate care.</p> <p>One change: The anticipated load from the adjoining compartment shall be based upon the capacity of the horizontal exit doors (rather than 100 % of load seeking refuge)</p>	<p>Section 19.2.2.5.1 The refuge area capacity shall be based upon one person per 30 square ft. in a skilled nursing facility and one person per 15 square ft. in a limited care facility.</p>	<p>IBC meets the same level of protection as the CBC.</p> <p>NFPA has a lower level of protection, since the capacity of refuge area for a limited care facility with non-ambulatory occupants would only be one person per 15 square ft., while the CBC would require one person per 30 square ft..</p>
<p>Section 1006.2.1 Exit Discharge, Location. The exit discharge shall be at grade or shall provide direct</p>	<p>Section 1023 Exit discharge shall be at grade or provide direct access to grade. The exit</p>	<p>Sections 19.2.7 and 11.7.2 Not more than 50 % of exits may discharge through areas on level of exit</p>	

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>access to grade. The exit discharge shall not reenter the exit access.</p> <p>Exterior stairways, balconies and ramps shall not be located in areas where building openings are prohibited.</p>	<p>discharge shall not reenter the building.</p> <p>There are two exceptions that allow a maximum of 50 % of occupants to reenter the building with appropriate fire-resistive construction and/or sprinkler protection</p> <p>Section 1022.2 Exterior exit ramps and stairways shall not be used as an element of a required means of egress for occupancies in Group I-2.</p>	<p>discharge if level is protected with sprinklers and separated with fire-resistance meeting requirement for enclosure of exits.</p> <p>Exits shall terminate at public way or at an exterior exit discharge.</p>	
<p>Section 1006.2.2 Where the exit from a building discharges at other than grade level, there shall be not less than two separate paths of exit travel to grade level. Such paths shall be so arranged so that there are no dead ends more than 20 ft. in length. Where the occupant load served is less than 10, one path of exit travel to grade is permitted.</p>			

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.2.3 Exit Discharge, Travel Distance. Travel distance in the exit discharge at grade level shall not be limited. For travel distance of the exit discharge at other than grade level - without sprinkler protection throughout shall not exceed 200 ft. -with sprinkler protection throughout shall not exceed 250 ft...</p>			
<p>Section 1006.3.2 Exterior Exit Balconies. Exterior exit balconies serving any area caring for one or more non-ambulatory persons shall not be less than 8 ft. in width.</p> <p>Ambulatory only: Not less than 44 ". If serving less than 50, not less than 36 ".</p> <p>The required width of exterior exit balconies shall be unobstructed. Doors when fully opened may reduce the required width by not more than 7 ".</p>	<p>Section 1003.3.3 Projections up to 4 "between height of 27 "and 80 "above walking surface permitted into the clear width.</p> <p>Section 1005.2 Doors shall not project more than 7 " into required width when fully open nor reduce the required width to less than one-half during the course of the swing</p> <p>Section 1013.5 Width of balconies shall comply with requirements for corridors in section</p>	<p>Not Found</p>	

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>1016.2 The minimum width shall not be less than 44". The minimum width shall not be less than 36" with a required occupant capacity of 50 or less. The minimum width shall not be less than 96" in I-2 occupancies required for bed movement.</p>		
<p>Section 1006.3.2.3 Exterior Exit Balconies, Construction. Walls of exterior exit balconies of Group I occupancies serving an occupant load of 7 or more shall not be less than one-hour fire-resistive construction and ceilings shall not be less than that required for a one-hour fire-resistive floor or roof system, except the exterior sides of exterior exit balconies.</p>	<p>Section 1013.5.1 Exterior egress balconies shall be separated from the interior of a building by walls and opening protectives as required for corridors.</p> <p>Section 1016.1 and Table 1016.1 Send user to section 407.3; which states corridors in I-2 occupancies shall be constructed as smoke partitions which sends user to section 710.</p> <p>Section 710. Smoke partitions are not required to have a fire-resistance rating. Smoke partitions shall extend from the floor to the underside</p>	<p>Section 11.5.3.3 Interior walls as required for corridors</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	of the floor or roof deck above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.		
<p>Section 1006.3.2.4 Exterior Exit Balconies, Openness. The long side of an exterior exit balcony shall be at least 50 % open, and the open area above the guardrail shall be distributed to prevent the accumulation of smoke or toxic gases.</p>	<p>Section 1013.5.2 The long side of an egress balcony shall be at least 50 % open, and the open area above the guards shall be so distributed to minimize the accumulation of smoke or toxic gases.</p>	<p>Section 11.5.3.2 The long side shall be 50 % open, and prevent accumulation of smoke</p>	<p>IBC and NFPA meet same level of protection as CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.3.3.1 Exterior Exit Stairways. There shall be no enclosed useable space under exterior exit stairways. The open space under exterior exit stairways shall not be used for any purpose.</p>	<p>Section 1022.2 Exterior exit ramps and stairways shall not be used as an element of a required means of egress for occupancies in Group I-2.</p>	<p>Not found</p>	<p>IBC provides more protection than the CBC and NFPA.</p>
<p>Section 1006.3.3.3 Exterior Exit Stairways, Protection of Exterior Wall Openings. All openings in the exterior wall below and within 10 ft., measured horizontally, of an exterior exit stairway serving a building over two stories in height shall be protected by fixed or self-closing fire assemblies of no less than 45 minutes fire-resistance rating. Openings may be unprotected where two separated exterior stairways are served by a common exterior exit balcony.</p>	<p>Section 1022.2 Exterior exit ramps and stairways shall not be used as an element of a required means of egress for occupancies in Group I-2.</p>	<p>Section 11.2.2.7.3 Separate from interior building by equivalent fire rating of enclosed stairs with opening protection.</p>	
<p>Section 1006.3.4.2 Exterior Exit Ramps, Construction. There shall be no enclosed useable space under exterior exit ramps. The open space under exterior exit ramps shall not be used for any purpose</p>	<p>Section 1022.2 Exterior exit ramps and stairways shall not be used as an element of a required means of egress for occupancies in Group I-2.1019.5 There shall be no enclosed useable space under exterior stairways unless the space</p>		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	is completely enclosed in 1 hour fire-resistive construction. The open space under exterior stairways shall not be used for any purpose.		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.3.4.3 Exterior Exit Ramps, Protection of Exterior Wall Openings. All openings in the exterior wall below and within 10 ft., measured horizontally, of an exterior exit ramp serving a building over two stories in height shall be protected by fixed or self-closing fire assemblies of no less than 45 minutes fire-resistance rating. Openings may be unprotected where two separated exterior stairways are served by a common exterior exit balcony.</p>	<p>Section 1022.2 Exterior exit ramps and stairways shall not be used as an element of a required means of egress for occupancies in Group I-2.</p>		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.3.5.2 Exit Courts, Width. The width of exit courts shall not be less than 44".</p> <p>The required width of exit courts shall be unobstructed to a height of 7'.</p> <p>The required width of exit courts shall be unobstructed. Doors when fully opened may reduce the required width by not more than 7".</p>	<p>Section 1005.2 Doors shall not project more than 7" into required width when fully open nor reduce the required width to less than ½ during the course of the swing</p> <p>Section 1023.5.1 Width of court not less than 44". Unobstructed to a height of 7 ft.</p>	<p>Section 11.7.1 Courts shall be of required width and size to provide all occupants with a safe access to public way.</p>	<p>IBC and CBC meet the same level of protection.</p> <p>NFPA is vague and appears to provide less protection.</p>
<p>Section 1007.5.5 Exterior Exit Doors. All required exterior exit doors shall open in the direction of exit travel regardless of the occupant load served.</p>	<p>1008.1.2 Swing in direction of travel required when serving 50 or more.</p>	<p>19.2.2.2.1, Swing in direction of travel when occupant load is 50 or more.</p>	<p>CBC provides a higher level of protection than NFPA and IBC. IBC and NFPA have a lower level of protection than CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1006.5.3 Exit Courts, Construction and Openings. An exit court serving a building or portion thereof having an occupant load of 10 or more is less than 10' in width, the exterior court walls shall be not less than one-hour fire-resistance for a distance of 10' above the floor of the court and all openings protected with 45-minute assemblies.</p>	<p>Section 1023.5.2 If less than 10' wide walls shall be one-hour for a height of 10' with 45-minute openings; when serving 10 or more occupants.</p> <p>Similar to CBC</p>	<p>Section 11.7.1 Courts shall be of required width and size to provide all occupants with a safe access to public way.</p>	<p>IBC and CBC meet the same level of protection.</p> <p>NFPA is vague and appears to provide less protection.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.1 Minimum Size of Means of Egress. The clear width of the means of egress serving bed or litter patients shall be such to allow the ready passage of beds, gurneys, and similar equipment, but shall not be less than 44". Other aisles shall have a clear width of not less than 32". With ceilings not less than 8' from finished floor.</p>	<p>Section 1003.2 Ceilings required to be minimum of 7 ft.</p>	<p>Sections 19.2.1 and 11.1.5 Ceilings required to be 7' – 6"</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.7 Ramps. When the first story of I-1.1 occupancies is at other than grade level, such occupancies housing nonambulatory patients shall have a ramp leading from the first story to the exterior of the building at grade level.</p>			
<p>Section 1007.5.8 Hardware. Exit and exit-access doors serving an area of 50 or more shall not be provided with a latch or lock unless it is panic hardware. Patient room doors shall be readily openable from either side without the use of keys.</p> <p>In nursing homes, locking devices, when approved, may be installed at patient sleeping rooms. Devices are to be readily openable from the patient room side, are readily operable by the facility staff. Where key locks are used on patient room doors, keys shall be located on the floor involved</p>	<p>Section 1008.1.8.3 Panic hardware not required for hospitals</p>	<p>Section 19.2.2.2.1 Panic hardware not required in Health Care Occupancies</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>IBC and NFPA have a lower level of protection than CBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.9 Suites. A group of rooms in an I-1.1 occupancy may be considered a suite when it complies with the following: suites without patient rooms shall not exceed 10,000 sq. ft.; suites with patient rooms shall not exceed 5,000 sq. ft.; each suite of rooms shall be separated from the remainder of the building by no less than a one-hour occupancy separation. Each patient room in the suite shall be located to permit direct visual supervision by staff. Exits for portions of the building outside the suite shall not pass through the suite.</p>	<p>Section 1013.2.2 Suites of sleeping rooms shall not exceed 5,000 sq. ft. Suites of rooms other than patient sleeping rooms shall not exceed 10,000 sq. ft. Any</p>	<p>Section 19.2.5 Complying suites may be subdivided with non-fire-rated, non-combustible partitions.</p> <p>Section 19.2.5.5 Intervening rooms shall not be hazardous area.</p> <p>Section 19.2.5.6 Sleeping room suites shall not exceed 5,000 sq. ft.</p> <p>Section 19.2.5.7 Suites other than patient sleeping rooms shall not exceed 10,000 sq. ft.</p> <p>Section 19.2.5.8 For non-patient sleeping rooms, one intervening room permitted in suites if the travel distance does not exceed 100 ft. or two intervening rooms where the travel distance within the suite does not exceed 50 ft.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>IBC and NFPA have the same level of protection.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.9.3 Suites, Travel Through Adjoining Room. Rooms within suites may have access to exits through one adjoining room if there is not more than 100 ft. of travel distance within the suite to and exit or to a corridor that provides direct access to an exit. Rooms other than patient sleeping rooms may access exits through two adjoining rooms where there is not more than 50 ft. of travel distance within the suite to an exit or to a corridor that provides direct access to an exit. Other portions of the exit access shall not pass through suites.</p>	<p>Section 1013.2.2 Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to an exit access corridor, except: Rooms with exit doors opening directly to the outside at ground level patient sleeping rooms are permitted to have one intervening room if the intervening room is not used as an exit access for more than 8 patient beds. Special nursing suites are permitted to have one intervening room where design allows for direct and constant visual supervision. For rooms other than patient sleeping rooms, suites of rooms are permitted to have one intervening room if the travel distance within the suite to the exit access door is not greater than 100 ft. and are permitted to have two intervening rooms where the travel distance within the suite to</p>	<p>Section 19.2.5.1 Exit access from a suite may pass through one intervening room for sleeping rooms. For other than sleeping rooms may exit access may pass through two intervening rooms.</p> <p>Section 19.2.5.2 Suites more than 1000 sq.ft. shall have not less than two remotely located exit access doors for patient rooms.</p> <p>Section 19.2.5.3 For non-sleeping rooms two exit access doors are required when more than 2500 sq. ft.</p> <p>Section 19.2.5.8 For non-patient sleeping rooms, one intervening room permitted in suites if the travel distance does not exceed 100 ft. or two intervening rooms where the travel distance within the suite does not exceed 50 ft...</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>an exit access door is not greater than 50 ft..</p> <p>Suites of sleeping rooms shall not exceed 5,000 sq. ft. Suites of rooms other than patient sleeping rooms shall not exceed 10,000 sq. ft. Any patient sleeping room or any suite that includes patient sleeping rooms, of more than 1,000 sq. ft. shall have at least two exit access doors remotely located from each other. The travel distance between any point in a Group I-2 occupancy and an exit access door in the room shall not exceed 50 ft. The travel distance between any point in a suite of sleeping rooms and an exit access door of that suite shall not exceed 100 ft.</p>		

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.10 Exit Access Through Adjoining Rooms. In I-1.1 occupancies every patient sleeping room or treatment room shall have an exit access door leading directly to an exit corridor.</p> <p>Exception for ante rooms and rooms within suites.</p>			
<p>Section 1007.5.11 Swing of Patient Room Doors. Entrance doors to patient bedroom doors from corridors shall not swing into the required width of the corridor in I-1.1 occupancies.</p>	<p>Section 1005.2 Permits all doors to swing into the corridor up to one half the required width.</p>	<p>Section 11.2.1.4.2 Doors shall swing in direction of exit travel when serving 50 or more, part of an exit enclosure, or high hazard.</p>	<p>CBC provides more protection than NFPA and IBC.</p>

I OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 1007.5.12 Fences and Gates. Fenced and locked gate safe dispersal areas are permitted when not less than 50 ft. from buildings. Sized at 3 person per square ft. for ambulatory occupants and 20 persons per square ft. for non-ambulatory occupants. The aggregate clear width shall be based upon not less than one exit unit of 22 " for each 500 persons accommodated and not exit shall be less than 44 " .	Not addressed	Not addressed	CBC provides a higher level of protection than NFPA and IBC.

I OCCUPANCIES

Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 901 referenced to Section 308.9 Basic Requirement An approved automatic and manual fire alarm system shall be provided for all Group I- Division 1.1, 1.2, 2 and 3 Occupancies.</p>	<p>Section 407.6 Basic Requirement Corridors in Nursing homes, ICF and Detoxification facilities and spaces permitted to have openings in the corridor by section 407 shall be protected by an automatic fire detection systems installed in accordance with section 907.</p>	<p>Section 19.3.4.1 Basic Requirement Health care occupancies shall be provided with a fire alarm system in accordance with Section 55.2. (A fire alarm system shall be installed in accordance with the applicable requirements of Chapter 52 and NFPA 72®, National Fire Alarm Code.)</p>	<p>The CBC provides a higher level of protection.</p> <p>The IBC and NFPA treat the occupancies very differently. Some of the occupancies move into difference classifications where different requirements apply. The California Code, with all of the state amendments, is the more restrictive overall.</p>
<p>Section 308.10 Smoke detectors Required in all I- occupancies and patient sleeping areas.</p>	<p>Section 407.6 Required in corridors of Nursing homes, ICF and detoxification facilities.</p>	<p>Section 21.3.4.4 Detection. An approved automatic smoke detection system shall be installed in accordance with Section 55.2, throughout all resident sleeping areas and adjacent day rooms, activity rooms, or contiguous common spaces.</p> <p>Section 21.3.4.4.1 Smoke detectors shall not be required in sleeping rooms with four or fewer occupants.</p> <p>Section 21.3.4.4.3 Detectors not required in open dormitories where staff is</p>	<p>CBC provides a higher level of protection.</p>

I OCCUPANCIES

Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>present in the dormitory whenever the dormitory is occupied. The CBC is more restrictive</p>	
<p>Section 901 Scope See Section 308.9 basically a repeat of the above mention sections Refers to Chapter 35 which gives NFPA 72 1996 as the standard with local modifications in other section of the code such as chapter 10.</p>	<p>Section 907 General Section 907.1 This section covers the application of installation, performance and maintenance of fire alarm systems and their components.</p>	<p>Section 55.2.1.2 A fire alarm system shall be installed in accordance with the applicable requirements of Chapter 52 and NFPA 72®, National Fire Alarm Code.</p>	<p>CBC provides a higher level of protection.</p>

I OCCUPANCIES

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 904.2.7 Group I occupancies Sprinkler protection Sprinkler protection is required in Group I occupancies.</p> <p>For jails and prisons a dry manually operated valve is permitted. Exception to requirement for sprinklers: hospital, children's home, children's nursery or institution, or a home or institution for the aged or senile or any sanitarium or institution for insane or mentally retarded and any nursing or convalescent home for six or less occupants.</p> <p>Home or institution for all ambulatory and not mentally disturbed children sprinklers not required if two stories or less and detection is provided.</p> <p>Institution or home for the aged for less than six occupants, one-story, fire alarm system sprinklers not required. Sprinklers not required in detention facilities where inmates are not restrained.</p>	<p>903.2.5 Automatic sprinkler protection is required throughout buildings with a Group I occupancy.</p>	<p>19.3.5 Sprinkler protection is required throughout all (non-ambulatory) Health Care occupancies. In Type I and Type II construction alternative protection measures may be permitted with AHJ approval</p> <p>20.3.5.1 Sprinkler protection required in ambulatory health care buildings (this is group R in CBC) for buildings two or more stories in height of Type II (000), Type III (200) or Type V (000) construction.</p> <p>21.3.5.3 Sprinkler protection is required throughout all Detention and Correctional Occupancies except where free movement and access to the means of egress is permitted.</p>	<p>The CBC provides a higher level of protection than IBC or NFPA.</p>

I OCCUPANCIES

Fire Protection Systems- Fire Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.5.2 Standpipes. Where required. Table 9-A. Class I standpipe required in buildings four or more stories in height with sprinkler protection.</p> <p>Without sprinkler protection sprinklers required when building is four or more stories Class III standpipe required.</p> <p>Without sprinkler protection, less than 4 stories but greater than 20,000 sq. ft. per floor, Class II standpipe required.</p>	<p>905.3.1 Assuming automatic sprinkler protection throughout, Class I standpipe system is required in building located more than 30 feet above the lowest level of fire department access or more than 30 feet below the highest level of fire department vehicle access.</p>	<p>19.3.5.6 A Class I standpipe is required in (non-ambulatory) Health Care Occupancies when an occupiable area is more than 200 feet from FD vehicle access when non-sprinkler protected or an occupiable floor level is more than 30 feet above or below level of Fire Department Access.</p> <p>20.3.5.4 For ambulatory health care Class I standpipe required in buildings four or more stories in height or having four or more basement levels.</p> <p>21.3.5.5.1 A Class I standpipe system shall be provided when a minimum of one floor level is more than 30 feet above or below the level of Fire Department access, any point in a building is more than 200 feet from its nearest point of fire department entry, or building is four or more stories in height or has four or more basement levels.</p>	<p>No significant difference.</p>

I OCCUPANCIES

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>308.8 Special Hazard Table 3-C Specific Use Separation</p> <p>Labs 1 hr Laundries >100sf 1hr Paint shops 1hr</p> <p>Maint. Shop 1hr Soiled Linen 1hr Storage>100sf 1hr Trash Collection 1hr</p>	<p>Table 302.1.1 Incidental Use Area</p> <p>Labs 1hr or Sprk Laund. 1hr or Sprk Paint shop 2hr - 1hr w/sprinklers Maint. Shop No req. Linen >100sf 1hr or Storage No req. Waste >100sf 1hr or non rated w/ sprk.</p>	<p>Table 19.3.2.1 Hazardous area protection</p> <p>1hr no req. 1hr</p> <p>1hr 1hr 1hr 1hr</p>	<p>The CBC and NFPA provide more protection than the IBC.</p>
<p>410 – Medical gas Systems in Groups B and I Occupancies</p> <p>When non-flammable gas cylinders are located inside buildings, they shall be in a separate room, separated from the rest of the building by not less than 1-hour construction with 1-hour smoke and draft control doors. Provide either an exterior wall with high and low vents or sprinkler the room, vent the room to the exterior through a 1-hour shaft and provide mechanical ventilation of 6 air changes per hour.</p>	<p>No Requirements</p> <p>Chapter 415 addresses only flammable gasses. The IBC has adopted a number of test and national standards however; there is nothing in the IBC, which addresses medical gas system installation, testing or certification.</p>	<p>19.3.2.4 Medical gas systems shall comply with NFPA 99.</p>	<p>CBC provides more protection.</p> <p>CBC requirements are not found in either IBC or NFPA.</p>

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.2.1 Occupant load factor I-2 Sec.1003.2.2.1 Table 10-A Children home two exits required at 10 occupants and 80 Sq. Ft.</p>	<p>Section 1004.1 Occupant load factor B- Occupancies. 100 Sq. Ft. Requires two exits at 50 occupants.</p>	<p>Section 11.3.1.2 Occupant load factor 20.2.4.2 Any room, or any suite of rooms, of more than 2500 ft² (230 m²) shall have not less than two exit access doors remotely located from each other. 240 Sq. Ft. per occupant.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>Section 1003.2.2.1 Second exit Table 10-A I-2 Healthcare facilities 7 for sleeping rooms or treatment rooms. 120 sq. ft. for sleep room and 240 for treatment.</p>	<p>Section 1014.1 Second exit B- Occupancies Occupant load of 50 in B occupancy class. Need two exits</p>	<p>Section 20.2.4.1 Second exit 20.2.4.1 Not less than two exits of the types described in 28.2.2 that are remotely located from each other shall be provided for each floor or fire section of the building. 20.2.4.2 Any room, or any suite of rooms, of more than 2500 ft² (230 m²) shall have not less than two exit access doors remotely located from each other.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>Egress Width Section 1003.2.3.2 I-2 Egress width Stairs 0.4 other egress components 0.2</p>	<p>Egress Width Section 1005.1 B-occupancy 0.3 for stairs and 0.2 for other egress components without sprinklers; 0.2 for stairs and 0.15 for other egress components in sprinklered buildings</p>	<p>Egress Width Section 11.3.3.1 Health care Facilities sprinklered Stairs 0.3” Other components 0.2 Health care non-sprinklered for stairs 0.6” and 0.5 for other components</p>	<p>CBC provides a higher level of protection than NFPA and IBC because all facilities must be sprinklered.</p>

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Exit illumination Section 1003.2.8.2 The emergency lighting system shall be arranged so that the average is at least 1 foot-candle. In the event of a power failure power shall be supplied by an automatically by an emergency power system.</p>	<p>Exit illumination Section 1006.1 The emergency lighting system shall be arranged so that the average is at least 1 foot candle and may decline to 0.6 foot candles</p>	<p>Exit illumination Section 11.8.1.1 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use. Artificial lighting shall be employed within the means of egress for such periods of time as are required to maintain the illumination to the minimum criteria values herein specified. Exception: Automatic, motion sensor-type lighting switches shall be permitted within the means of egress, provided that the switch controllers are equipped for fail-safe operation, the illumination timers are set for a minimum 15-minute duration, and the motion sensor is activated by any occupant movement in the area served by the lighting units. 11.8.1.3* The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 11.8.1.1 shall be illuminated to values of at least 1 ft-candle (10 lux) measured at the floor.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.10 1003.2.10 I-2 -Power supply The power supply for means of egress Illumination shall be provided automatically from an emergency system</p>		<p>Emergency illumination shall be provided for not less than 1½ hours in the event of failure of normal lighting. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10 lux) and, at any point, not less than 0.1 ft-candle (1 lux), measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6 lux) and, at any point, not less than 0.06 ft-candle (0.6 lux) at the end of the required 1½ hours. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.</p>	<p>CBC and NFPA provide a higher level of protection than the IBC.</p>
<p>Delayed Egress Section 1003.3.3.1.10 When approved by the building official special egress control may be installed on doors of an approved time delay type provided the building ins protected throughout by an approved automatic fire sprinkler systems and</p>	<p>Delayed Egress Section 1008.1.8.6 Approved listed delayed locks shall be permitted to be installed on doors serving any occupancy except A, E, and H- occupancies provided the building ins protected throughout by an</p>	<p>Delayed Egress Section 11.2.1.6.1 11.2.1.6.1 Delayed-Egress Locks. Approved, listed, delayed-egress locks shall be permitted to be installed on doors serving low and ordinary hazard contents in buildings protected throughout by an approved, supervised automatic fire detection system in</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>an approved smoke detection systems. Such devices shall conform to all the following</p> <ol style="list-style-type: none"> 1. The egress-control device shall automatically deactivate on activation of either the fire alarm or fire sprinkler system. 2. The egress-control device shall automatically deactivate upon loss of power to any of the following: 3. The egress control 4. The smoke detection system 5. The Means of exit illumination. 	<p>approved automatic fire sprinkler systems and an approved smoke or heat detection systems. Such devices shall</p>	<p>accordance with Section 55.2, or an approved, supervised automatic sprinkler system in accordance with Section 55.3, and where permitted in Chapter 16 through Chapter 31, provided that the criteria of 11.2.1.6.1(A) through 11.2.1.6.1(F) are met.</p> <p>(A) The doors shall unlock upon actuation of an approved, supervised automatic sprinkler system installed in accordance with Section 55.3, or upon the actuation of any heat detector or not more than two smoke detectors of an approved, supervised automatic fire detection system installed in accordance with Section 55.2.</p> <p>(B) The doors shall unlock upon loss of power controlling the lock or locking mechanism.</p> <p>(C) An irreversible process shall release the lock within 15 seconds upon application of a force to the release device required in 11.2.1.5.4 that shall not be required to exceed 15 lbf (67 N) nor be required to be continuously applied for more than 3 seconds. The initiation of the release process shall activate an audible signal in the</p>	

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only. (D) Where approved by the authority having jurisdiction, a delay not exceeding 30 seconds shall be permitted. (E)* On the door adjacent to	
		the release device, there shall be a special sign in letters at least 1 in. (2.5 cm) high that complies with 11.10.8.1 and 11.10.8.2 and reads as follows: PUSH UNTIL ALARM SOUNDS DOOR CAN BE OPENED IN 15 SECONDS (F) Emergency lighting shall be provided in the area of the door	
<p>Section 1004.3.4.3 Construction Corridors 1004.3.4.3 Construction Corridors of Group I occupancies have an occupant load of seven or more shall be fully enclosed by a one hour corridor (see 710.13)</p>	<p>Section 1016.1 Corridor Construction shall be as per table 16.1 (B occupancies 30; B Occupancies with fire sprinkler's not required any rating</p>	<p>Section 20.3.6.1 Corridors General. Corridors used for exit access within the ambulatory health care occupancy shall comply with the following: (1) They shall be smoke partitions in accordance with Section 8.10. {Smoke partitions shall comply with one of the following: (1) Smoke partitions shall extend from the floor to the</p>	CBC provides a higher level of protection than NFPA and IBC.

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>underside of the floor or roof deck above, through any concealed spaces, such as those above suspended ceilings and through interstitial structural and mechanical spaces.</p> <p>(2)* Smoke partitions shall be permitted to terminate at the underside of a monolithic or suspended ceiling system where the following conditions are met:</p> <p>(a) The ceiling system forms a continuous membrane.</p> <p>(b) A smoke-tight joint is provided between the top of the smoke partition and the bottom of the suspended ceiling.</p> <p>(c) The space above the ceiling is not used as a plenum.</p> <p>(3) Smoke partitions serving hazardous areas shall be permitted to terminate at the underside of a monolithic or suspended ceiling system where the following conditions are met:</p> <p>(a) The ceiling system forms a continuous membrane.</p> <p>(b) A smoke-tight joint is provided between the tip of the smoke partition and the bottom of the suspended ceiling.</p>	

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>(c) The space above the ceiling is not used as a plenum, or, if it is, there is no return grille from the hazardous area into the plenums.}</p> <p>(2) They shall have not less than a 1-hour fire resistance rating in accordance with Section 8.4 in other than smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 55.3.</p>	
<p>Section 1007.5.1 The clear width of the means of egress Exit doors 1007.5.1 The clear width of the means of egress components shall be such that bed ridden or litter patients shall not be less 44" clear width. Other aisles shall not be less than 32" Ceilings shall be no less than 8' clear height</p>	Not Addressed	<p>Section 20.2.3.2 The clear width of any corridor or passageway Exit doors The clear width of any corridor or passageway required for exit access shall be not less than 44 in. (112 cm). 20.2.3.3 Doors in the means of egress from diagnostic or treatment areas, such as x-ray, surgical, or physical therapy, shall provide a clear width of not less than 32 in. (81 cm).</p>	CBC & NFPA provides a higher level of protection than IBC.
<p>1007.5.3 Hallways 1007.5.3 Hallways- Hallways in I-1.2 shall not be less than 6' in width</p>	<p>Not Addressed B- Occupancies the requirement for rated corridor is not required for this occupancy class.</p>	Not Addressed	CBC provides a higher level of protection than NFPA and IBC.

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.5.4 Corridors 1007.5.4 Corridors I- 2 corridors in I-2 shall not be less than 6'</p>	<p>Section 1007.5.4 Corridors B- Occupancies the requirement for rated corridor are not required for this occupancy class corridor width 36"</p>	<p>Section 20.2.3.2 Corridors 20.2.3.2 The clear width of any corridor or passageway required for exit access shall be not less than 44 in. (112 cm).</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>1007.5.9.1 A group of rooms in a group I Division 1.2 or 2 occupancy may be considered as suite The suite in shall not exceed 10,000 Sq. Ft.</p>	<p>B-Occupancies do not have any designations or provisions for suites.</p>	<p>Any room, or any suite of rooms, of more than 2500 ft2 (230 m2) shall have not less than two exit access doors remotely located from each other. 20.2.4.3 Not less than two exits of the types described in 28.2.2 shall be accessible from each smoke compartment. Egress shall be permitted through adjacent compartments but shall not require return through the compartment of fire origin.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>The suite shall be separated from the remainder of the building by a one-hour occupancy separation.</p>	<p>B- Occupancies do not have any designations or provisions for suites.</p>	<p>N/A</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-2 OCCUPANCIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1008.1.1 Doors Section 1008.1.1 Doors 44"</p>	<p>Section 1008.1.2 Swing of the door Section 1008.1.1 Doors minimum clear width shall be 32 inches</p>	<p>Section 20.2.3.3 Doors 20.2.3.3 Doors in the means of egress from diagnostic or treatment areas, such as x-ray, surgical, or physical therapy, shall provide a clear width of not less than 32 in. (81 cm)</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>Section 1007.5.11 Swing of patient doors 1007.5.11 Swing of patient doors Entrance to patient bedrooms from corridors from Group I Div 1.2 Occupancies shall not swing into the required width of the corridor</p>	<p>Section 1008.1.2 Swing of the door 1008.1.2 Swing of the door swing in the direction of travel if occupancy of more than 50</p>	<p>Section 11.2.1.4.2 Swing of the door 11.2.1.4.2 Side-hinged or pivoted-swinging doors in the required means of egress shall swing in the direction of egress travel where any of the following conditions exist: (1) The doors shall serve an area with an occupant load of 50 or more. (2) The doors shall be used in an exit enclosure. (3) The requirement of 11.2.1.4.2(2) shall not apply to doors from individual dwelling units that open directly into an exit enclosure. (4) The doors shall serve a high hazard contents area</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-2 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 308.2.2.1 Smoke Barriers Listed only for I-1.1 occupancies</p>	<p>N/A In the IBC this is a B occupancy and there are no provisions for smoke barriers</p>	<p>Section 20.3.7.2 Every story of the ambulatory health care facility shall be divided into not less than two smoke compartments, unless one of the following conditions exists: (1) Facilities of less than 5000 ft² (465 m²) and protected by an approved automatic smoke detection system (2) Facilities of less than 10,000 ft² (930 m²) and protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 55.3 (3) An area in an adjoining occupancy, which is permitted to serve as a smoke compartment for the ambulatory health care facility where the following criteria are met: (a) The separating wall and both compartments meet the requirements of 20.3.7. (b) The ambulatory health care facility is less than 22,500 ft² (2100 m²). (c) Access from the ambulatory health care facility to the other occupancy is unrestricted.</p>	<p>NFPA 5000 provides a higher level of protection than the CBC.</p>

I-2 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>Section 20.3.7.4 Any required smoke barrier shall be constructed in accordance with Section 8.11. (A) Any required smoke barrier shall have a fire resistance rating of not less than 1 hour. (B) Smoke dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air-conditioning systems for buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section</p>	
		<p>Section 20.3.7.3 Smoke compartments, other than the area of an atrium separated in accordance with 8.12.3, shall not exceed an area of 22,500 ft² (2100 m²), and the travel distance from any point to reach a door in a smoke barrier shall not exceed 200 ft (60 m). 55.3. 20.3.7.5 Windows in the smoke barrier shall be of fixed fire window assemblies in accordance with 8.7.5. 20.3.7.6 Not less than 15 net ft² (1.4 net m²) per ambulatory health care facility occupant</p>	

I-2 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounges, and other common areas on each side of the smoke compartment for the total number of occupants in adjoining compartments.</p> <p>20.3.7.7* Doors in smoke barriers shall comply with the following:</p> <p>(1) They shall be not less than 1$\frac{3}{4}$-in. (4.4-cm) thick, solid-bonded wood core or the equivalent.</p> <p>(2) They shall be self-closing or automatic closing in accordance with 20.2.2.2.4.</p> <p>(3) They shall be provided with positive-latching hardware on other than cross-corridor doors.</p> <p>(4) They shall be provided with a vision panel of fire-rated glazing or wire glass panels in approved frames if the door is a cross-corridor door.</p>	

I-3 OCCUPANCIES-DETENTION/CORRECTIONAL FACILITIES

Occupancy Group Classification & Detention

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 308.1 Group 1, Division 3</p> <p>Jails, prisons, reformatories and buildings where personal liberties of inmates are similarly restrained.</p> <p>Restraint shall mean the physical retention of a person within a room, cell or holding facility by any means, or within a building by means of locked doors.</p> <p>Accommodating 1 or more persons as defined in Section 219 and 323A.</p>	<p>Section 308.4 Group I-3</p> <p>Jails, prisons, reformatories, detention, correctional and prerelease centers where occupants are under security.</p> <p>Restraint applies to persons incapable of self-preservation due to security measures not under the occupant's control.</p> <p>Accommodating more than five persons who are restrained.</p>	<p>Section 211.3.7.1 Detention/Correctional Occupancies</p> <p>Correctional, detention facilities, community residential or substance abuse centers, schools and camps where occupants are confined or housed under degrees of restraint or security as noted in Section 21.1.3.1, Conditions 2-5.</p> <p>Detention applies to persons incapable of self-preservation due to security measures not under the occupant's control.</p> <p>Accommodating 4 or more persons.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-3 OCCUPANCIES – DETENTION/CORRECTIONAL FACILITIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1003.2.3.2 Section 1003.3.1.3 Exit Door Width Other than Cell Doors An occupant load of 10 or more shall have a clear width of not less than 32 inches</p>	<p>Section 1008.1.1 Clear Width of Exit Doors. Doors to sleeping rooms shall be a minimum of 28 inches in clear width. All other areas a clear width of 32 inches is required</p>	<p>Section 21.2.11.4 Section 11.2.1.2.4 Clear Width of Exit Doors Doors to sleeping rooms shall be a minimum of 28 inches in clear width. All other areas a clear width of 32 inches is required</p>	<p>All codes provide the same level of protection</p> <p>Accessibility requirements, if enforced, may change minimum clear width of exit doors.</p>
<p>Section 332A.2 Cell Door Width. Cell doorways shall not be less than 24 inches in clear width and 6 feet in height.</p>	<p>Not Addressed</p>	<p>Not Addressed</p>	<p>IBC and NFPA do not designate cells. The reference in CBC to 24- inch width is for a cell that has an occupant of no more than two.</p>
<p>Section 331A.5 Exit Signs Exit signs are not required in areas of restraint where inmates are housed or held.</p> <p>Exit signs required in all public accessible areas</p>	<p>Section 1011.1 Exit Signs Exit signs not required in sleeping areas</p> <p>Exit signs required in all public accessible areas</p>	<p>Section 21.2.10 (B) Exit Signs Exit signs not required in residential housing units.</p> <p>Exit signs required in all public accessible areas</p>	<p>All meet the same level of protection</p>
<p>Section 331A Number of Exits Two exits required when occupant load is greater than 20 in areas of restraint. EXCEPTION: In areas such as hospitals, classrooms, assemblies, within the area of restraint</p>	<p>Section 1014.1 Number of Exits Table 1014.1 Two exits required when occupant load is greater than 10.</p>	<p>Section 21.2.4.1 Number of Exits Two exits required on every story or smoke compartment.</p>	<p>CBC provides a higher level of protection, in areas other than other than cell complexes, than NFPA and IBC. NFPA provides the lowest level of protection</p>

I-3 OCCUPANCIES – DETENTION/CORRECTIONAL FACILITIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
shall have exits per Table 10-A.			

I-3 OCCUPANCIES – DETENTION/CORRECTIONAL FACILITIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.4 Separation of Exits Exits shall be not less than ½ of the diagonal dimension of area served.</p>	<p>Section 1014.2.1 Distance between exits Exits shall be not less than ½ of the diagonal dimension of the area served in un-sprinklered buildings. Distance may be reduced to 1/3 the distance when sprinklers are installed.</p>	<p>Section 11.5.1.4 Arrangement of Means of Exit Exits shall be not less than ½ of the diagonal dimension of the area served in un-sprinklered buildings. Distance may be reduced to 1/3 the distance when sprinklers are installed.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>The CBC maintains the ½ dimension for measurement while the other two codes allow a reduction in measurement distance if sprinklers are installed.</p>
<p>Section 1104.3.4.3 Corridors 1-hour fire resistive rating required for occupant loads of seven or more.</p> <p>Exception: Open-barred cells forming corridor walls and open barred cell doors need not be fire resistive.</p>	<p>Section 1016.1 Corridors 1-hour fire resistive rating required with any occupant load.</p>	<p>Section 11.1.3.1 Exit Access Corridors 1-hour fire resistive rating required when occupant load exceeds 30 persons.</p>	<p>IBC provides a higher level of protection.</p> <p>A 1-hour corridor is required at any occupant load while the other codes allow 7 to 30 occupant loads before requiring 1-hour construction</p>
<p>Section 1004.2.6 Dead end corridors Dead-end corridors shall not exceed 20 feet.</p> <p>Section 332A.4 Dead-end balconies serving cell tiers shall not extend more than 50 feet.</p>	<p>Section 1016.3 Dead-end corridors Dead-end corridors shall not exceed 50 feet.</p>	<p>Section 21.21.5.2 Dead-end corridors Dead-end corridors shall not exceed 50 feet where there is free movement or remote-control release of locking devices if provided for staff.</p> <p>In areas where staff controlled manual release is provided dead-end corridors shall not exceed 20 feet.</p>	<p>CBC provides a higher level of protection.</p> <p>A maximum of 20 feet is allowed in the CBC for a dead- end corridor when the other codes allow a 50 foot dead-end.</p>

I-3 OCCUPANCIES – DETENTION/CORRECTIONAL FACILITIES

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 333A Safe refuge Shall provide not less than <u>3</u> square feet per occupant and be at least <u>50</u> feet from the building.</p>	<p>Section 1023.6 Safe dispersal area Shall provide not less than <u>5</u> square feet per occupant and be at least <u>50</u> feet from the building.</p>	<p>Section 21.2.7.1 Safe dispersal area Shall provide not less than <u>15</u> square feet per occupant and be at least <u>50</u> feet from the building.</p>	<p>NFPA provides a higher level of protection. All codes require a minimum 50 foot clearance from buildings, but NFPA requires 15 Square feet per occupant opposed to 3 and 5 for the other codes.</p>
<p>Section 332A.5 Powered Operated Doors Exit doors that are power operated shall have a means of remote release. This may be by means of mechanical or manual release.</p>	<p>Section 408.4.2 Locks shall be operable by a manual release at door and an emergency power or remote mechanical operating release shall be provided.</p>	<p>Section 21.2.11.8 Mechanically Operated Locks. All mechanically operated locks shall be provided with a manual means of release.</p>	<p>All codes provide the same level of protection. Each requires a manual means of unlocking doors. Doors may have a remote release device.</p>

I-3 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 325A Smoke Compartmentation Every story of housing units with more than 50 inmates in a detention/correctional facility shall be divided into not less than two approximately equal compartments by smoke barriers. No compartment shall exceed 22,500 sq.ft. Exceptions: In Type 1 or II buildings .fully sprinklered, In holding facilities, spaces having direct exits from the cell complex to an immediate area having 50 feet of open space. For I-3 occupancies other than detention/correctional facilities smoke barriers are required per a hospital.</p>	<p>Section 408.6 Smoke Barriers Smoke Barriers shall divide every story for sleeping or nay other having an occupant load of 50 or more into at least two smoke compartments. Exception Spaces having direct exit to a public way, Resident housing that is separated by a 2-hour fire rated construction or 50 feet of open space, secured open area located 50 feet from the housing area and provides 6 sq. feet per person.</p>	<p>Section 211.3.7.1 Subdivision of buildings. Smoke barriers shall be provided to divide every story used for sleeping by residents or any occupant load of 50 or more. Exceptions: May used horizontal exits, Resident housing that is separated by a 2-hour fire rated construction or 50 feet of open space, secured open area located 50 feet from the housing area and provides 15 sq. feet per person.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p> <p>All facilities are required to be fire sprinklered and be of a type I or II construction all other exceptions are secondary.</p>

I-3 OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 330A.1 Fire Alarm Required Within every detention facility a State Fire Marshal approved manual and automatic fire alarm system for the alerting of staff. Fire alarm system shall respond to products of combustion other than heat.</p>	<p>Section 907.2.6.2 All group I-3 occupancies shall have an automatic and manual fire alarm system.</p>	<p>Section 21.3.4.1.1 Detention and correctional occupancies shall be provided with a fire alarm system in accordance with Section 55.2, except as modified by</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>A staff alerting fire alarm shall sound at all staff control stations on the floor of activation and an audible and visual signal shall be indicated on an annunciator at the facility control center upon activation of any fire alarm device, automatic extinguishing system</p>	<p>Section 907.2.6.1 Approved Fire Alarm Actuation of the fire extinguishing system, manual fire alarm box or fire detection shall initiate an approved fire alarm, which automatically notifies staff. Exception Sleep unit in condition 2 or 3 smoke detectors are not required in sprinkler building with rooms less than 4 occupants.</p>	<p>Section 21.3.4.4 Detection. An approved automatic smoke detection system shall be installed in accordance with Section 55.2, as modified by 21.3.4.4.1 through 21.3.4.4.3, throughout all resident sleeping areas and adjacent day rooms, activity rooms, or contiguous common spaces.</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>
<p>No exceptions for fire alarm in I-3 occupancies</p>	<p>Exception: Sleep unit in condition 2 or 3</p>	<p>Section 21.3.4.4.3 Smoke detectors shall not be required in Use Condition II open dormitories where staff is</p>	<p>CBC provides a higher level of protection than NFPA and IBC.</p>

I-3 OCCUPANCIES

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		present within the dormitory whenever the dormitory is occupied	

R-1

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
R-1 Definition R-1 occupancies include hotels, motels and congregate residences >10 persons.	Residential category compared to CBC for R-1 has expanded to include R-2 which designates same occupancies with "non-transient" occupants.	Presents a simple definition under "Residential Occupancy" however further breaks down functions to include; lodging/rooming house, hotel/dormitory and apartment building with specific requirements referenced in respective chapters of 23, 24 and 25.	All the codes define residential occupancies a little different.

R-1

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 5- Basic Construction Type, height, and area requirements</p>	<p>Table 503 Basic Construction Type, height, and area requirements</p>	<p>Table 7.4.1 Basic Construction type, height, and area requirements</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC for height, stories, and area when sprinkler protection provided.</p>
<p>505 & 506 Area increase allowance typical with exceptions. Protected by sprinkler system; *Triple for one-story *Doubled for more than one story building. Aggregate floor area is total floor area of building limited to two times on story table value. 505 & 506 Continued Sprinkler allowance not allowed when used for: Story/height increase and One-hour fire resistive substitution</p>	<p>504.1 & 504.2 Area increases Table 503 Area increases: Formula for increase based on frontage perimeter in relation to total perimeter of building if >25% Protected by sprinkler system; Triple for one-story Doubled for more than one-story building</p>	<p>7.4.1 Area increases Provisions are similar to that specified in IBC 7.6.2 Table 7.4.1 Area increases: Same as IBC</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC.</p>

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>506</p> <p>Table 5-B Height increases; One story increase allowed for sprinkler protection, no adjustment to height; Sprinkler protection not allowed for both area and height increase</p>	<p>504</p> <p>Table 503 Height increases; One story and 20 ft. increase allowed for sprinkler protection Sprinkler protection allowed for both area and height increase</p>	<p>7.4.3</p> <p>Table 7.4.1 Same as IBC</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC. Many construction types are similar with the exception that non-rated construction types, other than Type V-N, are allowed to be four stories in height for IBC and NFPA 5000. CBC allows two stories. See above, similar analysis for height and area increases.</p>
<p>601</p> <p>Table 6-A Table 5-A Location on Property Type I, II FR, III one-hour and IV Exterior walls Four-hour < 3 ft. Two-hour < 20 ft. One-hour < 40 ft. Openings NP < 3 ft. Protected < 20 ft. Type II one-hour, II-N, V-one-hour, V-N Exterior walls one-hour < 5 ft. (II-one-hour < 40 ft.) Openings</p>	<p>704.5</p> <p>Table 601 Table 602 Location of Property Exterior walls Exterior bearing walls Type I A; three-hour Type I B, Type III A Type III B, Type IV; two-hour Type II A, Type V A; one-hour All Types One-hour < 10 ft. No rating > 30 ft. (IIIB & IV B No rating > 10 ft. and < 30 ft.) Table 704.8 Openings if exterior wall fire</p>	<p>7.3</p> <p>Table 7.2.2 Table 7.3.2.1 Location on Property Exterior walls Exterior bearing walls Type 442; four-hour Type 332; three-hour Type 222. 211. 200, 2HH; two-hour Type 111; one-hour Minimum for residential One-hour < 10 ft. No rating > 10 ft. Table 7.3.5 (a) Openings NP < 3 ft. Unprotected and protected are</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC for exterior wall and opening protection.</p>

R-1

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
NP < 5 ft.	resistive; NP < 3 ft. NP < 5 ft. (unprotected) Unprotected and protected openings	a % of exterior wall Opening fire-rating Two-hour wall-1 ½ hr. One-hour wall- ¾ hr.	

R-1

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>302.1 Separation Mixed use per Table 3-B and 3-C Exceptions: Spray Booth Accessory use rooms: Assembly < 750 sq. ft. Admin/Office < 25% Shop/office < 10% R1 Kitchen serving dining Customer waiting < 450 sq. ft.</p>	<p>302.3 Mixed use per Table 302.3.3 Exceptions: Accessory use areas < 10% of floor Assembly <750 sq. ft. Storage area within business or mercantile when <10%; <1,000sq. ft.; or <3,000 sq. ft. and sprinklered Incidental use areas per Table 302.1.1 708.6 Table 715..3</p>	<p>6.2 Mixed use per Table 6.2.4.1 Exceptions: Accessory use areas < 25% of floor Assembly < 750 sq. ft. Incidental use areas of mercantile, business, industrial or storage; Certain non-residential use areas??? 6.2.1.2 Dining area < 300 O. L. accessory to retail sales Admin/Office < 25% Private garage for one- and two-family dwellings if ½ in. gypsum on garage side, 1 3/8 in. solid door, 26-gauge duct. Table 8.7.2</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>Many provisions similar in all codes for exceptions to the occupancy separation requirements.</p> <p>Tables for IBC and NFPA 5000 appear similar and more restrictive than CBC; however, sprinkler protection allowed to reduce protection by one-hour in these Codes but is not allowed in CBC.</p> <p>In general, similar requirements for three Codes with possible exception of opening protection. NFPA less restrictive than IBC/CBC re: all accessory use areas <25% do not require fire resistive separation.</p>
<p>508- Sprinklers Sprinklers shall not substitute for occupancy separations.</p>	<p>302.3.2 – Sprinkler Exception: Reduce one hour for sprinkler protection; 1 hr. minimum required</p>	<p>Table 6.2.4.1 Reduce one hour for sprinkler protection; 1 hr. minimum required</p>	<p>IBC and NFPA 5000 provide equal protection as the CBC.</p>
<p>302.2-Structural Members Horizontal, vertical and structural members</p>	<p>Not addressed</p>	<p>6.2.4.3/6.2.4.4 Horizontal, vertical and structural members</p>	<p>IBC provides lower level of protection than CBC. NFPA 5000 provides and equal level of protection to the CBC.</p>

R-1

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
302.3 – Occupancy Separations. 4hr./None 3hr./3hr. 2hr./1½hr. 1hr./1hr.	Table 715.3 - Occupancy Separations 4 hr./ 3hr. 3 hr/ 3hr. 2 hr/1 ½ hr 1 hr/ ¾ hr.	Table 8.72 Separations/Openings 4 hr./ 3 hr. 3 hr./ 3 hr. 2 hr./ 1 ½ hr 1 hr./ ¾ hr.	IBC and NFPA 5000 provide a lower level of protection than the CBC.
302.5 - Separations Heating equipment room from residential separation by 1 hr. Except when room serves 1 unit	Table 302.1.1 Furnace over 400,000 Btu/hr; Boiler over 15 psi. and 10 horsepower Separation by 1 hr. or protected by sprinklers.	Table 25.3.2.2 Boiler and fuel fired service rooms serving more than 1 dwelling; Separation by one hour and protected by sprinkler system	IBC provides a lower level of protection than CBC. NFPA 5000 provides an equal level of protection as CBC.
310.2.2 - Separations Walls and floors separating hotel dwelling units-1 hr. Apartment houses > 2 stories or > 3,000 sq. ft.-1 hr. Common storage or laundry areas- 1 hr.	Table 302.1.1- Separations Laundry > 100 sq. ft. Storage rooms > 100 sq. ft. Separation by one-hour or protected by sprinkler system	Table 25.3.2.2 Laundries > 100 sq. ft. outside of dwelling; Storage rooms > 100 sq. ft. Separation by one hour or protected by sprinkler system	IBC and NFPA provide an equal level of protection as the CBC.

R-1

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>1004.2- General Requirements.</p> <p>General requirements for R-1 Generic to all occupancies incorporating exit, exit access and exit discharge.</p> <p>Number of required exits based on occupant load.</p>	<p>1003.1- General Requirements</p> <p>Requirements for “general means of egress” same as CBC as it applies to requirements for exit, exit access and exit discharge.</p> <p>Number of exits required based on occupancy classification and required when common path travel exceeds limitations.</p>	<p>23.2 - General</p> <p>“Means of escape “requirements address specific functions such as Lodge/rooming house occupancies and/or Hotel/Dormitory Occupancies.</p> <p>Requirements are found in specific function chapters 23, 24, & 25 along with referenced Means of Egress Chapter 11. Number of required exits based on occupant load.</p>	<p>IBC and NFPA 5000 provide a lower level of protection than CBC.</p>

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>1004.2.4-Exit Separations. Exit separation of not less than ½ the maximum diagonal distance of the area where two exits or exit access is required.</p>	<p>1014.2.1-Exit Separations Exit separation distance is relaxed to 1/3 of the maximum overall diagonal distance in a sprinklered building.</p>	<p>11.5.1.4 Exit separation requirements are the same as IBC.</p>	<p>IBC and NFPA provide a lower level of protection than the CBC.</p>
<p>1004.2.5; 1006.2; 1006.2.3- Travel distance. Travel distance in the exit discharge to grade specifies 200' in non-sprinklered building and 250' where sprinklered.</p>	<p>1015.1; 1016.3 – Travel distance I BC same as CBC in both travel distance but stipulates maximum length of exit access travel. IBC conceptualizes common path of egress travel requirements similar to NFPA.</p>	<p>25.2.6 – Travel distance. NFPA is the same as CBC and further specifies travel distance requirements from a room or suite to corridor door for hotels/dormitories. Requirements for common path of travel in apartment buildings differ at 75' in sprinklered buildings versus 125' in non-sprinklered.</p>	<p>IBC and NFPA 5000 provide an equal level of protection to the CBC.</p>
<p>1005.3.4.6 Dead ends No greater than 20 ft</p>	<p>1016.3- Dead ends. Dead end limitations same as CBC.</p>	<p>35' dead end corridors are allowed in non-sprinklered bldgs and 50' in sprinklered.</p>	<p>IBC provides an equal level of protection as the CBC. NFPA provides a lower level of protection than the CBC.</p>

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>1004.3.4 - Corridors</p> <p>One-hour fire resistive corridors required where OL >10</p> <p>Opening protection requirements are prescriptive and typical to all applications for required fire-rated corridors.</p>	<p>Corridors</p> <p>Same as CBC with exception allowed for 0.5 fire-resistive construction in buildings protected by sprinkler system.</p> <p>Opening protection requirements same intent as CBC.</p>	<p>24.3.6.2; 24.3.6.2; 24.3.6.5 - Corridors</p> <p>Required for exit access corridors in hotel & dormitory occupancies and reduced to ½ hr fire-resistive construction in buildings protected by sprinkler system, same as IBC.</p> <p>Opening protection same as CBC. Conditional provisions for unlimited spaces allowed open to corridor.</p>	<p>IBC and NFPA 5000 provide a lower level of protection than CBC.</p> <p>NFPA does not address corridor requirements for apartment buildings or lodging and/or rooming houses. IBC and NFPA not as restrictive for buildings protected by a supervised sprinkler system.</p> <p>IBC details a prescriptive list of what is or is not acceptable regarding air movement allowances in corridors.</p> <p>Further, IBC spells out corridor continuity with regards to fire-resistive construction from point of entry to an exit. Conversely, IBC allows “open-ended corridors which contains no door or protective open connection between corridor and exterior stairway in buildings protected by sprinkler systems.</p>
<p>310.4 – Escape and rescue</p> <p>Escape and Rescue Openings are required of sleeping rooms located in basements and below 4th story with considerations in buildings provided by sprinkler system.</p>	<p>1025 – Escape and rescue</p> <p>IBC incorporates same regs for escape and rescue as CBC unless building is provided sprinkler system.</p>	<p>NFPA does not address regulation in this category.</p>	<p>IBC and NFPA provide a lower level of protection than the CBC.</p>

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>1003.2.8.2, 1003.2.8.3; 1003.2.9.2 –Exits signs</p> <p>Exit Signs, tactile exit signs and low level exit signs required in addition to path markings through out interior rated corridors in buildings not sprinklered.</p> <p>1003.2.9.2 – Emergency lighting Emergency lighting required when occupant load >100</p>	<p>1011.1, 1006.1 - Exit signs</p> <p>No requirements for low level or exit path markings.</p> <p>1006.1- Emergency lighting</p> <p>Emergency lighting required based on number of required exits.</p>	<p>11.9; 11.10 24.2.9; 25.2.9</p> <p>Exit sign requirements typical of CBC however floor exit path markings not required.</p> <p>24.2.9; 25.2.9 – Emergency lighting</p> <p>Emergency lighting required where occupant load > 25 unless direct exit to grade provided in hotels and dorms; >12 dwelling units or > 3 stories in height for apartment buildings unless direct exit to grade is provided for each unit</p>	<p>IBC and NFPA provide a lower level of protection than the CBC.</p> <p>IBC and NFPA provide a higher level of protection than the CBC.</p>

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Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>310.10 – Fire alarm system.</p> <p>Manual and automatic fire alarm systems required in:</p> <ul style="list-style-type: none"> *apartment houses 3 or more stories in height or 16 plus dwelling units *hotels 3 or more stories or 20 plus guest rooms *congregate residences 3 or more stories in height or occupant load of 20 plus 	<p>907.2.8 & 907.2.9 – Fire alarm system</p> <p>Manual fire alarm systems required similar to CBC in residential occupancies (R-1 & R-2) except for following:</p> <ul style="list-style-type: none"> *1. Building not over two stories in height; and individual guest rooms and attic or crawl spaces are separated from each other and public or common areas by one-hour fire partitions and; each individual guest room has exit directly to public way, exit court or yard. *2 Manual pull boxes not required through out when building is equipped with an automatic sprinkler system; notification appliances will activate upon sprinkler water flow; and one manual pull box installed in approved location. <p>For R-2 Occupancies the code is more specific when calling out for a manual system, i.e.;</p> <ul style="list-style-type: none"> *dwelling unit or sleeping unit located 3 or more stories above the lowest level of exit discharge; *dwelling unit or sleeping unit located more than one story 	<p>23.3.4.1; 24.3.4 & 25.3.4</p> <p>A manual fire alarm system is required; however considerations for apartments are similar to CBC.</p>	<p>NFPA provides a lower level of protection than the CBC.</p> <p>IBC provides an equal level of protection than the CBC.</p>

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Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	below the highest level of exit discharge of exits serving the unit		
<p>310.9.1 Smoke alarms. Smoke alarms in new buildings to be connected to building wiring and have battery backup. Existing buildings can have battery-powered smoke detectors. Alarms to be located in main rooms or sleeping rooms and shall be audible throughout the building. 310.9 specifies that smoke alarms not be connected to the building's fire alarm system unless for annunciation only.</p>	<p>907.2.10 Smoke alarms. For R-1, single and multiple-station smoke alarms not only required in sleeping rooms, but in every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit. Devices must meet household fire warning equipment provisions or NFPA 72. For R-2, smoke alarms required not only in sleeping rooms, but outside of each separate area in the vicinity of bedrooms. 907.2.10.2 – Power source is same as CBC except if building is connected to emergency electrical system, battery backup in Group R-1 is not required. Interconnection where more than one smoke alarm is required. Audible alarm requirements same as CBC.</p>	<p>24.3.4.9 Smoke alarms</p>	<p>IBC provides a higher level of protection than the CBC.</p> <p>NFPA provides an equal level of protection as the CBC</p>

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Fire Alarm Systems- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1006.2.9.1.1- General</p> <p>Reiterates and references CBC requirements for R Occupancies.</p>	<p>907.2.8, 907.2.9 General</p> <p>Reiterates building code requirements. Similar to CBC.</p>	<p>General</p> <p>NFPA reiterates building codes and references NFPA 101.</p>	<p>Each code addresses the basic requirements in a different manner.</p>
<p>1006.2.9.1.3 Automatic detection.</p> <p>Requires automatic detection in common areas and interior corridors. Excludes pull station requirement in interior corridor provided with smoke detectors.</p>	<p>907.2.8.2, 907.2.9 Automatic detection.</p> <p>Requires auto fire alarm system in all interior corridors in R-1's unless rooms have direct exit to an exterior exit access.</p>	<p>13.7.2.9; 13.7.2.11 Automatic detection.</p> <p>Same as CBC in new hotel & dormitories and new apartment buildings with similar exceptions.</p>	<p>IFC provides a higher level of protection than the CFC.</p> <p>NFPA provides an equal level of protection as the CFC.</p>
<p>1006.2.9.1.4 – Heat detectors.</p> <p>Requires heat detectors in all common areas; recreation room, laundry and furnace rooms.</p>	<p>IBC does not address heat detector requirements.</p>	<p>NFPA 1 does not address heat detector requirements.</p>	<p>NFPA and IFC provide a lower level of protection than the CFC</p>

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Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
310.9.2, 904.2.1 Sprinklers required All buildings: 1500 Sq. Ft. w/o openings every 50 ft.; walls > 75 ft. from opening; rubbish and linen chutes; Floor O.L. > 29 or > 55 ft.	903, 903.2.10.1 Sprinklers required All buildings: Same as CBC 903.2.7	Chapter 23, 24, 25 Sprinkler required Sprinklers required based upon occupancy	NFPA and IBC provide an equal level of protection as the CBC.
Congregate residence > 2 stories or > 5 units	All residential buildings	Lodging/Rooming house O. L. > 29 or floor level > 55 ft. Exception: Door to outside at ground or exterior stair to outside	IBC provides a higher level of protection than the CBC. NFPA provides a lower level of protection than the CBC
Apartment > 2 stories or > 5 units Hotel > 2 stories or > 5 guest rooms	All residential buildings	All apartment buildings Exceptions: Door to outside at ground or exterior stair to outside serving > 3 units or 1 hr. interior stair serving 1 unit All Hotels/Dormitory Exceptions: Door to outside at ground or exterior stair to outside < 4 stories	IBC and NFPA provide a higher level of protection than the CBC
NFPA 13 R < 5 stories or if not in lieu of other code requirement e.g. area increase	NFPA 13 R < 5 stories	Same as IBC	IBC and NFPA provide a lower level of protection than the CBC.
NFPA 13, 13R Design See comments.	903.4 Design NFPA 13, 13 R More exceptions to electrically supervised monitoring	NFPA 13, 13 R Design Draft stop in dwelling unit and closely spaced sprinkler provisions do not apply to apartment or hotel within	IBC and NFPA provide a lower level of protection than CBC.

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Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 9- A Standpipes Class I Standpipe > 3 stories</p>	<p>905 - Standpipes Class I Standpipe floor level > 30 ft.</p>	<p>dwelling room Chapter 23, 24, 25 Standpipes Lodging house-No requirement 55.4.1 Hotels/Apartment houses Class I Standpipe for buildings > 3 stories or > 3 basement levels</p>	<p>IBC and NFPA provide and equal level of protection as the CBC.</p>

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Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1003 Sprinklers All buildings 1,500 or > without openings at every 50 feet. Also, at rubbish and linen chutes.</p>	<p>903 Sprinklers Same as IBC with following additional requirement; 903.3.1.2 NFPA 13 R system for exterior balconies and patios in Type V construction;</p>	<p>13.3 Sprinklers All new buildings with basements < 2500 sq. ft.; Same as NFPA 5000, however, no reference to height and story exceptions</p>	<p>IBC and NFPA provide a higher level of protection than the CFC.</p>
<p>1004; Table 1004-A Standpipes. Class I standpipes > than 3 stories.</p>	<p>905, Standpipes Same as IBC</p>	<p>13.2- Standpipes Class I standpipe required New buildings > 3 stories; > 50 ft.; > one story below grade; > 20 ft. below grade</p>	<p>NFPA provides a higher level of protection than CFC. IFC provides an equal level of protection than CFC</p>

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Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>310.12 – Special hazards. Special Hazards Chimney/Heating requirements-Mechanical Code and Chapter 31; One-hour door to rooms with Class I flammable liquids; Protect children from unenclosed gas fired water heater/furnace</p>	<p>Table 302.1.1- Special hazards Occupancy separations</p>	<p>Table 24.3.2.3 Table 25.3.2.3 Hazardous area protection/separation</p>	<p>IBC and NFPA have a lower level of protection than the CBC.</p> <p>All three codes contain similar requirements. IBC and NFPA 5000 allow sprinklers in lieu of one-hour protection and height/ area increases. CBC does not allow multiple credits for modifications. This provision is main reason CBC most restrictive code.</p> <p>CBC has specific requirements, not contained in NFPA 5000 or the IBC, for a one-hour door for rooms with flammable liquids and child protection from open flame heaters.</p> <p>CFC requires two-hour separation between residential and battery system room; not specifically cited in CBC.</p> <p>Lodging/rooming house does not require separation by NFPA 5000 code.</p>

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 310.1 Group R Occupancies defined. <u>Division 2.1.</u> Residentially-based, licensed facilities accommodating more than six nonambulatory clients. This division may include ambulatory clients. Licensing categories that may use this classification include, but are not limited to: Adult Residential Facilities, Congregate Living Health Facilities, Residential Care Facilities for the Elderly, Group Homes and Residential Care Facilities for the Chronically III. <u>Division 2.1.1.</u> Residentially-based, licensed facilities accommodating six or less nonambulatory clients. This division may include ambulatory clients. Licensing categories that may use this classification include, but are not limited to: Adult Residential Facilities, Congregate Living Health Facilities, Foster Family Homes, Intermediate Care Facilities for the Developmentally Disabled Habilitative, Intermediate Care Facilities for the Developmentally Disabled Nursing, Nurseries for the full-time care of children under the age of six, but not including “infants” as defined in Section 210; Residential Care Facilities for the Elderly, Small Family Homes and Residential Care Facilities for the Chronically III. <u>Division 2.2.</u> Residentially-based, licensed facilities accommodating more than six ambulatory clients. This division may</p>	<p>Section 308.2 Group I-1 (Residential Care/Assisted Living Facilities) this occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> Residential board and care Assisted living facilities Halfway houses Group homes Congregate care facilities Social rehabilitation Alcohol and drug centers Convalescent facilities <p>A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as the above, housing at least six and not more than 16 persons, shall be classified as Group R-4.</p>		

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Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>include nonambulatory clients and shall not exceed six nonambulatory clients. Licensing categories that may use this classification include, but are not limited to: Adult Residential Facilities, Residential Care Facilities for the Elderly, Group Homes, Community Treatment Facilities and Social Rehabilitation Facilities.</p> <p><u>Division 2.2.1.</u> Residentially-based, licensed facilities accommodating six or less ambulatory clients. This division may include a maximum of two nonambulatory clients. Licensing categories that may use this classification include, but are not limited to: Adult Residential Facilities, Intermediate Care Facilities for the Developmentally Disabled Habilitative, Intermediate Care Facilities for the Developmentally Disabled Nursing, Nursing Homes, Residential Care Facilities for the Elderly, Foster Family Homes, Group Homes, Small Family Homes, Community Treatment Facilities and Social Rehabilitation Facilities.</p> <p><u>Division 2.3.</u> Residentially-based, licensed facilities providing hospice care throughout accommodating more than six bedridden clients. Licensing categories that may use this classification are limited to: Congregate Living Health Facilities for the Terminally Ill and Residential Care Facilities for the Chronically Ill.</p> <p><u>Division 2.3.1.</u> Residentially-based facilities providing hospice care throughout accommodating six or less bedridden</p>	<p>Group I-1: more than 16 ambulatory(308.2) Group R-3: with five or less ambulatory Group R-4: from six to 16 ambulatory</p> <p>Section 308.3 Group I-2 (<u>Personal Care Service</u>) this occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:</p> <p>Hospitals Nursing homes (both intermediate-care facilities and skilled nursing facilities) Mental hospitals Detoxification facilities</p> <p>A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.</p> <p>Group I-2: more than five nonambulatory (308.3) Group R-3: five or fewer nonambulatory (310.1) <u>Residential Care/Assisted Living Facility:</u> A building or part thereof housing persons, on a 24 hr basis,</p>		

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Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>clients. Licensing categories that may use this classification are limited to: Congregate Living Health Facilities for the Terminally III and Residential Care Facilities for the Chronically III.</p> <ol style="list-style-type: none"> 1. R-2.1: more than six nonambulatory 2. R-2.1.1: six or less nonambulatory 3. R-2.2: more than six ambulatory. May include up to six nonambulatory. 4. R-2.2.1: six or less ambulatory. May include two nonambulatory. 5. R-2.3: more than six bedridden hospice. 6. R-2.3.1: six or less bedridden hospice. 	<p>who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation, facilities, alcohol and drug abuse centers and convalescent facilities (310.2)</p> <p><u>Personal Care Service</u>: The care of residents who do not require chronic or convalescent medical or nursing care. Personal care involves responsibility for the safety of the resident while inside the building (310.2)</p>		

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 310.2.1 Buildings or parts of buildings classed in Group R because of the use or character of the occupancy shall be limited to the types of construction set forth in Table 5-B and shall not exceed, in area or height, the limits specified in Sections 504, 505 and 506.</p>	<p>Ref. Table 503 for height and allowable area.</p> <p>Construction types are limited to two types A or B.</p>	<p>Section 7.1.1 Buildings or parts of buildings classified in a specified occupancy group because of their use shall be limited to the types of construction specified in Section 7.2 and shall not exceed the height or area requirements specified in Section 7.4 through Section 7.6. See Table 7.4.1.</p>	<p>IBC is less restrictive than the CBC in that floor areas are greater in the IBC.</p> <p>IBC construction references to type A and B refer to fire-resistive (A) and non-resistive construction (B) types.</p> <p>NFPA in Table 7.4.1 provides for sprinkler allowances.</p> <p>NFPA and IBC, although the same, contain complicated methods for calculating area increases as opposed to the CBC.</p>
<p>Section 310.2.2 Special provisions. Exception for Group R, Divisions 2.1.1, 2.2.1 and 2.3.1 occupancies from the one-hour requirement for walls and floors separating dwelling units and guest rooms in the same building.</p>		<p>Section 7.4.1.3.3 Small Board and Care Occupancies. The values in Table 7.4.1 for sprinklered buildings shall also apply to buildings, four stories or less in height, protected throughout with an approved, electrically supervised sprinkler system in accordance with Section 55.3.1.1 (2).</p>	

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>For Group R, Division 2.1.1 occupancies where clients are housed above the first floor and there is more than 3,000 square feet of floor area above the first floor construction shall not be less than one-hour fire-resistive construction, except as provided in Section 601.5.2.2.</p>			
<p>For Group R, Division 2.2 occupancies where nonambulatory clients are housed above the first floor and there is more than 3,000 square feet of floor area above the first floor or housing more than 16 clients above the first floor construction shall not be less than one-hour fire-resistive construction throughout except as provided in Section 601.5.2.</p>			
<p>For Group R, Divisions 2.3 and 2.3.1 Occupancies where clients are housed above the first floor shall not be of less than one-hour fire-resistive construction throughout except as provided in Section 601.5.2.2.</p>			

R-2

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Identified R2 occupancies in Table 3-A, however there is no reference in Table 3-B for occupancy separations.</p>	<p>Separation requirements range from 2 to 4 hours depending on occupancy with a footnote reference to Section 302.3.3 which cannot be found. Reference should be to Section 302.3.2 and provides an exception for a 1-hour reduction of separation construction.</p>	<p>Comparing Board and Care Large, and Board and Care Small. Requires from 1 to 3 hour separations based on type use with 1-hour reduction for sprinklered facilities. Health Care Facilities in most cases do not give credit for sprinklered facilities. Ref Table 6.2.4.1.</p>	<p>NFPA generally becomes more restrictive when you exceed 4 or more non-ambulatory clients.</p> <p>It appears that both the NFPA and IBC provisions are close with regards to the cut-off when the 1-hour reduction maybe used.</p>

R-2 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Smoke barriers are required per 310.2.3 in all R-2 occupancies when the floor areas exceed 6,000 sq. ft./flr. There are two exceptions to this requirement 1. In R2.1, 2.1.1 and 2.2 occupancies with direct exiting from each dwelling unit and non-ambulatory clients are housed only on the first floor; and 2, R-2 occupancies are not required to comply with the provisions of Section 410 as they pertain to occupant load factors for determining areas of smoke barriers.</p> <p>General requirement limiting the area of smoke barriers when required to not exceed 22,500 sq. ft. nor exceed 150 ft. in width or length. Also the smoke barriers shall divide the floor as equally as possible.</p>	<p>407.4. Smoke barriers are required for I occupancies when the numbers of non-ambulatory clients exceed 5. There are no provisions that cover Residential (R) uses.</p>	<p>In Health Care Occupancies and Large Residential Board and Care Facilities. Requires that every story be divided in not less than two smoke barriers not exceeding 22,500 sq. ft. equally dividing the story or floor. There are 4 exceptions to this requirement based on other types of uses in the occupancy. Reference Section 19.3.7 and 26.3.3.7.</p>	

R-2

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.6.3.1 Number of exits:</p> <p>This section addresses the exiting requirements for residentially based, licensed facilities classified as Group R occupancies.</p> <p>This section requires that Group R, Division 2 occupancies shall have a minimum of two exits.</p> <p>This section requires that Division 2.1 occupancies housing nonambulatory clients above the first floor shall have two separate, enclosed and remotely located exit stairs.</p> <p>This section requires that Division 2.1.1, 2.2.1 and 2.3.1 occupancies in buildings of non-rated construction shall have at least one exit through a corridor/hallway/area and into a bedroom which has direct exiting to the exterior, or through a corridor/hallway from the sleeping area to an exit, or through a direct exit from the bedroom to the exterior, or through an adjoining bedroom which has a direct exit.</p>	<p>Section 1005 Exits:</p> <p>This section addresses the exiting requirements for Group I and R occupancies.</p> <p>This section requires that a building exceeding 1 story, with 10 occupants, or has 75 feet of travel distance shall have a minimum of two exits to the exterior of the building.</p> <p>This section indicates that Group I-1 and R occupancies shall have a minimum of two exits when the occupant load exceeds 10.</p> <p>Travel distance in</p> <p>Section 1004.2.4 Exit access travel distance requires that Group I-1 and R occupancies shall not exceed 200 feet of travel distance and Group I-2 occupancies shall not exceed 150 feet of travel distance. This section provides for an increase in the travel distance of 50 feet for fully automatic sprinklered buildings.</p>	<p>Section 19.2.4 Number of exits -Health care occupancies:</p> <p>This section addresses the exiting requirements for Health care occupancies.</p> <p>This section requires that a minimum of two exits remotely located from each other shall be provided for each floor or fire section of the building.</p> <p>This section requires that at least one exit shall be one of the following:</p> <ul style="list-style-type: none"> • Door to outside of building • Stair • Smokeproof enclosure • Ramp • Exit passageway <p>Section 19.2.4.3 requires that not less than two exits shall be provided from each smoke compartment.</p> <p>Section 19.2.5.1 requires that every habitable room shall</p>	<p>The 2003 NFPA 5000 and the 2003 IFC provides a higher level of protection than that of the 2001 CBC relative to the topic of Exiting for Group R-2 Occupancy - Number of exits.</p>

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>have an exit access door leading directly to one of the following:</p> <ul style="list-style-type: none"> • Exit access corridor – unless permitted by the following: • Ground level exit open to outside • Exit access from a patient sleeping room with not more than 8 beds – permitted to exit through an intervening room • Exit access from a patient sleeping suite – permitted to exit through an intervening room to reach an exit access if there is constant visual supervision by nursing staff • Suite of rooms, not sleeping rooms suite – permitted to have one intervening room if the travel distance does not exceed 100 feet 	

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<ul style="list-style-type: none"> • Suite of rooms, not sleeping rooms suite – permitted to have two intervening rooms if the travel distance does not exceed 50 feet. <p>Section 19.2.5.9 requires that every corridor shall provide access to not less than two approved exits without passing through intervening rooms.</p> <p>Section 19.2.5.10 requires that every exit or exit access shall not have dead end corridors exceeding 30 feet.</p> <p><u>Residential Board and Care Occupancies - Small Facilities:</u> Living areas above or below the level of exit discharge shall have a primary means of escape that is either an interior stair, exterior stair, a horizontal exit, or a fire escape stair. (26.2.2.1.2)</p> <p>Living areas in facilities without sprinklers shall have a secondary means of escape consisting of one of the</p>	

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>following: 1) door, stair, passage or hall providing access to the exterior at grade and independent and remote from the primary means of escape or 2) passage through an adjacent nonlockable space, independent and remote from the primary means of escape leading to any approved means of escape or 3) Outside window operable from the inside providing a clear opening of not less than 5.7 sq. ft. (26.2.2.2)</p> <p><u>Residential Board and Care Occupancies – Large Facilities:</u> Corridors shall be a minimum of 60 inches wide. (26.3.2.2.3).</p> <p>Travel distance shall not exceed 250 feet. (26.3.2.5).</p> <p>Dead end corridors shall not exceed 30 feet. (26.3.2.4.3).</p> <p>Corridors shall provide access to not less than two exits. (11.5.1.2).</p> <p>Street floor exits shall be sized</p>	

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		to accommodate the occupant load of the street floor plus the required capacity of stairs and ramps discharging onto the street floor (26.3.2.2.2)	

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Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 310.10.1 requires R2.1 occupancies be provided with an approved manual and automatic fire alarm system. Exception: when non-ambulatory clients are housed on the first floor only and the building is protected by an automatic sprinkler system where actuation will initiate a fire alarm signal and a manual fire alarm system is provided.</p> <p>Group R2.1.1, 2.2.1, and 2.3.1 require at least one manual pull station. Section 310.10.2.</p> <p>Group R2.2 occupancies are required to have a manual fire alarm system. Section 310.10.3.</p> <p>In each case smoke detectors are required in Section 310.9.</p>	<p>Group I occupancies require a manual and automatic fire alarm system. Section 907.2.6. Exception: Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at a nurse's station or other constantly attended location.</p> <p>Group I.2 occupancies shall be provided with an automatic fire detection system where waiting areas and other spaces are open to the corridor. Section 907.2.6.1. Exceptions: corridor smoke detection is not required when smoke detectors are provided in patient sleeping rooms and an audible and visual alarm is provided at a nurse station. Also corridor smoke detection is not required in smoke compartments that contain patient sleeping rooms where unit doors are equipped with automatic door-closing devices and integral smoke detectors on the unit side of the door.</p> <p>In Groups R-3 and R-4 occupancies single-or multiple-</p>	<p>Fire alarm is required in Health Care Facilities. Section 19.3.4.1.</p> <p>Board and Care Facilities, Small, requires a manual fire alarm system and smoke detection throughout. Section 26.2.3.4.1.</p> <p>Board and Care Facilities, Large, require a fire alarm system and smoke detection in corridors and in-patient sleeping rooms. Section 26.3.3.4.1.</p>	<p>Requirements for both IBC and NFPA are similar.</p>

R-2

Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	station smoke alarms shall be installed regardless of occupant load. Section 907.2.10.1.2.		

R-2

Fire Alarm Systems- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Group R2.1 and 2.3 occupancies require a manual and automatic fire alarm system. Section 1006.2.9.2.1. System smoke detectors shall be installed in corridors and common areas. Single station smoke detectors shall be installed in guestrooms and dwelling units. Upon actuation these smoke detectors shall only actuate within such guestroom or dwelling unit.</p> <p>Group R2.2 occupancies shall be provided with a manual fire alarm system. Section 1006.2.9.2.2.</p> <p>Group R2.1.1 and 2.2.1 occupancies shall be provided with one manual pull station. Section 1006.2.9.2.3.</p>	<p>Group I occupancies require a manual and automatic fire alarm system. Section 907.2.6. Exception: Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at a nurse's station or other constantly attended location.</p> <p>Group I.2 occupancies shall be provided with an automatic fire detection system where waiting areas and other spaces are open to the corridor. Section 907.2.6.1. Exceptions: corridor smoke detection is not required when smoke detectors are provided in patient sleeping rooms and an audible and visual alarm is provided at a nurse station. Also corridor smoke detection is not required in smoke compartments that contain patient sleeping rooms where unit doors are equipped with automatic door-closing devices and integral smoke detectors on the unit side of the door.</p> <p>In Groups R-3 and R-4 occupancies single-or multiple-station smoke alarms shall be</p>	<p>Health Care Facilities require a fire alarm system. Section 13.7.2.5.1.</p> <p>Board and Care, Small, requires a manual fire alarm system and smoke alarms in accordance with NFPA 101 in living areas on each level. Section 13.7.2.15.1.1. Exception: Smoke alarms are not required when facility is protected throughout by an automatic sprinkler system. Each sleeping room be provided with a single station smoke alarm.</p> <p>Board and Care, Large, requires a fire alarm system. Section 13.7.2.15.2.1. Smoke alarms in each sleeping room. All common areas require smoke detection. Exception: Smoke detection is not required when facility is protected throughout by a supervised automatic sprinkler system.</p>	<p>IFC requirements the same as the IBC.</p>

R-2

Fire Alarm Systems- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	installed regardless of occupant load. Section 907.2.10.1.2.		

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 904.10 requires automatic sprinkler systems in Group R, Division 2 occupancies. Exceptions: 1. Division 2.1.1 and 2.2.1 occupancies not housing bedridden clients and not exceeding two stories or not housing bedridden clients and not housing nonambulatory clients above the first story. 2. Occupancies housing ambulatory children only and the portion of the building housing the children do not exceed two stories. 3. Division 2 occupancies housing ambulatory persons only none of whom is a child nor who is elderly (over the age of 65).</p> <p>Section 904.2.10.1 requires an automatic sprinkler system in Group R, Division 2.3 and 2.3.1 occupancies.</p>	<p>Section 903.2.5 Group I occupancies. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area. Exception to allow use of NFPA 13R and 13D where permitted. Section 903.2.7 Group R occupancies. An automatic sprinkler system in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.</p>	<p>Section 19.3.5.1 buildings containing <u>health care facilities</u> shall be protected throughout by an approved, supervised automatic sprinkler system. Section 26.2.3.5.1 residential board and care occupancies, <u>small</u>, requires all facilities be protected throughout by an approved automatic sprinkler system. Section 26.3.3.5.1 residential board and care occupancies, <u>large</u>, require all facilities be protected throughout by an approved automatic sprinkler system.</p>	

R-2

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>The sprinkler requirements contained in the CBC for Residential Care Facilities classified as R-2 occupancies were not reprinted in the CFC.</p>	<p>Section 903.2.5 requires an automatic sprinkler system shall be provided throughout buildings with a Group I fire area. Section 903.2.7 requires an automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.</p>	<p>For Health Care Occupancies Section 13.3.2.7.1 Buildings containing health care facilities shall be protected throughout by an approved, supervised automatic sprinkler system. Exception: In type I and Type II construction, where approved by the authority having jurisdiction, alternative protection measures shall be permitted to be substituted for sprinkler protection in specified areas where the authority having jurisdiction has prohibited sprinklers, without causing the building to be classified as nonsprinklered. For New Residential Board and Care Facilities Section 13.3.2.16.1 <u>Large Facilities</u>, all buildings shall be protected throughout by an approved automatic sprinkler system. Section 13.3.2.16.2.1 <u>Small Facilities</u>, all facilities shall be protected throughout by an approved automatic sprinkler system. Exception: In conversions, sprinklers shall not be required in small board and care homes with a rating of prompt evacuation capability</p>	

R-2

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
		and serving eight or fewer residents.	

R-2

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Requires chimneys and heating apparatus conform to the Mechanical Code; also, that the storage, use and handling of flammable and combustible liquids in Division 1 and 2 occupancies be in accordance with the Fire Code.</p>	<p>None found.</p>	<p>In Health Care Facilities requires 1-hour construction around boiler rooms, laboratories, laundries, and storage uses. (Table 19.3.2.1).</p> <p>For Board and Care Facilities, small, requires 1-hour construction or sprinklers if the fire loading or activity is more severe than a 1 or 2 family dwelling. Section 26.2.3.2.1. Large, same requirements as for Health Care Facilities.</p>	

R-6

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 310. Group R, Division 6 Occupancies shall be residential group care facilities, which provide care and/or supervisory services. Restraint shall not be practiced in these facilities.</p> <p>Such residential group care facilities are limited to halfway houses such as community correctional centers, community correction reentry centers, community treatment programs, work furlough programs, and alcoholism or drug abuse recovery or treatment facilities.</p> <p>R-6.1: more than six nonambulatory residents R-6.2: more than six ambulatory residents R-6.1.1: six or less non-ambulatory residents R-6.2.1: six or less ambulatory residents</p>	<p>Section 308.2 Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following:</p> <p>Residential board and care Assisted living facilities Halfway houses Group homes Congregate care facilities Social rehabilitation Alcohol and drug centers Convalescent facilities</p> <p>A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such</p>	<p>Health Care Occupancy: An occupancy used for purposes of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupant's control (6.1.5.1).</p> <p>Residential Board and Care Occupancy: A building or portion thereof that is used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services (6.1.9.1 & A-6.1.9.1)). Small Facility: 4-16 Large Facility: >16</p>	<p>The R-2 Occupancies are California Occupancies and are not found in other codes. Comparisons to other codes are based on similar occupancies. R-2's are statutorily driven.</p>

R-6

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>as the above, housing at least six and not more than 16 persons, shall be classified as Group R-4.</p> <p>Group I-1: more than 16 ambulatory(308.2) Group R-3: with five or less ambulatory Group R-4: from six to 16 ambulatory</p> <p>Section 308.3 Group I-2 this occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:</p> <p>Hospitals Nursing homes (both intermediate-care facilities and skilled nursing facilities) Mental hospitals Detoxification facilities</p> <p>A facility such as the above with five or fewer persons shall be classified as Group</p>		

R-6

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	R-3 or shall comply with the International Residential Code in accordance with Section 101.2. Group I-2: more than five nonambulatory (308.3) Group R-3: five or fewer nonambulatory (310.1)		

R-6

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Allowable Height and Area requirements specific to Group R Division 6 Occupancies are not given in Section 310 or Chapter 5.</p> <p>Section 316-A Group R-6 Occupancies are permitted in any type construction. Some additional requirements if floor area exceeds 3,000 sq. ft. and if the building exceeds 2-stories and if there are nonambulatory clients above the first floor.</p> <p>Section 317-A Exterior walls located less than 3 feet from property lines shall be of 1-hour fire resistive construction and openings are not permitted.</p>	<p>Ref. Table 503 for height and allowable area.</p> <p>Construction types are limited to two types A or B.</p>	<p><u>Health Care Occupancies:</u> As type increases, limits on height and floor area increase to NP/NP for Type V buildings (7.4.1)</p> <p><u>Board & Care Occupancies:</u> As type increases, limits on height and floor area increase to NP/4500 for large and 2/7000 for small Type V buildings (7.4.1)</p> <p>Both Health Care and Board & Care Occupancies require 1hr fire resistance of exterior walls for separation distances to 10ft and 0hr for >10ft. 10ft of separation allows max. area of unprotected openings to be 55% of exterior walls – less for less separation.</p>	

R-6

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Group R Division 6 Specific occupancy separation requirements are not found in the text of Section 302, Section 310 or in Tables 3-A and 3-B.</p> <p>Section 316-A.2 Requires a 4-hour separation from Group H Occupancies and a 1-hour separation from all other occupancy types.</p>	<p>Separation requirements range from 2 to 4 hours depending on occupancy with a footnote reference to Section 302.3.3 which does not exist. Reference should be to Section 302.3.2 and provides an exception for a 1-hour reduction of separation construction.</p> <p>Comparing Board and Care Large, and Board and Care Small. Requires from 1 to 3 hour separations based on type use with 1-hour reduction for sprinklered facilities. Health Care Facilities in most cases do not give credit for sprinklered facilities. Ref Table 6.2.4.1.</p>	<p><u>Board and Care Facilities:</u> require from 1-3 hour separations based on use type with a 1-hr reduction for fully sprinklered buildings. More restrictive for larger facilities (6.2.4.1)</p> <p><u>Health Care Facilities:</u> require 2-3 hour separation based on use type and for the most part do not allow for the reduction in sprinklered buildings (6.2.4.1)</p>	<p>NFPA generally becomes more restrictive when you exceed 4 or more non-ambulatory clients.</p> <p>It appears that both the NFPA and IBC provisions are close with regards to the cut-off when the 1-hour reduction maybe used.</p>

R-6 OCCUPANCIES

Smoke Barriers

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p><u>General</u>: No provisions for smoke barriers are given in the text of Section 310.2.3.</p>	<p><u>I-2</u>: Requires that every story for inpatient sleeping or treatments or with occupant load of ≥ 50 be divided in not less than two smoke compartments which do not exceed 22,500ft² with travel distance to reach a door in the barrier < 200ft (407.4)</p> <p><u>R</u>: no requirements</p>	<p><u>Board & Care Occupancies</u>: Requires that every story for inpatient sleeping or treatments or with occupant load of ≥ 50 be divided in not less than two smoke compartments which do not exceed 22,500ft² with travel distance to reach a door in the barrier < 200ft. 4 exceptions (19.3.7)</p>	

R-6

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Rated corridors shall be in accordance with Sections 1004.3.4.2 and 318A.3.</p> <p>Sections 318A.7 and 310.4 Require rescue windows/doors below fourth floor.</p> <p>Section 318A.1 Requires compliance with Chapters 3A and 10 for Means of Egress.</p> <p>Exits required in a Group R-6.1 housing nonambulatory clients. Requires direct exiting from sleeping rooms of nonambulatory clients or two separate means of egress connected by an exit corridor.</p> <p>Group R-6.2A Occupancies housing clients, none of whom are physically or mentally handicapped or nonambulatory may have a means of egress as required for a Group R, Division 3 Occupancy.</p>	<p>Group I and R occupancies exceeding 1 story, 10 occupants, or 75 feet travel distance shall be provided with a minimum of two exits from the building to the exterior. (Table 1018.2)</p> <p>Group I-1 and R occupancies shall have two exits when the occupant load exceeds 10 (Table 1014.1)</p> <p>Travel distance in Group I-1 and R occupancies shall not exceed 200 feet Travel distance shall not exceed 150 feet for Group I-2 occupancies. Above distances may be increased 50 feet for sprinklered buildings.</p> <p>Group I and R occupancies exceeding 1 story, 10 occupants, or 75</p> <p>1025.1 Rescue windows</p> <p>Table 1018.2 Requires 2 exits with occupant load exceeds 10.</p>	<p>At least one exit shall be either a direct exit to the exterior, a stair, a smokeproof enclosure, a ramp or an exit passageway (19.2.4.2).</p> <p>Not less than two exits shall be provided from each smoke compartment (19.2.4.3).</p> <p>Every habitable room shall have an exit access door leading directly to an exit access corridor (See exceptions 1-4 19.2.5.1).</p> <p>Every corridor shall provide access to not less than two approved exits without passing through intervening rooms. (19.2.5.9).</p> <p>Dead end corridors shall not exceed 30 feet. (19.2.5.10)</p> <p><u>Residential Board and Care Occupancies - Small Facilities:</u> Living areas above or below the level of exit discharge shall have a primary means of escape that is either an interior stair, exterior stair, a horizontal exit, or a fire escape stair. (26.2.2.1.2)</p>	

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>Living areas in facilities without sprinklers shall have a secondary means of escape consisting of one of the following: 1) door, stair, passage or hall providing access to the exterior at grade and independent and remote from the primary means of escape or 2) passage through an adjacent nonlockable space, independent and remote from the primary means of escape leading to any approved means of escape or 3) Outside window operable from the inside providing a clear opening of not less than 5.7 sq. ft. (26.2.2.2)</p> <p><u>Residential Board and Care Occupancies – Large Facilities:</u> Corridors shall be a minimum of 60 inches wide. (26.3.2.2.3).</p> <p>Travel distance shall not exceed 250 feet. (26.3.2.5).</p> <p>Dead end corridors shall not exceed 30 feet. (26.3.2.4.3).</p> <p>Corridors shall provide access to not less than two exits.</p>	

R-6

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		(11.5.1.2). Street floor exits shall be sized to accommodate the occupant load of the street floor plus the required capacity of stairs and ramps discharging onto the street floor (26.3.2.2.2)	

R-6

Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Group R-6 Occupancies shall be provided with smoke alarms or multiple station smoke alarms. Section 310.9.1.</p> <p>Section 310.9.1.3 requires hardwired with battery back-up in new construction.</p> <p>310.9.1.4 Requires smoke alarms installed in each sleeping room, corridor, and areas giving access to sleeping rooms at each level.</p> <p>Section 320A.1 Requires an approved automatic fire alarm system which responds to products of combustion be installed in Group R-6.1 and 6.2 Occupancies. Exception: Group R-6.2 Occupancies not housing nonambulatory, physically handicapped, or mentally handicapped clients. Or 2. Group R-6 Occupancies protected throughout by an approved automatic sprinkler system.</p> <p>Section 320A. When an automatic fire alarm system is not required a manual pull station shall be provided in a location subject to the local authority.</p>	<p>Group I occupancies require a manual and automatic fire alarm system. Section 907.2.6. Exception: Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at a nurse's station or other constantly attended location.</p> <p>Group I.2 occupancies shall be provided with an automatic fire detection system where waiting areas and other spaces are open to the corridor. Section 907.2.6.1. Exceptions: corridor smoke detection is not required when smoke detectors are provided in patient sleeping rooms and an audible and visual alarm is provided at a nurse station. Also corridor smoke detection is not required in smoke compartments that contain patient sleeping rooms where unit doors are equipped with automatic door-closing devices and integral smoke detectors on the unit side of the door.</p> <p>In Groups R-3 and R-4 occupancies single- or multiple-</p>	<p><u>Board & Care: Small</u>-requires manual fire alarm system with occupant notification without delay and smoke alarms on every level, in living spaces, and sleeping rooms. Section 26.2.3.4.1.</p> <p><u>Large</u>-requires a fire alarm system initiated by manual means, manual firebox supervised by employee, sprinklers, detection system. Smoke alarms in sleeping rooms and outside sleeping area as well as smoke detection in corridors and areas open to corridors. Section 26.3.3.4.1.</p>	<p>Requirements for both IBC and NFPA are similar.</p>

R-6

Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 320A.3. Group R-6 Occupancies housing persons who are hearing impaired shall be provided with notification appliances for the hearing impaired.	station smoke alarms shall be installed regardless of occupant load. Section 907.2.10.1.2.		

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Fire Alarm Systems- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1006.2.9.1.6 requires an approved single station smoke alarm or multiple-station smoke alarms in sleeping rooms of Group R-6 Occupancies.</p> <p>Section 1006.2.9.3.1 requires the installation of smoke alarms in existing R Occupancies not already provided with smoke alarms.</p>	<p>Group I occupancies require a manual and automatic fire alarm system. Exception: Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at a nurse's station or other constantly attended location.</p> <p>Group I.2 occupancies shall be provided with an automatic fire detection system where waiting areas and other spaces are open to the corridor. Exceptions: corridor smoke detection is not required when smoke detectors are provided in patient sleeping rooms and an audible and visual alarm is provided at a nurse station. Also corridor smoke detection is not required in smoke compartments that contain patient sleeping rooms where unit doors are equipped with automatic door-closing devices and integral smoke detectors on the unit side of the door.</p> <p>In Groups R-3 and R-4 occupancies single-or multiple-station smoke alarms shall be installed regardless of occupant load.</p>	<p>Health Care Facilities require a fire alarm system.</p> <p>Board and Care, Small, requires a manual fire alarm system and smoke alarms in accordance with NFPA 101 in living areas on each level. Exception: Smoke alarms are not required when facility is protected throughout by an automatic sprinkler system. Each sleeping room be provided with a single station smoke alarm.</p> <p>Board and Care, Large, requires a fire alarm system. Smoke alarms in each sleeping room. All common areas require smoke detection. Exception: Smoke detection is not required when facility is protected throughout by a supervised automatic sprinkler system.</p>	

R-6

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 318A.9 Requires sprinklers be installed in a Group R-6.1 Occupancy and in Group R-6 Occupancies which house nonambulatory clients above the first floor.</p> <p>Other than general requirements for all occupancies in Table 9-A based on height and area of structure there are no provisions requiring standpipes in Group R-6 Occupancies.</p>	<p>Section 903.2.5 Group I occupancies. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area. Exception to allow use of NFPA 13R and 13D where permitted.</p> <p>Section 903.2.7 Group R occupancies. An automatic sprinkler system in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.</p>	<p>Section 19.3.5.1 buildings containing <u>health care facilities</u> shall be protected throughout by an approved, supervised automatic sprinkler system.</p> <p>Section 26.2.3.5.1 residential board and care occupancies, <u>small</u>, requires all facilities be protected throughout by an approved automatic sprinkler system.</p> <p>Section 26.3.3.5.1 residential board and care occupancies, <u>large</u>, require all facilities be protected throughout by an approved automatic sprinkler system.</p>	

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1003.2.2. Requires sprinklers be installed in all occupancies with some exceptions. For specifics in regards to Group R-6 Occupancies the following requirements are from the building code. Section 318A.9 Requires sprinklers be installed in a Group R-6.1 Occupancy and in Group R-6 Occupancies which house nonambulatory clients above the first floor.</p>	<p>Section 903.2.5 requires an automatic sprinkler system shall be provided throughout buildings with a Group I fire area. Section 903.2.7 requires an automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.</p>	<p>For Health Care Occupancies Section 13.3.2.7.1 Buildings containing health care facilities shall be protected throughout by an approved, supervised automatic sprinkler system. Exception: In type I and Type II construction, where approved by the authority having jurisdiction, alternative protection measures shall be permitted to be substituted for sprinkler protection in specified areas where the authority having jurisdiction has prohibited sprinklers, without causing the building to be classified as nonsprinklered. For New Residential Board and Care Facilities Section 13.3.2.16.1 <u>Large Facilities</u>, all buildings shall be protected throughout by an approved automatic sprinkler system. Section 13.3.2.16.2.1 <u>Small Facilities</u>, all facilities shall be protected throughout by an approved automatic sprinkler system. Exception: In conversions, sprinklers shall not be required in small board and care homes with a rating of prompt evacuation capability</p>	

R-6

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
		and serving eight or fewer residents.	

R-6

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Sections 1107.1 and 1109.7. Require chimneys and heating apparatus conform to the Mechanical Code.</p>	<p>413.2 Attic spaces, concealed spaces, and storage. Except R-3 occupancies.</p>	<p>General: any area having a degree of hazard greater than normal to the general occupancy shall be enclosed so that the area has a 1-hour fire resistance or is protected with auto extinguishing systems, or both if hazard is severe. (8.15)</p> <p><u>Board & Care Facilities:</u> <u>Small</u>, requires 1-hour construction or sprinklers if the fire loading or activity is more severe than a 1 or 2 family dwelling. (25.2.3.2) <u>Large</u>, same requirements as for Health Care Facilities. (26.3.3.2.2)</p>	

DAYCARE

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 205 Definition-DAY CARE</p> <p>The care of persons during any period of a 24-hour day that does not provide permanent sleeping accommodations.</p> <p>Section 305.1 Requirements for Group E Occupancies:</p> <p>Division 3: Any Non-residential building or portion used for more than 6 children/persons.</p> <p>Licensing categories would include <i>Adult Day-care, Family Day-Care, Adult Day-support, Day-Care for Mildly Ill, Children, Infant Care Centers, and School Age Child Day-Care Centers.</i></p>	<p>Section 305.2 Day-Care:</p> <p>Day -Care, structure or building or portion of, used for educational, supervision or personal care services for more than 5 children older than 2 1/2 years of age classified as Group E occupancy.</p> <p>Section 308.5 Group I-4, Day care facilities:</p> <p>Facility, building, or structure used for 6 or more persons of any age for custodial care periods of less than 24 hrs. in a place other than the home of the person being cared for.</p> <p>308.5.1 Group I-4, Day care facilities - Adult Day Care:</p> <p>Facility for 6 or more adults for less than a 24</p>	<p>Section 3.3.713.3 Day-Care Occupancy:</p> <p>Occupancy for 4 or more clients for supervision and maintenance care for less than 24 hrs.</p> <p>Annex A – Section A 3.3.71.3 and A. 6.1.4.1: Day Care occupancies include the following:</p> <ol style="list-style-type: none"> 1. Child care occupancies. 2. Day-care homes. 3. Adult day care facilities. 4. Nursery schools. 5. Kindergarten classes that are incidental to a child day care occupancy. 	<p>Each of these codes has a very distinct approach to defining Day Care and how the occupancy is to be classified based on occupancy load, age and duration of care.</p> <p>The SFM has the statutory authority to amend this section of the code. The 2001 CBC classifies Group E-3 as used for both adults and children in both a school setting as well as a commercial setting.</p> <p>The IBC similarly classifies day care facilities as an I-4 but has subcategories covering adult and child day care facilities based on occupancy load, age and duration of care.</p> <p>The NFPA has a similar approach as that of the 2001 CBC in that this occupancy classification is used for both adults and children in both a school setting as well as a commercial setting. However the NFPA has a lower threshold for the start of the occupancy load to that of 4 verses 5 and 6 for the IBC and 6 for the CBC.</p>

DAYCARE

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>hrs. of supervision and personal care services.</p> <p>308.5.2 Group I-4, Day care facilities - Child Care Facility:</p> <p>A facility that provides supervision and personal care services for less than 24 hrs. for 6 or more children, 2 ½ years old or less.</p> <p><i>Exception: Day care for more than five, but no more than 100 for children that are 2½ years of age and located on the first floor and each room have an exit door directly to the exterior, shall be classified as Group E Occupancy.</i></p>		

DAYCARE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 3 Use or Occupancy</p> <p>Section 305.2 – Construction Height & Allowable Area:</p> <p>This section addresses the requirements for the type of construction, allowable floor area and height of the buildings classified as an E occupancy.</p> <p>This section indicates that Table 5B – Basic Allowable Building Heights shall be used to determine the allowable height and floor area. This table specifies the following:</p> <ul style="list-style-type: none"> • Type I - FR may be 4 floors in height w/ 45,200 sq.ft. • Type II – One-Hr. may be 2 floors in height w/ 20,200 sq.ft. • Type II –N may be 1 floor in height w/ 	<p>Chapter 5 General Building Heights & Areas</p> <p>Section 501 – General:</p> <p>This section addresses the requirements for the control of height and area of buildings and additions to existing buildings.</p> <p>This section refers to Table 503 Allowable Building Heights. This table specifies the following for Group I-4:</p> <ul style="list-style-type: none"> • Type I - A the floor area and building height is unlimited. • Type I - B may be 5 floors in height w/ 60,500 sq.ft. floor area. • Type II - A may be 3 floors in height w/ 26,500 sq.ft. • Type II - B may be 2 	<p>Chapter 7 - Construction Types & Height & Area Requirements:</p> <p>Section 7.4 Height & Area Limitations:</p> <p>This section addresses the requirements for the type of construction, allowable floor area and height of the buildings.</p> <p>This section refers to Table 7.4.1 Height and Area Requirements. This table specifies the following for day care occupancies:</p> <ul style="list-style-type: none"> • Type I – (442) is unlimited in floor area and building height for both sprinklered and nonsprinklered buildings. • Type I – (332) is unlimited in floor area and limited to 420 ft. in height for a sprinklered bldg. and 2 	<p>The bases of allowable height and floor area in the 2001 CBC are based on the building’s type of construction as shown in Table 5-B. The following characteristics must first be identified to determine the allowable height and or floor area:</p> <ul style="list-style-type: none"> • Type of Construction, which would include all building components or elements of construction. • Fire rating required per use of building and or the type of construction required. <p>Once these characteristics have been identified this table identifies the allowable height and floor area allowed in each type of construction.</p> <p><i>Example; Type I - FR may be 4 floors in height w/ 45,200 sq.ft. The structural frame shall be fire rated at 3 hours and roofs shall be fire rated at 2 hours.</i></p> <p>The bases of allowable height and floor area in the 2003 IBC is based on the building’s type of construction as shown in Table 503. The following</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>13,500 sq.ft.</p> <ul style="list-style-type: none"> • Type III – One-Hr. may be 2 floors in height w/ 20,200 sq.ft. • Type III – N may be 1 floor in height w/ 13,500 sq.ft. • Type IV – H.T may be 2 floors in height w/ 20,200 sq.ft. • Type V – One-HR. may be 2 floors in height w/ 15,700 sq.ft. • Type V – N may be 1 floor in height w/ 9,100 sq.ft. <p>This section also indicates that that a 50% area increase is allowed if the travel distance specified in section 1004.2.5 are reduced by 50%.</p>	<p>floors in height w/ 13,000 sq.ft.</p> <ul style="list-style-type: none"> • Type III - A may be 3 floors in height w/ 23,500 sq.ft. • Type III - B may be 2 floors in height w/ 13,000 sq.ft. • Type IV – H.T. may be 3 floors in height w/ 25,500 sq.ft. • Type V - A may be 1 floor in height w/ 18,500 sq.ft. • Type V - B may be 1 floor in height w/ 9,000 sq.ft. 	<p>floors not to exceed 400 ft. height for nonsprinklered buildings.</p> <ul style="list-style-type: none"> • Type II – (222) is limited to 60,500 sq.ft. with a maximum bldg. height of 180 ft. with 12 floors for a sprinklered bldg. and 2 stories not to exceed 160 ft. for a nonsprinklered building. • Type II – (111) is limited to 26,500 sq.ft. with a maximum bldg. height of 85 ft. not exceeding 6 floors for a sprinklered bldg. and 26, 50 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 1 floors for a nonsprinklered building. • Type II – (000) is limited to 13,000 sq.ft. with a maximum bldg. height of 75 ft. not exceeding 4 floors for a sprinklered bldg. 	<p>characteristics must first be identified to determine the allowable height and or floor area:</p> <ul style="list-style-type: none"> • Type of Construction, which does not include all building components or elements of construction. <p>Building elements are expressed as such items as columns, girders, floor joist, etc. Each element as shown in Table 601 is shown to have a fire rating based on the type of construction.</p> <p><i>Example; Type 1-A requires that the structural frame be fire rated at 3 hours. The floor construction is required to be fire rated at 2 hours and the roof construction including supports are required to be fire rated at 1.5 hours. Example; Type 1-A requires that the structural frame be fire rated at 3 hours. The floor construction is required to be fire rated at 2 hours and the roof construction including supports is required to be fire rated at 1.5 hours.</i></p> <p><i>Type I - A the floor area and building height is unlimited.</i></p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>and 13,000 sq.ft. with a maximum bldg. height of 55 ft. not exceeding 1 floor for a nonsprinklered building.</p> <ul style="list-style-type: none"> • Type III – (211) is limited to 23,500 sq.ft. with a maximum bldg. height of 85 ft. not exceeding 4 floors for a sprinklered bldg. and 26,500 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 1 floor for a nonsprinklered building. • Type III – (200) is limited to 13,000 sq.ft. with a maximum bldg. height of 75 ft. not exceeding 2 floors for a sprinklered bldg. and 13,000 sq.ft. with a maximum bldg. height of 55 ft. not exceeding 1 floor for a nonsprinklered building. • Type IV – (2HH) is limited to 25,500 sq.ft. 	<p><i>Type I - B</i> may be 5 floors in height w/ unlimited floor area.</p> <p>The bases of allowable height and floor area in the 2003 NFPA 5000 is based on the building's type of construction and whether the building is a sprinklered or nonsprinklered as shown in Table 7.4.1.</p> <p><i>Example; Type I – (442) is unlimited in floor area and building height for both sprinklered and nonsprinklered buildings.</i></p> <p><i>Type I – (332) is unlimited in floor area and limited to 420 ft. in height for a sprinklered bldg. and 400 ft. height for nonsprinklered buildings.</i></p> <p>Table 7.2.2 specifies the following example of fire rating based on construction type:</p> <ul style="list-style-type: none"> • <i>Type 1(442) Exterior bearing walls supporting more than one floor, column shall have a 4-hour fire rating. Interior bearing walls supporting more than one floor, column shall have a 4 hour fire rating and interior bearing walls supporting only</i>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>with a maximum bldg. height of 85 ft. not exceeding 2 floors for a sprinklered bldg. and 25,500 sq.ft. with a maximum bldg. height of 65 ft. not exceeding 1 floor for a nonsprinklered building.</p> <ul style="list-style-type: none"> • Type V – (111) is limited to 18,500 sq.ft. with a maximum bldg. height of 70 ft. not exceeding 4 floors for a sprinklered bldg. and 18,500 sq.ft. with a maximum bldg. height of 50 ft. not exceeding 1 floor for a nonsprinklered building. • Type V – (000) is limited to 9,000 sq.ft. with a maximum bldg. height of 60 ft. not exceeding 2 floors for a sprinklered bldg. and 9,000 sq.ft. with a maximum bldg. 	<p><i>one floor or roof shall have a 3-hour fire rating.</i></p> <ul style="list-style-type: none"> • <i>Type 1(332) Exterior bearing walls supporting more than one floor, column shall have a 3-hour fire rating. Interior bearing walls supporting more than one floor, column shall have a 3 hour fire rating and interior bearing walls supporting only one floor or roof shall have a 2-hour fire rating.</i>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		height of 40 ft. not exceeding 1 floor for a nonsprinklered building.	
<p>Chapter 3 Use or Occupancy</p> <p>305.3 Location on Property:</p> <p>This section specifies that Group E occupancies shall front directly on a public street or an exit discharge not less than 20 ft. in width. At least one exit shall be located on a public street or an exit discharge.</p>	<p>Section 1023.6 Access to public way.</p> <p>Exit discharge shall be direct, unobstructed to public way, except when safe dispersal area provided</p>	<p>Chapter 7 - Construction Types & Height & Area Requirements:</p> <p>Section 7.1.3 Location and Property.</p> <p>This section specifies that buildings are subject to Chapter 37 Exterior Wall Construction and section 7.3 Exterior Walls for openings in exterior walls.</p> <p>Section 7.4 Height and Area Limitations</p> <p>Addresses such requirements for buildings based on their intended use and type of construction as indicated in Table 7.4.1.</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a lower level of protection than that of the 2001 CBC in that the CBC requires Group E-3 occupancies to exit directly to the front of the building, on a public street.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 302.4 Occupancy separations:</p> <p>Occupancy separations are specified in Table B Required Separation.</p> <p>H-Occupancy requires 2-4 hour separation.</p> <p>A, B, and E Occupancies, no separation required.</p> <p>I, M, R, and U Occupancies require a 1-hour separation.</p> <p>S Occupancy requires 1 & 3 hour separation.</p> <p>Section 302 Mixed Use or Occupancy:</p> <p>Separation from other occupancies required per Section 302.4</p> <p>.</p>	<p>Section 302.1.1 Incidental</p> <p>Section 302.3.2 Separated Uses.</p> <p>Use of fire barriers or horizontal assemblies with fire-resistance rating.</p>	<p>Section 17.1.2.1 Multiple Occupancies.</p> <p>This section addresses the requirements for multiple occupancies. Multiple occupancies are defined in section 6.2 as a building in which two or more classes of occupancy exist. The following is a list of multiple occupancies:</p> <ul style="list-style-type: none"> • Section 17.1.2.2 – Assembly & Educational. • Section 17.1.2.3 Dormitory & Classrooms. • Section 17.1.3 – Classification of Occupancy. 	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC in that the IBC utilizes fire barrier walls or horizontal assemblies to provide separation and the NFPA 5000 specifies fire-resistive assemblies and occupancy separations.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 302.3 Types of Occupancy:</p> <p>Occupancy separations shall be classed as:</p> <p>Four-hour fire resistive</p> <p>Three-hour fire resistive</p> <p>Two-hour fire resistive</p> <p>One-hour fire resistive</p> <p>Section 305 requirements for Group E</p> <p>Occupancies refer to section 302 for the requirements of a particular occupancy separation.</p> <p>Table 3B only requires a one-hour occupancy separation between an E and B occupancy.</p> <p>Group E occupancies mixed with other occupancy classifications may require separation.</p>	<p>Section 302 Classification:</p> <p>Section 302.1.1.1 specifies that Table 302.1.1 Incidental Use Areas shall be used to determine the required separation between occupancies.</p> <p>Section 302.3 Mixed Occupancies, refers to Table 302.3.3, Required Separation of Occupancies as the table to use in determining separation between mixed occupancies.</p> <p>Table 302.3.3 indicates that a two-hour separation (unless noted otherwise) is required between a Group I-4 and the following occupancies:</p> <ul style="list-style-type: none"> • A-1 • A-2 • A-3 • A-4 • A-5 • B • E 	<p>Section 18.1.2 Multiple Occupancies:</p> <p>Refers to;</p> <p>Section 6.2.3 and 6.2.4 Separated Occupancy:</p> <p>This section refers to Table 6.2.4.1 Separated by fire resistance-rated assemblies.</p> <p>A two- hour separation is required between Daycare and the following occupancies:</p> <ul style="list-style-type: none"> • Assembly with less than 300 occupants • Assembly with 300 to 1000 occupants • Assembly with more than 1000 occupants <p>This section identifies several additional occupancies that require a two to three-hour separation.</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a higher level of protection than that of the 2001 CBC.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<ul style="list-style-type: none">• F-1 = 3 hour• F-2• H-2-5 = 3-4 hours• I-1• I-2• I-3• I-4• M• R• S-1 = 3 hours• S-2• U = 1 hour		

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1007.3.1 Definitions:</p> <p>This section does not define Common Path of Egress Travel.</p>	<p>Section 1002 Definitions:</p> <p>Defines Common Path of Egress Travel as a portion of the exit access where occupants are required to travel before two separate paths of travel to two exits are available.</p>	<p>Section 3.3.84 Common Path of Travel:</p> <p>Defines common path of travel as a portion of the exit access where occupants are required to travel before two separate paths of travel to two exits are available.</p> <p>Chapter 18 Day Care Occupancies</p> <p>Section 18.2.5.3:</p> <p>No common path of travel shall exceed 75 ft. other than the first 100 ft. in a building protected by an automatic sprinkler system.</p>	
<p>Section 1007.3.3 Travel Distance:</p> <p>Travel Distance in rooms, 75 ft. to corridor or exit.</p> <p>Exceptions to allow</p> <p>90 or 110 ft. In other areas 150 ft. maximum.</p>	<p>Section 1004.2.4 Exit access travel distance:</p> <p>This section refers to Table 1004.2.4 for distances from the most remote point to the entrance.</p>	<p>Section 18.2.6 Travel distance to exits:</p> <p>Travel distance is limited to 100 ft. between any room door and the exit.</p> <p>Travel distance is limited to 150 ft. between any point in a room</p>	<p>The 2003 IBC and NFPA 5000 similarly provide a higher level of protection than that of the 2001 CBC.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Exceptions allow an increase to 175 or 225 ft.</p> <p>An additional 100 ft. for corridor at end.</p>	<p>Travel distance for an I-4 shall not exceed 150 ft. in a nonsprinklered building and 200 ft. if the building is fully protected with an automatic sprinkler system.</p>	<p>and the exit.</p> <p>Travel distance is limited to 50 ft. between any point in a sleeping room and the exit.</p> <p>The travel distances shown above may be increased by 50 ft. in any building that is fully sprinklered.</p>	
<p>Section 1007.3.4 Intervening Rooms:</p> <p>No hazardous areas, if only one exit is required then it may go through one intervening room if smoke detectors are provided, minor exceptions permitted.</p>	<p>Section 1004.2.3 Egress through intervening spaces:</p> <p>Permitted only if the intervening room is an accessory to the area served; is not a high-hazardous area.</p>	<p>Section 18.2.1 Means of Egress Requirements:</p> <p>Refers to section 11.</p> <p>Section 11.5.1.8 specifies that exit access from rooms or spaces shall be permitted through an intervening room if the room is an accessory to the area served.</p>	<p>The 2003 IBC and NFPA 5000 provides a lower level of protection than that of the 2001 CBC in smoke detectors are required to be installed throughout the exit access.</p>
<p>Section 1007.3.6 Stairways</p> <p>Minimum width increased to 5 ft. when occupant load 100 or more.</p>	<p>Section 1003.3.3 Stairways:</p> <p>This section addresses the requirements for the use of stairs as a component of the means of egress.</p>	<p>Section 18.2.2.3 Stairs:</p> <p>References to Section 11.2.2 for the use of stairs as a component of the means of egress.</p>	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	A minimum width shall be determined by sections 1003.2.3.1 and 1003.2.13.2, but shall not be less than 44 inches.		
<p>Section 1007.3.9 Basements:</p> <p>Exit stairways from the basement must be direct exits and path does not re-enter building.</p> <p>Section 305.2.3 Special Provisions:</p> <p>Does not allow E-3 Occupancies above or below the first floor.</p>	<p>Section 405 Underground Buildings:</p> <p>This section applies to buildings having spaces for human occupancy more than 30 ft. below the lowest level of exit discharge. These areas are required to be of Type 1 construction and sprinklered.</p>	<p>Section 18.1.5.1; Refers to Chapter 31 as follows:</p> <p>Section 31.2 Underground Structures:</p> <p>This section specifies that underground structures with an occupant load of more than 50 persons shall be protected by an automatic sprinkler system.</p>	The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC.
<p>Section 1007.3.10 Panic Hardware:</p> <p>Panic Hardware required for an occupant load of 50 or more and corridors shall not be provided with a lock or latch unless it is strictly panic hardware.</p>	<p>Section 1003.3.1.9 Panic and fire exit hardware:</p> <p>Where panic and fire exit hardware are installed, it shall comply with this section. Group I-4 Occupancies are not specifically</p>	<p>Section 18.2.2.2.2 Panic and fire exit hardware:</p> <p>Any door in a required means of egress with an occupant load of 100 shall be permitted to use a lock or latch provided it is strictly panic hardware.</p>	The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC.

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	required to have panic and fire exit hardware installed.		
<p>Section 1007.3.11 Fences and gates:</p> <p>The perimeter of the property must be fenced and gated, but openings must be sized to permit access by emergency vehicles.</p>	<p>Section 1003.3.2 Gates:</p> <p>This section specifies that gates serving as a means of egress component shall comply with the applicable section regarding doors.</p> <p>The IBC does not specifically address the use of fences in day care occupancies.</p>	<p>The 2003 NFPA 5000 does not specifically address fences and gates in day care occupancies.</p>	<p>The 2003 IBC and NFPA 5000 provide a lower level of protection than that of the 2001 CBC.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 10 Means of Egress</p> <p>Table 10-A:</p> <p>Specifies that a minimum of two exits is required with an occupant load of 7 or more.</p> <p>Section 305.2.3 Special Provisions:</p> <p>This section provides for seven interlocked exceptions relating to E-3 Occupancies.</p> <p>Number 3.5: Specifies that at least one exit or exit access door from an E-3 occupancy shall be into a separate means of egress per section 1007.3.</p>	<p>Section 1005 Exits:</p> <p>Table 1005.2.1 Minimum number of exits for occupant load. This section specifies the number of exits based on occupant load.</p> <p>An occupant load of 1-500 requires a minimum of two exits.</p>	<p>Section 18.2.4 Number of Exits:</p> <p>A minimum of two exits required to accessible from each story and mezzanine.</p>	<p>The 2003 NFPA provides a higher level of protection than that of the 2001 CBC in that regardless of the occupant load; a minimum of two exits is required.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 1004.2.6 Dead ends:</p> <p>No dead-end corridors shall exceed 20 ft.</p>	<p>Section 1004.3.2.3 Dead ends:</p> <p>No dead-end corridors shall exceed 20 ft.</p>	<p>Section 18.2.5.2</p> <p>No dead-end corridors shall exceed 20 ft. unless sprinklered per section 55.3.</p>	<p>The 2003 IBC and NFPA 5000 provide a similar level of protection to that of the 2001 CBC.</p>

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Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 305.2.4 Special Hazards:</p> <p>Laboratories, vocational, and similar areas separated from each other by not less than one-hour occupancy separation.</p> <p>Section 305.8: Areas that contain hazardous materials shall be separated by not less than one-hour occupancy separation.</p>	<p>The 2003 IBC does not specifically address Special Hazards:</p> <p>Table 302.3.2 specifies that H-1 and I-4 occupancies are not permitted.</p> <p>The following H occupancies require the specified occupancy separation:</p> <p>H-2 = 4 hour separation H-3 = 3 hour separation H-4 = 4 hour separation H-5 = 3 hour separation</p>	<p>Section 18.3.2 Hazard Area Protection:</p> <p>Rooms or spaces used for hazardous use shall be separated by 1-hour fire barriers or protected by fire sprinkler system.</p>	<p>The 2003 NFPA 5000 provides a similar level of protection of that of the 2001 CBC.</p> <p>The 2003 IBC does not specifically address Special Hazards for Group I-4 Occupancies. The IBC does refer to the IFC and the International Mechanical Code for additional requirements.</p>

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Fire Alarm Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 305.9 Fire Alarm System:</p> <p>Section 305.9.1 Group E Occupancies with an occupant load of 50 plus or more than one classroom. Fire alarm notification appliance shall be mounted at the exterior of the building and interconnected.</p> <p>Interconnection not required when buildings separated by 20 ft. and method of communication between classes and administration.</p>	<p>Section 907 Fire Alarm and Detection Systems:</p> <p>907.2.6 Group I. A manual fire alarm system and an automatic fire detection system required in Group I occupancies.</p>	<p>Section 18.3.4 Detection, Alarm, and Communication Systems.</p> <p>Section 18.3.4.1 This section specifies that the fire alarm system shall be in accordance with section 55.2.</p> <p>This section refers to the chapter 52 and the NFPA 72. This section address the following subjects:</p> <ul style="list-style-type: none"> • Signal Initiation • Manual Fire Alarm Boxes • Sprinkler System Initiation • Smoke Detection • Etc., 	<p>The 2003 NFPA 5000 may provide a higher level of protection than that of the 2001 CBC; however, the external references were reviewed.</p> <p>The 2003 IBC provides a higher level of protection than that of the 2001 CBC, in that the IBC requires I occupancies to have A manual fire alarm system and an automatic fire detection system regardless of occupant load.</p>

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Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Section 305.7 Sprinkler and Standpipes Systems	Section 903 Automatic Sprinkler System	18.3.5 Extinguishing Requirements	
305.2.3 Special Provisions. Sprinkler system provided for day care use on second story, with two exterior exits.	903.2.2. E / Day Care. Fire area greater than 20,000 ft ² /below the exit. 903.2.1.3 A-3/Day Care. Sprinklers required for floor area that exceeds 12,000 ft ² , occupant load 300 plus. I-4/Day Care. Sprinklers required throughout.	18.3.5.1 Sprinklers required when floor area exceeds 20,000 ft ² , clients under 24 months, incapable of self preservation.	The ICB and NFPA 5000 are similar in protection requirements. The CBC only addresses protection when use is on the second floor
305.2.3 Sprinkler system provided for use on second story, with two exterior exits.	903.2.1.3 A-3/Day-Care. Sprinklers required on floors other than the level of exit discharge.	18.3.5.3 Day Cares two or more stories above the level of discharge /provided automatic sprinkler system.	The CBC and ICB are more restrictive when it comes to above ground level use.
310.16 Existing R-3 310.16.1 Automatic sprinkler system may be required to provide adequate safety.	903.2.7. R-3 Sprinkler system throughout all buildings with a Group R fire area.	18.6 Day Care Home. No requirements.	The ICB is the most restrictive, requiring sprinklers in all Group- R fire areas.

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Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1003.2 If any portion of a basement is located more than 75' from an opening. Buildings with occupant Load > 30 that is located 55' or more above F/D vehicle access.</p> <p>Every story or basement with floors area >1500 sq. ft. & not provided with 20sq. ft of opening entirely above the adjoining ground level in each 50 lineal ft. of the exterior wall on at least one side.</p>	<p>Section 903.2.2 Greater than 20,000 sq. ft.</p> <p>Below the level of exit discharge.</p> <p>Except. Where every room throughout has a direct exit to the outside.</p>	<p>Section 13.3.2.2 In basements exceeding 2500 sq. ft. in new buildings.</p>	<p>The 2003 IFC provides a higher level of protection than that of the 2001 CBC.</p>

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Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 2 Definitions</p> <p>205 DAY CARE:</p> <p>The care of persons during any period of a 24-hour day that does not provide permanent sleeping accommodations. (The SFM has the statutory authority to amend this definition.)</p> <p>DAY CARE, LARGE FAMILY HOME:</p> <p>Is a providers own home licensed to provide day care for periods less than 24 hours a day for 9 to 14 persons including children under the age of ten who reside in the home. (The SFM has the statutory authority to amend this definition.)</p> <p>DAY CARE HOME,</p>	<p>Chapter 3 Use and Occupancy Classification.</p> <p>305.2 Day-Care:</p> <p>The use of a building or portion, thereof, for educational, supervision or personal care services for more than 5 children older than 2 1/2 years of age shall be classified as Group E Occupancy.</p> <p>Section 308.5 Group I-4, Day care facilities:</p> <p>Facility, building, or structure used for 6 or more persons of any age for custodial care periods of less than 24 hours, in a place other than the home of the person being cared for.</p>	<p>Chapter 3 Definitions</p> <p>Section 3.3.71.4 Day-Care Occupancy:</p> <p>Occupancy for 4 or more clients who receive care, supervision and maintenance by other than their relatives for less than 24 hours.</p> <p>Annex A – Section A 3.3.71.3 and A. 6.1.4.1: Day Care occupancies include the following:</p> <ol style="list-style-type: none"> 1. Child Care occupancies. 2. Day-care homes. 3. Adult day care facilities. 4. Nursery schools. 5. Kindergarten classes that are incidental to a child day care occupancy. <p>Section 18.6.1.1.2</p> <p>This section establishes the life safety requirements for day-</p>	<p>The 2001 CBC classifies Day-Care occupancies into two groups, E-3 and R-3 occupancies, based on residential and non-residential use.</p> <p>The 2003 IBC classifies Day-Care Facilities into three groups, I-4, A-3 and E.</p> <p>The ICB is the only code of the three that addresses individuals who are unable to self-evacuate during an emergency.</p> <p>The 2003 NFPA 5000 The 2003 IBC classifies Day-Care Occupancy into three groups with additional sub classifications:</p> <p>Day-Care Occupancies</p> <p>Child Care occupancies.</p> <p>Day-care homes.</p> <p>Adult day care facilities.</p> <p>Nursery schools.</p> <p>Kindergarten classes that are incidental to a child day care occupancy.</p>

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Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>SMALL FAMILY:</p> <p>Is a home that provides family day care to eight or fewer children, including children under the age of ten who reside in the home for periods less than 24 hours a day.</p> <p>These day care homes are exempted from State fire and life safety regulations other than those state and local regulations applicable to an R-3 Occupancy.</p> <p>Section 310 Requirements for Group R Occupancies.</p> <p>Section 310.1 Division 3:</p> <p>Dwellings and those dwellings used for large family day care homes and lodging houses.</p> <p>Licensing categories that</p>	<p>308.5.1 Group I-4, Adult Care Facility:</p> <p>A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services.</p> <p>Exception: A facility where occupants are capable of responding to an emergency situation without physical assistance from staff shall be classified as an A-3.</p> <p>Section 303 Assembly Group A, A-3:</p> <p>Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere.</p>	<p>care home for more than three, but not more than twelve clients who receive care for less than 24 hours a day.</p> <p>18.6.1.4 Occupancy Subclassification of Day Care Homes:</p> <p>Family Day Care Home is a home where more than three, but fewer than seven clients receive care for less than 24 hours per day. (Generally in a dwelling unit)</p> <p>A Group Day Care Home is a home where at least seven but not more than 12 clients receive care for less than 24 hours per day. (Generally in a dwelling unit)</p>	<p>Day Care Home = 3 to 12 clients</p> <p>Family Day Care Home = 3 to 6 clients</p> <p>Group Day Care Home = 7 to 12 clients</p>

R-3 DAYCARE

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>may use this classification include:</p> <p><i>Adult Day-care, Family Day-Care, Adult Day-support, Day-Care for Mildly Ill, Children, Infant Care Centers, and School Age Child Day-Care Centers.</i></p>	<p>308.5.2 Child Care Facility:</p> <p>A facility that provides supervision and personal care services for less than 24 hours for more than five children, 2 ½ years old or less.</p> <p>Exception: Day care for more than five, but no more than 100 for children that are 2½ years of age and located on the first floor and each room have an exit door directly to the exterior, shall be classified as Group E Occupancy.</p>		

R-3 DAY CARE

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 10 Means of Egress</p> <p>Section 1010 Large Family Day Care Homes:</p> <p>Every story or basement shall be provided with two exits, which are remotely located from each other.</p> <p>Where the basement is used for day-care purposes one of the two exits shall provide access directly to the exterior of the building. Rooms used for day care purposes shall not be located above the first floor. Exit doors shall be openable from the inside without special use of a key or any special knowledge.</p> <p>Table 10-A is not applicable to this occupancy classification.</p>	<p>Section 310 Residential Group R, R-3 indicates that for adult and child care facilities that are within a single family home are permitted to comply with the International Residential Code</p> <p>Section R311 Means of Egress.</p> <p>Section R311.4 Exit door required:</p> <p>Not less than one exit door shall be provided for each dwelling to the exterior without traveling through a garage.</p> <p>Section 1013.2 Egress through intervening spaces:</p> <p>Means of egress from a dwelling unit or sleeping area shall not lead through another sleeping area, toilet</p>	<p>Section 18.2.5.2 Group day-care homes shall comply with Section 11.5. Arrangement of Egress:</p> <p>Section 11.5.1.1 Exits shall be located and exit access shall be arranged so that exits are readily accessible at all times.</p> <p>Section 11.5.1.3</p> <p>Where more than one exit is required, such exits shall be remotely located from each other.</p> <p>Section 11.5.1.4</p> <p>Where two exits are required they shall be located at a distance from one another not less than one-half the length of the maximum overall diagonal distance.</p> <p>Section 18.2.5.6</p> <p>Travel distance between any room door intended, as an exit access shall not exceed 100 feet.</p>	<p>The 2003 IBC provide a higher level of protection than that of the 2001 CBC in that the IBC is more restrictive regarding the use of the intervening space when exiting.</p> <p>The 2003 NFPA 5000 provides similar level of protection as that of the 2001 CBC.</p>

R-3 DAY CARE

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	rooms or bathrooms.	<p>Travel distance between any point in a sleeping room and the exit access shall not exceed 150 feet.</p> <p>Travel distance between any point in a sleeping room and an exit access to that room shall not exceed 50 feet.</p> <p>The travel distances mentioned above are allowed to be increased by 50 feet in a building protected throughout by an automatic sprinkler system.</p>	
<p>Section 310.4 Access and Means of Egress Facilities and Emergency Escapes:</p> <p>Basements with habitable space and every sleeping room below the fourth floor shall have at least one operable window or door into a public street. Such window or door shall be operable from the inside without the use</p>	<p>Section R310 Emergency Escape and Rescue Openings:</p> <p>Basements with habitable space and every sleeping room shall have at least one operable emergency escape and rescue opening.</p> <p>Section R310.1.4 Operational</p>	<p>Section 18.6.2 Means of Escape Requirements:</p> <p>This section refers to section 22.2.</p> <p>Section 18.6.2.4 Number of Means of Escape:</p> <p>Every story occupied by clients shall have not less than two remotely located means of escape.</p>	<p>The 2003 IBC and NFPA 5000 provide a similar level of protection as that of the 2001 CBC.</p>

R-3 DAY CARE

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>of a separate tool.</p>	<p>Constraints:</p> <p>Such openings shall be operational from the inside without the use of keys or tools.</p>	<p>Section 18.6.2.4.2</p> <p>Every room used for sleeping, living and dining shall have at least two means of escape; at least one shall be a door or stairway with unobstructed travel to the out side of the building on to a public way.</p> <p>Section 18.6.2.4.3</p> <p>In group day care homes where spaces are on the story above the exit discharge used by clients, at least one means of escape shall discharge directly to the out side.</p> <p>Section 18.6.2.4.4</p> <p>Where clients are occupying a story below the level of exit discharge, at least one means of escape shall discharge directly to the out side and the vertical travel to the ground floor shall not exceed eight feet.</p>	

R-3 DAYCARE

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 3 Use or Occupancy</p> <p>Section 305.9 Fire Alarm Systems</p> <p>Section 310.15 Large Family Day Care Homes. (This entire section is a SFM amendment per statutory authority of the Health and Safety Code)</p> <p>Section 310.15.2</p> <p>Large family day care homes shall be equipped with an SFM approved single-station residential-type smoke alarms. Placement per the AHJ.</p> <p>Section 310.15.4</p> <p>Every large family day care home shall be equipped with at least one manual device, at a location approved by the AHJ. The device shall actuate a fire alarm signal that is distinctive in tone and audible throughout the structure at a minimum of <i>15db</i> above the ambient noise level.</p>	<p>Chapter 9 Fire Protection Systems.</p> <p>Section 907.2.10.1.2 Groups R-2, R-3, R-4 and I-1.</p> <p>Single or multiple station smoke alarms shall be installed, regardless of the occupant load:</p> <ul style="list-style-type: none"> • On the ceiling or wall outside of the sleeping rooms • In each sleeping room • In each story within the dwelling including basements but not crawl spaces. • Split levels • Etc. 	<p>Chapter 18 Day-Care Occupancies.</p> <p>Section 18.6 Day Care Homes.</p> <p>Section 18. 6.3.4 Detection, Alarm and Communication Systems.</p> <p>Section 18.6.3.4.1 Smoke detectors shall be installed per Section 55.2.</p> <p>Section 55.2.2.6 Smoke Alarms.</p> <p>Section 55.2.2.6.1</p> <p>Single-station and multiple-station smoke alarms shall be installed per NFPA 72.</p> <p>Section 18.6.3.4.2</p> <p>Where the day care home is located within a building of another occupancy, any corridors serving the day care home shall be provided with a</p>	<p>The 2003 IBC and NFPA 5000 similarly provide an equal level of protection as that of the 2001 CBC. However, the external references of the NFPA 5000 were not reviewed.</p>

R-3 DAYCARE

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
These devices need not be interconnect to other fire alarm device. Type of device and location accept-table to the enforcing agency.		smoke detection system. Section 18.6.3.4.3 Single-station and multiple-station smoke alarms powered by the buildings electrical system with integral sounding devices shall be provided in all sleeping rooms.	

R-3 DAYCARE

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>The 2001 CFC does not specifically regulate fire protection specific to R-3 Occupancies used for day-care purposes.</p> <p>Section 315.15.1 Large family day care homes shall be considered single-family dwellings for the purposes of local building and fire codes except for the standards specific to the protection of children.</p>	<p>The 2003 IFC does not specifically regulate fire protection specific to R-3 Occupancies used for day-care purposes nor does the 2003 IRC.</p>	<p>Chapter 20 Occupancy Fire Safety.</p> <p>Section 20.3 Day-Care Occupancies</p> <p>Section 20.3.3 Day-Car Homes:</p> <p>Section 20.3.3.1.1 Refers to section 16.6 of the NFPA 101 for homes where three or more, but not more than twelve clients receive care for less than 24 hours a day.</p> <p>Section 20.3.3.1.2 Where the facility houses more than one age group or one self-preservation capability, the strictest requirements shall apply throughout the home. NFPA 101 is referenced.</p> <p>Section 20.3.3.2.2 Emergency Egress and Relocation Drills:</p> <p>Are required per the NFPA 101.</p>	<p>The 2003 NFPA 1 provides a higher level of protection than that of the 2001 CBC.</p>

HIGHRISE

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.1- Definition</p> <p>Definition of a high-rise building. Buildings with occupied floors more than 75 ft. above fire dept. access.</p>	<p>403.1- Definition</p> <p>Same as CBC</p>	<p>403.1-Definition</p> <p>Same as CBC</p>	<p>All three codes share the same definition of High Rise building.</p>

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.1-Definition</p> <p>Definition of a high-rise building. Buildings with occupied floors more than 75 ft. above fire dept. access.</p>	<p>403.1- Definition</p> <p>Same as CBC</p>	<p>7.4.3.1- Definition</p> <p>Same as CBC</p>	<p>All three codes define a “high-rise” building in the same manner.</p>
<p>403.1 –High rise provisions</p> <p>Requires all buildings that meet above definition to comply with special high-rise provisions. Exceptions:</p> <ol style="list-style-type: none"> 1. Open parking garages. 2. Special structures 3. Jails, prisons, hospitals. 	<p>403.1- High rise provisions</p> <p>Requires all buildings that meet above definition to comply with special high-rise provisions:</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Open parking garages. 2. Special structures. 3. Stadiums. 4. H1,H2, and H3 occupancies in acc. With section 415 (i.e. silos). 	<p>33.1.1- High rise provisions</p> <p>All high-rise buildings must meet all of the special high-rise provisions of Chapter 33, in addition to the occupancy requirements of Chapters 16-30.</p>	<p>All codes similar in intent.</p>
<p>SPECIAL REQUIREMENTS FOR NEW HIGH-RISE BUILDINGS</p>	<p>SPECIAL REQUIREMENTS FOR NEW HIGH-RISE BUILDINGS</p>	<p>SPECIAL REQUIREMENTS FOR NEW HIGH-RISE BUILDINGS</p>	
<p>403.6 –Central Control Station</p> <p>Central control station shall be provided in a location approved by the fire department. One hour occupancy separation required.</p>	<p>403.8, 911.1-Central Control Station</p> <p>Same as CBC except delete items 13 and 14.</p>	<p>33.2.5 – Central Control Station.</p> <p>Central control station shall be provided in a location approved by the fire department. (Construction and size requirements are located in the</p>	<p>IBC and NFPA 5000 provide an equal level of protection as the CBC.</p>

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Room shall be a minimum size of 96 sq. ft. with a min. dimension of 8 ft. Room shall contain the following:</p> <ol style="list-style-type: none"> 1. Voice alarm and public address system panels. 2. Fire dept. communications panel. 3. Fire alarm annunciator panels. 4. Elevator status annunciator. 5. Air-handling status indicators and controls. 6. Door-unlocking controls (stairs). 7. Sprinkler valve and water-flow detector panels. 8. Emergency and stand-by power status indicators. 9. Telephone for fire department use. 10. Fire pump status indicators. 11. Schematic building plans showing layout, exiting, fire protection, 		<p>NFPA 1, Fire Code-and are relatively the same.) Room shall contain the following:</p> <ol style="list-style-type: none"> 1. Voice alarm and controls. 2. Fire department communications panel. 3. Fire alarm annunciator panels. 4. Elevator status annunciator. 5. Sprinkler valve and waterflow annunciators. 6. Emergency generator status indicators. 7. Door-unlocking controls. 8. Fire pump status indicators. 9. Telephone for fire department use. 	

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
firefighting equipment and fire dept. access. 12. Work table. 13. Elevator control switches for switching of emergency power. 14. Other fire protection equipment and controls as required by the AHJ.			
403.6.2 - Annunciation Annunciator identification: Control panels shall be permanently identified as to function.	No requirement	No requirement	IBC and NFPA provide a lower level of protection than the CBC.

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.6.2 - Annunciation</p> <p>Alarm, supervisory, and trouble signals shall be separately annunciated by means of an audible and visual indicator. When the system serves more than one building, each building shall be zoned separately. When there are multiple sprinkler systems on a floor, each shall be zoned separately.</p>	<p>907.8.2, 907.2 - Annunciation</p> <p>Sections adopt NFPA 72, which outline the same requirements.</p>	<p>33.2.1, 55.2.1.2 - Annunciation</p> <p>Sections adopt NFPA 72, which outline the same requirements.</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.6.2 – Central Control Stations</p> <p>Central control station shall not be used for the housing of any boiler, heating unit, generator, combustible storage or other hazardous equipment or storage.</p>	<p>No specific mention of this specific requirement, although it is inferred in Section 911.1, which states that the room <i>must be separated from the remainder of the building by a 1-hour fire barrier (11.9.2)</i></p>	<p>No specific mention of this specific requirement, although it is inferred in NFPA 1, Fire Code, which states that the room <i>must be separated from the remainder of the building by a 1-hour fire barrier (11.9.2)</i></p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>
<p>403.7 – Elevator lobbies.</p> <p>Elevator lobbies shall be provided at all floors. Walls of lobbies shall be one-hour rated and doors shall be 20-min. rated smoke and draft control assemblies. Exception: Main entrance level of office buildings, elevators in atriums.</p>	<p>No high-rise specific requirement, however, elevators are not permitted to open directly into corridors, and therefore a lobby is required unless additional doors are provided on the opening. Section 707.14.1.</p>	<p>No high-rise specific requirement, however, elevators are not permitted to open directly into exits, and therefore, a lobby would be required in the case that the elevator opens to a corridor (typical) Section 54.3</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC.</p>
<p>403.7 - Elevators</p> <p>Elevators shall be provided with primary and secondary floor elevator recall.</p>	<p>3001.2 - Elevators</p> <p>Section requires installation in accordance with ANSI A17.1-Same requirement.</p>	<p>54.2 - Elevators</p> <p>Section requires installation in accordance with ANSI A17.1-Same requirement.</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>
<p>403.7 – Elevator Hoistways</p> <p>Elevator hoistways shall not be vented through machine rooms. Each elevator machine room shall be a separate</p>	<p>3004.2 – Elevator Hoistways.</p> <p>Elevator hoistways may be vented through machine room provided the vent is ducted with noncombustible material and enclosed with fire</p>	<p>54.7.1.1 – Elevator Hoistways.</p> <p>Elevator hoistways may be vented through machine room provided the vent is ducted with non-combustible material and enclosed with fire resistive</p>	<p>IBC/NFPA provides a lower level of protection than the CBC.</p>

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
smoke zone.	resistive construction. No mention of elevator machine room being a separate smoke zone.	construction equal to the elevator hoistway construction. No mention of elevator machine room being a separate smoke zone.	
<p>403.8, 3003.3 - Generators</p> <p>Generator shall be provided in accordance with NEC. Six hours of fuel, or 8 hours of fuel where connected to fire pump, shall be provided. Generator shall be capable of supplying all equipment required to be operational at one time: fire alarm/voice, smoke detection, smoke control, fire dept. communication, standby lighting, fire pumps, exit signs, and at least one elevator in each bank.</p>	<p>403.10, 2702 - Generators</p> <p>A standby power system shall be provided in accordance with the ICC Electrical Code, NFPA 110, and NFPA 111 for the following loads: Power and lighting for fire command center, electrically powered fire pumps, ventilation and detection for smokeproof enclosures, power for not less than one elevator.</p> <p>An emergency power system shall be provided in accordance with the ICC Electrical Code, NFPA 110, and NFPA 111 for the following loads: Exit signs and egress lighting, elevator car lighting, voice/alarm system, fire detection systems. Where the secondary power source is a generator, it shall</p>	<p>33.2.4 - Generators</p> <p>Generator shall be provided in accordance with NEC. Two hours of fuel shall be provided. Generator shall be capable of supplying all equipment required to be operational at one time: fire alarm/voice system, electric fire pump, central control station equipment and lighting, not less than one elevator, mechanical equip. for smokeproof enclosures, mechanical equipment required to conform to requirements of Ch. 50 (Mechanical Systems).</p>	IBC and NFPA 5000 provide a lower level of protection to the CBC.

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	be provided with fuel for not less than 2 hours of running time.		
<p>403.8.2 Standby lighting.</p> <p>Standby lighting shall provide:</p> <ol style="list-style-type: none"> 1. Separate lighting circuits and fixtures sufficient to provide light with an intensity of not less than 1 footcandle at floor level in main escape routes. 2. All lighting circuits for mechanical rooms and the central control station. 	<p>1006.2, 403.10 – Standby lighting.</p> <p>Same as CBC.</p>	<p>33.2.4.1, 11.9 – Standby lighting</p> <p>Same as CBC.</p>	IBC and NFPA provide an equal level of protection as the CBC.
<p>403.8.3- Emergency Systems</p> <p>The following are classified as emergency systems and shall operate within 10 seconds of the normal power supply:</p> <ol style="list-style-type: none"> 1. Exit signs and means 	<p>403.11.1- Emergency Systems</p> <p>Same as CBC.</p>	<p>33.2.4.2 – Emergency Systems</p> <p>Same as CBC.</p>	IBC and NFPA provide an equal level of protection as the CBC.

HIGHRISE

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<ul style="list-style-type: none"> of egress lighting. 2. Elevator lighting. 3. Fire alarm system. 4. Sprinkler alarm system. 			
<p>403.10 -Seismic In seismic zones 2, 3, and 4, anchorage of mechanical and electrical equipment required for life-safety shall be provided.</p>	<p>403.14, 1621.1.3 - Seismic Discusses seismic design requirements for mechanical, electrical equipment.</p>	<p>13.4.2.1, 4.1.3.2.2.2 – Seismic. Buildings and components shall be designed to withstand seismic forces.</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>

HIGHRISE

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.9 - Stairs</p> <p>Stairway doors may be locked from the stairway side provided the doors unlock simultaneously upon a signal from the fire control room, and they fail to the open position. When doors are locked, phones or other 2-way communication shall be provided at every 5th floor.</p>	<p>403.12, 403.12.1- Stairs</p> <p>Same as CBC except there is no requirement for the doors to fail to the open position.</p>	<p>11.2.1.5.2 (B) - Stairs</p> <p>Stairs may be locked from the stair side when:</p> <ol style="list-style-type: none"> 1. Re-entry is provided at least 2 floors levels where access is provided to another exit. 2. Not more than 4 levels are between doors that provide re-entry where access is provided to another exit. 3. Re-entry is provided at the top floor or next to the top floor. 4. Re-entry doors are identified, and other doors direct user to re-entry doors. 	<p>IBC and NFPA provide a lower level of protection than the CBC.</p>

HIGHRISE

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>1005.3.3.7 – Stair enclosures.</p> <p>Pressurized stair enclosures with vestibules are required. pressurization shall provide a minimum pressure difference within the vestibule with the doors closed of +.05-inch water gage relative to the fire floor and .05-inch negative pressure relative to the exit enclosure.</p>	<p>403.13, 909.20, 1019.1.8 – Stair enclosures.</p> <p>Smokeproof enclosures are required for exit stairs serving floors 75 ft. or more above fire dept. access.</p> <p>Three methods:</p> <ol style="list-style-type: none"> 1. Natural ventilation. 2. Mechanical ventilation with vestibules required. 3. Pressurized stair enclosure with no vestibule that provides a minimum pressure of +15-inch pressure, and a maximum of +.35-inch pressure relative to the fire floor. 	<p>33.2.3, 11.2.3 – Stair enclosures.</p> <p>All vertical exit enclosures shall be smokeproof enclosures.</p> <p>Three methods:</p> <ol style="list-style-type: none"> 1. Natural ventilation. 2. Mechanical ventilation with vestibule. 3. Pressurized stair enclosure (Vestibule may not be necessary dependent upon engineered analysis.) <p>Stair enclosure shall be provided with a minimum pressure of +.05-inch pressure relative to the fire floor.</p>	<p>IBC and NFPA 5000 provide a higher level of protection than the CBC.</p>

HIGHRISE

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.5.2- Voice Alarm</p> <p>Voice/alarm signaling system required. Must be audible on alarm floor or as required by AHJ. Upon activation of any fire detector , water-flow device, or any suppression system, an alert tone is followed by voice instructions.</p>	<p>907.2.12, 907.2.12.2 – Voice Alarm.</p> <p>Similar to CBC except alarm must be audible on at minimum the floor of alarm, floor above, and floor below. Exception I-1 and I-2 occupancies which may sound at a constantly attended location and be broad-cast over an overhead paging system.</p>	<p>33.2.1.1, 55.2.3.6.1, and 55.2.3.6.2 – Voice Alarm</p> <p>Similar to CBC. Voice instructions must be transmitted to all areas of the building unless selective evacuation is employed, in which case, the message shall be heard in evacuation or relocation areas.</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>
<p>403.5.2 – Manual override.</p> <p>Manual override for voice communication shall be provided for all paging areas.</p>	<p>907.2.12.2.1 – Manual Override.</p> <p>Manual override for voice communication shall be provided for all paging areas.</p>	<p>55.2.3.6.2 – Manual Override.</p> <p>Manual override is required only when selective evacuation is employed.</p>	<p>NFPA 5000 provides a lower level of protection than CBC.</p> <p>IBC provides and equal level of protection as the CBC.</p>

HIGHRISE

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.5.3 Fire Dept. Communication System. A 2-way fire department communication system is required between the FCC, elevators, elevator lobbies, emergency and standby power rooms, and all entries into enclosed stairways.</p>	<p>907.2.12.3 – Fire Department Comm. System. Similar to CBC, except add fire pump rooms and areas of refuge.</p>	<p>33.2.1.2 – Fire Department Comm. System. 2-way fire department communication system is required to be installed in accordance with NFPA 72 between the FCC, elevator cars, elevator lobbies, and at each floor level of exit stair enclosures.</p>	<p>IBC and NFPA provide a lower level of protection than CBC.</p>
<p>403.5.3.1. Alarm Supervision Discusses where alarm signals must be transmitted. Mandates a listed Central Station, an approved remote station, or when approved, a direct transmission to the fire department.</p>	<p>907.14, 903.4, 903.4.1 Alarm Supervision. Similar to NFPA 5000. Requires monitoring by an approved central station, remote supervising station, proprietary supervising station, or when approved to a constantly attended location.</p>	<p>33.2.2.1, 55.3.2.2.1 55.2.4.2 Alarm Supervision. Sprinkler systems for all high-rise buildings must be electrically supervised. All fire alarm signals must be electrically supervised only when required for the particular occupancy.</p>	<p>IBC and NFPA provide equal level of protection as the CBC</p>

HIGHRISE

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1006.2.12.2.1, 1006.2.12.2.2 – Fire Alarms</p> <p>Group B office and Group R-1 occupancies shall be provided with an automatic fire alarm and an emergency voice/communication system.</p>	<p>907.2.12 – Fire Alarms</p> <p>Same as CBC but not specific to B office and R-1 occupancies--all high-rise buildings with a few listed exceptions.</p>	<p>13.7.1.4, 13.7.2.27.2 – Fire Alarms.</p> <p>Fire alarm system is required-either voice or alarm system dependent upon whether selective evacuation is employed.</p>	<p>NFPA provides a lower level of protection than the CFC.</p> <p>IFC provides an equal level of protection than the CFC.</p>
<p>1006.2.12.2.2 – Smoke Detectors</p> <p>Mandates smoke detection locations. Smoke detectors shall activate voice alarm and put equipment into operation that is necessary to prevent the recirculation of smoke.</p> <ol style="list-style-type: none"> 1. Mechanical equipment, electrical, transformer, telephone equipment, elevator machine rooms, and elevator lobbies. 2. Smoke detectors for the control of air conditioning equipment and ventilation systems as required by NFPA 90A, Ch. 4 	<p>907.2.12.1- Smoke Detectors</p> <p>Similar to CBC. Mandates specific locations for smoke detectors, but is less restrictive.</p>	<p>No high-rise specific requirements regarding smoke detector locations.</p>	<p>NFPA provides a lower level of protection than the CFC.</p> <p>IFC has equal level of protection as the CFC.</p>

HIGHRISE

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>3. R-1 Occupancies require smoke detection throughout corridors serving an occupant load of 10 or more.</p>			
<p>1006.2.12.2.3 -Audibility</p> <p>Mandates specific rooms where audibility of alert tone and voice announcement must be provided. Manual override for all paging zones must be provided. Section refers reader to CBC requirements and NFPA 72 as amended by Article 91 for design.</p>	<p>907.2.12.2, 907.2.12.2.1 907.2.12.2.2 - Audibility</p> <p>Similar to CBC, except requires audibility on fire floor, floor above, and floor below at minimum. Manual override for voice system is required for all paging zones. Capability to provide live voice instructions to elevators, stairways, and throughout a selected floor or floors shall be provided.</p>	<p>13.7.1.4.10.7</p> <p>Evacuation tone shall be audible throughout building except where selective evacuation is employed. Manual or selective paging is required when selective evacuation is employed.</p>	<p>IFC and NFPA provide an equal level of protection as the CFC.</p>
<p>1006.2.12.2.4 – Fire Dept. Communication.</p> <p>2-way communication system for Fire Department use is required between the Central control station,</p>	<p>907.2.12.3 – Fire Dept. Communication.</p> <p>Similar to CBC except add fire pump rooms and areas of refuge for communication locations. Adds exception to</p>	<p>13.7.2.27.2.2 – F.D. Communication.</p> <p>2-way telephone communication system shall be provided for Fire Department use in accordance</p>	<p>IFC and NFPA provide an equal level of protection as the CFC.</p>

HIGHRISE

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
elevators, elevator lobbies, emergency and standby power rooms, and at entries into enclosed stairways.	allow fire department radios to be accepted in lieu of communication system when approved.	with NFPA 72 between the Central Control Station, elevators, elevator lobbies, and at each floor level of exit stairways (unless the fire department's radio system is approved as equivalent).	
<p>1006.3.3.7 Zoning</p> <p>Not high-rise specific, however AHJ can mandate by floor, by device zoning for any fire alarm system. CBC requires sprinklers to be zoned by floor.</p>	<p>907.9.2 - Zoning</p> <p>High-rise building fire alarm systems shall be zoned by floor-by device.</p>	<p>13.7.3.1.1, A13.7.3.1.1-Zoning.</p> <p>Not high-rise specific, however, appendix section provides guidance to locations where zoning should be provided which would include high-rise buildings.</p>	<p>IFC and NFPA provide and equal level of protection as the CFC.</p>

HIGHRISE

Fire Protection Systems- Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
No requirement for life safety report (although smoke control report is required as a part of smoke control requirements of 905.6.2).	No requirement for life safety report.	<p>1.7.6.3.1.8 – Life Safety Report.</p> <p>Life safety report required.</p>	<p>NFPA provides a higher level of protection than CBC.</p> <p>IBC provides and equal level of protection than CBC.</p>
<p>403.2.1- Sprinklers</p> <p>Sprinkler system shall be designed to NFPA 13 Standard.</p>	<p>403.2, 903.3.1.1.1 – Sprinklers.</p> <p>Same as CBC. (some exceptions)</p>	<p>33.2.2.1 – Sprinklers.</p> <p>Same as CBC</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>
<p>403.2.1- Shut-off Valves.</p> <p>Sprinkler system shall be provided with shut-off valves and water-flow devices at each floor.</p>	<p>403.2, 903.3.3.1.1, 903.4.3, 907.8.2 – Shut-off Valves.</p> <p>Same as CBC</p>	<p>55.3.1.6 – Shut-off Valves.</p> <p>Same as CBC</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>

HIGHRISE

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>403.2.1- Valves.</p> <p>Valves and waterflow devices shall be electrically supervised and transmitted to an approved Central station, approved remote supervising station, constantly attended central control station, or when approved by Fire authority having jurisdiction, directly to the Fire Department.</p>	<p>403.2, 903.4, 903.4.3 – Valves.</p> <p>Similar to CBC except signal must be transmitted to approved Central station, approved remote supervisory station, proprietary station, or when approved by the Building official, to a constantly attended location.</p>	<p>33.2.2.1, 55.3.2, 55.3.2.2.1 – Valves.</p> <p>Similar to CBC except Signal may be sent to a proprietary station, and may not be sent directly to the Fire Department.</p>	<p>IBC and NFPA have an equal level of protection as the CBC.</p>

HIGHRISE

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.5, Table 9A - Standpipes</p> <p>Adopts NFPA 14 w/ amendment. A Class I standpipe with automatic supply is required.</p>	<p>905.3.1, exc. 1, 905.2 – Standpipes.</p> <p>Same as CBC</p>	<p>55.4.1 - Standpipes</p> <p>Same as CBC</p>	<p>IBC and NFPA provide an equal level of protection as the CBC.</p>
<p>1005.3.3.7.1.5, 904.5.3 Standpipe Outlets.</p> <p>Location of standpipe outlet – In vestibule of stair enclosure.</p>	<p>905.4 – Standpipe Outlets.</p> <p>Standpipe outlets required to be located at the intermediate landings between floors in stairways, or as approved by the building official.</p>	<p>55.4.1 – Standpipe Outlets.</p> <p>Same as IBC</p>	<p>IBC and NFPA provide a higher level of protection than the CBC.</p>

HIGHRISE

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1001.5.4 –Building Owner. Designates owner as responsible party for fire and life-safety system maintenance and testing. Quarterly testing by approved persons and written records are man-dated.</p>	<p>901.7.1- Building Owner. No high-rise specific related requirements. The building owner is ultimately responsible to repair impaired systems.</p>	<p>13.1.2, 13.3.3.3 – Bldg. Owner. No high-rise specific related requirements. Owner is responsible for testing and maintenance per the above section.</p>	<p>IFC and NFPA provide a lower level of protection than the CFC.</p>
<p>1003.2.2 – Sprinklers. All new buildings with a floor level with an occupant load of 30 or more that is located 55 ft. or more above fire department vehicle access shall be fully sprinklered in accordance with NFPA 13.</p>	<p>903.2.10.3 – Sprinklers. Same as CBC.</p>	<p>13.3.2.21.1- Sprinklers. High-rise buildings shall be provided with an automatic sprinkler system in accordance with NFPA 13.</p>	<p>IFC and NFPA provide an equal level of protection as the CFC.</p>

HIGHRISE

Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1004.2 - Standpipes</p> <p>New high-rise buildings are required to be provided with a Class 1 standpipe with an automatic water supply in accordance with NFPA 14.</p>	<p>905.3, 905.2 – Standpipes.</p> <p>Same as CBC.</p>	<p>13.2.2.3 – Standpipes.</p> <p>Same as CBC.</p>	<p>IFC and NFPA provide an equal level of protection as the CFC.</p>
<p>1004.3- Hose connections.</p> <p>Mandates locations of standpipe hose connections. In pressurized enclosures (exit stairs), requires outlet to be located in vestibule.</p>	<p>905.4 – Hose connections.</p> <p>Mandates locations of standpipe hose connections. In exit stairs, requires outlet to be located at the intermediate landing between floors unless otherwise approved by the building official.</p>	<p>13.2.2.2 – Hose connections.</p> <p>Refers to NFPA 14 which is the same as IFC for outlet locations in stairways.</p>	<p>NFPA provides a higher level of protection than the CFC.</p> <p>IFC provides an equal level of protection as the CFC.</p>

HIGHRISE

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>413A.1 – Emergency Power.</p> <p>Combustion engines and gas turbines (diesel generators and fire pumps) shall be installed in accordance with NFPA 37.</p>	<p>2702.1- Emergency Power.</p> <p>Emergency and stand-by power systems shall be installed in accordance with the ICC Electrical Code, NFPA 110, and NFPA 111.</p>	<p>11.9.2.3 NFPA 5000 (11.7.1, 11.7.2 NFPA 1) Emergency Power.</p> <p>Generators used for emergency or standby power shall be installed in accordance with NFPA 110 and NFPA 111. (Stationary generators shall be installed in accordance with NFPA 37 and NFPA 70.)</p>	<p>IFC and NFPA 5000 provide a higher level of protection than the CBC.</p>
<p>413A2.1 - Generators</p> <p>Rooms used for combustion engines or gas turbines shall be separated from the remainder of the building by not less than a one-hour fire-resistive occupancy separation.</p>	<p>403.10.1- Generators</p> <p>Rooms used to house generators for standby power in high-rise buildings shall be separated from the rest of the building by 2-hour construction.</p>	<p>11.2.3.12 - Generators</p> <p>Generators for required standby power to ventilation equipment shall be housed in rooms with a minimum 1-hour rated fire resistance rating.</p>	<p>IBC provides a higher level of protection than the CBC.</p> <p>NFPA provides an equal level of protection than the CBC.</p>

HIGHRISE

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>413A.2.2.1-Interior openings.</p> <p>Interior openings: In other than Group I occupancies, interior openings shall be allowed in fully sprinklered buildings. Openings shall be protected as openings in occupancy separations.</p>	<p>Not addressed in building code.</p>	<p>Not addressed in building code.</p>	<p>IBC and NFPA provide a lower level of protection than the CBC.</p>
<p>413A.2.3 CBC – Generator rooms.</p> <p>Rooms housing generators or fire pumps used for emergency power shall be dedicated rooms without any other equipment other than that necessary for emergency power generation and distribution.</p>	<p>Not addressed.</p>	<p>Not addressed.</p>	<p>IBC and NFPA provide a lower level of protection than the CBC.</p>

HIGHRISE

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>413A.2.4 Flammable liquids. Handling and use of flammable or combustible liquids shall comply with the Fire Code.</p>	<p>415.7.2- Flammable liquids. The storage, handling, processing and transporting of flammable and combustible liquids shall be in accordance with the IMC and the IFC.</p>	<p>2.1-Flammable liquids. NFPA 30, Flammable and Combustible Liquids Code is listed as a reference document and a part of the requirements of this code.</p>	<p>Each code refers to a different standard.</p>
<p>Listing of generators is not addressed in building code.</p>	<p>2702.1...1 IBC –Listing of emergency generators. Generators used for emergency and standby power shall be listed in accordance with UL 2200.</p>	<p>Not addressed.</p>	<p>IBC provides a higher level of protection than the CBC. NFPA provides an equal level of protection as the CBC.</p>

HIGHRISE

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Maintenance and testing of emergency generators is not addressed in building code.</p>	<p>2703.3 IBC – Maintenance and testing of generators. Standby and emergency power systems Shall be maintained and tested in accordance with the IFC. Maintenance of emergency and standby power systems is addressed including scheduling, written records, and switch maintenance. (Operational inspection and testing is required in accordance with NFPA 110 and 111, includes transfer switch test.) (604.5 IFC) Routine maintenance and testing shall be overseen by a properly instructed individual.</p>	<p>11.9.2.3 – Maintenance and testing of generators. Maintenance and Testing requires generators providing standby or emergency power to be tested and maintained accordance with NFPA 110 and 111.</p>	<p>IBC and NFPA provide a higher level of protection than the CBC.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>414A.1 Fixed Guideway Transit Systems</p> <p>Supersede other similar requirements</p> <p>414A2.2 If mixed occupancy, Fixed Guideway Transit System should meet Group A requirements</p>	<p>Section 303.1 Assembly Group A</p> <p>Waiting areas in transportation terminal classified as an A-3 Occupancy</p>	<p>Section 6.1.2.1</p> <p>Persons awaiting transportation classified as an Assembly Occupancy</p>	<p>All three Codes classify areas as a type of Assembly Occupancy. No substantive difference.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 414A.2 Construction</p> <p>Allows buildings to be Type I, Type II-FR, or Type II One hour construction; Underground stations; Type I or Type II-FR construction; Open stations may be Type II-N, Exception; that any construction type if occupant load < 300</p>	<p>NFPA 130 NFPA 220</p> <p>Allows buildings Type I or Type II or combination as determined by an engineering analysis of fire exposure hazards</p>	<p>NFPA 130 NFPA 220</p> <p>Allows buildings Type I or Type II or combination as determined by an engineering analysis of fire exposure hazards</p>	<p><u>Assumes</u> use of NFPA 130 for IBC and NFPA 5000</p> <p>CBC has more prescriptive requirements and does not allow less than Type II one-hour construction unless station is open-air type.</p> <p>IBC and NFPA appear to allow Type II 000 (non-rated) construction if determined by engineering analysis.</p> <p>Both of these Codes contain less restrictive requirements than CBC based on engineering analysis of fire exposure hazards.</p> <p>NFPA 5000 and IBC requirements are nearly identical.</p>
<p>Section 414.A.2.1 Height 506; Table 5-B</p> <p>Meet requirements of A 2.1 Occupancy for height limitations based on construction Type</p>	<p>Section 503 Table 503</p> <p>Meet requirements of A-3 Occupancy for height limitations based on construction type.</p>	<p>Section 7.4 Table 7.4.1</p> <p>Meet requirements of Assembly > 300 Occupancy for height limitations based on construction type.</p>	<p>IBC and NFPA 5000 are less restrictive than CBC.</p> <p>IBC and NFPA 5000 have similar height limitations.</p> <p>Construction types are similar but have different fire-resistive requirements for building elements; therefore, a completely accurate evaluation is not possible.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>504/505 Allowable Area</p> <p>Floor areas and increases Table 5-B Meet requirements of A 2.1 Occupancy for floor area limitations based on construction Type</p>	<p>Section 506 Table 503</p> <p>Meet requirements of A- 3 Occupancy for floor area limitations based on construction type.</p>	<p>Table 7.4.1</p> <p>Meet requirements of Assembly > 300 Occupancy for height limitations based on construction type.</p>	<p>IBC and NFPA 5000 are less restrictive than CBC.</p> <p>IBC and NFPA 5000 have similar floor area limitations.</p> <p>Construction types are similar but have different fire-resistive requirements for building elements; therefore, a completely accurate evaluation is not possible. Area increase provisions are the same for the IBC and NFPA 5000. The CBC appears to be more restrictive regarding area increase for frontage over 20 ft.</p> <p>The CBC does not allow for sprinkler protection to qualify for height and area increases.</p> <p>The other Codes allow sprinkler protection to qualify for both area and height increases.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 503 Location on Property</p> <p>Table 5-A Exterior wall rating</p> <p>Type I, II-FR, III one-hour & Type IV Four-hour < 5 ft.; Type II one-hour & Type V one-hour Two-hour < 10 ft. Openings not permitted < 5 ft.</p>	<p>Section 704.5 Table 601 Table 602 Exterior wall rating</p> <p>Minimum One-hour < 5 ft.; Type I A Three-hour Type I B Two-hour Type II A One-hour Type II B One-hour 704.8 Table 704.8 Unprotected and protected openings are a % of exterior wall</p>	<p>Section 7.3 Table 7.2.2 Table 7.3.2.1 Exterior wall rating</p> <p>Minimum One-hour < 10 ft.; Type I 442 Four-hour Type I 332 Three-hour Type II 222 Two-hour Opening and protection 7.3.5 Table 7.3.2.1 Table 7.3.5. (a) Table 7.3.5. (b) Unprotected and protected openings are a % of exterior wall</p>	<p>CBC more restrictive than NFPA 5000 and IBC regarding fire protection ratings of walls. CBC also more restrictive regarding location of openings.</p> <p>NFPA 5000 appears more restrictive than IBC regarding fire protection rating of exterior walls, however, types of construction differ enough not to allow an accurate analysis.</p> <p>Unable to determine protected and unprotected opening where allowed. All three Codes use different methods to determine where allowed.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 414A2.2 Occupancy Separations</p> <p>Table 5-B</p> <p>Occupancy separations as for A 2.1 Occupancy; Three-hour separation between power substation; Two-hour separation between public areas and rooms:</p> <p>Electrical Train control Trash Fan Emergency Generator Battery</p>	<p>Table 302.3.3</p> <p>Occupancy separations as for A-3 Occupancy; NFPA 130 Three-hour separation between power substation; Two-hour separation between public areas and rooms:</p> <p>Electrical Train control Trash Battery</p>	<p>Table 6.2.4.1</p> <p>Occupancy separations as for Assembly Occupancy based on occupant load; NFPA 130 Same requirements as IBC</p>	<p>All three Codes have very similar requirements regarding occupancy separation.</p> <p>Opening protection similar requiring 1 ½ hour protection rating for two-hour separation.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS
Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 414A.3 Exiting</p> <p>Minimum two exits, each within 20 ft. of each end; Occupant load- Capacity of train plus persons awaiting train. Exit station platform within 4 minutes and to a point of safety within 6 min.</p>	<p>Nothing specific to Fixed Guideway Transit Systems found in Code</p> <p>Section 1018.1 Occupant load 51-500 require two exits</p>	<p>Nothing specific to Fixed Guideway Transit Systems found in Code</p> <p>Section 11.4 Two exits required.</p>	<p>CBC has specific requirements in Code for Fixed Guideway Transit systems and exiting from station platforms.</p> <p>IBC and NFPA 5000 do not have specific provisions but would appear to have similar requirements. This conclusion <u>assumes</u> that both Codes would use the NFPA130 Standard, Fixed Guideway Transit and Passenger Rail Systems. CBC regulations are more prescriptive.</p> <p>Minor variations for exit speed calculation; 5% slope trigger for slower travel speed in CBC; 4% in NFPA 130 Standard. All Codes have similar requirements.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 414A.5</p> <p>Fire alarm system; Manual pull stations throughout Public address and emergency telephones</p>	<p>NFPA 130</p> <p>Fire alarm system; No manual pull stations Public address and emergency telephones</p>	<p>NFPA 130</p> <p>Same as IBC</p>	<p>All three codes have similar fire alarm system requirements. CBC requires manual pull stations but does allow an exception through the use of emergency telephones in lieu of pull stations.</p> <p>Other requirements are the same.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 414A.4</p> <p>Automatic sprinkler system with exceptions for some areas.</p> <p>414A.4.3 Underground Stations Class III Standpipe Aboveground Stations Class I Standpipe</p> <p>Deluge system required for under vehicles at platforms</p>	<p>NFPA 130 Section 903.2.1.3</p> <p>Automatic sprinkler system required for A-3 Occupancy NFPA 130 Underground Stations Class I or III</p>	<p>NFPA 130 Section 16.3.5</p> <p>Automatic sprinkler system required for Assembly Occupancy NFPA 130 Underground Stations Class I or III</p>	<p>IBC and NFPA 5000 would both require automatic sprinkler systems. The CBC may be less restrictive, regarding the sprinkler system, due to exceptions in the Fixed Guideway Transit System regulations.</p> <p>CBC is more restrictive requiring a Class III standpipe. The IBC and NFPA 5000 allow a Class I or III. A Class I standpipe may be a dry system.</p>

FIXED TRANSIT GUIDEWAY SYSTEMS

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
No provisions for Special Hazards	Not addressed	Not addressed	Deactivation of traction power (3 rd rail) Mentioned in NFPA 130 only
<p>Section 414A2.2 Table 5-B</p> <p>Occupancy separations as for A 2.1 Occupancy; Three-hour separation between power substation; Two-hour separation between public areas and rooms:</p> <p>Electrical Train control Trash Fan Emergency Generator Battery</p>	<p>Table 302.3.3</p> <p>Occupancy separations as for A-3 Occupancy; NFPA 130 Three-hour separation between power substation; Two-hour separation between public areas and rooms:</p> <p>Electrical Train control Trash Battery</p>	<p>Table 6.2.4.1</p> <p>Occupancy separations as for Assembly Occupancy based on occupant load; NFPA 130 Same requirements as IBC</p>	<p>All three Codes have very similar requirements regarding occupancy separation.</p> <p>Opening protection similar requiring 1 ½ hour protection rating for two-hour separation.</p>

STAGES & PLATFORMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.1 Scope 405.1.1 Standards of Quality. Stages, platforms and accessory spaces in assembly occupancies shall conform with the requirements of Section 405.</p>	<p>410.1 Applicability. The provisions of this section shall apply to all parts of buildings and structures that contain stage or platforms and similar appurtenances as herein defined.</p>	<p>CHAPTER 16 Assembly Occupancies. 16.1.1 Application. The requirements of this chapter shall apply to new buildings and portions thereof used as an assembly occupancy.</p>	<p>IBC and NFPA 5000 provide an equal level of protection as CBC Only</p> <p>The NFPA 5000 and the IBC, requirements for stages apply to all parts of buildings and structures that contain a stage or platform, whereas in the CBC, <i>Scope -Standards of Quality</i>, applies to stages and platforms located in Assembly Occupancies. however, CBC definition of: STAGE, appears to apply to all stages regardless of building occupancy.</p>

STAGES & PLATFORMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.1.2 DEFINITIONS</p> <p>STAGE is a space within a building used for entertainment or presentations, with a stage height of 50 ft or less. Curtains, drops, scenery, lighting devices and other stage effects are hung and not retractable except for a single lighting bank; single main curtain, border and legs; and single backdrop.</p> <p>STAGE AREAS are the entire performance area and adjacent backstage and support areas not separated from the performance area by FR construction.</p> <p>STAGE HEIGHT is the dimension between the lowest point on the stage floor and the highest point of the underside of the roof or floor deck above the stage</p>	<p>410.2 Definitions</p> <p>STAGE. Stage areas are the entire performance area and adjacent backstage and support areas not separated from the performance area by FR construction.</p> <p>Stage height shall be measured from the lowest point on the stage to the highest point of the roof or floor deck above the stage.</p>	<p>CHAPTER 2 – DEFINITIONS</p> <p>3.3.516. STAGE. A space within a building used for entertainment and utilizing drops or scenery other stage effects</p> <p>3.3.515.1 REGULAR STAGE. A stage with a height of 50 ft. or less measured from the lowest point on the stage floor and the highest point of the deck above.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>The CBC definition specifies a maximum 50 ft. height, whereas NFPA 5000 and the IBC do not. NFPA 5000 does however; specify the 50 ft. criteria for the definition of Regular Stages, and the IBC does use the 50 ft. criteria to differentiate specific requirements for stages.</p> <p>The NFPA 5000 definition is general and includes all stage types.</p>
<p>STAGE, LEGITIMATE, is a stage wherein curtains, drops, leg drops, scenery, lighting devices or other stage effects are retractable horizontally or suspended overhead and the stage height is > 50 ft.</p>	<p>Not defined</p>	<p>3.3.515.1 Legitimate Stage. A stage with a height is > 50 ft. measured from the lowest point on the stage floor and the highest point of the deck above.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>The term Legitimate Stage is not defined in the IBC, but the criteria is covered in the requirements for: Proscenium Wall, Section 410.35 and Separation from Stage, Section 410.5.1.</p>

STAGES & PLATFORMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>PLATFORM is that raised area within a building used for the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lectures and speakers; boxing and wrestling rings; theater in the round; and similar purposes wherein there are not overhead hanging curtains, drops, scenery or stage effects other than lighting.</p>	<p>PLATFORM. A raised area within a building used for the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lectures and speakers; boxing and wrestling rings; theater in the round; and similar purposes wherein there are not overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.</p>	<p>3.3.414. PLATFORM. The raised area within a building used for the presentation of music, plays and other entertainment.</p> <p>Annex, A.3.3.414. Platforms also include the head tables for special guests; the raised area for lectures and speakers; boxing and wrestling rings; theater in the round; and similar purposes wherein there are not overhead drops, pieces of scenery, or stage effects other than lighting and a screening valance.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>
<p>PLATFORM, PERMANENT A platform used within an area for more than 30 days.</p>	<p>Not specifically defined, however <i>temporary platform</i> is defined</p>	<p>Not specifically defined, however <i>temporary platform</i> is defined.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>
<p>PLATFORM, TEMPORARY, A platform used within an area for not more than 30 days.</p>	<p>PLATFORM. (Definition) A temporary platform is one installed for not more than 30 days.</p>	<p>3.3.414.1 TEMPORARY PLATFORM. A platform erected within an area for not more than 30 days.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>The IBC definition of Temporary Platform is included in the definition of <i>Platform</i>.</p>

STAGES & PLATFORMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>BATTEN A flown metal pipe or shape on which lights or scenery is fastened.</p>	Not defined	Not defined	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>Not defined in IBC or NFPA 5000 but referred to in both codes.</p>
<p>DROP is a large piece of scenic canvas or cloth that hangs vertically, usually across the stage area.</p>	Not defined	Not defined	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>Not defined in IBC or NFPA 5000 but referred to in both codes.</p>
<p>FLY is the space over the stage of a theater where scenery and equipment can be hung out of view. Also called lofts and rigging lofts.</p>	Not defined	Not defined	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>Not defined in IBC or NFPA 5000 but referred to in both codes.</p>
<p>FLY GALLERY is a raised area above a stage from which the movement of scenery and operation of other stage effects are controlled.</p>	<p>FLY GALLERY. A raised area above a stage from which the movement of scenery and operation of other stage effects are controlled.</p>	Not defined	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>Not defined in NFPA 5000 but referred to in the code.</p>
<p>GRIDIRON is the structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects. A gridiron grating shall not be considered a floor.</p>	<p>GRIDIRON. The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects.</p>	<p>3.3.245 GRIDIRON. The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>

STAGES & PLATFORMS

Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>EG DROP is a long narrow strip of fabric used for masking. When used on either or both sides of the acting area, it is provided to designate an entry onto the stage by the actors. It is also used to mask the side stage area. They may also be called “wings”.</p>	Not defined	Not defined	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p> <p>Not defined in IBC or NFPA 5000 but referred to in both codes.</p>
<p>PINRAIL is a rail on or above a stage that has belaying pins to which lines are fastened</p>	<p>PINRAIL. A rail on or above a stage which belaying pins are inserted and to which lines are fastened</p>	<p>3.3.408 PINRAIL. A rail on or above a stage through which belaying pins are inserted and to which lines are fastened.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>
<p>PROSCENIUM WALL is the wall that separates the stage from the auditorium or house.</p>	<p>PROSCENIUM WALL. The wall that separates the stage from the auditorium or assembly area.</p>	<p>3.3.566.13 PROSCENIUM WALL. The wall that separates the stage from the auditorium or house.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>
<p>THEATER-IN-THE-ROUND is an acting area in the middle of a room with the audience sitting all around it.</p>	<p>Term not defined, but is used in the definition of a platform.</p>	<p>Term not defined, but is used in the definition of a platform.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC.</p>

STAGES & PLATFORMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.2 Platforms. Temporary platforms may be constructed of any materials. The space between the floor and the platform above shall not be used for any purpose other than electrical wiring or plumbing to platform equipment.</p> <p>Platforms shall be constructed of materials as required for the type of construction of the building in which the platform is located. When the space beneath a raised platform is used for storage or any purpose other than equipment wiring or plumbing, the floor construction shall not be less than 1- hr. FR construction.</p> <p>When the space beneath the platform is <u>not</u> used for any purpose other than equipment wiring or plumbing, the underside of the platform shall be fire blocked and may be constructed of any type of materials permitted by this code. The floor finish may be of wood in all types of construction.</p>	<p>410.4.1 Temporary Platforms. Platforms constructed for less than 30 days are permitted to be constructed of any material permitted by this code. The space between the floor and the platform above shall not be used for any purpose other than electrical wiring or plumbing to platform equipment.</p> <p>410.4. Platform Construction. Permanent platforms shall be constructed of materials as required for the type of construction of the building in which the platform is located. Permanent platforms are permitted to be constructed of fire-retardant treated wood for Types I, II, IV construction where the platforms are not > 30 in. above the main floor, and not > 3000 sq. ft. in area. When the space beneath the permanent platform is used for storage or any purpose other than equipment, wiring or plumbing, the floor construction shall not be less than 1- hr. FR construction. When the space beneath the permanent platform is used only for equipment wiring or plumbing, the underside of the platform need not be protected.</p>	<p>16.4.5.1 Platform Construction. Temporary platforms shall be permitted to be constructed of any materials. The space between the floor and the platform above shall not be used for any purpose other than electrical wiring to platform equipment.</p> <p>(A) Permanent platforms shall be constructed of materials as required for the type of construction of the building in which the permanent platform is located, except that the finished floor shall be permitted to be of wood in all types of construction.</p> <p>(B) Where the space beneath the platform is used for storage or any purpose other than equipment wiring or plumbing, the floor construction shall not be less than 1- hr. FR construction.</p>	<p><u>Temporary Platforms</u></p> <p><i>IBC and NFPA proved an equal level of protection as the CBC</i></p> <p><u>Permanent Platforms</u></p> <p>NFPA 5000 provides an equal level of protection as the CBC.</p> <p>IBC provides a lower level of protection than the CBC</p> <p>The IBC allows permanent platforms to be constructed of fire-retardant treated wood in Types I, II, IV construction, where the platforms are not more than 30 inches above the main floor, and not more than 3000 sq. ft. in area.</p>

STAGES & PLATFORMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3 Stages. 405.3.1 Construction. The minimum type of construction for stages shall be as required for the building except that the finish floor, in all types of construction, may be of wood. Stages having a stage height > 50 feet shall be separated from the balance of the building by not less than a 2-hr. occupancy separation</p> <p>EXCEPTION: The opening in the proscenium wall used for viewing performances may be protected by a proscenium fire safety curtain conforming to UBC Standard 4-1.</p> <p>Where permitted by the building construction type or where the stage is separated from all other areas as required in the paragraph above, the stage floor may be of unprotected noncombustible or heavy-timber framing members with a minimum 1 ½" wood deck.</p> <p>Where a stage floor is required to be of one-hour fire-resistive- rated construction, the stage floor may be unprotected when the space below the stage is sprinklered</p>	<p>410.3.1 Stage Construction Stages shall be constructed of materials as required for floors for the type of construction of the building in which the stage is located.</p> <p>EXCEPTION: 1. Stages of Type IIB or IV const. with nominal 2" wood deck, provided that the stage is separated from all other areas in accordance with Section 410.3.5</p> <p>2. In buildings of Type IIA, IIIA and VA const., a FR rated floor is not required; provide the space below the stage is equipped with an auto. extinguishing system in accordance with 903 or 904.</p>	<p>16.4.5.2 Stages Construction. 16.4.5.2.1 Regular stages shall be constructed of materials as required for the type of construction of the building in which they are located. The finished floor may be of wood.</p> <p>16.4.5.2.2 Legitimate stages shall be constructed of materials as required for Type I buildings, except that the area extending from the proscenium opening to the back wall of the stage, for a distance of 6 ft. beyond the type of construction of the proscenium opening on each side, shall be permitted to be constructed of steel or heavy timber covered with a min. 1 ½ "wood floor.</p>	<p>NFPA provides a higher level of protection than the CBC.</p> <p>IBC provides a lower level of protection than the CBCB.</p> <p>The CBC and IBC allow a non-rated stage in fire-resistive construction where the space below the stage is sprinklered throughout. NFPA 5000 does not address the use of sprinklers.</p> <p>NFPA 5000 requires legitimate stages to be constructed of materials as required for Type I buildings, whereas the CBC allows legitimate stages located in A - 2 Occupancies to be constructed per the types of construction as allowed by Table 5-B.</p>

STAGES & PLATFORMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>throughout.</p> <p>405.3.1 cont. Where the stage height is 50 ft. or less, the stage area shall be separated from accessory spaces by a 1 hr. FR occupancy separation.</p> <p>EXCEPTION: Control rooms and follow spot rooms may be open to the audience.</p>			
<p>Openings through the stage floor.</p> <p>CBC requires that floors be constructed per construction type including opening protection.</p>	<p>410.3.1 #3 Stage Construction In all types of construction the finished floor shall be constructed of wood or non-combustible materials Openings through the stage floor shall be equipped with tight fitting, solid trap doors approved safety locks.</p>	<p>16.4.5.2.3 Openings through stage floor shall be equipped with tight fitting trap doors of min. 1 ½' wood that have approved safety locks. Other materials for trap doors acceptable where they provide fire and heat resistance equivalent.</p>	<p>IBC and NFPA 5000 provide a lower level of protection than CBC.</p>
<p>405.1.3 Materials and design. Materials used in the construction of platforms and stages shall conform to the applicable materials and design requirements as set forth in this code. All assumed design live loads shall be indicated on the construction documents submitted for approval.</p>	<p>Not specifically addressed for stages.</p>	<p>Not specifically addressed for stages.</p>	<p><i>IBC and NFPA provide an equal level of protection as the CBC</i></p> <p>Though not specifically addressed in the IBC or NFPA 5000 for stages.</p>

STAGES & PLATFORMS

Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3.5 Gridirons, fly galleries and pinrails. Beams designed only for the attachment of portable or fixed theater equipment, gridirons, galleries and catwalks shall be constructed of materials consistent with the building type of construction. A fire-resistance rating is not required.</p> <p>EXCEPTION: Combustible materials shall be permitted for use as the floors of galleries and catwalks of all types of construction.</p>	<p>410.3.2 Galleries, gridirons, catwalks and pinrails. Beams designed only for the attachment of portable or fixed theater equipment, gridirons, galleries and catwalks shall be constructed of materials consistent with the requirements for the type of construction of the building. This area shall not be considered floors, stories, mezzanines or levels in applying the building code.</p> <p>EXCEPTION: Floors of fly galleries and catwalks shall be constructed of approved materials.</p>	<p>16.4.5.7 Gridirons, Fly Galleries and Pinrails. Structural framing designed only for the attachment of portable or fixed theater equipment, gridirons, galleries and catwalks shall be constructed of materials consistent with the building type of construction, and a fire-resistance rating is not required.</p> <p>EXCEPTION: Combustible materials shall be permitted for use as the floors of galleries and catwalks of all types of construction.</p>	<p>IBC and NFPA provide an equal level of protection as the CBC</p>

STAGES & PLATFORMS

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3.1 Construction. Stages having a stage height exceeding 50 feet shall be separated from the balance of the building by not less than a 2 hr. occupancy separation.</p> <p>EXCEPTION: The opening in the proscenium wall used for viewing performances may be protected by a proscenium fire safety curtain conforming to UBC Standard 4-1.</p> <p>Where the stage height is 50 feet or less, the stage area shall be separated from accessory spaces by a 1 hr. fire-resistive occupancy separation.</p> <p>EXCEPTION: Control rooms and follow spot rooms may be open to the audience.</p>	<p>410.34 Proscenium Wall. Where the stage height is > 50 feet, all portions of the stage shall be separated from the seating area by a proscenium Wall with not < 2 hr. FR rating extending from the foundation to the roof.</p> <p>410.5.1 Separation the Stage. Where the stage height is > 50 feet, the stage shall be separated from dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the stage and other parts of the building by a fire barrier wall and horizontal assemblies, or both, with not < 2 hr. FR rating with approved opening protectives.</p> <p>For stage heights of 50 feet or less, the required stage separation shall be a fire barrier wall and horizontal assemblies, or both, with not < 1 hr. FR rating with approved opening protectives.</p>	<p>16.4.5.5 Proscenium Walls. Legitimate Stages shall be completely separated from the seating area by a proscenium wall of not < 2 hr. noncombustible or limited combustible rating. The proscenium wall shall extend at least 4 ft. above the roof of the auditorium in combustible construction. All openings shall be protected by a min. 1 ½ hr. FR rating.</p> <p>Exception No 1: The main proscenium opening used for viewing performances wall shall be provided with an approved auto. closing FR curtain as described in 16.4.5.6.</p> <p>Exception No 2: The proscenium walls shall not be required in smoke - protected assembly seating facilities constructed and operated in accordance with 16.4.2</p> <p>16.4.5.3 Accessory Rooms. Workshops, storerooms, permanent dressing rooms, and other accessory spaces contiguous to stages shall be separated from each other and other areas by 1 hr. FR rated construction and protected</p>	<p><u>STAGE HEIGHT < 50 FT.</u></p> <p>“IBC and NFPA 5000 provide an equal level of protection as the CBC</p> <hr/> <p><u>STAGE HEIGHT > 50 FT.</u></p> <p>NFPA provides a lower level of protection than the CBC.</p> <p><i>IBC provides an equal level of protection as the CBC.</i></p> <p>1. NFPA 5000 requires the proscenium wall to extend at least 4 ft. above the roof in combustible construction.</p> <p>2. NFPA 5000 exempts the requirement of a proscenium wall in facilities with approved smoke - protected assembly seating. The CBC does not allow this exemption.</p>

STAGES & PLATFORMS

Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>openings. Exception: A separation is not required for stages having a floor area not exceeding 1000 sq. ft.</p>	
<p>405.3.2 Accessory rooms. Dressing rooms, workshops, storerooms and other accessory spaces contiguous to stages shall be separated from one another and other building areas by a 1hr.FR occupancy separation.</p> <p>EXCEPTION: A separation is not required for stages having a floor area not exceeding 500 sq. ft.</p>	<p>410.5 Dressing and appurtenant rooms. Dressing and appurtenant rooms shall comply with Sections 410.5.1 through 410.5.4</p> <p>410.5.2 Separation from each other. Dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the stage shall be separated from each other by a fire barrier wall and horizontal assemblies, or both, with not < 1 hr. FR rating with approved opening protectives.</p>	<p>16.4.5.3 Accessory Rooms. Workshops, storerooms, permanent dressing rooms, and other accessory spaces contiguous to stages shall be separated from each other and other areas by 1 hr. FR rated construction and protected openings.</p> <p>EXCEPTION: A separation is not required for stages having a floor area not exceeding 1000 sq. ft.</p>	<p>NFPA provides a higher level of protection than the CBC.</p> <p><i>IBC provides a lower level of protection than the CBC.</i> IBC requires a 1 hour fire-resistive separation of all accessory rooms contiguous to stages, where as the CBC exempts stages not exceeding 500 sq. ft, and NFPA 5000 exempts stages not exceeding 1000 sq. ft.</p>
<p>Opening protectives. Addressed under construction.</p>	<p>410.5.3 Opening protectives.</p> <p>Openings other than to trunk rooms and the necessary doorways at stage level shall not connect such rooms with the stage, and such openings shall be protected with fire door assemblies that comply with section 715.</p>	<p>Addressed under Accessory Rooms.</p>	<p>NFPA provides a higher level of protection than the CBC.</p> <p><i>IBC provides a lower level of protection than the CBC.</i> IBC requires a 1 hour fire-resistive separation of all accessory rooms contiguous to stages, where as the CBC exempts stages not exceeding 500 sq. ft, and NFPA 5000 exempts stages not exceeding 1000 sq. ft</p>

STAGES & PLATFORMS

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 10-A Stage Exits.</p> <p>2 exits required when occupant load exceeds 50.</p>	<p>410.5.4 Stage Exits <i>At least one means of egress shall be provided from each side of the stage; from each side of the space under the stage;</i></p> <p>At least one means of escape shall be provided from each fly gallery and from the gridiron.</p> <p>A steel ladder, or alternating tread stairway or spiral stairway is permitted from the gridiron to a scuttle in the stage roof.</p> <p>1014.6 Stage means of egress. <i>Where two means of egress are required, based on the stage size or occupant load, one means of egress shall be provided on each side of the stage.</i></p>	<p>Stage exits and means of egress.</p> <p>Not Specifically Addressed</p>	<p>IBC provides a higher level of protection than the CBC.</p> <p>NFPA provides a lower level of protection than the CBC.</p>
<p>Gallery, gridiron and catwalks means of egress.</p> <p>Not Addressed</p>	<p>1014.61 Gallery, gridiron and catwalks means of egress. The means of egress from lighting and access catwalks, galleries and gridirons shall meet the</p>	<p>16.4.5.8 Catwalks. The min. clear width of lighting and access catwalks and the means of egress from galleries and gridirons shall</p>	<p>IBC and NFPA 5000 provide a higher level of protection than the CBC.</p> <p>Egress from access catwalks, galleries and gridirons are not</p>

STAGES & PLATFORMS

Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 500	Comments/References
	<p>requirements for occupancies in Group F-2.</p> <p>Exceptions.</p> <ol style="list-style-type: none"> 1. A minimum width of 22 in. is permitted for lighting and access catwalks. 2. Spiral stairways ... need not be enclosed. 3. Stairways ... need not be enclosed. 4. A stairway with a minimum width of 22, or spiral stairs is permitted in the means of egress. 5. A second of egress is not required from these areas where a means of escape to a floor or roof is provided. Ladders, alternating tread devices or spiral stairs are permitted in the means of egress. 6. Ladders are permitted in the means of egress. 	<p>be 22 in.</p> <p>16.4.5.8 Number of Exits. A second means of egress shall not be required from lighting and access and catwalks, where a means of escape to a floor or roof provided.</p> <p>16.2.2.3.1 Catwalks, gallery, gridiron stairs. Noncombustible grated stairs treads, and landing floors shall be permitted in the means of egress from lighting and access catwalks and the means of egress from galleries and gridirons.</p> <p>16.2.2.3.2 Spiral Stairs complying with 11.2.2.2.3 shall be permitted in the means of egress from lighting and access catwalks and the means of egress from galleries and gridirons.</p>	<p>addressed in the CBC.</p> <p>The NFPA 500 has more specific requirements concerning spiral stairs.</p> <p>NFPA 500 specifies noncombustible grated stairs treads, and landing floors.</p>

STAGES & PLATFORMS

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
No specific fire alarm requirements for stages.	No specific fire alarm requirements for stages.	No specific fire alarm requirements for stages.	<p>IBC and NFPA 5000 provide an equal level of protection as the CBC. Both the IBC and NFPA 5000 require a fire alarm/smoke detection system to activate the smoke control system, the CBC does not.</p> <p>However, the CBC would permit a fire alarm system to control and activate the required smoke control system and roof vents.</p>

STAGES & PLATFORMS

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.2.3.7 Stages. Automatic sprinklers All stages shall be provided with an automatic sprinkler system.</p> <p>Such sprinklers shall be provided throughout the stage and in dressing rooms, workshops, storerooms and other accessory spaces contiguous to such stages.</p> <p>Exceptions: 1. Sprinklers are not required for stages 1,000 sq. ft. or less in area and 50'. or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.</p> <p>2. Under stage areas less than 4 ft. in clear height used exclusively for storage and lined on the inside with 5/8-inch Type X gypsum wallboard or an approved equal.</p>	<p>410.6 Automatic Sprinklers Stages shall be equipped with an automatic fire-extinguishing system.</p> <p>The system shall be installed under the roof and gridiron, in the tie an fly galleries and in places behind the proscenium wall of the stage and in dressing rooms, lounges, workshops and storerooms accessory to such stages.</p> <p>Exceptions: 1. Sprinklers are not required under stage areas less than 4' in clear height utilized exclusively for storage, provided the concealed space is separated from the adjacent spaces by not less than 5/8-inch Type X gypsum board.</p> <p>2. Sprinklers are not required for stages 1,000 sq. ft or less in area and 50' or less in height where curtains, scenery, or other combustible hangings are not retractable vertically. Combustible hangings</p>	<p>16.4.5.9 Fire Protection. Every stage shall be protected by an automatic sprinkler system.</p> <p>The sprinkler protection shall be provided throughout the stage, storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to the stages.</p> <p>Exceptions Sprinklers are not required for stages 1,000 sq. ft. or less in area and 50'. or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.</p> <p>2. Under stage areas less than 4ft. in clear height used exclusively for chair or table storage and lined on the inside with 5/8-inch Type X gypsum wallboard or an approved equal.</p>	<p>IBC and NFPA 5000 provide equal level protection as the CBC.</p>

STAGES & PLATFORMS

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	shall be limited to a single main curtain, borders and a single backdrop.		
<p>904.5.2 Standpipes Where required: Standpipes shall be provided per Table 9-A.</p> <p>Table 9-A, # 6. A. Stages > 1000 sq. ft. <u>without</u> a sprinkler system require a Class II standpipe. Hoses <u>not</u> required. B. Stages > 1000 sq. ft. with a sprinkler system in the building require a Class III standpipe. The standpipe may be combined with sprinkler system. Hoses <u>not</u> required.</p> <p>904.5.4 Location of Class II Standpipes. In A - 1 and A - 2.1 Occupancies, with occupant loads >1000, 1½-inch outlets shall be located on each side of any stage, each side of the rear of the auditorium and each side of the balcony.</p>	<p>410.7 Standpipes. Standpipe systems shall be provided per Section 905. IBC 905.3.4 Stages. Stages > 1,000 sq. ft. shall have a Class III wet standpipe with a 1½-inch and 2½-inch hose connections on each side of the stage. Exception: The hose connections may be supplied from the building or area sprinkler system, with flow rates as required per NFPA 14, for Class III standpipes.</p> <p>905.3.4.1 Hose and cabinet. The 1½-inch hose connection is to have sufficient lengths of 1½ -inch hose for the stage area. The hose is to be on a rack inside a cabinet with an attached adjustable fog nozzle.</p>	<p>16.4.5.10 Standpipes or Hose Connections. Regular stages > 1000 sq. ft and all legitimate stages shall have 1½ inch hose lines at each side of the stage. Hose connections shall be in accordance with NFPA 13, unless Class II or III standpipes are installed in accordance with NFPA 14.</p>	<p>IBC and NFPA 5000 provide a lower level of protection than the CBC. CBC requires 1½-hose outlets at each side of: <u>any</u> stage, rear of auditorium and rear of balconies where the occupant load is > 1000. IBC and NFPA do not require these additional hose outlets.</p>

STAGES & PLATFORMS

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3.4 Proscenium walls. The proscenium opening shall be protected by an approved fire curtain or an approved water curtain complying with UBC Standard 4-1. The fire curtain shall be designed to close automatically upon automatic detection of a fire and upon manual activation and shall resist the passage of flame and smoke for 20 minutes between the stage area and the audience area.</p>	<p>410.3.5 Proscenium curtain. The proscenium opening of every stage height of over 50 ft. shall be provided with a curtain of approved material or an approved water curtain complying with Section 903.1.1 The curtain shall be designed and installed to intercept gases, flames, and smoke, and to prevent a glow from a severe fire on the stage from showing on the auditorium side for 20 minutes. The closing of the curtain from the full open position to close in < 30 seconds, but the last 8 ft of travel shall require not < 5 seconds.</p>	<p>16.4.5.6 Proscenium Opening Protection. Where required the proscenium opening shall be protected by an approved fire curtain or an approved water curtain complying with NFPA 13.</p>	<p>IBC and NFPA 5000 provide equal level of protection as the CBC</p> <p>The IBC requires the fire curtain to <i>close in specified time frames.</i></p>

STAGES & PLATFORMS

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	<p>410.3.5.1 Activation. The curtain shall be activated by a rate-of-rise heat detection ... operating at a rate of temperature rise of 15 to 20 degree F per minute, and by an auxiliary manual control.</p>	<p>16.4.5.6.1 The fire curtain or water curtain shall be designed to activate upon automatic detection of a fire and upon manual activation.</p> <p>16.4.5.6.2 A fire curtain shall be a listed opening protective assembly, or shall be constructed as described in 16.4.5.2.1 through 16.4.5.6.2.5.</p> <p>16.4.5.6.4 The curtain shall be kept in the normally closed position when each day's performance is completed.</p> <p>16.4.5.6.5 The curtain shall be automatic closing without the use of power.</p> <p>16.4.5.6.6 The curtain shall also be capable of upon manual activation.</p>	
<p>Curtain fabrics. Specified in "UBC Standard 4-1"</p>	Specified in Section 903.1.1	<p>16.4.5.6.2.1 Fabrics. (A) Curtain shall be made of one or more thickness of a noncombustible or limited combustible fabric that shall be permitted to be given a coating, meets the criteria of 16.4.5.6.2.5. (B) Curtain fabric shall have a min. weight of 2 3/8 lb/yd.</p>	IBC and NFPA provide an equal level of protection as the CBC.

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Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Tensile Strength Specified UBC Standard 4-1</p>	Specified in Section 903.1.1	<p>16.4.5.6.2 Tensile Strength Requirements. <i>Curtain fabrics shall have min. tensile strength of 400lb/in.</i></p>	IBC and NFPA provide an equal level of protection as the CBC.
<p>Wire-insertion reinforcement requirements. Specified UBC Standard 4-1</p>	Specified in Section 903.1.1	<p>16.4.5.6.2.3 Wire-Insertion Reinforcement Requirements. (A) The fabric shall be reinforced with noncorrosive wire. (B) Wire shall not be required when by approved test such fabric is equivalent in strength and durability.</p>	IBC and NFPA provide an equal level of protection as the CBC.

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Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3.4 Proscenium walls. The proscenium opening shall be protected by an approved fire curtain or an approved water curtain complying with UBC Standard 4-1. The fire curtain shall resist the passage of flame and smoke for 20 minutes between the stage area and the audience area.</p>	<p>410.3.5.2 Fire test. A sample curtain with a minimum of two vertical seams shall be subject to a standard fire test specified in ASTM E 119 for a period of 30 minutes. ... The curtain shall overlap the furnace edges appropriate to seal the top and sides. The curtain shall have bottom pocket containing a min. of 4 lb. /liner ft. of batten. The unexposed surface of the curtain shall not glow ... during the test. Unexposed surface temperature and hose stream test requirements shall not be applicable to the proscenium safety curtain test.</p>	<p>16.4.5.6.2.4. Fire test. A sample curtain with a minimum of two vertical seams shall be subject to a standard fire test specified in NPPA 251, as applicable for walls and portions for a period of 30 minutes. (A) The curtain shall overlap the furnace edges ... appropriate to seal the top and sides. (B) The curtain shall have a bottom pocket containing a min. of 4 lb. /liner ft. of batten. (C) The unexposed surface of the curtain shall not glow during the test. (D) Unexposed surface temperature and hose stream test requirements shall not be applicable to the proscenium safety curtain test.</p>	<p>IBC and NFPA provide a higher equal level of protection than the CBC.</p> <p>CBC has a requirement of 20 minute resistance of flame and smoke, 30 minute requirement in IBC AND NFPA 5000</p>

STAGES & PLATFORMS

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Curtain Fabrics Smoke Test.</p> <p>Not specifically addressed in the CBC, which adopts UBC Standard 4-1.</p>	<p>410.3.5.4 Smoke test.</p> <p>Curtain fabrics shall have a Smoke-developed rating of 25 or less when tested in accordance with ASTM E 84</p>	<p>16.4.5.6.2.5 Smoke Test.</p> <p>Curtain fabrics shall have a Smoke density of no greater than 25 where tested in accordance with NPPA 255 ... The Curtain fabrics shall be tested in the condition in which it is to be used.</p> <p>16.4.5.6.3 The complete installation of every proscenium curtain shall be subject to operating tests and any theater open to the public performances until after the proscenium curtain has been accepted and approved by the AHJ.</p>	<p>IBC and NFPA 5000 provide an equal level of protection as the CBC.</p>
<p>405.3.6 Flame-retardant requirements.</p> <p>Combustible scenery of cloth, film, dry vegetation and similar materials shall meet the requirements of the Fire Code. Foam plastics shall have a maximum heat release rate of 100 kilowatts.</p>	<p>410.3.6. Scenery</p> <p>Combustible materials used in sets shall be rendered flame resistant in accordance with Section 805 and the IFC. Foam plastics and materials containing foam plastics shall comply with Section 410,3,7,1, or 410.3.7.2.</p>	<p>Not addressed</p>	<p>NFPA 5000 provides a lower level of protection than the CBC.</p> <p>IBC provides an equal level of protection as the CBC</p>

STAGES & PLATFORMS

Other

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>405.3.3 Ventilation. Emergency ventilation shall be provided for all stage areas greater than 1,000 sq. ft. or with a stage height of > 50 ft. to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the following methods in Section 405.3.3.1 and 405.3.3.2.</p>	<p>410.3.7 Stage ventilation. Emergency ventilation shall be provided for stages > 1,000 sq. ft. in floor area, or with a stage height of > 50 ft. Such ventilation shall be by one or a combination of the following methods in Section 410.3.7.1 or 410.3.7.2.</p>	<p>16.4.5.4 Ventilators. Regular stages > 1,000 sq. ft. and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the methods specified in 16.5.4.1 through 16.4.5.4.3.</p>	<p>IBC and NFPA 5000 provide an equal level of protection as the CBC.</p> <p>See: <u>SMOKE CONTROL</u></p>
<p>405.3.3.1 Smoke control. A means shall be provided to maintain the smoke level no n 6 feet above the highest level of assembly seating or above the top of the proscenium opening where proscenium wall and opening protection is provided. The system shall be activated independently by each of the following: (1) activation of the sprinkler system in the stage area and (2) by a manually operated switch at an approved location. The emergency ventilation</p>	<p>410.3.7.2 Smoke control. Smoke control in accordance with Section 909 shall be provided to maintain the smoke level not less than 6 ft. the highest level of assembly seating or above the top of the proscenium opening where proscenium wall is provided in accordance with Section 410.3.4.</p> <p>909.12.2 Activation. Smoke control systems shall be activated in accordance with this section.</p> <p>909.12.2.3 Automatic control.</p>	<p>16.4.5.4.1 Smoke Control. (A) A means shall be provided to maintain the smoke level not less than 6 feet above the highest level of assembly seating or above the top of the proscenium opening where proscenium wall and opening protection are provided. (B) The smoke control system shall be activated independently by each of the following: <i>(1) Activation of the sprinkler system in the stage area.</i> <i>(2) Activation of the smoke detectors over the stage.</i> <i>(3) Manually operated switch at</i></p>	<p>IBC and NFPA 5000 provide equal protection as the CBC</p> <p>NFPA 5000 requires smoke detectors to activate the smoke control system, whereas the CBC does not.</p> <p>The IBC only requires smoke detectors to activate the smoke control system when required by engineering analysis.</p> <p>The CBC and NFPA 5000 requires that the fan(s) ventilation ducts to be properly protected for a minimum of 20 minutes upon activation.</p>

STAGES & PLATFORMS

Other

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>system shall be connected to both normal and standby power. The fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum 20 minutes of operation in the event of activation.</p>	<p>Where automatic control is required or used, the auto. control shall be initiated from the sprinkler system, manual controls ... and any smoke detectors required by engineering analysis</p>	<p>an approved location Emergency ventilation system shall be connected to both normal and standby power. Fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum 20 minutes of operation in the event of activation.</p>	
<p>405.3.3.2 Roof vents. Two or more vents shall be located near the center of and above the highest part of the stage area. They shall be raised above the roof and provide a net free vent area equal to 5 % of the stage area. Vents shall be constructed to open automatically by approved heat-activated devices. Supplemental means shall be provided for manual operation of the ventilator from the stage floor. Vents shall be of an approved type.</p>	<p>410.3.7.1 Roof Vents Two or more vents constructed to open automatically by approved heat activated devices and with an aggregate clear opening of not <5% of the stage shall be located near the center and above the highest part of the stage area. Supplemental means shall be provided for manual operation of the ventilator. Curbs shall be provided as required for skylights in Section 2610.2. Vents shall be labeled.</p>	<p>16.4.5.4.2 Roof vents. Two or more vents shall be located near center of and above highest part of stage area. Vents shall be raised above roof and provide a net free vent area equal to 5 % of the stage area. Vents shall be constructed to open automatically by approved heat-activated devices. Supplemental means shall be provided for manual operation and testing of the ventilator from the stage floor. Vents shall be labeled.</p>	<p>IBC and NFPA 5000 provide an equal level of protection as the CBC.</p> <p>The CBC and NFPA 5000 specify that manual operation of the ventilator shall be from the stage floor, whereas the IBC is not specific.</p> <p>IBC requires curbs to be installed as per skylights requirements.</p> <p>The IBC and NFPA 5000 require roof vents to be labeled, whereas the CBC only requires roof vents to be approved.</p>

STAGES & PLATFORMS

Other

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Other means of smoke Control. Not specifically addressed	Other means of smoke Control. Not specifically addressed	16.4.5.4.3 Other Means. Other approved means or removing smoke and combustible gases shall be permitted.	NFPA provides a lower level of protection than the IBC and CBC.

SMOKE CONTROL SYSTEMS

Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 903- DEFINITIONS</p> <p>PRESSURIZATION is the creation and maintenance of pressure levels in zones of a building, including elevator shafts and stairwells that are higher than the pressure level at the smoke source, such pressure levels being produced by positive pressures of a supply of uncontaminated air, by exhausting air and smoke at the smoke source, or by a combination of these methods.</p>	<p>Section 902- DEFINITIONS</p> <p>Not Addressed</p>	<p>Chapter 3-DEFINITIONS</p> <p>Not Addressed</p>	<p>Note: The IBC and NFPA 5000 do not contain many of the definitions of the CBC. However, in the case of NFPA 5000, many of the definitions are detailed in NFPA 92A and 92B.</p> <p>-----</p> <p>PRESSURIZATION is not defined in the IBC and NFPA 5000.</p>
<p>PRESSURIZED STAIRWAY ENCLOSURE is a type of smoke-control system in which stairway enclosures are mechanically pressurized to minimize smoke contamination of them during a fire incident.</p>	<p>SMOKEPROOF ENCLOSURE An exit stairway designed and constructed so that the movement of the products of combustion produced by a fire occurring in any part of the building into the enclosure is limited.</p>	<p>SMOKEPROOF ENCLOSURE A stair enclosure designed to limit the movement of products of combustion produced by a fire.</p>	<p>The CBC definition is specific to mechanically pressurized stairway enclosures, whereas the IBC and NFPA 500 definition of <i>smokeproof- enclosure</i> is general, though would include mechanical pressurization as means of providing a smoke proof enclosure.</p>

SMOKE CONTROL SYSTEMS

Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>SMOKE is the airborne solid and liquid particulates and gases evolved when a material undergoes pyrolysis or combustion, including the quantity of air that is entrained or other wise mixed into the mass.</p>	Not Addressed	Not Addressed	SMOKE is not defined in the IBC and NFPA 5000.
<p>SMOKE BARRIER is a continuous membrane, either vertical or horizontal, such as a wall, floor or ceiling assembly that is designed and constructed to restrict the movement of smoke</p>	<p>SMOKE BARRIER (Section 702.1) A continuous membrane, either vertical or horizontal, such as a wall, floor or ceiling assembly that is designed and constructed to restrict the movement of smoke.</p>	<p>SMOKE BARRIER A continuous membrane or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke.</p>	The IBC and NFPA 5000 provide an equal level of protection as the CBC.
<p>SMOKE-CONTROL MODE is a predefined operational configuration of a system or device for the purpose of smoke control.</p>	Not Addressed	Not Addressed	SMOKE-CONTROL MODE is not defined in the IBC and NFPA 5000.

SMOKE CONTROL SYSTEMS

Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>SMOKE-CONTROL SYSTEM, MECHANICAL, is an engineered system that uses mechanical fans to produce pressure differences across smoke barriers or establish airflows to limit and direct smoke movement.</p>	Not Addressed	Not Addressed	SMOKE-CONTROL SYSTEM, MECHANICAL is not defined in the IBC and NFPA 5000.
<p>SMOKE-CONTROL SYSTEM, PASSIVE, is a system of smoke barriers arranged to limit the migration of smoke.</p>	Not Addressed	Not Addressed	SMOKE-CONTROL SYSTEM, PASSIVE Definition is not defined in the IBC and NFPA 5000.
<p>SMOKE-CONTROL ZONE is a space within a building enclosed by smoke barriers.</p>	<p>SMOKE COMPARTMENT (Section 702.1) A space within a building enclosed by smoke barriers on all sides, including top and bottom.</p>	<p>SMOKE COMPARTMENT A space within a building enclosed by smoke barriers on all sides, including top and bottom.</p>	The IBC and NFPA 5000 definitions are equal to the CBC.

SMOKE CONTROL SYSTEMS

Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>SMOKE DAMPER is a device that meets the requirements of approved recognized standards, and is designed to resist the passage of air or smoke. A combination fire and smoke damper shall meet the requirements of approved recognized standards. See Chapter 35, Part IV.</p>	<p>SMOKE DAMPER (Section 702.1) A listed device installed in ducts and air transfer openings that is designed to resist the passage of air and smoke. The device is installed to operate automatically, controlled by a smoke detection system, and where required, is capable of being positioned from a remote command station.</p>	<p>SMOKE DAMPER A device within an air-distribution system to control the movement of smoke.</p>	<p>The IBC provides a higher level of protection than CBC.</p> <p>The NFPA 5000 provides a lower level of protection than the CBC.</p> <p>1. The NFPA 500 definition of <i>Smoke Damper</i> is not as specific and detailed as the CBC and IBC definitions, which required smoke dampers to comply with recognized standards.</p> <p>2. The IBC definition further specifies that <i>Smoke Dampers</i> are to operate automatically, controlled by a smoke detection system.</p>
<p>SMOKE EXHAUST SYSTEM is a mechanical or gravity system intended to move smoke from the smoke zone to the exterior of the building, including smoke removal, purging and venting systems, as well as the function of exhaust fans utilized to reduce the pressure in a smoke one.</p>	Not Addressed	Not Addressed	<p>SMOKE EXHAUST SYSTEM is not defined in the IBC and NFPA 5000.</p>

SMOKE CONTROL SYSTEMS

Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>STACK EFFECT is the vertical airflow within buildings caused by temperature differences.</p>	Not Addressed	Not Addressed	STACK EFFECT is not defined in the IBC and NFPA 5000.
<p>TENABLE ENVIRONMENT is an environment in which the quantity and location of smoke is limited or otherwise restricted to allow for ready evacuation through the space.</p>	Not Addressed	Not Addressed	TENABLE ENVIRONMENT is not defined in the IBC and NFPA 5000.
<p>ZONED SMOKE CONTROL is a smoke-control system utilizing pressure differences between adjacent smoke-control zones.</p>	<p>ZONE. A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent or an area in which a form of control can be executed.</p>	Not Addressed	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <ol style="list-style-type: none"> 1. The definition in the CBC is more specific to smoke control systems, whereas the IBC is general. 2. ZONED SMOKE CONTROL is not defined in NFPA 5000.

SMOKE CONTROL SYSTEMS

Where Required

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Atriums</p> <p>Section 402.2 Smoke-control System.</p> <p>A smoke-control system meeting the requirements of Section 905 shall be provided within the atrium and areas open to the atrium. The smoke-control system shall operate automatically upon actuation of the automatic sprinkler system within the atrium or areas open to the atrium and as required by Section 905.9.</p>	<p>Atriums</p> <p>Section 404.4 Smoke-control. A smoke-control system shall be installed in accordance with Section 909.</p> <p>Exceptions:</p> <p>1. Smoke control is not required for floor opening meeting the requirements of Section 707.2, Exception 2, 7, 8 or 9.</p> <p>2. Smoke control is not required for floor opening meeting the requirements meeting of Section 1019.1, Exception 8 or 9.</p>	<p>Atriums</p> <p>Section 8.12.3 Atriums. Unless prohibited by Chapter 16 through 30, an atrium shall be permitted, provided that the following is met.</p> <p>(5) An engineering analysis is performed that demonstrates that the entire building is designed to keep the smoke layer interfaced above the highest unprotected opening to adjoining spaces, or 6 ft above the highest floor level of exit access open o the atrium for a period equal to 1.5 times the calculated egress time or 20 minutes, which ever is greater.</p> <p>(6) Where an engineered smoke control system is installed to meet the requirements of 8.12.3(5) and is independently activated by each of the following:</p> <p>(a) Upon activation actuation of the automatic sprinkler system within the atrium or areas open to the atrium</p> <p>(b) Manual controls that are accessible to the fire dept.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>NFPA 5000 has performance criteria, requiring that an engineering analysis be preformed prior to requiring any smoke control and only then a smoke control system is an option means.</p>

SMOKE CONTROL SYSTEMS

Where Required

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>High-Rise</p> <p>403.4 Smoke Control. A smoke control system meeting the requirements of Chapter 9 shall be provided.</p>	<p>High-Rise</p> <p>Section 403.13 Smokeproof exit enclosures. Every required stairway serving more than 75 ft. above the lowest level of fire department vehicle access shall comply with Sections 909.20 and 1019.1.8.</p>	<p>High-Rise</p> <p>Section 33.2.3 All vertical exit stair enclosures shall be smoke-proof enclosures in accordance with 11.2.3.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The CBC requires a smoke control system in high-rise buildings.</p> <p>The 2003 IBC and NFPA 5000 only require smoke-proof exit stairway enclosures in high-rise buildings.</p>

SMOKE CONTROL SYSTEMS

Where Required

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Malls</p> <p>Section 404.3.3 Smoke-control system. A smoke-control system meeting the requirements of Section 905 shall be provided.</p> <p>EXCEPTION: A smoke-control system need not be provided when both of the following conditions exist:</p> <ol style="list-style-type: none"> 1. The mall does not exceed one story, and 2. The gross leasable area does not exceed 24,000 square feet. 	<p>Malls</p> <p>Section 402.9 Smoke control. A smoke-control system shall be provided where required for atriums .</p> <p>Section 404.4 (Atriums) Smoke-control. A smoke-control system shall be installed in accordance with Section 909.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Smoke control is not required for floor opening meeting the requirements of Section 707.2, Exception 2, 7, 8 or 9. 2. Smoke control is not required for floor opening meeting the requirements meeting of Section 1019.1, Exception 8 or 9. 	<p>Malls</p> <p>Section 27.4.4.8 Smoke control. A smoke control system complying with 8.12.3(5) shall be provided in a mall with floor openings connecting more than two floors.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The CBC requires a smoke control system for all Malls that exceed one story or when the gross leasable area exceeds 24,000 square feet.</p> <p>The IBC and NFPA 5000 are less restrictive, only requiring smoke control systems in malls where the floor openings exceed two stories.</p>

SMOKE CONTROL SYSTEMS

Where Required

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Stages and Platforms</p> <p>405.3.3 Ventilation. Emergency ventilation shall be provided for all stage areas greater than 1,000 sq. ft. or with a stage height of > 50 ft. to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the following methods in Section 405.3.3.1 and 405.3.3.2.</p>	<p>Stages and Platforms</p> <p>410.3.7 Stage ventilation. Emergency ventilation shall be provided for stages > 1,000 sq. ft. in floor area, or with a stage height of > 50 ft. Such ventilation shall be by one or a combination of the following methods in Section 410.3.7.1 or 410.3.7.2.</p>	<p>Stages and Platforms</p> <p>16.4.5.4 Ventilators. Regular stages > 1,000 sq. ft. and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the methods specified in 16.5.4.1 through 16.4.5.4.3.</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p> <p>Note: Conflicts do exist in the various ventilation methods referenced by these sections.</p>

SMOKE CONTROL SYSTEMS

Where Required

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Detention and Correctional Facilities.</p> <p>Appendix Ch. 3, Section 323.1 Smoke Management System. A mechanically operated smoke management system or systems shall be provided in every detention or correctional facility.</p>	<p>Detention and Correctional Facilities.</p> <p>Section 408.8 Windowless buildings. Windowless buildings shall be provided with an engineered smoke control system to provide ventilation in accordance with 909 for each windowless smoke compartment.</p>	<p>Detention and Correctional Facilities.</p> <p>Chapter 21, Detention and Correctional Occupancies.</p> <p>Section 21.4.4.13.2 Limited- Access Buildings (Nonsprinklered Buildings). Means to evacuate smoke from the smoke compartment of fire origin</p> <ol style="list-style-type: none"> 1. Operable windows on not less than two side of the building, spaced not more than 30 ft. apart, that provide openings with dimensions of not less than 22 inches in width and 24 inches in height. 2. Manual or automatic smoke vents. 3. Engineered smoke control system. 4. Mechanical exhaust system providing not less than 6 air changes per hour. 5. Other methods acceptable to the AHJ. 	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The CBC requires a smoke management system to be installed in every detention and correctional facility.</p> <ol style="list-style-type: none"> 1. The IBC only requires a smoke control system for limited access buildings used as detention or correctional facilities 2. NFPA 5000 only requires smoke control for non-sprinklered limited access buildings used as detention or correctional occupancies. An engineered smoke control system is one of the specified means of providing smoke evacuation.

SMOKE CONTROL SYSTEMS

Underground Structures

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
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<p>Underground Structures</p> <p>Not Addressed</p>	<p>Underground Structures</p> <p>Section 405 Underground Buildings Section 405.1 General. Underground Structures-Buildings with a floor level more than 30 feet below the lowest level of exit discharge.</p> <p>Section 405.5 Smoke Control System A smoke-control system shall be installed in accordance with Sections 405.1 and 405.2. 405.1 Control system. Smoke control is required to control the migration of products of combustion in accordance with Section 909. Smoke control shall restrict the movement of smoke to the general area of fire origin and to maintain means of egress in usable condition. 405.2. Smoke exhaust system. Where compartmentation is required each compartment shall have an independent smoke control system.</p>	<p>Underground Structures</p> <p>Section 31.2 Underground Structures</p> <p>Section 31.2.4 The underground portions of an underground structure shall be provided with approved, automatic smoke control in accordance with Section 55.7 where the underground structure has all of the following:</p> <ul style="list-style-type: none"> (1) when the occupant load is greater than 100. (2) A floor level of occupancy more than 30 ft. below or more than one level below the lowest level of exit discharge. (3) Combustible contents, interior finishes, or construction. 	<p>The IBC and NFPA 5000 provide a higher level of protection than the CBC.</p> <p>The IBC and the NFPA 5000 require smoke control systems in underground structures, whereas the CBC does not require or address smoke control in underground structures.</p>
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ATRIA

Smoke Control Systems

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>SECTION 905</p> <p>905.1 Scope and Purpose. This section applies to mechanical or passive smoke-control systems when they are required by other provisions of this code.</p> <p>905.2 Design Methods.</p> <p>905.2.1 General. Buildings or portions thereof required by this code to have a smoke-control system shall have such systems designed in accordance with the requirements of this section. EXCEPTION: Smoke and heat venting required by Section 906.</p> <p>905.2.2 Rationality.</p> <p>905.2.2.1 General. Systems or methods of construction to be used in smoke control shall be based on a rational analysis in accordance with well-established principles of engineering. The analysis shall include, but not be limited by, Sections 905.2.2.2 through 905.2.2.6.</p> <p>905.2.2.2 Stack effect. The system shall be designed such that the maximum probable normal or reverse stack effects will not adversely interfere with the system's capabilities. In determining the maximum probable stack effects, altitude, elevation, weather history and interior temperatures shall be</p>	<p>SECTION 909</p> <p>909.1 Scope and Purpose. This section applies to mechanical or passive smoke-control systems when they are required by other provisions of this code.</p> <p>909.2 General Design Requirements.</p> <p>909.2.1 General. Buildings or portions thereof required by this code to have a smoke-control system shall have such systems designed in accordance with the applicable requirements of Section 909 and the generally accepted and well established principles of engineering relevant to the design.</p> <p>909.3 Special Inspections In addition to the ordinary inspections and test requirements which buildings, structures and parts thereof are required to undergo, smoke control systems subject to the provisions of Section 909 shall undergo special inspections and tests sufficient to verify the proper commissioning of the smoke control system.</p> <p>909.4 Analysis A rational analysis supporting the types of smoke control systems to be</p>	<p>A.8.12.3(5)-Engineering Analysis should include the following elements:</p> <ol style="list-style-type: none"> (1) Fire Dynamics (2) Response and performance of building systems (3) Response time required for occupants to reach exits <p>NFPA 92B-Guide for Smoke Management Systems in Malls, Atria and Large Areas- Chapter 1: General information and definitions: Purpose (Section 1.3): The purpose of the standard is to provide guidance in implementing smoke management systems to accomplish one or more of the following:</p> <ol style="list-style-type: none"> 1. Maintain a tenable environment in the means of egress from large-volume spaces during the time required for evacuation. 2. Control and reduce the migration of smoke between the fire area and adjacent spaces. 3. Provide conditions within and outside the fire zone to assist emergency personnel in 	<p>IBC & NFPA 5000 provide equal level of protection as CBC. NOTE: all three codes have basic methods for accomplishing these requirements. For example, where the CBC says that the designer is required to perform an analysis to take into account the effect of sprinkler activation on air entrainment into the smoke plume (Section 905.6.2.4), NFPA 92B discusses in detail the ramifications of sprinkler activation on stratification of smoke and entrainment of air into the smoke plume. Note 1: See Section 905.6 of the CBC. The CBC requires justification for choosing a design fire of less than 5,000 Btu/sec., whereas the IBC only requires the design fire size chosen to have engineering justification. Also, the CBC gives suggested heat release rates for office and residential occupancies, requiring engineering justification if different rates are used.</p> <p>Note 2: In Section 909.12 of the IBC, it specifically requires smoke control system detection and control units to comply with UL 864. The CBC does not have this requirement.</p> <p>Note 3: Section 909.16.1 of the IBC has a requirement for a status indicator light (green) to indicate fans, dampers, etc indicating their on or operating status. The CBC has no equivalent status indication requirement. Also, the CBC requires normal status to be indicated by a green light, while</p>

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Smoke Control Systems

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>used.</p> <p>905.2.2.3 Temperature effect of fire. Buoyancy and expansion caused by the design fire (Section 905.6) shall be analyzed. The system shall be designed such that these effects do not adversely interfere with the system's capabilities.</p> <p>905.2.2.4 Wind effect. The design shall consider the adverse effects of wind. Such consideration shall be consistent with the requirements of Chapter 16, Division III Wind Design.</p> <p>905.2.2.5 HVAC systems. The design shall consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. The analysis shall include all permutations of systems status. The design shall consider the effects of the fire on the heating, ventilating and air-conditioning systems.</p> <p>905.2.2.6 Climate. The design shall consider the effects of low temperatures on systems, property and occupants. Air inlets and exhausts shall be located so as to prevent snow or ice blockage.</p>	<p>employed, their methods of operation, the systems supporting them and the methods of construction to be utilized shall accompany the submitted construction documents and shall include, but not be limited to, the items indicated in sections 909.4.1 through 909.4.6.</p> <p>909.4.1 Stack effect. See Section 905.2.2.2 of the CBC.</p> <p>909.4.2 Temperature effect of fire. See Section 905.2.2.3 of the CBC.</p> <p>909.4.3 Wind effect. See Section 905.2.2.4 of the CBC.</p> <p>904.4.4 HVAC systems. See Section 905.2.2.5 of the CBC.</p> <p>904.4.5 Climate. See Section 905.2.2.6 of the CBC.</p> <p>909.5 Smoke barrier construction. Smoke barriers shall comply with Section 709... See Section 905.2.3 of the CBC.</p>	<p>conducting search and rescue operations and in locating and controlling the fire.</p> <p>4. Contribute to the protection of life and reduction of property loss.</p> <p>5. Aid in post-fire smoke removal.</p> <p>Design Principles (Sect. 1.5): 1. Smoke produced from a fire in a large open space is assumed to be buoyant, rising in a plume above the fire and striking the ceiling or stratifying due to temperature inversion. After the smoke strikes the ceiling or begins to stratify, the space will begin to fill with smoke, with the layer interface descending. Such smoke filling is represented by a two-zone model in which there is a distinct interface between the bottom of the smoke layer, and the ambient air.</p> <p>The smoke supply rate from the plume can be estimated to be the air entrainment rate into the plume below the smoke layer interface. Sprinklers can reduce the heat release rate</p>	<p>the IBC requires a white light.</p> <p>Note 4: Section 905.14 has specific response times listed for various types of equipment. Section 909.17 of the IBC is much more general.</p>

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Smoke Control Systems

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>905.2.3 Smoke barrier construction. A smoke barrier may or may not have a fire-resistive rating. Smoke barriers shall be constructed and sealed to limit leakage areas exclusive of protected openings. Maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:</p> <ol style="list-style-type: none"> 1. Walls: $A/AW = 0.00100$ 2. Exit enclosures: $A/AW = 0.00035$ 3. All other shafts: $A/AW = 0.00150$ 4. Floors and roofs: $A/AF = 0.00050$ <p>WHERE: A = total leakage area, square feet (m²). AF = unit floor or roof area of barrier, square feet (m²). AW = unit wall area of barrier, square feet (m²).</p> <p>Total leakage area of the barrier is the product of the smoke barrier gross area times the allowable leakage area ratio. Compliance shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke-control mode for mechanical smoke-control systems. Passive smoke-control systems may be tested using other approved means such as door fan testing.</p>	<p>909.5.1 Leakage Area. See the final paragraph of Section 905.2.3 of the CBC.</p> <p>909.5.2 Opening protection. Openings in smoke barriers shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke-control system. Door openings shall be protected by door assemblies complying with Section 715.4.3.</p> <p>EXCEPTIONS:</p> <ol style="list-style-type: none"> 1. Passive smoke-control systems may have automatic-closing devices actuated by spot-type smoke detectors listed for releasing service installed in accordance with Section 907.11. 2. Fixed openings which are protected using the airflow method. 3. In Group I-2, where such doors are installed across corridors, a pair of opposite swinging doors without a center mullion shall be installed having vision panels with approved fire-rated glazing materials in approved fire-rated frames, the 	<p>and the air entrainment rate into the plume.</p> <p>2.As a result of the zone-model approach, the model assumes uniform properties from the point of interface to the ceiling, and horizontally throughout the entire smoke layer.</p> <p>1.An equilibrium position for the smoke layer interface can be achieved by exhausting the smoke at the same rate it is supplied to the layer. Similarly, smoke exhaust can delay the rate of descent of the smoke layer.</p> <p>2.Where the smoke layer has descended to the level of adjacent occupied spaces, prevention of smoke migration can be accomplished by physical barriers or opposed airflow.</p> <p>3.For smoke exhaust to be effective, make-up air must be provided, but at a low enough velocity and diffused sufficiently so as not to affect the flame, smoke plume, or smoke interface.</p>	

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>905.2.4 Opening protection. Openings in smoke barriers shall be protected by self-closing devices or automatic-closing devices actuated by the required controls for the mechanical smoke- control system.</p> <p>EXCEPTIONS: 1. Passive smoke-control systems may have automatic-closing devices actuated by spot-type smoke detectors listed for releasing service. Such detectors when used in Group I, Division 1.1 Occupancies shall activate the fire alarm system.</p> <p>2. The airflow method may be used to protect openings fixed in a permanently open position which are located between smoke zones in other than Group I, Division 1.1 Occupancies.</p> <p>3. In Group I, Division 1.1 Occupancies an approved smoke detector listed for air duct installation and releasing service shall be located in the duct upstream of the smoke damper and after the last opening or branch of that duct, or</p>	<p>area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances and shall not have undercuts, louvers or grilles. The doors shall have head and jam stops, astragals or rabbets at meeting edges, and automatic-closing devices. Positive-latching devices are not required.</p> <p>4. Group I-3.</p> <p>5. Openings between smoke zones with clear ceiling heights of 14 feet or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.</p> <p>909.5.2.1 Ducts and air transfer openings. Ducts and air transfer openings are required to be protected with a minimum Class II, 250 deg. F smoke damper complying with Section 716 (See last paragraph of Section 905.2.4 of the CBC).</p> <p>909.6 Pressurization Method. See Section 905.3 of the CBC. Note that the language of the "Exception" of this section is substantially similar to that of</p>	<p>4. Fires in communicating spaces can produce buoyant gasses that spill into the large space. The design must consider the difference in entrainment behavior between a free plume and a spill plume.</p> <p>5. Effective design requires early detection of the smoke condition.</p> <p>6. The smoke management system components should be capable of continuous use at the maximum temperatures expected.</p> <p>7. When the smoke control system is based on maintaining tenability, factors that can be considered may include heat exposure, toxicity, and visibility.</p> <p>8. If the design is based on occupants exiting a space before being exposed to smoke or before tenability thresholds are reached, a timed egress analysis must be performed for the space.</p> <p>Design Parameters (Sect.1.6):</p> <p>1. The design criteria should include an understanding with</p>	

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<p>4. In Group I, Division 1.1 Occupancies smoke damper activation may be accomplished by a fire alarm control panel provided that an open area smoke detection system as required by the California Fire Code is provided within all areas served by an HVAC system. Door openings shall be protected in accordance with Section 1004.3.4.3.2.</p> <p>EXCEPTIONS: 1. In Group I, Division 1 Occupancies when such doors are installed across corridors, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with approved fire-rated glazing materials in approved fire-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and automatic-closing devices. All doors shall have positive latching devices.</p>	<p>this IBC section.</p> <p>909.7 Airflow Method. See Section 905.4 of the CBC.</p> <p>909.8 Exhaust Method. See Section 905.5 of the CBC.</p> <p>909.9 Design Fire. See Section 905.6 of the CBC.</p> <p>909.9.3 Heat-release assumptions. The analysis shall make use of best available data and shall not be based on excessively stringent limitations of combustibile material.</p> <p>909.11 Power Systems. See Section 905.8 of the CBC.</p> <p>909.12 Detection and Control Systems. Fire detection systems providing control input and output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment. Control systems for mechanical smoke control systems shall include provisions for</p>	<p>the AHJ of the expected performance of the system and the acceptance test procedures.</p> <p>2. Leakage Area: Design Criteria should be based on the following considerations with reference to the smoke zone and communicating zones:</p> <p>a) Small openings in smoke barriers, such as construction joints, cracks, closed door gaps, etc should be addressed in terms of maintaining an adequate pressure difference across the smoke barrier, with the positive pressure outside the smoke zone.</p> <p>b) Large openings in smoke barriers such as open doors and other sizeable openings can be addressed in terms of maintaining an adequate air velocity through the openings with the airflow direction into the zone of fire origin.</p> <p>1. Weather Data: The temperature differences between the interior and exterior of the building cause stack effect and determine the stack effect's direction and</p>	

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<p>2. Group I, Division 3 Occupancies. Duct and other heating, ventilating and air-conditioning openings shall be equipped with a minimum Class II, 250_F (121_C) smoke damper as defined and tested in accordance with approved recognized standards. See Chapter 35, Part IV.</p> <p>905.2.5 Duration of operation. All portions of active or passive smoke-control systems shall be capable of continued operation after detection of the fire event for not less than 20 minutes.</p> <p>905.3 Pressurization Method. 905.3.1 General. The primary means of controlling smoke shall be pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.</p> <p>905.3.2 Minimum pressure difference. The minimum pressure difference across a smoke barrier shall be 0.05 inch water gage (12.4 Pa) in fully sprinklered buildings.</p> <p>EXCEPTION: Smoke-control systems serving other than fully sprinklered buildings may be approved by the building official, provided the system is designed to achieve pressure</p>	<p>verification. Verification shall include positive confirmation of actuation, testing, manual override, the presence of power downstream of all disconnects and, through a preprogrammed weekly test sequence report, abnormal conditions audibly, visually and by printed report.</p> <p>905.9.3 Activation. Smoke-control systems shall be activated as follows:</p> <p style="padding-left: 20px;">909.12.2.1 Pressurization, airflow or exhaust method. Mechanical smoke-control systems, using the pressurization, airflow or exhaust method shall have automatic control.</p> <p style="padding-left: 20px;">909.12.2.2 Passive Method. Passive smoke control systems actuated by approved spot-type detectors listed for releasing service shall be permitted.</p> <p>909.12.3 Automatic control. Whenever completely automatic control is required or used, the automatic-control sequences shall be initiated from an</p>	<p>magnitude. The stack effect must be considered when selecting exhaust fans. Also, the effect of temperature and wind velocity varies with building height, configuration, leakage, and openings in wall and floor construction.</p> <p>2. Pressure differences: The maximum and minimum pressure differences across the boundaries of smoke control zones should be considered.</p> <p>Chapter 2: Design Considerations:</p> <p>This chapter expands upon the design parameters mentioned above, discusses design methodologies and limitations including smoke accumulation depth, disruptions to the smoke layer interface, and considerations related to natural venting. This chapter also discusses various methods of smoke control (the same three methods of the CBC), considerations to take in to effect for the management of fire in adjacent spaces, system</p>	

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<p>differences at least two times the maximum calculated pressure difference produced by the design fire.</p> <p>905.3.3 Maximum pressure difference. The maximum air pressure difference across a smoke barrier shall be determined by required door-opening forces. The actual force required to open exit doors when the system is in the smoke-control mode shall be in accordance with Section 1003.3.1.5. The calculated force to set a side-hinged, swinging door in motion shall be determined by: $F = F_{dc} + K(WA.P)/2(W - d)$ (5-1) WHERE: A = door area, square feet (m²). d = distance from door handle to latch edge of door, feet (m). F = total door opening force, pounds (N). F_{dc} = force required to overcome closing device, pounds (N). K = 5.2 (9.6). W = door width, feet (m). Δ P = design pressure difference, inches water gage (Pa).</p> <p>Opening forces for other doors shall be determined by standard engineering methods for the resolution of forces and reactions.</p>	<p>appropriately zoned automatic sprinkler system complying with Section 903.3.1.1, manual controls that are readily accessible to the fire department and any smoke detectors required by engineering analysis.</p> <p>909.13 Control Air Tubing. See Section 905.10 of the CBC.</p> <p>909.14 Marking and Identification. See Section 905.11 of the CBC.</p> <p>909.15 Control Diagrams. See Section 905.12 of the CBC.</p> <p>909.16 Firefighter's Smoke Control Panel. A firefighter's smoke control panel for fire department emergency response purposes only shall be provided and shall include manual control or override of automatic control for mechanical smoke-control systems. The panel shall be located in the fire command center complying with section 911, and shall comply with Sections 909.16 through 909.16.3.</p>	<p>operation requirements, and system reliability requirements.</p> <p>Chapter 3: Calculation Procedures:</p> <p>Design Fire (Section 3.2): All of the design calculations are dependant on the heat release rate from the fire. Therefore, as a first step the design fire size needs to be identified. The design fire size is based on an engineering analysis of the characteristics of the fuel, the effects induced by a fire, or both. In addition, the fire can be considered as steady or unsteady.</p> <ol style="list-style-type: none"> 1. Steady fire: A fire of constant heat release rate. As such, the fire is expected to grow quickly to some limit. 2. Effect of sprinklers on fire size: Unless there is reason to expect that fire will continue to spread after sprinkler activation, the effect of sprinklers on the design fire size can be accounted for by assuming that the fire 	

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<p>905.4 Airflow Method.</p> <p>905.4.1 General. When approved by the building official, smoke may be prevented from migrating through openings fixed in a permanently open position, which are located between smoke-control zones by the use of the airflow method. The design air flows shall be in accordance with this section.</p> <p>905.4.2 Velocity. The minimum average velocity through a fixed opening shall not be less than</p> $v = 217.2 [h (T_f - T_o)/(T_f + 460)]^{1/2}$ <p>For SI: $v = 119.9 [h (T_f - T_o)/T_f]^{1/2}$</p> <p>WHERE: h = height of opening, feet (m). T_f = temperature of smoke, °F (K). T_o = temperature of ambient air, °F (K). v = air velocity, feet per minute (m/s).</p> <p>Airflow shall be directed to limit smoke migration from the fire zone. The geometry of openings shall be considered to prevent flow reversal from turbulent effects.</p> <p>905.4.3 Prohibited conditions. This</p>	<p>Section 909.16.1 Fans within the building shall be shown on the fire-fighter's control panel. A clear indication of the direction of airflow and the relation ship of components shall be displayed. Status indicators shall be provided for all smoke control equipment by pilot lamp-type indicators as follows:</p> <ol style="list-style-type: none"> 1. Fans, dampers and other operating equipment in their normal status-WHITE. 2. Fans, dampers and other operating equipment in their off or closed status-RED. 3. Fans, dampers and other operating equipment in their on or open status-GREEN. 4. Fans, dampers and other operating equipment in a fault status-YELLOW. <p>909.16.2 Smoke-control panel. See Section 905.13.2 of the CBC.</p> <p>909.16.3 Control action and priorities. The firefighter's control panel actions shall be as follows:</p> <ol style="list-style-type: none"> 1. ON-OFF, OPEN-CLOSE control actions shall have the highest priority of any control point within the building. Once 	<p>stops growing when sprinklers are activated. Alternatively, if fire tests indicate that the fire will be controlled but not immediately extinguished by the sprinklers, an exponential decrease in heat release rate can be assumed.</p> <ol style="list-style-type: none"> 3. Separation Distance: See Section 905.6.2.2 of the CBC. 4. Unsteady Fires: An unsteady fire is one that varies with respect to time. A t-squared profile is often assumed for unsteady fires. Then the heat release rate at any time is given by: $Q=1000(T/T_g)^2$ 5. Where: Q=heat release rate from fire (Btu/sec) T=time after effective ignition (sec) T_g=growth time (sec) The growth time is the time 	

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<p>method shall not be employed where either the quantity of air or the velocity of the airflow will adversely affect other portions of the smoke-control system, unduly intensify the fire, disrupt plume dynamics or interfere with exiting. In no case shall airflows toward the fire exceed 200 feet per minute (60 960mm per minute). Where Formula (5-2) requires airflows to exceed this limit, the airflow method shall not be used.</p> <p>905.5 Exhaust Method.</p> <p>905.5.1 General. When approved by the building official, for large enclosed volume, such as in atria or malls, the exhaust method may be used. The design exhaust volumes shall be in accordance with this section.</p> <p>905.5.2 Exhaust rate.</p> <p>905.5.2.1 General. The height of the lowest horizontal surface of the accumulating smoke layer shall be maintained at least 10 feet (3048 mm) above any walking surface within the smoke zone. The required exhaust rate for the zone shall be the largest of the calculated plume mass flow rates for the possible plume configurations.</p>	<p>issued from the firefighter's control panel, no automatic or manual control from any other control point within the building shall contradict the control action.</p> <p>Where automatic means is provided to interrupt normal, non-emergency equipment operation or produce a specific result to safeguard the building or equipment (i.e., duct freezestats, duct smoke detectors, high-temperature cutouts, temperature-actuated linkage and similar devices), such means shall be capable of being overridden by the firefighter's control panel control action and the last control action as indicated by each fire-fighter's control panel switch position shall prevail.</p> <p>EXCEPTION: Power disconnects required by the ICC Electrical Code.</p> <p>2. Only the AUTO position of each three-position firefighter's control panel switch shall allow automatic or manual control action from other control points within the building. The AUTO position shall be the NORMAL,</p>	<p>interval from the time of effective ignition until the fire exceeds 1000 Btu-sec.</p> <p>This section of NFPA 92B goes on to discuss in detail cautions in selecting a minimum design fire size, emphasizing selecting a credible worst-case scenario, rather than modest fire sizes based on the type or limited amount of combustibles that are present or expected. It also discusses the effect of low ceilings and high ceiling paces (both with and without sprinkler protection) on choice of design fires.</p> <p>Section 3.4 of the standard goes on to discuss the stratification of smoke and its effect on smoke management system design, whereas the CBC is silent. Section 3.5 gives equations to calculate smoke layer depth, average temperature rise, optical density and species concentrations during the smoke filling stage and the quasi-steady vented stage,</p>	

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<p>Provisions shall be made for natural or mechanical supply of outside air to make up an equal volume of the air exhausted at flow rates not to exceed 200 feet per minute (60 960 mm per minute) toward the fire.</p> <p>905.5.2.2 Axisymmetric plumes. The plume mass flow rate [mp, lbs./sec. (kg/s)] shall be determined by placing the design fire center on the axis of the space being analyzed. The limiting flame height shall be determined by: $z_l = 0.533Q_c^{2/5}$ For SI: $z_l = 0.166Q_c^{2/5}$</p> <p>WHERE: Q = total heat output. Q_c = convective heat output, Btu/s (kW). (The value of Q_c shall not be taken as less than 0.70Q.) z = height from top of fuel surface to bottom of smoke layer, feet (m). z_l = limiting flame height, feet (m). (z_l must be greater than the fuel equivalent diameter. See Section 905.6.)</p> <p>for $z > z_l$ $mp = 0.022Q_c^{1/3}z^{5/3} + 0.0042Q_c$</p> <p>For SI: $mp = 0.071Q_c^{1/3}z^{5/3} + 0.0018Q_c$</p>	<p>non-emergency, building control position.</p> <p>When a firefighter's control panel is in the AUTO position, the actual status of the device (on, off, open, closed) shall continue to be indicated by the status indicator described above. When directed by an emergency condition, the NORMAL position shall become the emergency condition for that device or group of devices within the zone. In no case shall control actions require the smoke control system to assume more than one configuration at any one time.</p> <p>909.17 System Response time. Smoke control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment.</p>	<p>for both constant heat release rates and t-squared fires.</p> <p>Section 3.6 provides equations to determine the height of first indication of smoke at any time for cases where no smoke exhaust is operating, the mass of smoke exhaust equals the mass rate of smoke supplied from the plume to the smoke layer, and the mass rate of smoke supplied is greater than the rate of smoke exhaust. Section 3.7 details determining the position of the smoke layer with the smoke exhaust system operating.</p> <p>Section 3.8 contains the same equations for axisymmetric plumes, balcony and window spill plumes and the airflow method (called Opposed Airflow in NFPA 92B) as the corresponding sections of the CBC. It also gives several more equations for such calculations as determining the number of</p>	

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<p>for $z = z_l$ $mp = 0.011Q_c$</p> <p>For SI: $mp = 0.035Q_c$</p> <p>for $z < z_l$ $mp = 0.0208Q_c^{3/5}z$</p> <p>For SI: $mp = 0.032Q_c^{3/5}z$</p> <p>To convert mp from pounds per second of mass flow to a volumetric rate, the following formula shall be used:</p> $V = 60mp/\rho$ <p>WHERE: V = volumetric flow rate, cubic feet per minute (m³/s). ρ = density of air at the temperature of the smoke layer, lbs./ ft.³ (T: in _F) [kg/m³ (T: in _° C)].</p> <p>905.5.2.3 Balcony spill plumes. The plume mass flow rate (m for spill plumes shall be determined using the geometrically probable width based on architectural elements and projections in the following formula:</p> <p>For SI: $mp = 0.41(QW^2)^{1/3}(z_b + 0.3H)$ $[1 + 0.063(z_b + 0.6H)/W]^{2/3}$</p> <p>WHERE: H = height above fire to underside of balcony, feet (m).</p>	<p>For purposes of smoke control, the fire-fighter's control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shutdown of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. The system response time for each component and their sequential relationships shall be detailed in the required rational analysis and verification of their installed condition reported in the required final report.</p> <p>909.18 Acceptance Testing. See Section 905.15 of the CBC.</p> <p>909.18.8 Special inspections for smoke control. Smoke control systems shall be tested by a special inspector.</p> <p>909.18.8.1 Scope of testing. Special inspections shall be conducted in accordance with</p>	<p>exhaust inlets, and plume temperature and width.</p> <p>Chapters 4 and 5, "Equipment and Controls" and "Testing", respectively provide general guidelines and not specific requirements for these areas like the CBC.</p> <p>Section 55.7 Smoke Control.</p> <p>Section 55.7.1 Installation, Inspection, Testing and Maintenance. Where required by other sections of this code, smoke control systems shall be installed, tested and maintained in accordance with nationally recognized standards, engineering guides, or recommended practices, as approved by the AHJ.</p> <p>Section 55.7.2 System Design. The engineer of record shall clearly identify the intent of the system, the design method used, the appropriateness of that method, and the required means of inspecting, testing, and maintaining the system.</p>	

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<p>W = plume width at point of spill, feet (m). zb = height from balcony, feet (m).</p> <p>905.5.2.4 Window plumes. The plume mass flow rate (mp) shall be determined from:</p> $mp = 0.077(AwHw^{1/2})^{1/3}(zw + a)^{5/3} + 0.18AwHw^{1/2} \quad (5-9)$ <p>For SI: $mp = 0.68(AwHw^{1/2})^{1/3}(zw + a)^{5/3} + 1.5AwHw^{1/2}$</p> <p>WHERE: Aw = area of the opening, square feet (m²). Hw = height of the opening, feet (m). Zw = height from the top of the window or opening to the bottom of the smoke layer, feet (m).</p> $a = 2.4Aw^{2/5}Hw^{1/5} - 2.1Hw \quad (5-10)$ <p>905.5.2.5 Plume contact with walls. When the axisymmetric plume contacts the surrounding walls, the mass flow rate may be considered to be constant from the point of contact and beyond provided that contact remains constant. Use of this provision requires calculation of the plume diameter, which shall be calculated by:</p>	<p>the following:</p> <ol style="list-style-type: none"> During erection of ductwork and prior to concealment for the purposes of leakage testing and recording device location. <p>Prior to occupancy and after sufficient completion for the purposes of pressure-difference testing, flow measurements, and detection and control verification.</p> <p>908.18.8.2 Qualifications. Special inspection agencies for smoke control shall have expertise in fire protection engineering and certification air balancers.</p> <p>909.18.9 Reports. A complete report of testing shall be prepared by the required special inspector or special inspection agency.</p> <p>The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark. The report shall be reviewed by</p>	<p>Section 55.7.3 Smoke Control System Operation.</p> <p>Section 55.7.3.1 Floor or zone dependent smoke control systems shall be automatically activated by sprinkler waterflow or smoke detection systems.</p> <p>Section 55.7.3.2 Means for manual operation of smoke control systems shall be provided at an approved location.</p> <p>Section 55.7.4 Acceptance Testing. Acceptance testing shall be performed by a special inspector in accordance with Section 55.11.</p>	

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<p> $d = 0.48 [(T_c + 460)/(T_a + 460)]^{1/2z}$ $d = 0.48(T_c/T_a)^{1/2z}$ (5-11) </p> <p>WHERE: d = plume diameter, feet (m). T_a = ambient air temperature, °F (K). T_c = plume center line temperature, °F (K). $T_c = (318 Q_c^{2/3} H^{-5/3}) + T_a$ For SI: $T_c = (23.3 Q_c^{2/3} H^{-5/3} + 273.15) + T_a$ z = height at which T_c is determined, feet (m). </p> <p>905.6 Design Fire.</p> <p>905.6.1 General. The design fire shall be based on a Q of not less than 5,000 Btu per second (5275 kW) unless a rational analysis is performed by the designer and approved by the building official.</p> <p>905.6.2 Rational analysis.</p> <p>905.6.2.1 Factors considered. The engineering analysis shall include the characteristics of the fuel, fuel load, effects included by the fire, whether the fire is likely to be steady or unsteady.</p> <p>905.6.2.2 Separation distance. Determination of the design fire shall include consideration of the type of</p>	<p>the responsible registered design professional, and when satisfied that the design intent has been achieved, the responsible designer shall seal, sign and date the report.</p> <p>909.18.8.3.1 Report filing. A copy of the final report shall be filed with the building official and an identical copy shall be maintained in an approved location at the building.</p> <p>909.18.9 Identification and documentation. Charts, drawings and other documents identifying and locating each component of the smoke-control system, and describing their proper function and maintenance requirements shall be maintained on file at the building as an attachment with the report required by Section 909.18.8.3. Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.</p> <p>909.19 System acceptance. See Section 905.16 of the CBC.</p>		

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<p>fuel, fuel spacing and configuration. The design fire shall be increased if other combustibles are within the separation distance as determined by: $R = [Q/(12\delta q'')]^{1/2}$</p> <p>WHERE: Q = heat release from fire, Btu/s (kW). q'' = incident radiant heat flux required for non-piloted ignition, Btu/ft²·s (W/m²). R = separation distance from target to center of fuel package, feet (m).</p> <p>The ratio of the separation distance to the fuel equivalent radius shall not be less than 4. The fuel equivalent radius shall be the radius of a circle of equal area to floor area of the fuel package.</p> <p>905.6.2.3 Heat-release assumptions. The analysis shall make use of best available data and shall not be based on excessively stringent limitations of combustible material. For offices, the heat release rate shall be 25 Btu/ft²·s (284 kW/m²) or greater. For mercantile and residential occupancies, the heat release rate shall be 50 Btu/ft²·s (567 kW/m²) or greater.</p> <p>905.6.2.4 Sprinkler effectiveness assumptions. The effect of sprinklers</p>			

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<p>may be assumed to have halted fire growth at time of activation only upon a documented engineering analysis. cont. Atria</p> <p>905.7 Equipment.</p> <p>905.7.1 General. Equipment such as, but not limited to, fans, ducts and balance dampers shall be suitable for their intended use, suitable for the probable temperatures to which they may be exposed and approved by the building official.</p> <p>905.7.2 Exhaust fans. Components of exhaust fans shall be rated and certified by the manufacturer for the probable temperature rise to which the components may be exposed. This temperature rise shall be computed by: $T_s = (Q_c/mc) + (T_a)$</p> <p>WHERE: <i>c</i> = specific heat of smoke at smoke-layer temperature, Btu/ lb._F (kJ/kg-K). <i>m</i> = exhaust rate, pounds per second (kg/s). <i>Q_c</i> = convective heat output of fire, Btu/sec. (kW). <i>T_a</i> = ambient temperature, _F (K). <i>T_s</i> = smoke temperature, _F (K).</p> <p>EXCEPTION: <i>T_s</i> may be reduced if</p>			

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<p>dilution air is ensured and the new Ts is calculated.</p> <p>905.7.3 Ducts. Duct materials and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined by Formula (5-13). Ducts shall be constructed and supported in accordance with the Mechanical Code. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported by substantial, noncombustible supports.</p> <p>EXCEPTION: Flexible connections, for the purpose of vibration isolations complying with the Mechanical Code, may be used if constructed of approved fire-resistive materials.</p> <p>905.7.4 Equipment, inlets and outlets. Equipment shall be located so as to not expose uninvolved portions of the building to an additional fire hazard. Outside air inlets shall be located so as to minimize the potential for introducing smoke or flame into the building.</p>			

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<p>Exhaust outlets shall be located so as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard.</p> <p>905.7.5 Automatic dampers. Automatic dampers installed within the smoke-control system shall be listed and conform to the requirements of approved recognized standards. See Chapter 35, Part III.</p> <p>905.7.6 Fans. In addition to other requirements, belt-driven fans shall have 1.5 times the number of belts required for the design duty with the minimum number of belts being two. Fans shall be selected for stable performance based on normal temperature and, where applicable, elevated temperature. Calculations and manufacturer's fan curves shall be part of the documentation procedures. Fans shall be supported and restrained by non-combustible devices in accordance with the requirements of Chapter 16.</p> <p>Motors driving fans shall not be</p>			

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<p>operating beyond their name-plate horsepower (kW) as determined from measurement of actual current draw. Motors driving fans shall have a minimum service factor of 1.15.</p> <p>905.8 Power Systems.</p> <p>905.8.1 General. The smoke-control system shall be supplied with two sources of power. Primary power shall be the normal building power systems. Secondary power shall be from an approved standby source complying with the Electrical Code. The standby power source and its transfer switches shall be in a separate room from the normal power transformers and switchgear and shall be enclosed in a room of not less than one-hour fire-resistive construction, ventilated directly to and from the exterior. Power distribution from the two sources shall be by independent routes. Transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power. The systems shall comply with the Electrical Code.</p> <p>905.8.2 Power sources and power surges. Elements of the smoke-management system relying on volatile memories or the like shall be supplied with un-interruptable power sources of sufficient duration to span</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>15-minute primary power interruption. Elements of the smoke-management system susceptible to power surges shall be suitably protected by conditioners, suppressors or other approved means.</p> <p>905.9 Detection and Control Systems.</p> <p>905.9.1 General. Fire-detection and control systems for mechanical smoke-control systems shall be supervised in accordance with the Fire Code. Supervision shall further provide positive confirmation of actuation, testing of devices, manual override mechanisms, and the presence of power downstream of all disconnects. When supervision requires the sensing of damper position, it shall be accomplished by limit or proximity switches. When supervision requires sensing of airflow, it shall be by differential pressure transmitters. Required supervision shall be indicated at the Fire Fighter's Control Panel.</p> <p>The fire-detection and control system shall be listed.</p> <p>905.9.2 Wiring. In addition to meeting requirements of the Electrical Code, all wiring, regardless of voltage, shall be fully enclosed within continuous</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>raceways.</p> <p>905.9.3 Activation. Smoke-control systems shall be activated as follows:</p> <ol style="list-style-type: none"> 1. Mechanical smoke-control systems, using the pressurization method, serving buildings having no occupied floor more than 300 feet (91 440 mm) above or 75 feet (22 860 mm) below exit grade shall have automatic control of pressurized stairwell enclosure systems. All other portions of the smoke-control system may be manual in accordance with Section 905.13. <p>EXCEPTION:</p> <ol style="list-style-type: none"> 1. When required in Group I Occupancies, they shall be entirely automatic <ol style="list-style-type: none"> 2. Mechanical smoke-control systems, using the pressurization method, serving buildings having occupied floors more than 300 feet (91 440 mm) above or 75 feet (22 860 mm) below exit grade shall have completely automatic control. 3. Mechanical smoke-control 			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>systems using the airflow or exhaust method shall have completely automatic control.</p> <p>4. Passive smoke-control systems may be actuated by approved spot-type detectors listed for releasing service.</p> <p>905.9.4 Automatic control. Whenever completely automatic control is required or used, the automatic-control sequences shall be initiated from an appropriately zoned automatic sprinkler system meeting the requirements of UBC Standard 9-1 or from an appropriately zoned, total coverage smoke-detection system meeting the requirements of the Fire Code.</p> <p>905.9.5 Smoke detection. Smoke detectors shall be listed and shall be installed in accordance with the California Fire Code.</p> <p>905.10 Control Air Tubing. 905.10.1 General. Control-air tubing shall be of sufficient size to meet the required response times. Tubing shall be flushed clean and dry prior to final connections. Tubing shall be adequately supported and protected from damage. Tubing passing through concrete or masonry shall be sleeved</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>and protected from abrasion and electrolytic action.</p> <p>905.10.2 Materials. Control-air tubing shall be hard drawn copper, Type L, ACR, see ASTM B 42-92, B 43-91, B 68-88, B 88-92, B 251-88 and B 280-92. Fittings shall be wrought copper or brass, solder type; see ANSI B 16.22-89 or ANSI B 16.18-84. Changes in direction may be made with appropriate tool bends. Brass, compression type fittings may be used at final connection to devices; other joints shall be brazed using a BCuP5 brazing alloy with solid above 1,100_F (593_C) and liquid below 1,500_F (816_C). Brazing flux shall be used on copper to brass joints only.</p> <p>EXCEPTION: Nonmetallic tubing may be used within control panels and at the final connection to devices, providing all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. Tubing shall be listed by an approved agency for flame and smoke characteristics. 2. Tubing and connected device shall be completely enclosed within galvanized or paint grade steel enclosure of not less than 0.030 inch 			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>(0.76 mm) (No. 22 galvanized sheet gage) thickness. Entry to the enclosure shall be by copper tubing with a protective grommet of neoprene or teflon or by suitable brass compression to male barbed adapter.</p> <p>3. Tubing shall be identified by appropriately documented coding.</p> <p>4. Tubing shall be neatly tied and supported within enclosure. Tubing bridging cabinet and door or movable device shall be of sufficient length to avoid tension and excessive stress. Tubing shall be protected against abrasion. Tubing serving devices on doors shall be fastened along hinges.</p> <p>905.10.3 Isolation from other functions. All control tubing serving other than smoke-control functions shall be isolated by automatic isolation valves or shall be an independent system.</p> <p>905.10.4 Testing. Test all control-air tubing at three times operating pressure for not less than 30 minutes without any noticeable loss in gage pressure prior to final connection to devices.</p> <p>905.11 Marking and Identification.</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>The detection and control systems shall be clearly marked at all junctions, accesses and terminations.</p> <p>905.12 Control Diagrams. Identical control diagrams showing all devices in the system and identifying their location and function shall be maintained current and kept on file with the building official, the fire department and with the firefighter's control panel in an approved format and manner.</p> <p>905.13 Firefighter's Control Panel.</p> <p>905.13.1 General. A firefighter's control panel shall be provided for manual control or override of automatic control for mechanical smoke-control systems. Such panel shall be designed to graphically depict the building arrangement and smoke-control system zones served by the systems. The status of each smoke control zone shall be indicated by lamps and appropriate legends. Fans, major ducts and dampers within the building that are portions of the smoke-control systems shall be shown on the firefighter's control panel and shall be shown connected to their respective ducts with a clear indication of the direction of airflow.</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Devices, switches, indicators and the like shall bear plain English identifying legends having a size and stroke equivalent to 12- point helvetica bold. Status indicators shall be provided for all smoke-control equipment by pilot lamp-type indicators as follows:</p> <ol style="list-style-type: none"> 1. Fans, dampers and other operating equipment in their normal status-GREEN. 2. Fans, dampers and other operating equipment in their off or closed status-RED. 3. Fans, dampers and other operating equipment in a fault status-YELLOW. Provision for testing the pilot lamp on the firefighter's control panel by means of one or more, lamp test. Momentary push buttons or other self-restoring means shall be included. The fault status shall be further identified by pulsing the indicator lamp. <p>EXCEPTION: Light-emitting diodes may be used in lieu of pilot lamps with prior approval.</p> <p>The firefighter's control panel layout shall be submitted at full scale for approval prior to installation.</p> <p>905.13.2 Smoke-control capability. The firefighter's control panel shall</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>provide control capability over the complete smoke-control system equipment within the building as follows:</p> <ol style="list-style-type: none"> 1. ON-AUTO-OFF control over each individual piece of operating smoke-control equipment that can also be controlled from other sources within the building. This includes stairway pressurization fans; smoke exhaust fans; supply, return and exhaust fans; elevator shaft fans; and other operating equipment used or intended for smoke-control purposes. 2. OPEN-AUTO-CLOSE control over all individual dampers relating to smoke control and that are also controlled from other sources within the building. 3. ON-OFF or OPEN-CLOSE control over all smoke-control and other critical equipment associated with a fire or smoke emergency and that can only be controlled from the firefighter's control panel. <p>EXCEPTIONS: 1. For complex systems, with prior approval, the controls and indicators may be combined to control and indicate all elements of a single smoke zone as a unit.</p> <p>2. For complex systems, with prior</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>approval, the control may be accomplished by computer interface using approved, plain English commands.</p> <p>905.13.3 Control action and priorities. The firefighter's control panel actions shall be as follows:</p> <p>1. ON-OFF, OPEN-CLOSE control actions shall have the highest priority of any control point within the building. Once issued from the firefighter's control panel, no automatic or manual control from any other control point within the building shall contradict the control action. Where automatic means is provided to interrupt normal, non-emergency equipment operation or produce a specific result to safeguard the building or equipment (i.e., duct freezestats, duct smoke detectors, high-temperature cutouts, temperature-actuated linkage and similar devices), such means shall be capable of being overridden by the firefighter's control panel control action and the last control action as indicated by each firefighter's control panel switch position shall prevail.</p> <p>EXCEPTION: Power disconnects required by the Electrical Code.</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>2. Only the AUTO position of each three-position firefighter's control panel switch shall allow automatic or manual control action from other control points within the building. The AUTO position shall be the NORMAL, non-emergency, building control position. When a firefighter's control panel is in the AUTO position, the actual status of the device (on, off, open, closed) shall continue to be indicated by the status indicator described above.</p> <p>905.14 Response Time. Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke-control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. The total response time for individual components to achieve their desired operating mode shall not exceed the following:</p> <ol style="list-style-type: none"> 1. Control air isolation valves - Immediately 2. Smoke damper closing -15 seconds 3. Smoke damper opening - 15 			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>seconds maximum</p> <p>4. Fan starting (energizing) - 15 seconds maximum</p> <p>5. Fan stopping (de-energizing) - Immediately</p> <p>6. Fan volume modulation - 30 seconds maximum</p> <p>7. Pressure control modulation - 15 seconds maximum</p> <p>8. Temperature control safety override - immediately</p> <p>9. Positive indication of status - 15 seconds maximum</p> <p>For purposes of smoke control, the firefighter's control panel response time shall be the same for automatic or manual smoke-control action initiated from any other building control point.</p> <p>905.15 Acceptance Testing. 905.15.1 General. Devices, equipment, components and sequences shall be individually tested. These tests, in addition to those required above or by other provisions of this code, shall consist of determination of function, sequence and, where applicable, capacity of their installed condition. cont. Atria</p> <p>905.15.2 Detection devices. Smoke or fire detectors that are a part of a</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>smoke-control system shall be tested in accordance with the Fire Code in their installed condition. When applicable, this testing shall include verification of airflow in both minimum and maximum conditions.</p> <p>905.15.3 Ducts. Ducts that are part of a smoke-control system shall be traversed using generally accepted practices to determine actual air quantities.</p> <p>905.15.4 Dampers. Dampers shall be tested for function in their installed condition.</p> <p>905.15.5 Inlets and outlets. Inlets and outlets shall be read using generally accepted practices to determine air quantities.</p> <p>905.15.6 Fans. Fans shall be examined for correct rotation. Measurements of voltage, amperage, revolutions per minute and belt tension shall be made.</p> <p>905.15.7 Smoke barriers. Measurements using inclined manometers shall be made of the pressure differences across smoke barriers. Such measurements shall be conducted for each possible smoke control condition.</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>905.15.8 Controls. Each smoke zone, equipped with an automatic initiation device, shall be put into operation by the actuation of one such device. Each additional such device within the zone shall be verified to cause the same sequence but the operation of fan motors may be bypassed to prevent damage.</p> <p>Control sequences shall be verified throughout the system, including verification of override from the firefighter's control panel and simulation of standby power conditions.</p> <p>905.15.9 Reports. A complete report of testing shall be prepared by the required special inspector or special inspection agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark.</p> <p>The report shall be reviewed by the responsible designer, and when satisfied that the design intent has been achieved, the responsible designer shall affix the designer's signature and date to the report with a statement as follows: I have reviewed this report and by</p>			

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Smoke Control Systems

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>personal knowledge and on-site observation certify that the smoke control system is in substantial compliance with the design intent, and to the best of my understanding complies with requirements of the code.</p> <p>A copy of the final report shall be filed with the building official and an identical copy shall be maintained in an approved location at the building.</p> <p>905.15.10 Identification and documentation. Charts, drawings and other documents identifying and locating each component of the smoke-control system, and describing their proper function and maintenance requirements shall be maintained on file at the building with the above-described report.</p> <p>Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.</p> <p>905.16 Acceptance. Buildings, or portions thereof, required by this code to comply with this section shall not be issued a certificate of occupancy until such time that the building official determines that the provisions of this section have been fully complied with</p>			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>and that the fire department has received satisfactory instruction on the operation, both automatic and manual, of the system.</p> <p>EXCEPTION: In buildings of phased construction, the building official may issue a temporary certificate of occupancy if those portions of the building to be occupied meet the requirements of this section and that the remainder does not pose a significant hazard to the safety of the proposed occupants or adjacent buildings.</p>			

SMOKE CONTROL SYSTEMS

Malls

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 404.3.3 Smoke-control system. A smoke-control system meeting the requirements of Section 905 shall be provided.</p> <p>EXCEPTION: A smoke-control system need not be provided when both of the following conditions exist:</p> <ol style="list-style-type: none"> 1. The mall does not exceed one story, and 2. The gross leasable area does not exceed 24,000 square feet. <p>-----</p> <p style="text-align: center;">SECTION 905</p> <p><i>See "Atria" Smoke Control Provisions</i></p>	<p>Section 404.4 Smoke-control. A smoke-control system shall be installed in accordance with Section 909.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Smoke control is not required for floor opening meeting the requirements of Section 707.2, Exceptions 2, 7, 8 or 9. 2. Smoke control is not required for floor opening meeting the requirements meeting of Section 1019.1, Exception 8 or 9. <p>-----</p> <p style="text-align: center;">SECTION 909</p> <p><i>See "Atria" Smoke Control Provisions</i></p>	<p>Section 27.4.4.8 Smoke Control-A smoke control system complying with 8.12.3(5) shall be provided in a mall with floor openings connecting more than two levels.</p> <p>Section 8.12.3(5)-An engineering analysis is required to be performed that demonstrates that the building is designed to keep the smoke layer interface above the highest unprotected opening to adjoining spaces, or 6 ft. above the highest floor level of exit access open to the mall for a period of equal to 1.5 times the calculated egress time or 20 minutes, whichever is greater.</p> <p>Section A 8.12.3(5)-Engineering Analysis should include the following elements:</p> <ol style="list-style-type: none"> (4) Fire Dynamics (5) Response and performance of building systems (6) Response time required for occupants to reach exits <p>See NFPA 92B-Guide for Smoke Management Systems in Malls,</p>	<p>NFPA 5000 provides a higher level of protection than CBC.</p> <p>The IBC provides a lower level of protection than the CBC.</p> <p>Note 1: The smoke control provisions of the three codes are intended to provide a tenable environment for the evacuation or relocation of occupants. The choice of how this is accomplished is left to the designer and the AHJ.</p> <p>All three codes give three basic methods for accomplishing this goal. These are the Pressurization Method (Section 909.6 of the CBC), the Airflow Design Method (Section 909.7 of the CBC), and the Exhaust Method (Section 909.8 of the CBC). In general, the Exhaust Method is used in large enclosed volumes often found in Atriums and Malls.</p> <p>Note 2: I have included extracts from NFPA 92B in the "Atria" spreadsheet. This standard details and expands upon the equations contained in both the CBC and IBC, and includes some additional formulas for calculation of the plume temperatures, number of exhaust grilles, etc.</p> <p>Note 2 cont.</p> <p>For example, where the CBC says that</p>

SMOKE CONTROL SYSTEMS

Malls

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>Atria and Large Areas.</p> <p>Section 55.7 Smoke Control.</p> <p>Section 55.7.1 Installation, Inspection, Testing and Maintenance. Where required by other sections of this code, smoke control systems shall be installed, tested and maintained in accordance with nationally recognized standards, engineering guides, or recommended practices, as approved by the AHJ.</p> <p>Section 55.7.2 System Design. The engineer of record shall clearly identify the intent of the system, the design method used, the appropriateness of that method, and the required means of inspecting, testing, and maintaining the system.</p>	<p>the designer is required to perform an analysis to take into account the effect of sprinkler activation on air entrainment into the smoke plume (Section 905.6.2.4), NFPA 92B discusses in detail the ramifications of sprinkler activation on stratification of smoke and entrainment of air into the smoke plume.</p>

SMOKE CONTROL SYSTEMS

Malls

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		<p>Section 55.7.3 Smoke Control System Operation.</p> <p>Section 55.7.3.1 Floor or zone dependent smoke control systems shall be automatically activated by sprinkler waterflow or smoke detection systems.</p> <p>Section 55.7.3.2 Means for manual operation of smoke control systems shall be provided at an approved location.</p> <p>Section 55.7.4 Acceptance Testing. Acceptance testing shall be performed by a special inspector in accordance with Section 55.11.</p>	

SMOKE CONTROL

Stages & Platforms

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
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<p>405.3.3 Ventilation. Emergency ventilation shall be provided for all stage areas greater than 1,000 sq. ft. or with a stage height of > 50 ft. to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the following methods in Section 405.3.3.1 and 405.3.3.2.</p>	<p>410.3.7 Stage ventilation. Emergency ventilation shall be provided for stages > 1,000 sq. ft. in floor area, or with a stage height of > 50 ft. Such ventilation shall be by one or a combination of the following methods in Section 410.3.7.1 or 410.3.7.2.</p>	<p>16.4.5.4 Ventilators. Regular stages > 1,000 sq. ft. and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the methods specified in 16.5.4.1 through 16.4.5.4.3.</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p>
<p>405.3.3.1 Smoke control. A means shall be provided to maintain the smoke level not less than 6 feet above the highest level of assembly seating or above the top of the proscenium opening where proscenium wall and opening protection is provided. The system shall be activated independently by each of the following: (1) activation of the sprinkler system in the stage area and (2) by a manually operated switch at an approved location.</p> <p>cont. Stage Smoke Control</p> <p>The emergency ventilation system shall be connected to both</p>	<p>410.3.7.2 Smoke control. Smoke control in accordance with Section 909 shall be provided to maintain the smoke level not less than 6 ft. the highest level of assembly seating or above the top of the proscenium opening where proscenium wall is provided in accordance with Section 410.3.4.</p> <p>909.12.2 Activation. Smoke control systems shall be activated in accordance with this section.</p> <p>909.12.2.3 Automatic control. Where automatic control is required or used, the auto. control shall be initiated from</p>	<p>16.4.5.4.1 Smoke Control.</p> <p>(A) A means shall be provided to maintain the smoke level not less than 6 feet above the highest level of assembly seating or above the top of the proscenium opening where proscenium wall and opening protection are provided.</p> <p>(B) The smoke control system shall be activated independently by each of the following:</p> <p>(1) Activation of the sprinkler system in the stage area.</p> <p>(2) Activation of the smoke detectors over the stage.</p> <p>(3) Manually operated switch at an approved location</p> <p>(C) The emergency ventilation system shall be connected to both normal and standby power.</p>	<p>NFPA 5000 provides a higher level of protection than CBC.</p> <p>The IBC provides a lower level of protection than the CBC.</p> <p>1. NFPA 5000 requires smoke detectors to activate the smoke control system, whereas the CBC does not.</p> <p>The IBC only requires smoke detectors to activate the smoke control system when required by engineering analysis.</p> <p>2. The CBC and NFPA 5000 requires that the fan(s) ventilation ducts to be properly protected for a minimum of 20 minutes upon activation.</p> <p>cont. Stage Smoke Control</p>

SMOKE CONTROL

Stages & Platforms

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
normal and standby power. The fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum 20 minutes of operation in the event of activation.	the sprinkler system, manual controls ... and any smoke detectors required by engineering analysis.	(D) The fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum 20 minutes of operation in the event of activation.	
405.3.3.2 Roof vents. Two or more vents shall be located near the center of and above the highest part of the stage area. They shall be raised above the roof and provide a net free vent area equal to 5 % of the stage area. Vents shall be constructed to open automatically by approved heat-activated devices. Supplemental means shall be provided for manual operation of the ventilator from the stage floor. Vents shall be of an approved type.	410.3.7.1 Roof vents. Two or more vents constructed to open automatically by approved heat-activated devices and with an aggregate clear opening of not < 5 % of the stage shall be located near the center and above the highest part of the stage area. Supplemental means shall be provided for manual operation of the ventilator. Curbs shall be provided as required for skylights in Section 2610.2. Vents shall be labeled.	16.4.5.4.2 Roof vents. (A) Two or more vents shall be located near the center of and above the highest part of the stage area. (B) The vents shall be raised above the roof and provide a net free vent area equal to 5 % of the stage area. (C) Vents shall be constructed to open automatically by approved heat-activated devices. (D) Supplemental means shall be provided for manual operation and testing of the ventilator from the stage floor. (E) Vents shall be labeled.	The IBC and NFPA 5000 provide an equal level of protection as the CBC. 1. The CBC and NFPA 5000 specify that manual operation of the ventilator shall be from the stage floor, whereas the IBC is not specific. 2. IBC requires curbs to be installed as per skylights requirements. 3. The IBC and NFPA 5000 require roof vents to be labeled, whereas the CBC only requires roof vents to be approved.
Other means of smoke Control. Not specifically addressed	Other means of smoke Control. Not specifically addressed	16.4.5.4.3 Other Means. Other approved means or removing smoke and combustible gases shall be permitted.	NFPA 5000 provides a higher level of protection than CBC.

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Occupancy Group Classification & Definitions

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Chapter 2-Definitions:</p> <p>Atrium is an opening through two or more floor levels other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Floor levels, used in this definition, do not include balconies within assembly occupancies or mezzanines that comply with Section 507.</p>	<p>404.1.1 Definition. The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.</p> <p>ATRIUM. An opening connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall.</p> <p>Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.</p>	<p>3.3.38 Atrium. A large-volume space created by a floor opening or a series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; an elevator hoistway; an escalator opening; or as a utility shaft used for plumbing, electrical, air-conditioning, or communications facilities.</p> <p>A.3.3.38 Atrium. As defined in NFPA 92B, <i>Guide for Smoke Management Systems in Malls, Atria, and Large Areas</i>, a large-volume space is an unpartitioned space, generally two or more stories in height, within which smoke from a fire either in the space or in a communicating space can move and accumulate without restriction. Atria and malls are examples of large-volume spaces.</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p> <p>Essentially the same definitions except that the NFPA 5000 definition of an <i>Atrium</i> includes: "A large-volume space created by a floor opening or a series of floor openings".</p> <p>The NFPA 5000 Annex paragraph, (NFPA 92B definition), further defines <i>Atria</i> as a large-volume space.</p>

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Construction, Height, Allowable Area, Location on Property

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>402.1 General. Buildings of other than Group H Occupancies, with automatic sprinkler protection throughout may have atria complying with the provisions of this section.</p>	<p>404.1 General. Vertical openings meeting the requirements of this section are not required to be enclosed in other than Group H occupancies.</p>	<p>8.12.3 Atrium. Unless prohibited by Chapter 16 through 30, an atrium shall be permitted, provided that the following conditions are met: ... (See Occupancy Separation Template).</p> <p>There is nothing in Chapters 16 through 30 that prohibit an atrium.</p>	<p>The IBC provides an equal level of protection as the CBC.</p> <p>NFPA 5000 provides a lower level of protection than the CBC.</p> <p>Both the 2001 CBC and the 2003 IBC prohibit atriums in Group H Occupancies.</p> <p>NFPA 5000 does not prohibit an atrium in any occupancy, provided it fully complies with Section 8.12.</p> <p>NOTE: However, NFPA 5000 does not have a separate occupancy type classification for H (hazard) occupancies; NFPA 5000 instead classifies the use and storage areas of hazardous materials separately and specifies separate requirements for each occupancy type.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>402.3 Enclosure of Atria. Atria shall be separated from adjacent spaces by not less than one-hour fire-resistive construction.</p>	<p>404.5 Enclosure of Atriums. Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier wall.</p>	<p>8.12.3 Atrium. Unless prohibited by Chapter 16 through 30, an atrium shall be permitted, provided that the following conditions are met:</p> <p>(1) The atrium is separated from the adjacent spaces by fire barriers with not less than a 1-hour fire resistance rating with opening protectives for corridor walls, unless one of the following is met:</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p>
<p>402.3 Enclosure of Atria Exceptions: 1. The separation between atria and tenant spaces that are not guest rooms, congregate residences or dwelling units may be omitted at three floor levels.</p> <p>2. Open exit-access balconies are permitted within the atrium.</p> <p>Openings in the atrium enclosure other than fixed glazing shall be protected by smoke- and draft-control assemblies conforming to Section 1004.3.4.3.2.</p> <p>EXCEPTION: Other tight fitting doors that are</p>	<p>404.5 Enclosure of Atriums Exceptions: 1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches away from the glass and so designed that the entire surface of the glass is wet upon activation of the sprinkler system. The glass shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.</p> <p>2. A glass-block wall assembly in accordance with Section 2110 and having a ¾-hour rating.</p>	<p>8.12.3 Atrium.</p> <p>a) Any number of levels of the building shall be permitted to open directly to the atrium without enclosure based on the results of the engineering analysis required in 8.12.3(5).</p> <p>b) Glass walls and inoperable windows shall be permitted in lieu of the fire barriers where all of the following are met:</p> <p>i. Automatic sprinklers shall be spaced along both sides of the glass wall and the inoperable window at intervals not to exceed 6 ft.</p> <p>ii. The automatic sprinklers shall be located at a distance from the glass not to exceed 1 ft. and shall be arranged so that the entire surface of the glass is wet upon operation of the sprinklers.</p> <p>iii. The glass shall be tempered, wired, or laminated glass held in place by a gasket</p>	<p>The IBC provides an equal level of protection as the CBC.</p> <p>NFPA 5000 provides a lower level of protection than the CBC.</p> <p>NFPA 5000 allows any number of levels to open directly to the atrium without an enclosure if based upon an engineering analysis.</p>

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>maintained automatic closing, in accordance with Section 713.2, by actuation of a smoke detector, or self-closing may be used when protected as required for glazed openings in Exception 2.</p> <p>Fixed glazed openings in the atrium enclosure shall be equipped with fire windows having a fire-resistive rating of not less than three-fourths hour, and the total area of such openings shall not exceed 25 percent of the area of the common wall between the atrium and the room into which the opening is provided.</p> <p>EXCEPTIONS: 1. In Group R, Division 1 Occupancies, openings may be unprotected when the floor area of each guest room, congregate residence or dwelling unit does not exceed 1,000 square feet and each room or unit has an approved means of egress not entering the atrium.</p> <p>2. Guest rooms, dwelling units, congregate residences and tenant spaces may be separated from the</p>	<p>3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are included in computing the atrium volume for the design of the smoke control system.</p>	<p>system that allows the glass framing system to deflect without breaking (loading) the glass before the sprinklers operate.</p> <p>iv. The automatic sprinklers shall not be required on the atrium side of the glass wall and the inoperable windows where there is no walkway or other floor area on the atrium side above the main floor level.</p> <p>v. Doors in these walls shall be of glass or other material that restrict the passage of smoke.</p> <p>vi. Doors shall be self-closing or automatic closing upon detection of smoke.</p>	

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>atrium by approved fixed wired glass set in steel frames. In lieu thereof, tempered or laminated glass or listed glass block may be used, subject to the following:</p> <p>2.1 The glass shall be protected by a sprinkler system equipped with listed quick-response sprinklers. The sprinkler system shall completely wet the entire surface of the glass wall when actuated. Where there are walking surfaces on both sides of the glass, both sides of the glass shall be protected.</p> <p>2.2 The tempered or laminated glass shall be in a gasketed frame so installed that the glazing system may deflect without breaking (loading) the glass before the sprinkler system operates.</p> <p>2.3 The glass block wall assembly shall be installed in accordance with its listing for a three-fourths-hour fire-resistive rating and Section 2110.</p> <p>2.4 Obstructions such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed</p>			

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Occupancy Separations

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
between the sprinkler system and the glass.			
<p>402.6 Occupancy Separation Exceptions: The vertical portion of the occupancy separation that is adjacent to the atrium may be omitted between a Group B Occupancy office, Group M Occupancy sales area or Group A, Division 3 Occupancy and Group R, Division 1 apartment, congregate residence or guest room located on another level.</p>	Not Allowed or Addressed.	Not Allowed or Addressed.	<p>The IBC and NFPA 5000 provide a higher level of protection than the CBC.</p> <p>This atrium occupancy separation exception is unique to the 2001 CBC and is not allowed or addressed in the IBC or NFPA 5000.</p>

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Exiting

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>402.5 Means of egress. 402.5.1 Travel distance. Not more than 100 feet of the travel distance allowed by Section 1004.2.5 may be on an open exit-access balcony within the atrium.</p>	<p>404.8 Travel distance. In other than the lowest level of the atrium, where the required means of egress is through the atrium space, the portion of exit access travel distance within the atrium space shall not exceed 200 feet.</p>	<p>11.7.2(C) The entire area on the level of exit discharge shall be separated from areas below by construction having a fire resistance rating not less than that required for the exit enclosure. Exception No. 1: In an atrium, levels below the level of exit discharge shall be permitted to be open to the level of discharge in accordance with 8.12.3.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The 2001 CBC is most restrictive in limiting exiting through an atrium and the maximum travel distance.</p> <p>The 2003 IBC allows exiting through the atrium on any level, provided the maximum travel distance does not exceed 200 feet.</p> <p>NFPA 5000 allows several options to permit exiting through atria, including an engineering analysis.</p>
<p>402.5.2 Group I Occupancy means of egress. Required means of egress from sleeping rooms in Group I Occupancies other than jails, prisons and reformatories shall not pass through the atrium.</p>	<p>Not Addressed</p>	<p>Not Addressed</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The IBC and NFPA 5000 do not specifically prohibit Group-I Occupancies, other than jails, prisons etc. from exiting through atriums.</p>
<p>402.5.3 Stairs and ramps. Stairways and ramps in the atrium space shall be enclosed.</p>	<p>707.2, Exception 5. A shaft enclosure is not required for floor openings complying with the provisions for covered malls or atriums.</p>	<p>* See Section 11.7.2(c) above.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>Only the 2001 CBC requires that stairways and ramps within an atrium be enclosed.</p>

ATRIA

Fire Alarm - Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>FIRE ALARM SYSTEMS</p> <p>Not Specifically Addressed</p>	<p>FIRE ALARM SYSTEMS</p> <p>Not Specifically Addressed.</p>	<p>FIRE ALARM SYSTEMS</p> <p>Not Specifically Addressed</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p> <p>All three building codes do not specially address fire alarm requirements in atriums.</p> <p>* Note: However, all three building codes do require a fire alarm system indirectly, to control and activate the atrium smoke-control system where provided.</p>

ATRIA

Fire Alarm- Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1006.2.12.3 Buildings with atriums. Actuation of an atrium smoke-control system required by the Building Code shall initiate an audible fire alarm signal in designated portions of the building.</p>	<p>907.2.13 Atriums connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories.</p> <p>The system shall be activated in accordance with Section 907.7. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section 907.2.12.2.</p>	<p>No specific provisions. Smoke-control systems addressed in NFPA 5000, with reference to NFPA 92B.</p>	<p>The IFC and NFPA 1 provide a lower level of protection than the CFC.</p> <ol style="list-style-type: none"> 1. The CFC requires activation of an audible fire alarm signal upon actuation of an atrium smoke-control system for all atriums, whereas the 2003 IFC Draft only requires a fire alarm system in atriums that connects more than two stories. 2. The 2003 IFC Draft requires an emergency voice/alarm communication system in atriums of Group A, E or M Occupancies, that connects more than two stories. 3. NFPA 1 does not require or address fire alarm systems in atriums.

ATRIA

Fire Protection Systems-Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Automatic sprinkler protection.</p> <p>402.1 General. Buildings, of other than Group H Occupancy, with automatic sprinkler protection throughout may have atria complying with the provisions of this section.</p>	<p>404.3 Automatic sprinkler protection. An approved automatic sprinkler system shall be installed throughout the entire building.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. That area of a building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by a 2-hour fire barrier wall or horizontal assembly or both. 2. Where the ceiling of the atrium is more than 55 feet above the floor, sprinkler protection at the ceiling of the atrium is not required. 	<p>8.12.3 Atrium.</p> <p>(4) The entire building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 55.3 and 55.3.2.</p>	<p>The IBC provides a lower level of protection than the CBC.</p> <p>NFPA 5000 provides an equal level of protection as the CBC.</p> <ol style="list-style-type: none"> 1. IBC allows exception for an automatic sprinkler system throughout the entire building, where a 2-hour fire barrier wall or horizontal assembly separates that area of the building from the atrium. 2. IBC also allows exception for sprinkler protection at the ceiling of atriums, where the ceiling is more than 55 feet above the floor.

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Fire Protection Systems-Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
FIRE SPRINKLERS Not Specifically Addressed	FIRE SPRINKLERS Not Specifically Addressed	FIRE SPRINKLERS Not Specifically Addressed	FIRE SPRINKLERS The IFC and NFPA 1 provide an equal level of protection as the CFC. All three model codes are similar and do not specifically require or address the installation of fire sprinkler systems in atriums. All three codes do reference NFPA 13 as the standard for the design and installation of fire sprinkler systems.

ATRIA

Special Hazards

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>402.8 Interior Finish. The interior finish of walls and ceilings of the atrium and all unseparated tenant spaces allowed under Exception 1 to the first paragraph of Section 402.3 shall be Class I with no reduction in class for sprinkler protection.</p>	<p>404.7 Interior finish. The interior finish of walls and ceilings of the atrium shall not be less than Class B with no reduction in class for sprinkler protection.</p>	<p>No specific requirement for interior finish materials.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p>
<p>402.10 Combustible furnishings in atria. The quantity of combustible furnishings in atria shall not exceed that specified in the Fire Code.</p>	<p>404.2 Use. The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the <i>International Fire Code</i> shall be used in the atrium space. Exception: The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1</p>	<p>No specific requirement for furnishings or decorative materials.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>The 2003 IBC permits any use with the installation of an automatic sprinkler system.</p>
<p>402.4 Escalators and elevators. Escalators and elevators located entirely within the atrium enclosure need not be enclosed unless required by Chapter 30.</p>	<p>707.2, Exception 5. A shaft enclosure is not required for floor openings complying with the provisions for covered malls or atriums.</p>	<p>8.12.5.2 Moving walks not constituting an exit and escalators shall have their floor openings enclosed or protected as required for other vertical openings unless permitted by the following: (1) The requirement of 8.12.5.2 shall not apply to escalators in large, open areas such as atriums and enclosed shopping malls.</p>	<p>The IBC and NFPA 5000 provide an equal level of protection as the CBC.</p>

ATRIA

Other

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Section 402.2 Smoke-control System. A smoke-control system meeting the requirements of Section 905 shall be provided within the atrium and areas open to the atrium. The smoke-control system shall operate automatically upon actuation of the automatic sprinkler system within the atrium or areas open to the atrium and as required by Section 905.9.</p>	<p>Section 404.4 Smoke-control. A smoke-control system shall be installed in accordance with Section 909.</p> <p>Exceptions: 1. Smoke control is not required for floor opening meeting the requirements of Section 707.2, Exception 2, 7, 8 or 9. 2. Smoke control is not required for floor opening meeting the requirements meeting of Section 1019.1, Exception 8 or 9.</p>	<p>Section 8.12.3 Atriums. Unless prohibited by Chapter 16 through 30, an atrium shall be permitted, provided that the following is met.</p> <p>(5) An engineering analysis is performed that demonstrates that the entire building is designed to keep the smoke layer interfaced above the highest unprotected opening to adjoining spaces, or 6 ft above the highest floor level of exit access open o the atrium for a period equal to 1.5 times the calculated egress time or 20 minutes, which ever is greater.</p> <p>(6) Where an engineered smoke control system is installed to meet the requirements of 8.12.3(5) and is independently activated by each of the following: (a) Upon activation actuation of the automatic sprinkler system within the atrium or areas open to the atrium (b) Manual controls that are readily accessible to the fire dept.</p>	<p>The IBC and NFPA 5000 provide a lower level of protection than the CBC.</p> <p>NFPA 5000 has performance criteria, requiring that an engineering analysis be preformed prior to requiring any smoke control and only then a smoke control system is an option means.</p>

ATRIA

Other

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>402.7 Standby Power. Smoke control for the atrium and the smoke-control system for the tenant space shall be provided with standby power as required in Section 905.8.</p>	<p>404.6 Standby power. Equipment required to provide smoke control shall be connected to a standby power system in accordance with Section 909. .11</p>	<p>No requirement.</p>	<p>NFPA 5000 provides a lower level of protection than the CBC.</p> <p>NFPA 5000 does not require atrium smoke-control systems to be provided with standby power</p> <p>Note: NFPA 5000 does not automatically require a smoke-control system for atriums.</p>

FIRE EXTINGUISHING SYSTEMS

Sprinklers

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
904.1.2 Standards	903.1 Standards	55.3.1 Standards	All three codes refer to NFPA 13,13d & 13R
904.1.3 Modifications. When residential sprinkler are provided, exceptions to, or reductions in, code requirements based on the installation of an automatic fire-extinguishing system are not allowed.	903.1.2 Residential systems. Unless specifically allowed by this code, residential sprinkler systems installed in accordance with NFPA 13D or NFPA 13R shall not be recognized for the purposes of exceptions or reductions permitted by other requirements of this code.	22.3.5.1 Where modifications are permitted by this Code based on the installation of an automatic sprinkler system, such modifications shall be permitted when the automatic sprinkler system complies with 55.3.1(1), 55.3.1.1(2) or 55.3.1.1(3).	The CBC and the IBC provide an equal level of protection. Both codes allow modifications if a 13 system is installed. NFPA 5000 is less restrictive allowing modification if any type of sprinkler system is installed.
904.2.2 All Occupancies except Group R, Division 3 and Group U Occupancies shall be provided with sprinklers	903.2.10. Same Language	Not addressed	CBC & IBC provide the same level of protection. The NFPA 5000 addresses sprinkler requirements in each occupancy chapter.
904.2.3.1 Drinking establishments An automatic sprinkler system shall be installed in rooms used by the occupants for the consumption of alcohol and where the total area of such rooms exceeds 5,000 square feet.	903.2.1.2 Group A-2 An automatic sprinkler system shall be provided when one of the following conditions exist: 1. The fire area exceeds 5,000 square feet. 2. The fire area has an occupant load of 300 or more. 3. The fire area is located on a floor other than the level	16.3.5.1.1 Buildings containing assembly occupancies with occupant load greater than 300 shall be protected by an automatic sprinkler system: (1) Throughout the story containing the assembly occupancy (2) Throughout all stories below the story containing	The CBC provides a higher level of protection than either the IBC or NFPA 5000. The CBC limits the sprinkler requirements to drinking establishments, while the IBC and NFPA 5000 address assemblies all-inclusive. However, NFPA includes requirements for assemblies located below the level of exit

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	of exit discharge.	the assembly occupancy (3) Assembly occupancy located below the level of exit discharge, all stories intervening between that story and the exit.	discharge.
<p>904.2.3.2 Basements An automatic sprinkler system shall be installed in basements in Group A Occupancies when the basement is larger than 1,500 square feet.</p>	<p>903.2.1.1 - 903.2.1.4 Assembly occupancies located on a floor other than the exit floor shall be sprinklered</p>	<p>16.3.5.1.1 #3 Assembly occupancy located below the exit to all stories between the story and the exit shall be sprinklered</p>	<p>The CBC provides less protection than either the IBC or NFPA 5000. Both NFPA 5000 and the IBC require sprinklers in all A 's located below the exit floor and on all floors between.</p>
<p>904.2.3.3 Exhibition and display rooms. An automatic sprinkler system shall be installed in Group A Occupancies that has an occupant load of 799 used for exhibition or display purposes.</p>	<p>903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:</p> <ul style="list-style-type: none"> • The fire area has an occupant load of 300 or more. • The fire area is located on a floor other than the level of exit discharge. 	<p>16.3.5.1.1 Assembly Occupancies. Buildings containing assembly occupancies with an occupant load greater than 300 shall be protected by a sprinkler system.</p>	<p>The CBC provides less protection than either the IBC or NFPA 5000. CBC permits an occupant load of 799 before sprinkler systems are required. A 300-occupant load requires sprinklers in the IBC & NFPA 5000.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.2.3.4 Stairs. Sprinkler system are required in enclosed usable space below or over a stairway in Group A Divisions 2,2.1, 3 and 4</p>	Not addressed	<p>11.1.3.2.3 There shall be no enclosed usable space within an exit enclosure.</p>	CBC and IBC provides less protection than NFPA 5000. NFPA 5000 Chapter 11 applies to all building or portions thereof regardless of occupancy
<p>904.2.3.5 Multitheater complexes. An automatic sprinkler system shall be installed in every building containing a multitheater complex.</p>	<p>903.2.1.1 Group A-1. Sprinklers are required if the fire area contains a multitheater complex.</p>	16.3.5.1.1 Not addressed	CBC and the IBC provide the same level of protection. NFPA 5000 treats Multitheater complexes as assembly occupancy.
<p>904.2.3.6 Amusement Building. An automatic sprinkler system shall be installed in all amusement buildings</p>	<p>903.2.13 (See Table 903.2.13 and 411.4) An automatic sprinkler system shall be installed in all</p>	<p>16.4.7.2 Sprinklers are required in every special amusement building, other than buildings or structures not exceeding 10 ft in</p>	The IBC and CBC provide the same level of protection which is greater than NFPA.

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	amusement buildings	height and not exceeding 160 ft in aggregate horizontal projection...	
904.2.3.7 Stages. All stages shall be protected with an automatic sprinkler system.	903.2.13 (Table 903.2.13 & 410.6) All stages shall be protected with an automatic sprinkler system	16.4.5.9 All stages shall be protected with an automatic sprinkler system	Both the IBC & NFPA are equivalent to the CBC.
904.2.3.8 Smoke-protected assembly seating. Smoke-protected assembly seating shall be protected with an automatic sprinkler system.	1024.6.2.3 Smoke-protected assembly seating shall be protected with an automatic sprinkler system	16.4.2 Sprinklers not required: <ul style="list-style-type: none"> • If the roof construction is more than 50 ft above the floor level. • An Engineering analysis substantiates the ineffectiveness of sprinklers due to building height and combustible loading. 	The CBC & IBC provide an equal level of protection which is greater than NFPA.
904.2.4 Group Occupancies E An automatic fire sprinkler system shall be installed	903.2.2 Educational occupancy buildings with fire compartments exceeding	17.3.5.1 Educational occupancy buildings with fire compartments exceeding	The CBC provides less protection than the IBC and NFPA 5000. Both the IBC and NFPA 5000 do not

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
throughout all Group E, Educational buildings with an occupant load 50.	20,000 square feet shall be provided with sprinklers	20,000 square feet shall be provided with sprinklers	distinguish between educational occupancies.
904.2.4.2 Basements. An automatic sprinkler system shall be installed in basements classified as Group E, Division 1 Occupancies.	Not specifically addressed	17.3.5.4 Every portion of an educational building below the level of exit discharge shall be protected with a sprinkler system.	CBC and NFPA provide the same level of protection.
904.2.5 Group F Occupancies An automatic fire sprinkler system shall be installed in woodworking occupancies over 2,500 square feet.	903.2.4 An automatic fire extinguishing system shall be installed in Group H occupancies. (See Table's 903.2.13 &)	29.3.5.1 Group F Occupancies An automatic sprinkler system shall be installed in rooms classed as Group F Occupancies where the floor area exceeds 12,000 square feet on any floor or 24,000 square feet on all floors or in Group F Occupancies more than 3 stories in height	IBC and NFPA provide more protection than the CBC. The IBC requires sprinklers in all woodworking occupancies. While NFPA requires sprinkler when the floor area is equal to or exceeds 12, 000 square feet
904.2.6.1 General. An automatic fire extinguishing system shall be installed in Group H, Divisions 1,2,3 and 7 Occupancies.	903.2.8.1 Repair Garages Repair Garages with a floor area grater than 10,000 square feet shall have an automatic fire extinguishing system	Not specifically addressed (See Chapter 28 Business, Chapter29 Industrial, Chapter 34 High Hazard)	The CBC provides less protection than the IBC. The IBC requires sprinklers in all H occupancies regardless of Division. NFPA does not address hazardous occupancies. NFPA regulates commodities.

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.2.6.2 Group H Division 4 Group H, Division 4 Occupancies having a floor area of more than 3,000 square feet shall have an automatic fire extinguishing system.</p>	<p>903.2.4.2 Group H-5 An automatic fire extinguishing system shall be installed throughout buildings containing Group H, Division 5</p>	<p>29.3.5.1 Repair Garages with a floor area greater than 12,000 square feet shall have an automatic fire extinguishing system</p>	<p>CBC provides a higher level of protection than either the IBC or NFPA 5000. While the IBC is more restrictive than NFPA 5000.</p>
<p>904.2.7 Group I Occupancies. An automatic sprinkler system shall be in Group I occupancies.</p>	<p>903.2.6 Group M An automatic sprinkler system shall be installed in rooms classed as Group M Occupancies where the floor area exceeds 12,000 square feet on any floor or 24,000 square feet on all floors or in Group M Occupancies more than 3 stories in height...</p>	<p>19.3.51 Health care Facilities 20.3.5.1 Ambulatory Health Care 21.3.5.1 Detention</p> <p>An automatic sprinkler system shall be installed in health care facilities.</p>	<p>The CBC provides a higher level of protection than the IBC however, less protection than NFPA 101. The IBC allows for either an NFPA 13R or 13D in health care facilities. NFPA 5000 requires NFPA 13 system in all ambulatory health care facilities.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>904.2.9 Group R, Division 1 An automatic sprinkler system shall be installed throughout every apartment house three or more stories in height or containing 5 or more dwelling units, every congregate residence three or more stories in height or having an occupant load of 11 or more, and every hotel three or more stories in height or containing 6 or more guest rooms.</p>	<p>903.4 & 905.9 All valves controlling the water supply for automatic sprinkler systems shall be electrically monitored:</p> <ul style="list-style-type: none"> • 20 or more sprinkler heads in Group I, Division 1.1 and 1.2 Occupancies. • 100 or more sprinkler heads in all other occupancies. 	<p>25.3.5.2 Apartment Buildings. An. automatic sprinkler system shall be installed in all apartment building except where direct exiting from each unit is provided.</p>	<p>The IBC provides a higher level of protection than the CBC or NFPA.</p> <p>NFPA requires sprinklers in all apartment buildings unless direct exiting is provided. IBC requires sprinklers in all R occupancies.</p>
<p>904.3.1 All valves controlling the water supply for automatic sprinkler systems shall be electrically monitored:</p> <ul style="list-style-type: none"> • 20 or more sprinkler heads in Group I, Division 1.1 and 1.2 Occupancies. 	<p>Group R-2 Occupancies are not addressed.</p>	<p>Chapter 16 – 34 Requires sprinkler system supervision on all required systems.</p>	<p>The IBC and NFPA provides more protection than the CBC.</p> <p>NFPA 5000 requires sprinkler system supervision on all required systems.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<ul style="list-style-type: none"> 100 or more sprinkler heads in all other occupancies. 			
<p>904.2.10 Licensed Care facilities. Automatic sprinkler systems shall be installed in-group R Division 2 occupancies.</p> <ul style="list-style-type: none"> R2.1.1 and 2.2.1 not housing bed ridden clients and not exceeding two stories in height or not housing bedridden clients and not housing non-ambulatory clients above the first story. When Group R 2.1.1 and 2.2.1 occupancies are required to have an automatic sprinkler system an NFPA 13R or 13Dsystem may be used when in the scope of those standards. Section 2-6 of NFPA 13R or 13D shall not apply unless approved by the AHJ. 	<p>903.2.10.1 Sprinkler systems are not required</p>	<p>Group R-2 Occupancies are not addressed.</p>	<p>The CBC provides more protection than the IBC or NFPA.</p> <p>Group R-2's are SFM specific occupancies for California. They are not addressed by either NFPA 5000 or the IBC.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<ul style="list-style-type: none"> • Pursuant to the Health and Safety Code Section 13113, Division 2.2. Occupancies housing ambulatory children only non of whom are mentally ill or mentally retarded, and the buildings or portions thereof in which such children are housed are not more then two stories in height, and buildings or portions thereof housing such children have an automatic fire alarm system activated by an approved smoke detectors. • Pursuant to H & S Code Section 13143.6, Division 2 occupancies which house ambulatory persons only, non of whom is a child) under the age of 18 years, or who is elderly (65 years of age or older). 			

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
904.2.2 R-3 Sprinkler systems are not required.	903.2.8 An automatic sprinkler system shall be installed in rooms classed as Group S Occupancies where the floor area exceeds 12,000 square feet on any floor or 24,000 square feet on all floors or in Group S Occupancies more than 3 stories above grade.	22.3.5.1 Sprinkler systems are not required. NFPA allows for modification if a sprinkler system is provided.	NFPA 5000 provides more protection than either the CBC or the IBC.
Group (S) Sprinklers not required.	903.2.8.2 Bulk storage of tires In excess of 20,000 cubic feet shall be sprinklered.	30.3.5.1 Storage occupancy other than low hazard shall be sprinklered.	IBC & NFPA are equivalent and both provide more protection than CBC.
Bulk Storage of Tires are not addressed.	903.2.9 Group S-2 Enclosed Parking Garages shall be provided with a sprinkler system	Not addressed.	IBC provides more protection than both the CBC & NFPA 5000. CBC nor NFPA 5000 specifically address bulk storage of tires

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Group S-2 Enclosed Parking Garages are not required to be sprinklered.</p>	<p>903.2.9.1 Commercial Parking Garages Over 5,000 square feet shall be provided with sprinklers.</p>	<p>30.8.3.5.2- 30.8.3.5.2 Automatic sprinkler system are required in basements and underground parking structures and within or below a building used for other occupancy.</p>	<p>The IBC and NFPA provides more protection than the CBC.</p> <p>CBC does not specifically address commercial parking garages.</p>
<p>Commercial Parking Garages are not required to be sprinklered.</p>		<p>Not addressed.</p>	<p>CBC and NFPA 5000 do not specifically address commercial parking garages. The IBC provides more protection.</p>

STANDPIPE SYSTEMS

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
904.5.1 Standpipes shall comply NFPA 14	905.2 Installation Requirements Installation shall be in accordance w/NFPA 14.	55.4.1 Installation shall be as per NFPA 14 (Most Current Addition)	Both the IBC and NFPA 5000 are equivalent to the CBC.
904.5.2 Where Required. Standpipe systems shall be provided as set forth in Table 9A	905.3 Required Installations Standpipe systems shall be required as set forth in sections 905.3.1 – 905.3.6	Requirement based upon Occupancy Classifications as found in Chapters 15 through 30 and Section 55.4	Both the IBC and NFPA 5000 are equivalent to the CBC
Table 9A Building over 150' in height non-sprinklered Class III standpipe required.	905.3.1 30' in height Class III standpipe required	55.4.1 Class I Standpipes shall be provided in buildings 4 stories in height or w/4 basement levels.	The IBC provides more protection than NFPA 5000 and the CBC.
Table 9A Buildings 150 feet in height sprinklered, Class I standpipe is required	905.3.1 30' in height Class III standpipe required	55.4.1 Class I Standpipes shall be provided in buildings 4 stories in height or w/4 basement levels.	The IBC provides more protection than NFPA 5000 and the CBC.
Table 9A 4 stories or more non-sprinklered class 1 & II or a III	905.3.1 Class III Standpipe only for buildings 30' in height	55.4.1 Class I Standpipes shall be provided in buildings 4 stories in height or w/4 basement levels.	The IBC provides more protection than NFPA 5000 and the CBC.
Table 9A 4 stories or more-sprinklered Class 1 standpipe is required	905.3.1 Class I only	55.4.1 Class I Standpipes shall be provided in buildings 4 stories in height or w/4 basement levels.	Both the IBC and NFPA 5000 are equivalent to the CBC
Table 9A Group A non-sprinklered, with an occupant load greater than 1000, a class II standpipe is required	905.3.2 Group A non-sprinklered, with an occupant load greater than 1000, a class I standpipe is required	16.3.5.2.2 & 16.3.5.2.3 Assembly Occupancies Class I standpipes are required where one level is 30 above or below FD access or more than 150 feet from FD entry.	The IBC provides more protection than NFPA 5000 and the CBC.

STANDPIPE SYSTEMS

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>Table 9A Group A's over 300 occupants (exhibition hall) sprinklered or non-sprinklered, class II Stand pipes required.</p>	Not Addressed	<p>16.3.5.2.2 Assembly Occupancies Class I standpipes are required where one level is 30 feet above or below FD access or where an occupied area is more than 150 feet from the FD point of entry.</p>	The CBC provides more protection than NFPA 5000 and the IBC.
<p>Table 9A Day Care Occupancies Standpipes for day care occupancies are not specifically addressed</p>	<p>Day Care Occupancies Standpipes for day care occupancies are not specifically addressed</p>	<p>18.3.5.6.2 Day Care Occupancies Class I standpipes shall be provided in non-sprinklered day care occupancies when any area is more than 150 feet from the point of Fire Department entry</p>	NFPA 1 provides more protection than either the CBC or the IBC.
<p>Table 9A Non -sprinklered Group I, H, B, S, M & F Division 1 occupancies less than 4 stories but greater than 20,000 sq feet per floor,class II</p>	<p>905.3.1 all buildings where the floor level is more than 30' above grade a Class III standpipe system is required 905.3.3 Covered malls – Class I sized to 250 gpm. 905.3.6 Helistops required when the building is required to have a standpipe</p>	<p>55.4.1 Class I Standpipes shall be provided in all buildings 4 stories in height or w/4 basement levels. 19.3.5.6 Health Care Occupancies & 21.3.5.5 Detention / Correctional Occupancies</p>	Both the IBC and NFPA 5000 provide more protection than the CBC.

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Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
		In Group I Occupancies Class I standpipes are required where occupied area are more than 200 feet from Fire Department access.	
Table 9A Sprinklered Group I, H, B, S, M & F Division 1 occupancies less than 4 stories but greater than 20,000 square feet per floor. No Requirement	905.3.1 all buildings where the floor level is more than 30' above grade a Class I standpipe system is required 905.3.3 Covered malls – Class I sized to 250 gpm. 905.3.6 Helistops required when the building is required To have a standpipe	55.4.1 Class I Standpipes shall be provided in all buildings 4 stories in height or w/4 basement levels. 19.3.5.6 Health Care Occupancies & 21.3.5.5 Detention / Correctional Occupancies In Group I Occupancies Class I standpipes are required where occupied area are more than 200 feet from Fire Department access.	Both the IBC and NFPA 5000 provide more protection than the CBC
Table 9A Stages more than 1000 square feet in area sprinklered, Class III standpipes are required	905.3.4 exception Class III connected to the sprinkler system	16.3.5.2.4 Stages. Class II or Class III or 1-1/2 inch hose lines and cabinets shall be provided on each side of a regular legitimate stage	The IBC provides more protection than NFPA 5000 and the CBC.
904.5.3. There shall be a Class I standpipe outlet connection at Every floor-level landing of every required stairway and on each side of the wall adjacent to the exit	905.4(1-6) Every floor in every required stairway On each side of a horizontal exit Every exit passage way entrances,	55.4.1 Installation ion standards Shall be as specified in NFPA 14.	The IBC provides more protection than NFPA 5000 and the CBC.

STANDPIPE SYSTEMS

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
<p>opening of a horizontal exit, Outlets at stairways shall be located within the Exit enclosure or, in the case of pressurized enclosures, within the vestibule or exterior balcony...</p>	<p>Covered mail building adjacent to all entrance, Each floor greater then 150 feet away from a hose connection in non-sprinklered, 200 feet in sprinklered buildings.</p>		
<p>904.5.4 Class II standpipe outlets shall be accessible and shall be located so that all portions of the building are within 30 feet of a nozzle attached to 100 feet of hose. Group A, Occupancies, with legitimate stages outlets shall be located on each side of any stage, on each side of the rear of the auditorium and on each side of the balcony.</p>	<p>905.5 In A-1 & A-2 Occupancies Class II Standpipes shall be located at the rear of the auditorium, on each side of the balcony, and on each tier of dressing rooms.</p>	<p>55.4.2 Class II and Class II Installations Installations shall be as specified in NFPA 14 (Most Current Edition)</p>	<p>The IBC provides more protection than NFPA 5000 and the CBC.</p>
<p>904.5.5. Class III standpipe systems shall have outlets located as required for Class I standpipes.</p>	<p>905.6 Location of class III standpipe hose connections. Required as per class 1.</p>	<p>55.4.2 Class II and Class II Installations Installations shall be as specified in NFPA 14 (Most Current Edition)</p>	<p>The IBC provides more protection than NFPA 5000 and the CBC.</p>

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2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
904.6.1 Provides for temporary standpipes for buildings under construction	3311 Standpipes Building under construction that are four stories or more shall be provided with not less than one standpipe	No equivalent requirement	The CBC provides more protection than NFPA 5000 and the IBC.
904.6.2 When standpipes are required, outlet shall be available as soon as construction is not more than 35 feet in height	3311 Cont'd Such standpipes shall be installed where the progress of construction is not more than 40 feet in height.	No equivalent requirement	The CBC provides more protection than NFPA 5000 and the IBC.
904.6.3 Temporary standpipes are allowed to be used in place of permanent systems if they are designed to furnish a minimum of 500 gallons of water per minute at 50 psi.	No equivalent requirement	No equivalent requirement	The CBC provides more protection than NFPA 5000 and the IBC.
904.7 Basement pipe inlets Basement Pipe Inlets shall be required in unsprinklered basements of warehouse, factories and stores basement pipe inlets are required.	No equivalent requirement	No equivalent requirement	The CBC provides more protection than NFPA 5000 and the IBC.

FIRE EXTINGUISHING SYSTEMS

Sprinklers

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
<p>1003.2.2 Except Group R, Division 3 and Group U Occupancies, sprinklers shall be installed in window less buildings and basements that exceed 1500 sq. ft. and buildings that exceed 55 feet in height.</p>	<p>903.2.10. Except Group R, Division 3 and Group U Occupancies, sprinklers shall be installed in window less buildings and basements that exceed 1500 sq. ft. and buildings that exceed 55 feet in height.</p>	<p>13.3.2.20 Sprinklers are required in windowless buildings and basements.</p>	<p>CFC & IFC are equivalent.</p> <p>NFPA provides less is less protection with respect to 55 ft high buildings.</p>
<p>1003.2.3.1 Drinking establishments An automatic sprinkler system shall be installed in rooms used by the occupants for the consumption of alcoholic and where the total area of such rooms exceeds 5,000 square feet.</p>	<p>903.2.1.2 Group A-2 An automatic sprinkler system shall be provided when one of the following conditions exist: 4. The fire area exceeds 5,000 square feet. 5. The fire area has an occupant load of 300 or more. The fire area is located on a floor other than the level of exit discharge.</p>	<p>13.3.2.3.1 Buildings containing assembly occupancies with occupant load greater than 300 shall be protected by an sprinkler system: 1. Throughout the story containing the assembly occupancy Throughout all stories below the story containing the assembly</p>	<p>The CFC provides less protection than either the IFC or NFPA 1. The CFC limits the sprinkler requirements to drinking establishments, while the IFC and NFPA 1 address assemblies all-inclusive. However, NFPA includes requirements for assemblies located below the level of exit discharge.</p>

FIRE EXTINGUISHING SYSTEMS Sprinklers

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2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
		occupancy	
<p>1003.2.3.2 Basements An automatic sprinkler system shall be installed in basements in Group A's when the basement is larger than 1,500 square feet.</p>	<p>903.2.1.1 - 903.2.1.4 Assembly occupancies located on a floor other than the exit floor shall be sprinklered</p>	<p>13.3.2.3.1 #3 Assembly occupancy located below the exit at all stories between the story and the exit shall be sprinklered</p>	<p>The CFC provides less protection than either the IFC or NFPA. Both NFPA and the IFC require sprinklers in all A 's located below the exit floor and on all floors between.</p>
<p>1003.2.3.3 Exhibition and display rooms. An automatic sprinkler system shall be installed in Group A Occupancies that has an occupant load of 799 used for exhibition or display purposes.</p>	<p>903.2.1.3 Group A-3. A sprinkler system is required with 300 or more Occupant load.</p>	<p>13.3.2.3.1 A sprinkler system is required with 300 or more Occupant load.</p>	<p>The CFC provides less protection than either the IFC or NFPA 1. CFC permits an occupant load of 799 before sprinkler systems are required. A 300-occupant load requires sprinklers in the IFC & NFPA 1.</p>
<p>1003.2.3.4 Stairs. Sprinkler system are required in enclosed usable space below or over a stairway in Group A Divisions 2,2.1, 3 and 4</p>	Not addressed	Not addressed	NFPA 1 & IFC provide less protection than the CFC.

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Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
<p>1003.2.3.5 Multitheater complexes. An automatic sprinkler system shall be installed in every building containing a multitheater complex.</p>	<p>903.2.1.1 Group A-1. Sprinklers are required if the fire area contains a multitheater complex.</p>	<p>13.3.2.3.1 A sprinkler system is required with 300 or more Occupant load.</p>	<p>CFC and the IFC are equivalent. NFPA 1. treats Multitheater complexes as assembly occupancies providing less protection.</p>
<p>1003.2.3.6 Amusement Building. An automatic sprinkler system shall be installed in all amusement buildings</p>	<p>903.2.13 (See Table 903.2.13 and 411.4) An automatic sprinkler system shall be installed in all amusement buildings</p>	<p>Not addressed</p>	<p>The IFC and CFC are equivalent.</p>
<p>1003.2.3.7 Stages. All stages shall be protected with an automatic sprinkler system.</p>	<p>903.2.13 (Table 903.2.13 & 410.6) All stages shall be protected with an automatic sprinkler system</p>	<p>13.3.2.3.2 All stages shall be protected with an automatic sprinkler system</p>	<p>Both the IFC & NFPA 1 is equivalent to the CFC</p>
<p>1003.2.3.8 Smoke-protected assembly seating. Smoke-protected assembly seating shall be protected with an automatic sprinkler system.</p>	<p>1024.6.2.3 Smoke-protected assembly seating shall be protected with an automatic sprinkler system</p>	<p>. Not addressed</p>	<p>The CFC & IFC are equivalent and provide more protection than NFPA.</p>
<p>1003.2.4.1 Group Occupancies E A fire sprinkler system shall be installed throughout all Group E educational building with an</p>	<p>903.2.2 Educational occupancy buildings with fire compartments exceeding 20,000 square feet shall be provided with sprinklers</p>	<p>Not addressed</p>	<p>The CFC provides more protection than the IFC and NFPA 1.</p>

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Sprinklers

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
occupant load 50.			
<p>1003.2.4.2 Basements. An automatic sprinkler system shall be installed in basements classified as Group E, Division 1 Occupancies.</p>	Not specifically addressed	<p>13.3.2.5.1 Every portion of an educational building below the level of exit discharge shall be protected with a sprinkler system.</p>	CFC is equivalent to NFPA 1. Both the CFC and NFPA 1 provide more protection than the IFC.
<p>1003.2.4.3 Stairs. An automatic sprinkler system shall be installed in enclosed usable space below or above a stairway in Group E, Division 1</p>	Not specifically addressed	Not addressed	The CFC provides more protection than the IFC and NFPA 1.
<p>1003.2.5.1 Group F Occupancies A sprinkler system shall be installed in woodworking occupancies over 2,500 square feet.</p>	<p>903.2.3 Group F-1 An automatic sprinkler system shall be installed in woodworking operations</p>	Not addressed	The IFC provides more protection than the CFC and NFPA 1. The IFC requires sprinklers in all woodworking occupancies.

FIRE EXTINGUISHING SYSTEMS

Sprinklers

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
<p>1003.2.5 General. An automatic fire extinguishing system shall be installed in Group H, Divisions 1,2,3 and 7 Occupancies.</p>	<p>903.2.4 An automatic fire extinguishing system shall be installed in Group H occupancies. (See Table's 903.2.13 &)</p>	Not addressed	The IFC provides more protection than the CFC and NFPA 1. The IFC requires sprinklers in all H occupancies regardless of Division. NFPA does not address hazardous occupancies. NFPA regulates commodities.
<p>1003.2.6.2 Group H Division 4 Group H, Division 4 Occupancies having a floor area of more than 3,000 square feet shall have an automatic fire extinguishing system.</p>	<p>903.2.8.1 Repair Garages Repair Garages with a floor area greater than 10,000 square feet shall have an automatic fire extinguishing system</p>	Not addressed	The CFC provides more protection than the IFC and NFPA 1.
<p>1003.2.6.3 Group H Division 6 Occupancies. An automatic fire extinguishing system shall be installed throughout buildings containing Group H, Division 6</p>	<p>903.2.4 An automatic fire extinguishing system shall be installed in Group H occupancies. (See Table's 903.2.13)</p>	Not addressed	CFC and IFC are equivalent.
<p>1003.2.7 Group I Occupancies. An automatic sprinkler system shall be in Group I occupancies.</p>	<p>903.2.5 Group I An automatic sprinkler system shall be in Group I occupancies</p>	<p>13.3.2.7.1 Health care Facilities 13.3.2.9.1 Detention An automatic sprinkler system shall be in health care facilities.</p>	All three Codes are equivalent. However, the CFC provides more protection than the IFC and NFPA 1 in that the IFC and NFPA 1 allow for either an NFPA 13R or 13D.

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2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
<p>1003.2.9 Group R, Division 1 An automatic sprinkler system shall be installed throughout every apartment house or hotel that is three or more stories in height or containing 5 or more dwelling units or 6 or more guest rooms.</p>	<p>903.2.7 Group R. An automatic sprinkler system shall be installed throughout all buildings with a Group R fire area.</p>	<p>13.3.2.13.2 All Apartment buildings shall be sprinklered. Unless, each unit has direct exiting.</p>	<p>The IFC provides more protection than the CFC and NFPA 1.</p>
<p>1003.3.1 All valves controlling the water supply for automatic sprinkler systems shall be electrically monitored:</p> <ul style="list-style-type: none"> • 20 or more sprinkler heads in Group I, Division 1.1 and 1.2 Occupancies. • 100 or more sprinkler heads 	<p>903.4 & 905.9 All valves controlling the water supply for automatic sprinkler systems shall be electrically monitored:</p> <ul style="list-style-type: none"> • 20 or more sprinkler heads in Group I, Division 1.1 and 1.2 Occupancies. • 100 or more sprinkler heads 	<p>13.3.3.1.7 For every required sprinkler system, water flow and supervision shall be monitored in accordance with NFPA 72.</p>	<p>The CFC and IFC provides less protection than NFPA.</p> <p>NFPA 1 requires sprinkler system supervision on all required systems.</p>

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Sprinklers

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2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
in all other occupancies.	in all other occupancies.		
1003.2.10 Automatic sprinklers are required in permanent Sound Stages & Solid-Ceiling Sets that are over 6000 sq.ft.	Not Addressed	Not addressed	The current CFC provides more protection than both the IFC and NFPA 1.
Automatic sprinkler systems for Group S Occupancies are not specifically addressed	903.2.8 An automatic sprinkler system shall be installed in rooms classed as Group S Occupancies where the floor area exceeds 12,000 square feet on any floor or 24,000 square feet on all floors or in Group S Occupancies more than 3 stories above grade.	13.3.2.22.1 Storage occupancies greater than 2500 sq.ft. shall be sprinklered.	The NFPA provides more protection than the IFC and CFC.
Bulk storage of tires is not specifically addressed. See Article 81	903.2.8.2 Bulk storage of tires in excess of 20,000 cubic feet shall be sprinklered.	13.3.2.22.1 Sprinklers are required in high piled storage occupancies.	IFC provides more protection than both, the CFC & NFPA. However, the CFC addresses high piled storage in Article 81, while

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2001 CFC	2003 IFC Draft	2003 NFPA 1	Comments/References
			NFPA 1 requires sprinklers in all high piled storage occupancies.
Enclosed parking garages are not specifically addressed. However, 1003.2.2 requires sprinkler protection in all windowless buildings and basements that exceed 1500 sq. ft. This would include enclosed parking.	903.2.9 Group S-2 Enclosed Parking Garages shall be provided with a sprinkler system	13.3.2.20 Not specifically addressed. However, Sprinkler protection is required in basements and window less structures.	All Three codes provide the same level of protection.
Parking Garages over 5,000 square feet are not specifically addressed.	903.2.9.1 Parking Garages Over 5,000 square feet that are used for parking trucks and buses shall be provided with sprinklers.	Not specifically addressed.	The IFC provides more protection than the CFC and NFPA 1. CFC and NFPA 1 do not specifically address commercial parking garages.

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Standpipes

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1004 Standpipe 1004.1.1 Installation</p> <p>National standard hose threads.</p>	<p>905 Standpipe</p> <p>--Hose threads approved and compatible with FD hose threads.</p> <p>Also refers to NFPA 14.</p>	<p>13.2 Standpipes 13.2.1</p> <p>Also refers to NFPA 14.</p>	<p>The CFC is equivalent to both the IFC and NFPA 1. All three codes refer to NFPA 14 to standard installation requirements.</p>
<p>Required Installations. Table 1004-A Building > 150' high & more than 1 story.</p> <p>-- Non-sprinklered, Class III</p> <p>--Sprinklered-Class I</p>	<p>905.3.1</p> <p>--30' in height above FD vehicle access, Class III.</p> <p>--floor level of lowest story is > than 30' below the highest level of FD access, Class III.</p> <p>--Sprinklered bldg w/ 30' height limitations, Class I.</p>	<p>13.2.2.2(1-4) Required.</p> <p>-- > than 50' above grade & containing intermediate stories or balconies, Class I.</p> <p>--High Rises, Class I</p>	<p>IFC provides more protection than the CFC and NFPA.</p>

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Standpipes

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Table 1004-A 4 stories or more but less than 150' high.</p> <p>--Non-sprinklered Class 1 & II or III</p> <p>--Sprinklered, Class I</p>	<p>905.3.1 --30' in height above FD vehicle access, Class III. --floor level of lowest story is > than 30' below the highest level of FD access, Class III.</p> <p>--Sprinklered bldg w/ 30' height limitations, Class I.</p>	<p>13.2.2.2 (1-4) --More than 3 stories above grade, Class I</p> <p>--More than 1 story below grade, Class I.</p> <p>--More than 20' below grade, Class I.</p>	<p>IFC and NFPA provides more protection than the CFC.</p>
<p>Table 1004-A Group A w/ occupant load >1000.</p> <p>--Non-sprinklered, Class II</p> <p>--Sprinklered, NR</p>	<p>905.3.2 --Non-sprinklered, Class I. Sprinklered, not addressed.</p>	<p>Not addressed</p>	<p>IFC provides more protection than the CFC and NFPA.</p>
<p>Table 1004-A Group A-2.1 occupancies . 5,000 s.f. used for exhibition.</p> <p>--Non-sprinklered, Class II</p> <p>--Sprinklered, Class II</p>	<p>Not Addressed</p>	<p>Not Addressed</p>	<p>CFC Provides more protection than the IFC and NFPA</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Table 1004-A Group I, H, B, S, M & F Division 1 Occ. < 4 stories but > than 20,000 sq ft. per floor.</p> <p>--Non-sprinklered, Class II</p> <p>--Sprinklered-NR</p>	<p>905.3.1 --Open parking garages not more than 150' above FD access, Class I manual standpipes. --Open parking garages, subject to freezing, Class I manual standpipes. --Basements equipped with sprinkler systems, Class I.</p> <p>905.3.3 Covered malls – Class I sized to 250 gpm.</p> <p>905.3.5 Underground buildings, Class I</p> <p>905.3.6 Helistops required when the building is required to have a standpipe.</p>	<p>13.2.2.5 --New & existing Detention/Correctional facilities over 2 stories, Class I.</p> <p>-- Non-sprinklered Detention/Correctional facilities over two stories high, Class III.</p>	<p>The CFC provides more protection than the IFC and NFPA.</p> <p>NFPA 1 requires a Class I standpipe for all occupancies more than 3 stories regardless of square feet.</p>

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Standpipes

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Table 1004-A Stages > than 1000 sf.</p> <p>--Non-sprinklered Class II</p> <p>--Sprinklered, Class III</p>	<p>905.3.4 Stages > than 1000 sf.</p> <p>--Non-sprinklered- Class III with a 1 ½ and 2 ½ inch hose connections.</p> <p>-- Sprinklered- Class III connected to the sprinkler system.</p>	<p>13.2.2.4 Stages > than 1000 sf.</p> <p>--Equipped with 1 ½ “ hose lines at each side of stage, per NFPA 13.</p> <p>--Class II or III standpipes per NFPA 14.</p>	<p>IFC provides more protection than the CFC and NFPA.</p>
<p>1004.3 Class I locations.</p> <p>--Every floor of each required stairway.</p> <p>--Each side of the wall near the horizontal exit opening.</p> <p>--Outlets at stairs located within the exit enclosure.</p> <p>--For pressurized stairs, within the vestibule or exterior balcony.</p>	<p>905.3.3 <u>Covered malls-</u> entrance to each exit passageways, floor level landings in stairs opening into the mall, and exterior public entrances.</p> <p>905.4</p> <p>--Every floor of each required stairway.</p> <p>--Each side of the wall near the horizontal exit opening.</p> <p>--Every exit passageway.</p> <p>--Roof level with a 33.3 % slope.</p> <p>--Each floor > than 150’ away from a hose connection in non-sprinklered</p>	<p>Class I locations.</p> <p>Not addressed</p>	<p>IFC provides more protection than the CFC and NFPA.</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	<p>buildings and 200' in sprink'd buildings.</p> <p>Class I Locations (905.4.1 Fire resistive protection requirements for vertical enclosures.</p> <p>905.4.2 Standpipes interconnected when more than 1 in a building.</p>		

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Standpipes

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1004.4 Location of Class II --All portions of bldg w/i 30' of a nozzle attached to 100' of hose.</p> <p>--A-1 & A-2.1 occupancies, each side of stage, rear of auditorium, each balcony side.</p>	<p>905.5 Accessible, w/i 30' of a nozzle attached to 100' of hose.</p> <p>905.5.1 --A-1 & A-2 Occ.-Each side of stage, each side of the rear of the auditorium, on each side of the balcony, and on each tier of dressing rooms.</p> <p>905.5.2 No fire resistive rating protection required.</p> <p>905.5.3 1-inch hose allowed in light-hazard occupancies.</p>	<p>Class II locations.</p> <p>Not addressed</p>	<p>IFC provides more protection than the CFC and NFPA.</p>

FIRE EXTINGUISHING SYSTEMS

Standpipes

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1004.5 Location of class III.</p> <p>As per Class I.</p>	<p>905.6 Location of class III.</p> <p>Located as per Class I and hose connections as per Class II.</p> <p>905.6.1 Fire resistive protective construction as per Class I.</p> <p>905.5.3 Interconnected where more than 1 standpipe in a building.</p>	<p>Class III locations.</p> <p>Not Addressed.</p>	<p>The CFC is equivalent to IFC. NFPA 1 does not specifically address the location of hose cabinets or connections</p>

Protection of Commercial Cooking Equipment

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>1005.1 Ventilating Hood and Duct Systems. A ventilating hood and duct system shall be provided in accordance with the Mechanical Code.</p>	Not specifically addressed	Not specifically addressed (see NFPA 96)	<p>CFC provides more protection than the IFC and NFPA.</p> <p>Neither NFPA 1 or the IFC addresses protection of commercial cooking equipment</p>
<p>1005.2.1 Where required. Approved automatic fire-extinguishing systems shall be provided for the protection of commercial-type cooking equipment.</p>	Not specifically addressed	Not specifically addressed (see NFPA 96)	<p>CFC provides more protection than the IFC and NFPA.</p> <p>Neither NFPA 1 or the IFC addresses protection of commercial cooking equipment</p>
<p>1005.2.2 Type of system. The system used for the protection of commercial-type cooking equipment shall be an automatic fire extinguishing system complying with UL 300.</p> <p>. Other systems shall be of an approved</p> <ol style="list-style-type: none"> 1. Automatic sprinkler 2. Dry-chemical. 3. Carbon dioxide 4. Wet-chemical. 	904.11 Commercial Cooking system	Not specifically addressed (see NFPA 96)	The CFC and the IFC are equivalent
<p>1005.2.3.1. The automatic fire extinguishing system used to protect ventilating hoods and ducts and cooking appliances shall be installed to include cooking surfaces, deep fat fryers, griddles, upright</p>	Not specifically addressed	Not specifically addressed (see NFPA 96)	<p>CFC provides more protection than the IFC and NFPA.</p> <p>Neither NFPA 1 or the IFC addresses protection of commercial cooking equipment</p>

Protection of Commercial Cooking Equipment

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
broilers, char broilers, range tops and grills. Protection shall also be provided for the enclosed plenum space within the hood above filters and exhaust ducts serving the hood.			
1005.2.3.2 When carbon dioxide systems are used, there shall be a nozzle at the top of the ventilating duct. Additional nozzles within vertical ducts exceeding 20' feet and horizontal ducts exceeding 50' feet Dampers shall be installed at either the top or the bottom of the duct. When the damper is installed at the top of the duct, the top nozzle shall be immediately below the damper.	904.11.3 Carbon dioxide systems Same language as the CFC	Not specifically addressed (see NFPA 96)	The CFC and the IFC are equivalent
1005.2.4 Automatic fire-extinguishing systems shall be interconnected to the fuel or current supply	904.11.2 System interconnection Same language as the CFC	Not specifically addressed (see NFPA 96)	The CFC and the IFC are equivalent

Protection of Commercial Cooking Equipment

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
for cooking equipment. Shutoff valves or switches shall be of a type that requires manual operation to reset.			
1005.2.4.2 Commercial-type cooking equipment protected by an automatic carbon dioxide extinguishing system shall be arranged to shut off the ventilation system upon activation.	904.11.3.1 Commercial-type cooking equipment protected by an automatic carbon dioxide system shall be arranged to shut off the ventilation system upon activation	Not specifically addressed (see NFPA 96)	The CFC and the IFC are equivalent
1005.2.5 Special provisions for automatic sprinkler systems. Automatic sprinkler systems shall be supplied from a separate, readily accessible indicating control valve that is identified. Sprinklers used for the protection of fryers shall be listed for that application and installed in accordance with their listing.	904.11.4 Sprinklers protecting commercial cooking equipment shall be supplied from a separate valve.	Not specifically addressed (see NFPA 96)	The CFC and the IFC are equivalent
1005.2.6 Manual system operation. A readily accessible manual	904.11.1 Manual system operation: A manual device shall be located	Not specifically addressed (see NFPA 96)	The IFC provides more protection than the CFC.

Protection of Commercial Cooking Equipment

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
activation device installed at an approved location. The activation device is allowed to be mechanically or electrically operated. Instructions for operating the fire-extinguishing system shall be posted adjacent to manual activation devices.	at or near a means of egress form the cooking area, a minimum of 10" feet and a maximum of 20 ' from the kitchen exhaust system. The manual activation device shall be located a minimum of 4' feet and a maximum of 5' feet above the floor.		The IFC specifies the location of the manual activation device. The CFC also allows the device to be electrically operated.
1005.2.7 Portable fire extinguishers. A fire extinguisher listed and labeled for Class K fires shall be installed within 30 feet of commercial food heat-processing equipment.	904.11.5 Cooking equipment using vegetable or animal oils and fats shall be provided with a Class K portable fire extinguisher	Not specifically addressed (see NFPA 96)	CFC provides more protection than the IFC and NFPA. NFPA 1 does not address protection of commercial cooking equipment
1005.2.8 Operations and maintenance. <ul style="list-style-type: none"> • Hoods shall be operational. • Grease filters shall be in place. • Grease extractors shall be operational. • Hoods, grease-removal devices, fans, ducts and other appliances shall be cleaned. • Extinguishing systems 	904.11.6. - 904.11.6.5 Operations and maintenance Same as CFC	Not specifically addressed (see NFPA 96)	The CFC and the IFC or equivalent

Protection of Commercial Cooking Equipment

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
shall be serviced every six months or after activation.			

Alarm Systems

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
WHERE REQUIRED			
303.9 Fire alarm systems are required as per the fire code. Group A Division 1, 2 and 2.1	907.2.1 alarm system required in assembly occupancies with 300 or more.	16.3.4.1 alarm system required in assembly occupancies with 300 or more and all theaters with more than one viewing room.	IBC and NFPA 5000 are equivalent to the current CBC. NOTE: The IBC places Alarm requirements in the same Chapter number (9) and uses identical Section numbers as IFC.
303.10 Voice evac required when more than 10,000 occupants	907.2.2.1 Voice Evac required for 1000 or more-	16.3.4.3.3 Voice Evac required for 300 or more-	NFPA provides more protection than the IBC and CBC.
305.9 Fire alarm systems required; Group E with 50 or more occupants or more than one classroom.	907.2.3 Required, Group E with 50 or more occupants.	17.3.4.1 Required in Group E greater than 1000 square feet.	IBC and NFPA 5000 are equivalent to the current CBC.
307.9 Fire alarm systems; Group H Occupancies with Organic Coatings and H-6	907.2.5 Group H Occupancies with Organic Coatings and wherever other hazardous materials are present.	34.7.3.5 Manual alarm required for areas required to comply with Protection Level 5 (semi conductor).	IBC provides more protection than the CBC or NFPA.
308.9 Fire alarm systems: Group I, Divisions 1.1, 1.2 and 2	907.2.6 same as CBC except that smoke detectors in corridors are added.	19.3.4 Required in all health care facilities.	IBC and NFPA 5000 are equivalent to the current CBC.

Alarm Systems

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
Fire alarm systems for Group M are not specifically addressed	907.2.7 Alarm system required in Group M other than malls having an occupant load greater than 500 or more than 100 above the exit discharge.	27.3.4 Requires fire alarm systems in Class A mercantile Occupancies (30,000 square feet or more than three stories, 1000 occ load)	The IBC and NFPA 5000 provide equivalent protection and each provide more protection than the CBC.
310.10 Required Installations; Group R Division 1 w/ 16 or more dwellings or three stories high.	907.2.8.1 Alarm system required in Group R-1 occupancies that a three stories or more.	25.3.4.1 requires alarms in apartment buildings more than three stories (less restrictive) or w/ more than 11 dwelling units. (more restrictive)	The IBC provides more protection than the CBC. NFPA provides more protection than the CBC with respect to the number of units, but less restrictive with respect to the number of stories.
403.5.1 , Required Installations; New High Rise Buildings.	907.2.12 New High - rise buildings.	33.2.1.1 Fire Alarm system required for new high-rise buildings.	IBC and NFPA 5000 are equivalent to the current CBC
403.5.2 Voice evac required for high-rise buildings.	907.2.12.2 Voice evac systems required in high-rise buildings.	33.2.1.1 Voice evac required for high-rise buildings.	IBC and NFPA 5000 are equivalent to the current CBC.
403.5.3 In high-rise buildings, a Fire Department communication System shall be provided.	907.2.12.3 In high-rise buildings, a Fire Department communication System shall be	33.2.1.2 In high-rise buildings, a two-way telephone system shall be provided for fire department use.	IBC and NFPA 5000 are equivalent to the current CBC

Alarm Systems

Building Code

2001 CBC	2003 IBC Draft	2003 NFPA 5000	Comments/References
	provided.		
404.3.6 Covered Mall buildings. A public address system shall be installed for fire department use in malls that exceed 50,000 square feet of total area.	907.2.20 Covered mall buildings exceeding 50,000 sq. ft. shall be provided with an emergency voice/alarm system.	27.4.4.10 An alarm system is required for Covered Mall buildings to include manual pull stations and public address.	NFPA provides more protection than the IBC or CBC.
408.5 Required Installations; Amusement Buildings w/ 50 or more occupant load shall have an automatic alarm system connected to exit lights, sound system and confusing effects.	907.2.11.1 Amusement buildings. Amusement Buildings w/ 50 or more occupant load shall have an automatic alarm system connected to exit lights, sound system and confusing effects	16.4.7.4 In special amusement buildings, an automatic smoke detection system shall be provided that is connected to exit lights, sound system and confusing effects.	IBC and NFPA 5000 are equivalent to the current CBC
408.5.4 An electronically supervised public address system shall be provided in special amusement buildings.	907.2.11.3 Electronically supervised voice comm system shall be provided in special amusement buildings.	No similar requirements.	The IBC and CBC provides more protection than NFPA.

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
<p>1006.1.1 Applicability. Installation and maintenance of fire alarm systems shall be in accordance with Section 1006.</p>	<p>907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing buildings. The requirements in Section 907.2 are applicable to new buildings while the requirements of Section 907.3 are applicable to existing buildings.</p>	<p>13.7.1.1 Where building fire alarm systems or automatic fire detectors are required by other sections of this Code, they shall be provided in accordance with NFPA 72®, National Fire Alarm Code ® and Section 13.7.</p>	<p>Both the IFC and NFPA 1 provide more protection than the CFC in that they have specific requirements for existing buildings.</p>
<p>1006.1.2 Problematic systems and systems out of service. This section requires that the Chief be notified when fire protection systems are out of service, and also grants the Chief the ability to require a fire watch, if necessary.</p>	<p>901.7 Systems out of service. This section requires that the Fire Department be notified when fire protection systems are out of service, and also grants the code official the ability to require a fire watch, if necessary or to evacuate the building.</p>	<p>13.7.1.4.6 Where a required fire alarm system is out of service for more than 4 hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated or an approved fire watch shall be provided.</p>	<p>The NFPA provides more protection than the IFC or CFC.</p> <p>NFPA 1 is much more specific and more restrictive than either the IFC or the CFC.</p>
<p>1006.2.2.1 General This section requires that manual alarm systems be installed in large (300 or more occupants) Public Assembly Occupancies</p>	<p>907.2.1 Group A A manual fire alarm system shall be installed in Assembly Occupancies with an occupant load of 300 or more.</p>	<p>13.7.2.1 (New), and 13.7.2.2 (Existing) Assembly Occupancies. Assembly occupancies with occupant loads of more than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system.</p>	<p>The NFPA provides more protection than the IFC or CFC.</p>
<p>1006.2.2.2 Activation of fire alarm in (<1000) Group A Occupancies shall immediately initiate an approved prerecorded message announcement (voice-evac)</p>	<p>907.2.1 Voice-evac alarm system required in assembly occupancies with an occupant load of 1000 or more.</p>	<p>13.7.1.4.10.10 Automatically transmitted or live voice evacuation instructions to occupants <u>shall be permitted</u>.</p>	<p>IFC and CFC provide more protection than the NFPA 1.</p>

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
<p>1006.2.3 Group B Occupancies. This section requires alarms systems in Group B occupancies only if they are: High-rise office buildings; Buildings with Atriums;</p>	<p>907.2.2 Group B. A manual fire alarm system shall be installed in any Group B Occupancies having an occupant load of 500 or more or more than 100 persons above or below the level of discharge.</p>	<p>13.7.2.19 (New) and 13.7.2.20 (Existing) Business Occupancies. Fire alarm systems shall be provided in any business if: The building is two stories or more. There is an occupancy load of 50 or more above or below the level of exit discharge; The occupancy is subject to 300 or more total occupants. And; In Industrial Occupancies If the total capacity of the building exceeds 100 persons or more than 25 persons are above or below the level of exit discharge.</p>	<p>The NFPA provides much more protection than the IFC or CFC</p> <p>The IFC provides more protection than the current CFC.</p> <p>NFPA requires fire alarms in most commercial buildings that are in excess of 10,000 sq. ft.</p>
<p>1006.2.13 (For SFM) Group C Occupancies. In organized camps, rooms used for sleeping purposes shall be provided with an automatic smoke detector system.</p>	<p>Group C Occupancies not addressed in IFC</p>	<p>Group C Occupancies not addressed in NFPA 1</p>	<p>The CFC provides more protection than the IFC or NFPA.</p>
<p>1006.2.14 (For SFM) Automatic Smoke Detection system for egress control devices. 1006.2.14.1 (SFM) This section requires smoke detection throughout the complete floor of a building, ii delayed egress devices are placed on exit doors.</p>	<p>1008.1.8.6 Delayed egress locks. This section permits delayed egress locking systems, provided that automatic sprinklers <u>or</u> approved smoke detection is installed.</p>	<p>14.5.3.1 Delayed-Egress Locks. This section permits delayed egress locking systems, provided that automatic sprinklers <u>or</u> approved smoke detection is installed.</p>	<p>The CFC provides more protection than IFC and NFPA in that either smoke detection <u>or</u> sprinkler protection must be provided, when using delayed egress devices.</p>

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
<p>1006.2.4 Group E Occupancies. This section requires a manual alarm system in schools having an occupant load of 50 or more.</p>	<p>907.2.3 Group E. A manual fire alarm system shall be installed in Group E Occupancies with an occupant load of 50.</p>	<p>13.7.2.3 New Educational Occupancies A fire alarm system is required in all Educational Occupancies that are greater than 1000 sq. ft.</p>	Both the IFC and NFPA 1 are equivalent to the current CFC.
<p>1006.2.4.2 Smoke detectors. This section requires smoke detectors in hallways and corridors where increased in travel distance to exits is desired.</p>	No similar requirement based upon travel distance.	No Similar Requirement for travel distance Increase in NFPA 1	The CFC provides more protection than the IFC and NFPA 1.
<p>1006.2.4.2.2 Travel through adjoining rooms. This section requires smoke detectors to when it is necessary to exit from a room through adjoining or intervening rooms.</p>	No similar requirement	No Similar Requirement for in NFPA 1	The CFC provides more protection than the IFC and NFPA 1.
<p>1006.2.4.3 Exterior alarm-signaling device. This section requires an alarm notification appliance (bell, horn etc.) to be mounted on the exterior of the building, whenever an alarm system is installed.</p>	<p>907.10.2 Audible alarms are required but not specifically required on the buildings exterior.</p>	<p>13.7.1.4.10.7 The general evacuation alarm signal shall operate throughout the entire building.</p>	The CFC provides more protection than the IFC and NFPA 1.
<p>1006.2.6.1 General. This section requires a manual fire alarm system in buildings using and storing large amounts of hazardous</p>	<p>907.2.5 Group H. This section requires a manual fire alarm system in buildings using and storing large amounts of hazardous</p>	No Requirement specific to Group H Occupancies	The CFC and IFC provides more protection than NFPA 1.

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
materials whenever required by Article 80 of the CFC.	materials whenever required by various chapters in the IFC.		
1006.2.7 Group I Occupancies. This section requires Institutional Occupancies to be provided with an approved manual and automatic fire alarm system.	907.2.6 Group I Manual and automatic detection is required in Group I occupancies. However, manual pull stations may be omitted in certain supervised locations.	13.7.2.5 Health Care Occupancies. Health care occupancies shall be provided with a fire alarm system.	The CFC provides more protection than the IFC and NFPA 1.
1006.2.7.1.2 Patient room smoke detectors. This section requires smoke detectors in patient sleeping rooms of hospitals and nursing homes.	907.2.6.1 Group I-2. Corridor smoke detection is required, but may be waived if smoke detectors are installed in Patient sleeping areas.	13.7.2.5.2 Detection in Spaces Open to Corridors. Detectors shall be installed in spaces open to the corridor.	The CFC provides more protection than the IFC and NFPA 1.
1006.2.7.2 Group I, Division 3 Occupancies. This section requires a manual and automatic fire alarm system installed for alerting staff in jails and institutions.	907.2.6.2. Group I-3 Occupancies Group I-3 Occupancies shall be equipped with a manual and automatic fire alarm system installed for alerting staff.	13.7.2.7 New Detention and Correctional Occupancies. Detention and correctional occupancies shall be provided with a fire alarm.	The CFC and IFC provide more protection than NFPA. NFPA 1 is less restrictive in that manual pull stations may be omitted.
1006.2.7.2.2 System initiation. In jails and institutions, the actuation of the alarm system shall initiate an approved fire alarm signal which automatically notifies staff. This	907.2.6.2.1 System Initiation. Actuation of an automatic suppression system, manual alarm device or a detector shall initiate an approved signal which automatically alerts staff.	No Specific Requirement for Pull Stations in Section 13.7.2.7	The CFC and IFC provide more protection than NFPA. NFPA 1 is less

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Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
section prohibits pre-signal systems.	This section prohibits pre-signal systems		restrictive in that manual pull stations are not specifically required by this section.
<p>1006.2.7.2.3 Manual fire alarm boxes. This section gives the general requirements for locating manual pull boxes in jails and institutions. This section allows manual boxes to be omitted from most areas so long as they are provided at staff-attended locations.</p>	<p>907.2.6.2 Manual fire alarm boxes. Same general provisions of CFC for locating manual alarm boxes.</p>	Manual pull boxes not required by NFPA 1.	The CFC and IFC provide more protection than NFPA.
<p>1006.2.7.2.4 Smoke detection. This section requires automatic smoke detection system throughout resident housing areas, sleeping areas and day rooms that are normally accessible to residents.</p>	<p>907.2.6.2.3 Smoke Detectors This section requires automatic smoke detection system throughout resident housing areas, sleeping areas and day rooms that are normally accessible to residents.</p>	<p>13.7.2.7.2 This section requires automatic smoke detection system throughout resident housing areas, sleeping areas and day rooms that are normally accessible to residents.</p>	NFPA 1 and the IFC are equivalent to the current CFC.
<p>1006.2.8 Group M Occupancies. No specific requirements for fire alarms in Group M occupancies.</p>	<p>907.2.7 Group M Occupancies A manual fire alarm system shall be installed in Group M Occupancies, having an occupant load of 500 or more persons or more than 100 persons above or below the exit discharge and in covered mall buildings</p>	<p>13.7.2.17 Mercantile Occupancies. A fire alarm system shall be provided for al new and existing mercantile occupancies that have an aggregate gross area more than 30,000 sq. ft. or more than 3-stories and in covered malls.</p>	The IFC and NFPA provide more protection than CFC. NFPA 1 is more restrictive than the IFC.

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
<p>1006.2.9 Group R Occupancies. 1006.2.9.1.1 Group R, Division 1 Occupancies shall be provided with a manual and automatic fire alarm system in apartment houses three or more stories in height or containing 16 or more dwelling units, and in hotels three or more stories in height or containing 20 or more guest rooms. EXCEPTIONS: 1. A manual fire alarm system need not be provided in one and two story buildings. 2. A separate fire alarm system need not be provided in buildings which are protected throughout by an approved supervised fire sprinkler system.</p>	<p>907.2.8 Group R-1. A manual fire alarm shall be installed in R-1 buildings that are more than two stories in height. Note: manual pull boxes may be omitted in sprinkler-protected buildings.</p>	<p>13.7.2.9 New Hotels and Dormitories. Fire alarm systems shall be installed in all Hotels, dormitories and apartment buildings with more than three stories or with more than 11 dwelling units with the following exceptions: Exception No. 2: Buildings that are protected throughout by approved, automatic sprinkler systems.</p>	<p>NFPA provides more protection than CFC or IFC. The CFC provides more protection than the IFC.</p>
<p>1006.2.9.1.1.1 (for SFM) Group R Division 2.1 and 2.3 Occupancies shall be provided with an approved automatic fire alarm system. Smoke detectors shall be installed in exit corridors and common areas.</p>	<p>907.2.9 Group R-2 A manual fire alarm system shall be installed in Group R-2 Occupancies where: 1. any dwelling unit is located three stories above the exit discharge. 2. Any dwelling unit is located more than one story below the exit discharge 3. The building contains 16 or fewer units.</p>	<p>13.7.2.15 Residential Board and Care Occupancies. A manual fire alarm system shall be provided in Facilities with Sleeping Accommodations for Not More Than 16 Residents. Exception: Smoke alarms shall not be required in buildings protected throughout by an approved automatic sprinkler system</p>	<p>The CFC provides more protection than the IFC or NFPA.</p>

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
1006.2.9.1.2 Manual fire alarm boxes are not required for interior corridors having smoke detectors.	907.2.9 (3) Exception 2. Manual fire alarm boxes are not required throughout the buildings protected with automatic fire sprinklers that are equipped to activate approved notification devices.	13.7.2.16.1.1 A manual fire alarm system may be omitted from existing board and care facilities so long as interconnected smoke detectors are provided throughout the facility.	The CFC and IFC provide more protection than the NFPA.
1006.2.9.1.3 Smoke detectors shall be provided in all common areas and interior corridors of Group R Occupancies serving as a required means of egress for an occupant load of 10 or more.	No similar Requirement	No similar requirement	The CFC provides more protection than the IFC or NFPA.
1006.2.9.1.4 Heat detectors. Heat detectors shall be provided in common areas such as recreational rooms, laundry rooms, furnace rooms, and similar areas (for SFM) of Group R Division 1.	No similar Requirement	No similar Requirement	The CFC provides more protection than the IFC or NFPA.
1006.2.9.1.5 Visual signaling devices. Guest rooms for persons with hearing impairments shall be provided with visible and audible alarm notification appliances.	907.2.10.3 Interconnection. Smoke alarms in Group R-2, R-3 or R-4 Occupancies shall be interconnected to sound audible e alarms only.	13.7.1.4.10.2 Whenever alarm systems are required, they shall be provided with notification devices that are both audible and visible.	NFPA provides more protection than the IFC or CFC.
1006.2.9.2.2 (For SFM) Group R, Division 2.2 Occupancies shall be provided with an approved manual fire alarm system.	907.2.9 Group R-2 A manual fire alarm system shall be installed in Group R-2 Occupancies where: 1. any dwelling unit is located three stories above the exit discharge. 2. Any dwelling unit is located more	13.7.2.15 Residential Board and Care Occupancies. A manual fire alarm system shall be provided in Facilities with Sleeping Accommodations for Not More Than 16 Residents. Exception: Smoke alarms shall not be	The CFC provides more protection than the IFC or NFPA. The IFC is more restrictive than NFPA 1.

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Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
	than one story below the exit discharge 3. The building contains 16 or fewer units.	required in buildings protected throughout by an approved automatic sprinkler system	
<p>1006.2.9.2.3 (For SFM) Group R Division 2.1.1 and 2.2.1 Occupancies. In addition to smoke alarms required by Section 1006.2.9.1.6, Group R Division 2.1.1 and 2.2.1 Occupancies shall be provided with one manual pull station.</p>	<p>907.2.9 Group R-2 Manual pull not required if less than 16 occupants.</p>	<p>13.7.2.15 Residential Board and Care Occupancies. Manual pull stations required throughout.</p>	NFPA provides more protection than the IFC or CFC.
<p>1006.2.9.3 Smoke alarms in existing Group R Occupancies 1006.2.9.3.1 General. Existing Group R Occupancies not already provided with a single-station smoke alarms shall be provided with approved single station smoke alarms.</p>	No specific requirement for existing group R occupancies.	13.7.2.12 requires alarm systems and smoke detectors for existing apartment buildings that are 3 stories or more than 11 units.	NFPA provides more protection than the IFC or CFC.
<p>1006.2.9.3.2. Approved single station smoke alarms shall be installed in existing dwelling units and congregate residences, and hotel and lodging-house guest rooms.</p>	No specific requirement for existing group R occupancies.	13.7.2.10.1 requires alarm systems and smoke detectors for existing Hotels and dormitories.	NFPA provides more protection than the IFC or CFC. The CFC is more restrictive than the IFC.
<p>1006.2.10 Group S Occupancies. See Section 1007.2.12. (Required only in high-rise buildings)</p>	No specific requirement for Group S Occupancy.	13.7.2.22 Storage Occupancies/enclosed parking structures. shall be provided with alarm systems when the aggregate floor area exceeds 100,000 sq. ft.Exception	NFPA provides more protection than the IFC or CFC.

FIRE ALARM SYSTEMS

Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
		No. 3: Storage occupancies protected throughout by approved automatic extinguishment protection.	
1006.2.12.1 An approved smoke-detection system shall be provided in amusement buildings.	907.2.11 An approved smoke-detection system shall be provided in amusement buildings.	No Similar requirements in NFPA 1	The IFC and CFC provide more protection than NFPA.
1006.2.12.2 High-rise buildings. Group B office buildings and Group R, Division 1 Occupancies, with floors more than 75 feet in height, shall be provided with an automatic fire alarm system and a communication system.	907.2.12 High-rise Buildings Buildings with floor areas that are more than 75 feet in height shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system.	13.7.2.27.2 High-Rise Buildings. 13.7.2.27.2.1. A fire alarm system using an approved, emergency voice/alarm communication system shall be installed in buildings that are greater than 75 feet in height.	CFC, IFC and NFPA 1 are equivalent.
1006.2.12.2.2 In high-rise buildings, automatic fire detection shall be provided in interior corridors, elevator lobbies and mechanical rooms.	907.2.12.1 Automatic fire detection Smoke detectors shall be provided in interior corridors, elevator lobbies and mechanical rooms.	No specific requirements for smoke detection.	The IFC and CFC provide more protection than NFPA.
1006.2.12.2.3 Emergency voice alarm-signaling system. The operation of any alarm device shall automatically sound an alert tone followed by voice instructions	907.2.12.2 Emergency voice/alarm communication system. The operation of any alarm device shall automatically sound an alert tone followed by voice instructions.	13.7.2.27.2.1. A fire alarm system using a voice/alarm communication system is required in high-rise buildings	CFC, IFC and NFPA 1 are equivalent

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Fire Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
<p>1006.2.12.2.4 Fire department communication system. A two-way, approved fire department communication system shall be provided for fire department use.</p>	<p>907.2.12.2.3 Fire Department communication system. An approved fire department communication system shall be provided for fire department use.</p>	<p>13.7.2.27.2.2 Two-way telephone communication service shall be provided for fire department use.</p>	CFC, IFC and NFPA 1 are equivalent
<p>1006.2.12.3 Buildings with atriums. Actuation of an atrium smoke-control system required by the Building Code shall initiate an audible fire alarm signal in designated portions of the building.</p>	<p>907.2.13 Atriums connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories.</p>	No Specific requirements for Atriums	The IFC and CFC provide more protection than NFPA.
<p>1006.2.12.4 High Piled combustible storage When required by Article 81, High piled storage areas shall be provided with and automatic fire detection system.</p>	<p>907.2.14 High-piled combustible storage uses. When required by Section 2306.5, fire detection systems shall be provided in areas of high-piled combustible storage.</p>	No Specific Requirement	The IFC and CFC provide more protection than NFPA.
<p>1006.2.12.5 (for SFM) When special egress-control devices are installed on exit doors, an automatic smoke-detection system shall be installed throughout the building.</p>	<p>907.2.15 Delayed egress locks When special egress-control devices are installed on means of egress doors, an automatic smoke-detection system or an automatic sprinkler system shall be installed throughout the building.</p>	<p>14.5.3.1 Delayed egress locks When special egress-control devices are installed on means of egress doors, an automatic smoke-detection system or an automatic sprinkler system shall be installed throughout the building.</p>	The CFC provides more protection than IFC or NFPA.
<p>1006.2.12.7 Aerosol storage uses. When required by Article 88, aerosol storage rooms and general-purpose warehouses containing aerosols shall be provided with an approved</p>	Not Specifically Required	No Specific Requirement	The CFC provides more protection than IFC or NFPA.

FIRE ALARM SYSTEMS

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/ References
manual alarm system.			
<p>1006.2.1.2.9 Lumber, plywood and veneer mills. Lumber, plywood and veneer mills shall be provided with a manual fire alarm system.</p>	<p>907.2.17 Lumber, plywood and veneer mills. Lumber, plywood and veneer mills shall be provided with a manual fire alarm system.</p>	No similar Requirements in NFPA 1	The IFC and CFC provide more protection than NFPA.
<p>1006.3 General System Design and Installation Requirements. 1006.3.1 Fire alarm systems, automatic fire detectors, emergency voice alarm communication systems and notification devices shall be designed, installed and maintained in accordance with the appropriate standards of NFPA 72.</p>	No similar Requirement.	37.7.1.1 Fire alarm systems shall be provided in accordance with NFPA 72.	NFPA provides more protection than the CFC which provides more protection than the IFC.

FIRE EXTINGUISHING SYSTEMS

Curtain Boards

Building Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>906.6.1 General. Curtain boards shall be provided to subdivide a vented building ...</p>	<p>910.3.4 Curtain Boards. Draft curtains shall be installed as per Table 910.3</p>	Not addressed	The CBC and IFC are equivalent. NFPA 5000 does not require curtain boards.
<p>906.6.2 Construction. Curtain boards shall be sheet metal, asbestos board, lath and plaster, gypsum wallboard or other approved materials that provide equivalent performance that will resist the passage of smoke. All joints and connections shall be smoke tight.</p>	<p>910.3.4.1 Construction. Draft curtains shall be constructed of sheet metal, lath and plaster, gypsum board or other approved materials.</p>	Not addressed	The construction requirements for curtain boards are identical between the CBC and the IBC.
<p>906.6.3 Location and depth. Curtain boards shall extend down from the ceiling for a minimum depth of 6 feet (1829 mm), but need not extend closer than 8 feet (2438 mm) to the floor. In Group H Occupancies, the minimum depth shall be 12 feet (3658 mm) except that</p>	<p>910.3.4.2 Location and depth. The location and minimum depth of curtain boards shall be in accordance with Table 910.3.</p>	Not addressed	The CFC provides more protection than the IFC

FIRE EXTINGUISHING SYSTEMS

Curtain Boards

Building Code

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
it need not be closer than 8 feet (2436 mm) to the floor, provided the curtain is not less than 6 feet (1829 mm) in depth			
906.6.4 Spacing. The distance between curtain boards shall not exceed 250 feet and the curtained area shall be limited to 50,000 square feet. In Group H Occupancies, the distance between curtain boards shall not exceed 100 feet (and the curtained area shall be limited to 15,000 square feet	Table 910.3. As specified in Table 910.3 with a maximum area formed by Draft Curtains not to exceeded 2,000 – 50,000 square feet based on occupancy.	Not addressed	IFC provides more protection than the CFC. The maximum floor area formed by draft curtains allowed by the IFC ranges from 2,000 square feet to 50,000 square feet depending on the designed storage height. The CFC limits the design area to 50,000 square feet regardless of storage heights.

Article 1 - Administration

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Article 1- ADMINISTRATION: is amended by the SFM pursuant to Health and Safety Code's statutory requirements.</p> <p>Article 1- Administration: model code provisions adopted by reference address the following matters:</p> <ul style="list-style-type: none"> • Article 1- Administration: indicates that the retroactive application of code requirements to existing occupancies is referred to Building Standards Commission and local fire chief. • Article 1- Administration: indicates that the Board of Appeals can hear appeals to orders and interpretation of the code. 	<p>Article 1- Administration: of the 2003 IFC address the following matters:</p> <ul style="list-style-type: none"> • Article 1- Administration: the scope of this article addresses construction, alteration and repair of fire sprinkler and alarm systems and permits for such systems. • Article 1- Administration: indicates that the authority lies with the code official. <p>Article 1- Administration: indicates that a Class A Occupancy is based on its use and not it's occupant load.</p>	<ul style="list-style-type: none"> • Article 1-Administration indicates that the Authority having jurisdiction (AHJ) has the regulatory authority to require or enforce. • Article 1 – Administration: indicates that all records must be kept. • Article 1- Administration: includes other NFPA references and standards. 	<p>IFC provides a higher level of protection than that of the CFC by including provisions in Article 1 that address the construction, alteration and repair of fire sprinkler and alarm systems and permits for such systems.</p> <p>However, the IFC indicates that the scope of authority for the IFC defaults to the "code official" versus the local fire chief.</p> <p>The NFPA 5000 provides equal level of protection as CFC.</p> <p>However, the NFPA 5000 has eliminated a time line for the retention of all records.</p>

Article 1 - Administration

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<ul style="list-style-type: none"> • Article 1- Administration: indicates that all records shall be retained for three years. • Article 1- Administration: Permits –indicates that there is one category of permit • 47 permits • Permit types are similar to IFC & NFPA 1 • Some differences battery permit > +100 gal • Compressed gas exempt amounts, 11 listed • HazMat Table similar to other codes • No permit required for fire alarm 	<p>Article 1 indicates that all records shall be retained for five years.</p> <ul style="list-style-type: none"> • Divides permits into 2 categories – Construction and Operational • 47 operational permits • 12 construction permits • battery permit +50 gal • Compressed gas exempt amounts, 6 listed, same quantity on those • Permit req for installation of fire spklr/fire alarm/fire pump/hydrants/standpipe 	<ul style="list-style-type: none"> • 1 category of permit • 73 permits • battery permit +100 gal if spklr or +50 if non-spklr • Compressed gas exempt amounts, 8 listed, same quantity on those • Permit req for installation of fire suppression system/fire alarm/fire pump/hydrants/standpipe 	

Article 2 - Definitions

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Article 2 - Definitions & Abbreviations</p> <p>This section defines the terms used within the 2001 CFC as they relate to matters that provide a reasonable degree of safeguards for life and property from fire.</p> <ul style="list-style-type: none"> • Section 201, requires that when terms are not defined, the Webster's Third Edition of 1986 shall be used. • There are approximately 467 terms defined in this section. 	<p>Chapter 2 - Definitions</p> <p>This section defines the terms used within the 2001 CFC as they relate to matters that provide a reasonable degree of safeguards for life and property from fire.</p> <ul style="list-style-type: none"> • Section 201, requires that when terms are not defined, the Webster's Third Edition shall be used. • This section provides a cross reference for most of the terms that are defined. • There are approximately 458 terms defined in this section. 	<p>Chapter 3 - Definitions</p> <p>This section defines the terms used within the NFPA 1 as they relate to matters that provide a reasonable degree of safeguards for life and property from fire.</p> <ul style="list-style-type: none"> • Chapter 3.1, Where terms are not defined, common usage shall apply. • There are approximately 429 terms defined in this section. • Section 2.3.15 requires that when terms are not defined, the Webster's Third Edition shall be used. 	<p>IFC provides the same level of protection as CFC relative to redundant Definitions.</p> <p>NFPA 1 provides the same level of protection as CFC relative to Definitions.</p>

Article 10 - Fire Protection

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1001.3 Plans:</p> <p>Section 1001.3 addresses the requirements for complete plans and specifications for fire alarm systems; fire extinguishing systems; including automatic sprinklers standpipe systems; clean agent systems and other special types of automatic fire extinguishing systems be submitted to the fire department for review and approval prior to system installation.</p> <p>Section 1101.3 also requires a State Fire Marshal listing number for all equipment, devices and materials.</p>	<p>Section 901.2 Plans:</p> <p>Section 901.2 addresses the requirements for complete plans and specifications for fire alarm systems; fire extinguishing systems; including automatic sprinklers standpipe systems; clean agent systems and other special types of automatic fire extinguishing systems be submitted to the fire department for review and approval prior to system installation.</p>	<p>Section 13.1.1 Plans:</p> <p>Section 13.1.1 addresses the requirements for complete plans and specifications for fire alarm systems; fire extinguishing systems; including automatic sprinklers standpipe systems; clean agent systems and other special types of automatic fire extinguishing systems be submitted to the fire department for review and approval prior to system installation.</p>	<p>IFC and NFPA 1 provides a lower level of protection than CFC relative to submittal plans.</p>
<p>Section 1001.4 Installation and Acceptance testing.</p> <p>Section 1001.4 addresses the requirements for the acceptance testing when required by the chief.</p> <p>The SFM amends this section by requiring that fire alarm and detection systems shall be tested in accordance with NFPA 72 as amended in Article 91.</p>	<p>Sections 901.4 and 901.5 Installation and Acceptance.</p> <p>Sections 901.4 and 901.5 address the requirements for the installation and acceptance of systems.</p> <p>This section also indicates that it is illegal to occupy any portion of the building</p>	<p>Section 13.1.1 Installation and Acceptance.</p> <p>Section 13.1.1 indicates that an acceptance test is required prior to the system certification.</p>	<p>IFC and NFPA 1 provides a lower level of protection than CFC relative to. Installation and acceptance.</p>

Article 10 - Fire Protection

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	<p>prior to acceptance of the fire protection system by the code official.</p>		
<p>Section 1001.5.1 Maintenance of fire protection systems.</p> <p>Section 1001.5.1 addresses the requirements for fire protection systems, which shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective.</p> <p>This section also requires that systems be maintained according to their original installation standards.</p>	<p>Section 901.6 Maintenance of fire protection systems.</p> <p>Section 901.6 addresses the requirements for fire protection systems which shall be maintained in an operative condition at all times and shall be replaced or repaired where defective.</p> <p>This section references several NFPA standards for the testing and maintenance of systems.</p>	<p>Section 13.1.7 Maintenance of fire protection systems.</p> <p>Section 13.1.7 addresses the requirements for fire protection systems which shall be maintained in a reliable operating condition and shall be replaced or repaired where defective</p>	<p>IFC and NFPA 1 provides the same level of protection as that of the CFC relative Maintenance of fire protection systems.</p>
<p>Section 1001.5.3 Systems out of service:</p> <p>Section 1001.5.3 addresses the requirements for notification if systems are out of service and when they are repaired.</p>	<p>Section 901.7 Systems out of service:</p> <p>Section 901.7 addresses the requirements for notification if systems are out of service and when they are repaired.</p>	<p>Section 13.3.4.3.6 Emergency Impairments:</p> <p>Section 13.3.4.3.6 addresses the requirements for notification if systems are out of service and when they are repaired.</p>	<p>IFC and NFPA 1 provides a higher level of protection than CFC relative to this topic of Article 10-Fire Protection - Systems out of service. By providing an extensive list of requirements for systems out of service and when fire watches are required for public occupied buildings.</p>
<p>Section 1001.7 Obstruction and impairment of fire hydrants and fire protection equipment:</p>	<p>Section 508.5.4 Obstruction and impairment of fire hydrants and fire protection</p>	<p>Workgroup was unable to locate a section in the NFPA 1 that provide similar requirements.</p>	<p>IFC provides the same level of protection as CFC relative to Obstruction and impairment of fire hydrants and fire protection equipment.</p>

Article 10 - Fire Protection

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1001.7 addresses the requirements for clear access to fire hydrants, standpipes, alarm notification appliances and the marking of hydrants.</p>	<p>equipment:</p> <p>Section 508.5.4 addresses the requirements for clear access to fire hydrants, standpipes, alarm notification appliances and the marking of hydrants.</p>		<p>NFPA 1 does not address this section.</p>
<p>Section 1002 Portable Fire Extinguishers:</p> <p>The SFM amends this section by referring to the regulatory requirements on this subject to the California Code of Regulations, Title 19, Division 1, Chapters 1 and 3 for requirements.</p>	<p>Section 906 Portable Fire Extinguishers:</p> <p>Section 906 addresses the requirements for the placement and type of fire extinguishers required for each type of occupancy or hazard being protected.</p>	<p>Section 13.6 Portable Fire Extinguishers:</p> <p>Section 13.6 addresses the requirements for the type and placement of fire extinguishers required for each type of occupancy or hazard being protected.</p>	<p>IFC and NFPA 1 similarly provide the same regulatory requirements relative to Portable Fire Extinguishers.</p> <p>However, the subject of the type and placement of fire extinguishers is statutorily regulated by the SFM.</p>
<p>Section 1003 Fire Extinguishing Systems:</p> <p>Section 1003 addresses the requirements for installation of a fire sprinkler system according to the occupancy or hazard type.</p>	<p>Section 903 Fire Extinguishing Systems:</p> <p>Section 903 addresses the installation of a fire sprinkler system according to the occupancy or hazard type.</p> <p>This section also requires that a 13R fire sprinkler system</p>	<p>Section 13.3 Fire sprinklers requirements for occupancy types and hazard categories:</p> <p>Section 13.3 addresses the requirements for the installation of a fire sprinkler system according to the occupancy or hazard type.</p> <p>This section identifies the requirements for both new and existing occupancies and under certain conditions requires the occupancy to be partially</p>	<p>IFC provides the same level of protection as CFC relative to this Fire Protection - Fire Extinguishing Systems.</p> <p>However the IFC requires a higher level of protection to residential occupancies.</p> <p>NFPA 1 provides the same level of protection as CFC relative to Fire Protection - Fire Extinguishing Systems.</p>

Article 10 - Fire Protection

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	shall be installed in multifamily residential occupancies and a 13D fire sprinkler system shall be installed in single-family residential occupancies.	protected.	However, the NFPA 1 requires that both new and existing occupancies and under certain conditions be partially protected.
<p>Section 1004 and Table 1004-A:</p> <p>Section 1004 & Table 1004-A addresses the requirements for the type of standpipe system that is required per the occupancy classification.</p>	<p>Section 905</p> <p>Section 905 addresses the requirements for the type of standpipe system that is required per the occupancy classification in accordance with NFPA 14.</p>	<p>Section 13.2</p> <p>Section 13.2 addresses the requirements and locations of standpipes in buildings.</p>	<p>IFC provides the same level of protection as CFC relative to Fire Protection - standpipe systems.</p> <p>NFPA 1 provides a lower level of protection than CFC relative to Fire Protection – standpipe systems. The only occupancy or use that was specifically required to have standpipe system was that of a detention facility.</p>
<p>Section 1006 Fire Alarm Systems:</p> <p>Section 1006 addresses the requirements for the installation and maintenance of fire alarm systems. This section also identifies the required installation locations in certain occupancy classifications.</p> <p>This section requires that alarm systems shall be installed per NFPA 72 as amended by the State Fire Marshal in Article 91.</p>	<p>Section 907 Fire Alarm and Detection Systems:</p> <p>Section 907 addresses the requirements for the installation and maintenance of fire alarm systems.</p> <p>This section identifies the location of fire alarm systems and voice alarm communication systems in certain occupancy classifications. This</p>	<p>Section 13.7 Detection, Alarm and Communication Systems:</p> <p>Section 13.7 addresses the requirements for fire alarm and detection systems installation, testing and maintenance in accordance with NFPA 72.</p>	<p>IFC and NFPA 1 provide the same regulatory requirements relative to Fire Protection relating to Detection, Alarm and Communication Systems.</p>

Article 10 - Fire Protection

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	section also requires the testing and maintenance of these systems to be in accordance with NFPA 72.		

Article 11 – General Safety Precautions

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1102.5 Commercial Barbeque Pits:</p> <p>This section addresses the requirements for the installation of a fire extinguishing system when required by the California Mechanical Code (CMC).</p>	<p>Section 602.1 Definition includes barbeques:</p> <p>Section 610 .1 Hoods installed per the International Mechanical Code (IMC)</p> <p>Section 904.2.1 requires that an approved kitchen hood fire extinguishing system be installed.</p>	<p>Chapter 50 - Commercial Cooking Equipment:</p> <p>Section 50.1.1 Hood installations shall be in accordance with NFPA 96.</p> <p>Section 50.4.4 Types of fire extinguishing systems shall be installed per NFPA Standards.</p> <p>This chapter has additional requirements which include the following:</p> <p>Section 50.4.4.6 Change in existing system to meet UL 300</p> <p>Section 50.4.8 Local annunciation</p> <p>Section 50.5.3 Inspection of exhaust system</p> <p>Section 50.5.4 Cleaning exhaust system</p>	<p>IFC & NFPA 1 provides equal protection as CFC.</p> <p>Note: each codes refer mechanical codes and NFPA Standards.</p>
<p>Section 1106 Protection of Gas Meters and Piping:</p> <p>Section 1107 Heat Producing Appliances:</p> <p>Section 1107 requires that heat-producing appliances shall be installed per California Building, (CBC) Electrical Code (CEC) and the CMC.</p>	<p>This subject is not specifically mentioned In Section 603 or the International Mechanical Code (IMC) or the International Fuel Gas Code.</p>	<p>This subject is not specifically mentioned in Section 11.5 or the NFPA 31 or NFPA 54.</p>	<p>These are not covered in CFC, IFC, NFPA 1</p>

Article 11 – General Safety Precautions

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1110 - Vacant Buildings: No requirements</p>	<p>Section 311 addresses the requirements for the maintenance of fire protection systems.</p>	<p>10.14 Similar to CFC 10.14.2 Includes maintenance of fire protection systems.</p>	<p>IFC & NFPA 1 provide a higher level of protection than CFC.</p>

Article 12 – Means of Egress

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1206 - Maintenance of Means of Egress and Emergency Escapes:</p> <p>The SFM amends this section to include <i>any exit door</i> to the requirements specific to sleeping rooms of the Group R occupancies</p>	<p>Section 1027 - Maintenance of the Means of Egress:</p> <p>Section 1027 refers to “Emergency Escape Openings” verses means of egress in its general requirements that are not applied to a Group R occupancy.</p> <p>This section requires that all emergency openings for all occupancies would be covered.</p>	<p>Chapter 14 - Means of Egress Reliability:</p> <p>This chapter addresses the general requirements relating to means of egress. This chapter is not specific to a Group R occupancy.</p>	<p>IFC and NFPA 1 provides a lower level of protection than CFC relative to Maintenance of Means of Egress and Emergency Escapes for Group R Occupancies.</p> <p>IFC and NFPA 1 provides a higher level of protection than CFC relative to Maintenance of Means of Egress and Emergency Escapes, in that both codes cover all emergency egress conditions for most occupancy classifications.</p>
<p>Section 1206 Means of Egress</p> <p>The SFM amends this section relating to bars, grates, grilles, or similar devices and the ability of the Fire District having Authority to open such devices from the exterior when required by the local fire department.</p>	<p>Section 1027 Means of Egress</p> <p>Section 1027 addresses the requirements for the use of bars, grates, grills, or other devices.</p>	<p>Chapter 14, Section Means of Egress</p> <p>Section addresses the requirements for the use of bars, grates, grills, or other devices. This section refers to NFPA 101 as a referenced standard for the use of such devices.</p>	<p>IFC and NFPA 1 provides a lower level of protection than that of the CFC relative to bars, grates, grilles, or similar devices used in Group R Occupancies.</p> <p>IFC and NFPA 1 provides a higher level of protection than CFC relative to bars, grates, grilles, or similar devices, in that both codes address the use of such devices in most occupancy classifications.</p>
<p>Section 1206 Means of Egress</p> <p>This section addresses the requirements relating to Security Bars (Burglar Bars) in residential</p>	<p>This subject is not specifically mentioned in Section 1027.</p>	<p>This subject is not specifically mentioned in Chapter 14. This section makes additional references to NFPA 101.</p>	<p>IFC and NFPA 1 provides a lower level of protection than CFC</p>

Article 12 – Means of Egress

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>occupancies. The SFM amends this section requiring that the installation of these devices shall comply with California Referenced Standards, Chapter 12-3.</p>			<p>relative to Security Bars.</p>
<p>Section 1207.5 - Special Egress Control Devices: The SFM amends this section by referring to section 1006.2.12.5 for the design of automatic smoke detection systems in association with new special egress-control devices.</p>	<p>This subject is not specifically mentioned in Section 1027.</p>	<p>This subject is not specifically mentioned in Chapter 14.</p>	<p>IFC and NFPA 1 provides a lower level of protection than CFC relative to design of automatic smoke – detection systems in association with new special egress-control devices.</p>

Article 24 - Aviation Facilities

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2401.1 Scope.</p> <p>This section addresses the requirements for Airports, heliports, helistops, and aircraft hangers.</p>	<p>Section 1101.1 Scope.</p> <p>This section addresses the requirements for Airports, heliports, helistops, and aircraft hangers.</p>	<p>Section 21.1 Hangers:</p> <p>This section addresses the requirements for the construction and protection of aircraft hangers, airport terminal buildings, tank location and rooftop landing facilities.</p>	<p>IFC provides the same level of protection as CFC relative to Aviation Facilities.</p> <p>NFPA 1 provides the same level of protection as CFC relative to Aviation Facilities. However the NFPA 1 address Heliports and helistops under 21.3.4 Rooftop Landing Facilities.</p>
<p>Section 2401 General:</p> <p>All of the sections in Article 24 address the general fire safety requirements for permits, sources of ignition, smoking, housekeeping, fire dept. access, dispensing of flammable and combustible liquids, combustible storage and hazardous materials storage.</p>	<p>Section 1103 General Precautions:</p> <p>This section addresses the requirements relating to general fire safety regarding sources of ignition, smoking, housekeeping, fire dept. access, dispensing of flammable and combustible liquids, combustible storage and hazardous materials storage.</p>	<p>Chapter 21 Airports and Heliports: addresses the requirements relating to general fire safety regarding sources of ignition, smoking, housekeeping, fire dept. access, dispensing of flammable and combustible liquids, combustible storage and hazardous materials.</p> <p>This section also addresses the requirements for the construction of Airport Terminal buildings and Aircraft Fueling facilities. This section makes references to other NFPA standards on this subject.</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC relative to Aviation Facilities.</p>
<p>Section 2402 - Aircraft Maintenance:</p> <p>This section addresses the requirements for the use and transferring of flammable or combustible liquids, areas where spray finishes are applied, the use of a Class I-A liquid for cleaning of parts, spill</p>	<p>1104 Aircraft Maintenance:</p> <p>This section addresses the requirements for the use and transferring of flammable or combustible liquids, areas where spray finishes are applied, the use of a Class I-A liquid for cleaning of parts, spill</p>	<p>Chapter 21 Airports and Heliports:</p> <p>This section addresses the requirements for the use and transferring of flammable or combustible liquids, areas where spray finishes are applied, the</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC relative to Aviation Facilities.</p> <p>However the NFPA 1 provides references to additional NFPA standards subject.</p>

Article 24 - Aviation Facilities

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>mitigation and the use of open flames in repairing aircraft.</p>	<p>mitigation and the use of open flames in repairing aircraft.</p>	<p>use of a Class I-A liquid for cleaning of parts, spill mitigation and the use of open flames in repairing aircraft.</p>	
<p>2403 Portable fire Extinguishers:</p> <p>This section addresses the requirements for the general and specific placement, type and size of fire extinguishers for a specific or general locations found in and about an aviation facility.</p> <p>This section also references the UFC Standard 10-1, which is the NFPA 10.</p>	<p>1105 Portable Fire Extinguishers:</p> <p>This section addresses the requirements for the general and specific placement, type and size of fire extinguishers for a specific or general locations found in and about an aviation facility.</p>	<p>Section 21.2.6.5 Portable fire extinguishers:</p> <p>This section refers the code user to section 13.6 Portable Extinguishers located in airport terminal Buildings</p> <p>Section 21.3.6.10 addresses the requirements for portable fire extinguishers at each take off and landing area, parking and fuel storage areas.</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC relative to Aviation Facilities.</p> <p>However the NFPA 1 provides additional references to other NFPA standards relating to portable extinguishers.</p> <p>Therefore on this topic of portable extinguishers at aviation facilities NFPA 1 provides a higher level of protection.</p>
<p>Section 2404 Aircraft Fueling:</p> <p>This section addresses the requirements for Aircraft Refueling Vehicles. This section also addresses the requirements for the dispensing of fuel, electrical bonding, operation, maintenance and use of aircraft fueling vehicles.</p> <p>This section also addresses the requirements for the training of personnel and</p>	<p>Section 1106 Aircraft Fueling:</p> <p>This section refers the code user to Chapter 22 Motor Fuel Dispensing Facilities and Repair Garages and NFPA 407 Airport Fuel Systems for additional requirements on this subject. This section also addresses the requirements for aircraft refueling vehicles, fuel dispensing and the training of personnel.</p>	<p>Chapter 21 Airports and Heliports:</p> <p>This chapter addresses the requirements for the construction of terminal and hanger buildings, fire protection, access, location of fuel tanks in regards to the take off and landing areas for aircraft and landing pad construction.</p>	<p>IFC provides the same level of protection as CFC relative to Aviation Facilities.</p> <p>NFPA 1 provides a lower level of protection as CFC relative to Aviation Facilities.</p>

Article 24 - Aviation Facilities

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>the necessary qualifications for aircraft fueling operators.</p> <p>This section addresses the following topics:</p> <p>emergency shut offs, the prevention and control of fuel spills and the notification of the fire department when any fuel is spilled, operation of Aircraft engines and heaters, requirements regarding open flames, aircraft fuel servicing locations, maintenance of aircraft fueling hoses, parking locations for aircraft fuel servicing vehicles and radar equipment locations in relationship to fuel dispensing operations.</p>			
<p>Section 2405 Helistops and Heliports:</p> <p>This section addresses the requirements for the protection of helistops and heliports. This section identifies the following requirements:</p> <p>Required clearances, how to contain a flammable liquid spill, exiting, standpipe systems, foam fire extinguishing agents, portable fire extinguishers</p>	<p>Section 1107:</p> <p>This section addresses the requirements for the protection of helistops and heliports. This section identifies the following requirements:</p> <p>Required clearances, how to contain a flammable liquid spill, exiting, standpipe systems, foam fire extinguishing agents, portable fire extinguishers and the Federal Aviation</p>	<p>Sections 21.3 and 21.3.4</p> <p>This section addresses the requirements for the protection of helistops and heliports. This section identifies the following requirements:</p> <p>Required clearances, how to contain a flammable liquid spill, exiting, standpipe systems, foam fire extinguishing agents, portable fire extinguishers and the Federal Aviation</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC relative to Aviation Facilities.</p>

Article 24 - Aviation Facilities

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
and the Federal Aviation Approvals.	Approvals.	Approvals.	

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2501 General:</p> <p>Section 2501.4 - Supervision and communication system addresses the requirements for the following:</p> <ul style="list-style-type: none"> • Adult supervision when the place of assembly is open to the public. • Communication for fire department notification regardless of occupant load. 	<p>Chapter 10 - Means of Egress:</p> <p>Section 1024 Assembly addresses the requirements for Group A occupancies containing seats, tables, displays, equipment or other similar material.</p> <p>This section addresses the requirements for the following topics:</p> <ul style="list-style-type: none"> • Bleachers • Μακρὰ ἐξίτ • Foyers and lobbies • Interior balcony • Smoke protection • Automatic sprinklers • Width of the means of egress • Travel distance <p>This section requires that a life safety evaluation complying with NFPA 101 be done for facilities</p>	<p>Chapters 14 & 20 – Means of Egress & Occupancy Fire Safety:</p> <p>These chapters require that the means of egress for new and existing buildings comply with NFPA 101.</p> <p>These chapters do not require facility supervision until the occupant load reaches 1,000.</p>	<p>The IFC and NFPA 1 provide the same level of protection as that of the CFC relative to the topic of Article 25-Places of Assembly.</p> <p>However, the 2003 NFPA 1 refers the code user to other standards not published in the NFPA 1.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	<p>using the reduced width allowances from</p>		
	<ul style="list-style-type: none"> •Smoke protection •Automatic sprinklers •Width of the means of egress •Travel distance <p>This section requires that a life safety evaluation complying with NFPA 101 be done for facilities using the reduced width allowances from Table 1024.6.2.</p>		

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2501.8.2 Panic Hardware:</p> <p>This section addresses the requirements for exit doors from Group A occupancies.</p> <p>This section requires that latch or lock shall not be provided on exit doors of Group A Occupancies unless it is panic hardware.</p>	<p>Section 1008.1.9 Panic and fire exit hardware:</p> <p>This section addresses the requirements for exit hardware for Group A Occupancies.</p> <p>This section requires that latch or lock shall not be provided on exit doors of Group A Occupancies unless it is panic hardware.</p>	<p>Section 14.5.3.2 Panic and fire exit hardware:</p> <p>This section addresses the requirements for when a door is required to be equipped with panic or fire hardware.</p> <p>This section requires that only approved panic hardware shall be used.</p> <p>When required, the panic and or fire hardware shall not be equipped with any locking device or screw that prevents the release of the latch.</p>	<p>The IFC and NFPA 1 provide the same level of protection as that of the CFC</p> <p>However, the NFPA 1 Section 14.5.3.2 does not specifically identify requirements for exit doors in a Group A Occupancy. This section requires the use of panic and fire hardware only when it is required.</p>
<p>Section 2501.9 Aisles:</p> <p>This section addresses the requirements for aisles leading to required exits. This section requires that aisles serving employee areas only the minimum width may be 24 inches.</p> <p>The minimum width in assembly occupancies without fixed seats shall be 36 inches clear or where seats, tables, etc. are placed on one side of the aisle only.</p> <p>Where seats, tables, etc. are placed on both sides</p>	<p>Section 1024.9.1 Aisles:</p> <p>This section addresses the requirements for aisles leading to required exits.</p> <p>This section requires the following widths for aisles:</p> <ul style="list-style-type: none"> • 48 inches for aisle stairs with seating on each side. • 36 inches for aisle stairs with seating on one side. • 23 inches between 	<p>Section 14.7 Exit passageways:</p> <p>This section addresses the requirements for exit passageways used as exit components.</p> <p>This section references to NFPA 101 as the standard for exit discharge and the minimum occupant load of an exit passageway.</p>	<p>The IFC provides the same level of protection as that of the CFC relative to Aisles.</p> <p>The NFPA 1 provides a higher level of protection than the 2001 CFC relative to the topic of Article 25- Places of Assembly – exit passageways or aisles.</p> <p>However, the NFPA 1 refers the code user to NFPA 101 for the requirements of exit passageways.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>of the aisle, the minimum width shall be 44 inches clear.</p> <p>This section indicates that the width of aisles</p> <p>in assembly occupancies with fixed seats; the width of the aisle shall be based on the number of occupants in accordance with Tables 2501-A & 2501-B.</p>	<p>an aisle stair handrail & seating is divided by a handrail.</p> <ul style="list-style-type: none"> • 42 inches for level or ramped aisles with seating on both sides. • 36 inches for level or ramped aisles with seating on one side. • 23 inches between an aisle stair handrail & seating where the aisle does not serve more than 5 rows on one side. 		
<p>Section 2501.9.5 Ramp Slope:</p> <p>This section addresses the requirements for the slope of ramped aisles. This section requires that the ramp shall not be more than 1 unit vertical in 8 units of horizontal run or a 12.5% slope. The surface of the ramp shall be slip resistant.</p>	<p>Section 1024.11 Assembly aisle walking surfaces:</p> <p>This section addresses the requirements for the slope of ramped aisles. This section requires that the ramp shall not be more than 1 unit vertical in 8 units of horizontal run or a 12.5% slope. The surface of the ramp shall be slip resistant.</p>	<p>Section 14.7 Exit passageways:</p> <p>This section addresses the requirements for exit passageways used as an exit components.</p> <p>This section references to NFPA 101 as the standard for an exit discharge and the minimum occupant load of an exit passageway.</p>	<p>The IFC provides the same level of protection as that of the 2001 CFC relative to the topic of Article 25-Places of Assembly – Sloped assembly aisles.</p> <p>The 2003 NFPA 1 provides a higher level of protection than that of the 2001 CFC relative to the topic of Article 25-Places of Assembly – Exit passageways.</p> <p>However, the NFPA 1 refers the code user to NFPA 101 for the requirements of exit passageways.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2501.9.6 Aisle Steps:</p> <p>This section addresses the requirements for Aisle steps. This section prohibits the placement of steps in an aisle having a slope of 1 unit vertical in 8 units of horizontal run or a 12.5% slope or less.</p> <p>This section indicates that steps are required when the slope of the ramp is steeper than 1 unit vertical in 8 units of horizontal run or a 12.5% slope.</p> <p>The risers shall not be more than 7 inches or less than 4 inches and the tread run shall not be less than 11 inches.</p> <p>The riser and treads shall be uniform.</p> <p>This section indicates that the tolerance between adjacent treads shall not exceed 0.188 inches.</p> <p>This section also requires the tread nosing to be marked with a contrasting strip.</p>	<p>Section 1024.11 Assembly aisle walking surfaces:</p> <p>This section addresses the requirements for aisle steps. This section prohibits the placement of steps in an aisle having a slope of 1 unit vertical in 8 units of horizontal run or a 12.5% slope or less.</p> <p>This section indicates that steps are required when the slope of the ramp is steeper than 1 unit vertical in 8 units of horizontal run or a 12.5% slope.</p> <p>The risers shall not be more than 7 inches or less than 4 inches and the tread run shall not be less than 11 inches.</p> <p>The riser and treads shall be uniform.</p> <p>This section indicates that the tolerance between adjacent treads shall not exceed 0.188 inches.</p>	<p>Section 14.7 Exit passageways:</p> <p>This section addresses the requirements for an exit passageway used as exit components.</p>	<p>The 2003 IFC similarly provides the same level of protection as that of the 2001 CFC relative to the topic of Article 25-Places of Assembly – Aisle Steps.</p> <p>The 2003 NFPA 1 refers the code user to NFPA 101 for the requirements of an exit passageway.</p> <p>The level of protection that the NFPA 1 provides relative to this topic of Article 25-Places of Assembly – Exit passageways has not been determined.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	<p>This section also requires the tread nosing to be marked with a contrasting stripe.</p>		
<p>Section 2501.9.7 Handrails:</p> <p>This section addresses the requirements for handrails located in aisles.</p> <p>This section requires handrails to comply with the building code.</p> <p>Handrails are required at the following conditions:</p> <ul style="list-style-type: none"> • Ramped aisles with a slope of 1 unit vertical in 15 units of horizontal run or a 6.7% slope are required to have handrails. • When there are two or more adjacent aisle steps. 	<p>Section 1024.13 Handrails:</p> <p>This section addresses the requirements for handrails located in aisles.</p> <p>This section requires handrails to comply with the building code.</p> <p>Handrails are required at the following conditions:</p> <ul style="list-style-type: none"> • Ramped aisles with a slope of 1 unit vertical in 15 units • of horizontal run or a 6.7% slope are required to have handrails. • When there are two or more adjacent aisle steps. 	<p>Section 14.7 Exit passageways:</p> <p>This section addresses the requirements for an exit passageway used as exit components.</p>	<p>The 2003 IFC similarly provides the same level of Protection as that of the 2001 CFC relative to the topic of Article 25-Places of Assembly – Handrails located in ramped aisle.</p> <p>The 2003 NFPA 1 refers the code user to NFPA 101 for the requirements of an exit passageway.</p> <p>The level of protection that the NFPA 1 provides relative to this topic of Article 25-Places of Assembly – Exit passageways has not been determined.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2501.10 Seating:</p> <p>This section addresses the requirements for seating in places of assembly.</p> <p>This section requires when the seating rows have 14 or less seats the minimum clearance between the rows shall not be less than 12 inches.</p> <p>This section also provides requirements for when the clear width of the row may be increased.</p>	<p>Section 1024.6.2 Smoke Protected Seating:</p> <p>This section addresses the requirements for seating in places of assembly.</p> <p>This section requires the clear width of the means of egress shall not be less than the occupant load served by the egress element or component.</p> <p>Table 1024.6.2 provides the appropriate multiplying factor for the occupant load served by the egress element or component.</p> <p>This section requires that a NFPA 101 life safety evaluation be done for facilities using the reduced width requirements of Table 1024.6.2.</p>	<p>Section 20.1.4.8 Seating:</p> <p>This section requires that in assembly occupancies accommodating more than 200 persons the seats shall be securely fastened to the floor. Seating diagrams are required in compliance with the requirements of NFPA 101.</p>	<p>The IFC provides the same level of protection as that of the CFC relative to –Seating.</p> <p>The 2003 NFPA 1 refers the code user to NFPA 101 for the requirements relating to seating in assembly occupancies.</p> <p>The level of protection that the NFPA 1 provides relative to this topic of Article 25-Places of Assembly – Seating, has not been determined.</p>
<p>Section 2501.10.2 Bonding of Chairs:</p> <p>This section addresses the requirements for seating in places of assembly.</p>	<p>Section 1024.12 Seat Stability:</p> <p>This section addresses the requirements for seating in places of</p>	<p>Section 20.1.4.8 Seating:</p> <p>This section addresses the requirements for seating in places of assembly.</p> <p>This section requires that all</p>	<p>The IFC provides the same level of protection as that of the CFC relative to the topic of Bonding of Chairs.</p> <p>NFPA 1 provides a higher level of protection than that of the CFC</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>This section requires that loose seats, folding chairs, or any similar seating that is not fixed, shall be bonded together in groups of 3 or more seats.</p> <p>This section indicates that when there are not more than 300 such seats, bonding is not required.</p>	<p>assembly.</p> <p>This section requires that all seats in assembly occupancies shall be securely fastened to the floor except in the following conditions:</p> <ul style="list-style-type: none"> • In places of assembly without ramped floors and with 200 or less seats. • In places of assembly without ramped floors and seating is at tables. • In places of assembly without ramped floors and with 200 or greater seats shall be fasten together in groups of not less than 3 seats. • Seats intended for musicians or other performers. 	<p>seats in assembly occupancies accommodating more than 200 persons shall be securely fastened to the floor.</p> <p>This section Indicates that seats are not required to be fasten to the floor in the following conditions:</p> <ul style="list-style-type: none"> • Restaurants • Night clubs • Other occupancies where fastening of the seats is impracticable. 	<p>relative to the topic of Article 25- Places of Assembly – Seating; in that the NFPA 1 requires seating accommodating 200 or more to be fastened to the floor where the 2003 IFC and 2001 CFC require seating accommodating 300 or more to be fastened to the floor.</p> <p>However, the NFPA 1 refers the code user to NFPA 101 for the requirements of seating.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2501.16 Maximum Occupant Load:</p> <p>This section addresses the requirements for posting of room capacity in an assembly use.</p> <p>This section requires that any room with an occupant load of 50 or more where fixed seats are not installed shall have the room capacity posted.</p>	<p>Section 1004.3 Posting of Occupant Load:</p> <p>This section addresses the requirements for posting of room capacity in an assembly use.</p> <p>This section requires that every room or space used for an assembly shall have the room capacity posted.</p>	<p>Section 20.1.4.8.3 Seating:</p> <p>This section addresses the requirements for posting of room capacity in an assembly use.</p> <p>This section requires that every room used for an assembly shall have the room capacity posted.</p>	<p>The IFC and NFPA 1 provide a higher level of protection than that of the CFC relative to the topic of Article 25 - Places of Assembly- Posting of Occupant load in that they equally require that all rooms and spaces regardless of the occupant load in an assembly use shall have the room capacity posted.</p>
<p>Section 2504 Outdoor Carnivals and Fairs:</p> <p>This section addresses the fire and life safety requirements for outdoor carnivals and fairs. This section addressees the following topics:</p> <ul style="list-style-type: none"> • Condition of the grounds • Fire department access • Electrical equipment • Concession stands • Fire extinguishers • Internal 	<p>This subject is not specifically mentioned in Section 1024 - Assembly occupancies.</p>	<p>Section 10.16 Special Outdoor Events, Carnivals and Fairs:</p> <p>This section addresses the fire and life safety requirements for outdoor carnivals and fairs.</p> <p>This section indicates that the authority having jurisdiction (AHJ) is permitted to regulate all outdoor events as it pertains to the following topics:</p> <ul style="list-style-type: none"> • Condition of the grounds • Fire department access • Electrical equipment • Concession stands • Fire extinguishers • Internal combustible power sources 	<p>The NFPA 1 provides a higher level of protection than that of the CFC relative to the topic of Article 25- Places of Assembly – Special Outdoor Events, Carnivals and Fairs.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>combustible power sources</p> <ul style="list-style-type: none"> • Fueling 		<ul style="list-style-type: none"> • Fueling • Outside storage • Exterior roofs or canopies • Parade floats • Powered industrial trucks <p>This section also indicates that the AHJ is permitted to order a life safety evaluation in accordance with NFPA 101.</p>	
<p>Section 2505 Liquid and Gas-Fueled Vehicles and Equipment: This section addresses the requirements for vehicles and equipment used for display, competition or demonstration within assembly occupancies.</p> <p>This section prohibits the fueling of vehicles and equipment within the building.</p>	<p>Section 314.4 Vehicles:</p> <p>This section addresses the requirements for vehicles located indoors.</p> <p>This section indicates that vehicles may not be located indoors except under the following conditions:</p> <ul style="list-style-type: none"> • Batteries must be disconnected • Fuel in tanks not to exceed 5 gallons. • Fuel tank openings to be closed and sealed. 	<p>Section 20.1.4.4.12.1</p> <p>This section requires that all fuel tank openings shall be locked and sealed when the vehicle is on display.</p> <p>This section also prohibits the fueling of vehicles within the building and prohibits the movement of the vehicles during exhibit hours.</p>	<p>The IFC and NFPA 1 provide an equal level of protection as that of the CFC relative to the topic of Article 25 - Places of Assembly - Liquid and Gas-Fueled Vehicles and Equipment.</p>

Article 25 – Places of Assembly

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	<ul style="list-style-type: none">• The fueling or defueling of vehicles, boats or other motor craft within the building is prohibited.		

Article-27 Cellulose Nitrate Plastics

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2701-Cellulose Nitrate Plastics (Pyroxylin)</p> <p>This section addresses the requirements for the safe storage and handling of Cellulose Nitrate Plastics (Pyroxylin)</p>	<p>Section 4201 Cellulose Nitrate Plastics (Pyroxylin)</p> <p>This section addresses the requirements for the safe storage and handling of Cellulose Nitrate Plastics (Pyroxylin)</p>	<p>This subject is not specifically addressed in the NFPA 1.</p>	<p>IFC provides the same level of protection as CFC relative to Cellulose Nitrate Plastics (Pyroxylin)</p>

Article-28 Storage and Handling/Combustible Fibers

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>2801- Scope:</p> <p>This section addresses the requirements for the safe storage and handling of combustible fibers.</p>	<p>Section 2901 Scope:</p> <p>This section addresses the requirements for the safe storage and handling of combustible fibers.</p>	<p>Section 62.1 General:</p> <p>This section addresses the requirements for the safe storage and handling of combustible fibers.</p> <p>Section 62.6.3.3 allows an unlimited amount of hay, straw and other agricultural products to be stored on farms under certain conditions.</p> <p>This section also does not require dust-collection systems. This section addresses the requirements for equipment, wiring, ignition sources and extinguishers in the space.</p>	<p>IFC provides the same level of protection as CFC relative to Storage and Handling of Combustible Fibers.</p> <p>NFPA 1 provides a higher level of protection as CFC relative to Storage and Handling of Combustible Fibers by providing requirements relating to equipment, wiring, ignition sources and extinguishers in the storage or handling space.</p>

Article-29 Repair Garages

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 2901 General:</p> <p>This section addresses the requirements for repair garages used for service or repair of motor vehicles.</p>	<p>Section 2201 General:</p> <p>This section addresses the requirements for repair garages used for service or repair of motor vehicles.</p> <p>This section does not restrict cutting and welding in repair garages, except for marine fuel dispensing facilities.</p> <p>This section addresses the requirements for the following topics:</p> <p>operation requirements, piping, valves and their fittings, protection of these fittings from damage, LPG motor fuel dispensing facilities, compressed natural gas facilities, hydrogen generation facilities, outdoor separation between hydrogen dispensers, compressors, generators and storage vessels.</p>	<p>Section 30.2 Repair Garages:</p> <p>This section refers the code user to the following NFPA standards relating to this subject:</p> <ul style="list-style-type: none"> • NFPA 30A • NFPA 101 • NFPA 57 • NFPA 58 • NFPA 253 • NFPA 211 • NFPA 82 • And any other NFPA standard relating to this subject. 	<p>IFC provides the same level of protection as CFC relative to Repair Garages.</p> <p>NFPA 1 does not provide the same level of protection as CFC relative to Repair Garages.</p> <p>However, the workgroup was not able to refer to each of the NFPA standards as referenced in Section 30.2.</p>

Article 30 – Wood Products

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 3002 Definitions:</p> <p>This section addresses the definition of terms relating to wood products as used in Article 30.</p> <p>This section defines approximately 9 terms as described above.</p>	<p>Section 1902 Definitions:</p> <p>This section addresses the definition of terms relating to wood products as used in Chapter 19.</p> <p>This section defines approximately 7 terms as described above.</p>	<p>Section 31.1 General:</p> <p>This section refers the code user to the following NFPA standards as they apply to wood products:</p> <ul style="list-style-type: none"> • NFPA 664 • NFPA 230 	<p>IFC provides the same level of protection as CFC relative to Wood Products.</p> <p>NFPA 1 refers the code user to other NFPA standards relative to wood products.</p>
<p>Section 3003 Permits:</p> <p>This section refers the code user to Article 1-Administrative-section 105 for the requirements for permits.</p>	<p>Section 1901.2 General:</p> <p>This section refers the code user to Chapter 1-Administrative-section 105.6 for the requirements for permits.</p>	<p>Section 31.2 Permits:</p> <p>This section refers the code user to Chapter 1-Administrative-section 1.12.19 for the requirements for permits.</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC relative to Wood Products - Permits.</p>
<p>Section 3004.5 Fire Alarms:</p> <p>This section addresses the requirements for the transmission of alarms.</p> <p>This section indicates that alarms in timber and lumber production mills, plywood and veneer mills shall be transmitted to the fire department.</p> <p>This section also requires that manual fire alarm</p>	<p>Section 1904 Fire Protection:</p> <p>This section addresses the requirements for the transmission of alarms.</p> <p>This section indicates that alarms in timber and lumber production mills, plywood and veneer mills shall be transmitted to the fire department.</p>	<p>Section 31.3.2.4 Fire detection and Extinguishment:</p> <p>This section addresses the requirements for the transmission of alarms.</p> <p>This section refers the code user to the following NFPA standards as they apply to wood products:</p> <ul style="list-style-type: none"> • NFPA 664 • NFPA 230 	<p>IFC provides a higher level of protection than CFC relative to the topic of Fire Alarms.</p> <p>NFPA 1 provides a lower level of protection than CFC and refers the code user to other NFPA standards relative to wood products.</p>

Article 30 – Wood Products

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>system be installed in the occupancies described above.</p> <p>All log and pole piles shall have end stops.</p>	<p>This section requires that manual fire alarm system be installed</p> <p>This section requires that portable extinguishers and hose/standpipe system be installed in areas where there are dryers.</p> <p>This section requires that an automatic fire sprinkler system be installed.</p>	<ul style="list-style-type: none"> NFPA 10 	
<p>3007 Plywood and Veneer Mills</p>	<p>Plywood and Veneer Mills Same as CFC with additional requirement that thermal oil-heating systems comply with IFC and NFPA 664.</p>	<p>31.3.4 Outside Storage/ Lumber and Wood Panels – Wood Processing. Does not provide for dryer protection. Includes same requirements as CFC, has additional sections establishing requirements for open yard storage.</p>	<p>IFC provides the same level of protection as CFC. NFPA 1 Does not cover this subject.</p>
<p>3008 Storage and Processing of Wood Chips, Hogged Materials, Fines, Compost and Raw Product Associated with Yard Waste and Recycling Facilities Storage site & piles with separations.</p>	<p>1908 Wood Products Requirements Same as CFC</p>	<p>31.3.6 Wood Products Requirements are the same as CFC & IFC</p>	<p>The requirements are equal in CFC, IFC, & NFPA 1.</p>
<p>3009 Exterior Storage of Finished Lumber Products Out side storage with defined sites and piles.</p>	<p>1909 Exterior Storage of Finished Products Same as CFC and includes additional</p>	<p>31.3.3 Outside Storage of Lumber and Wood Panels – Retail and Wholesale Includes CFC requirements and additional sections</p>	<p>The requirements are the equal in CFC, IFC, & NFPA 1</p>

Article 30 – Wood Products

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
	requirements for grid system to accommodate access roads and an approved hydrant and hose system or portable fire-extinguishing suitable for the fire hazard involved.	establishing general requirements for open yard storage arrangements, and exposure protection.	
Pressure Treatment Plants not addressed	Pressure Treatment Plants not addressed	31.3.5 Outside Storage of Ties, Poles, and Posts – Pressure Treating Plants	NFPA 1 provides a higher level of protection than CFC.

Article 32 – Tents, Etc

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>32 – Tents and Membrane Structures Requires: permits, access, fire retardant materials, exiting.</p>	<p>24-Tents & other Membrane Structures</p> <ul style="list-style-type: none"> • IFC similar to CFC and contains more some additional definitive requirements for permanent structures. 	<p>25 – Grandstands, Bleachers, Folding Seats, Tents and Membrane Structures</p> <ul style="list-style-type: none"> • NFPA 1 has no exemption for tents under 200 sq. ft. or canopies less than 400 sq. ft. • NFPA 1 does not provide a time limit for tents or temporary membrane structures, but does provide for permanent membrane structures. • CFC requires 20-foot separation from property lines, buildings, other tents, parking, etc, except tents not used for cooking need no separation between tents if the aggregate area does not exceed 15,000 sq. ft • NFPA 1 requires 10 feet between tent stake lines, except tents each not exceeding 1,200 sq. ft. need not be separated. • Separation from other structures is up to the AHJ with no guidance provided. • Separation from property lines and parking is not specified. • NFPA 1 address structural design of temporary membrane structures, but not tents. • NFPA 1 has good requirements for inflation requirements for air-supported structures; CFC relies on “the Building Code”. 	<p>IFC provides a higher level of protection than CFC. IFC has more requirements for permanent structures.</p> <p>NFPA 1 Has a lower level of protection than CFC.</p> <p>Note: NFPA 1 has a square foot requirement whereas CFC & IFC do not.</p>

Article 32 – Tents, Etc

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
		<ul style="list-style-type: none">• NFPA 1 addresses exits in the general requirements in the Means of Egress chapter• UFC tent exiting requirements are much stricter than general exit requirements.• NFPA 1 addresses cooking requirements in the chapter on commercial cooking equipment; the 97 UFC requirements are more customized to the needs of tents.• NFPA 1 requires flammable liquid storage to be 10 feet from tents or membrane structures; 97 UFC requires 50 feet. <p>NFPA 1 requires generators to be 5 feet from tents or membrane structures; 97 UFC requires 20 feet and physical separation from the public</p>	

Article-33 – Cellulose Nitrate

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>33-Cellulose Nitrate Film – references Article 90 which is the referenced standards</p>	<p>Chapter 42 and Section 306 References Section 409 Of the IBC and NFPA 40</p>	<p>Not Addressed in NFPA 1</p> <ul style="list-style-type: none"> • CFC references the NFPA Documents • NFPA 40 is noted in the reference section, but not in the main document. 	<p>Both CFC & IFC reference national standard & building code. IFC provides an equal level of protection as CFC. Note: NFPA 1 does not address this topic.</p>

Article-34 Auto Wrecking Yard

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>34- Auto Wrecking Yards Addresses permits, access, operations, & fire protection.</p>	<p>There is not section covering this subject</p>	<p>Chapter 22-</p> <ul style="list-style-type: none"> • Each section in UFC Art 34 is reprinted in its entirety in NFPA 1, Chapter 22. • There are no apparent differences in the Codes for this subject. • Neither Code presents any advantage in enforcement, fire/life safety, or firefighter safety. 	<p>CFC & NFPA 1 addresses this subject & IFC does not. IFC & NFPA 1 have a lower level of protection than CFC.</p>

Article-35 Covered Mall Buildings

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>35- Covered Mall Buildings</p> <ul style="list-style-type: none"> • Activities within the mall requiring permits are similar. • CFC requires permits for; Displays; Assemblies; Open flame and Gas fueled equipment. • CFC goes on to specify a variety of limitations (minimum aisle width, hazardous materials limits, fueled equipment, flame spread limitations for temporary structures, etc.). 	<p>CH 3, 6, 9,& 10</p> <ul style="list-style-type: none"> • No Chapter or definitions specific to malls in IFC, But main provisions contained elsewhere. • Requires permits for; Displays, open flames and gas fueled 	<p>None</p> <ul style="list-style-type: none"> • NFPA is silent regarding mall requirements. • Note: Some hazardous materials limits can be found in of NFPA 1, but are not as restrictive. • Permits required for; using the area for exhibits and a separate permit for use as an assembly 	<p>IFC Provides equal level of protection as CFC.</p> <p>NFPA 1 Provides a lower level of protection than CFC.</p> <p>Note: NFPA 1 has no requirements.</p>

Article-36 Dry Cleaning

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>36-Dry Cleaning</p> <ul style="list-style-type: none"> • Both CFC 36 and NFPA 32 have construction requirements. • CFC allows up to a gallon for spot cleaning under strict guidelines. 	<p>12 - Dry Cleaning</p> <ul style="list-style-type: none"> • IFC Stipulates that dry cleaning plants must also comply with NFPA 32 • Also allows up to 1 gallon if in new or safety can 	<p>24- Dry Cleaning</p> <ul style="list-style-type: none"> • NFPA 32 does allow class 1 liquids by exception and specific allowance (from 1-10 gallons) in all but type V plants (public use) • CFC Class IV differs from NFPA type IV • CFC has no class V. 	<ul style="list-style-type: none"> • CFC Class IV differs from NFPA and IFC type IV • CFC has no class V • IFC provides a higher level of protection than CFC. • NFPA 1 provides an equal level of protection as CFC.

Article-45 Flammable Finishes

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>45-Application of Flammable Finishes</p> <p>Addresses spray finishes, spray booths, products, & fire protection.</p>	<p>15-Flammable Finishes</p> <ul style="list-style-type: none"> • No major differences in requirement for CFC & IFC. • The IFC is reformed and contains some additions, such as coverage of floor surfacing or finishing operations for areas in excess of 350 sq. ft., and application of fiber- glass by brush or roller. • IFC references Current NFPA Standards VS. UFC which is obsolete • Adds additional requirement of 20 ft horizontally for Class 1, Div 2. 	<p>43 Using Flammable or Combustible Materials</p> <p>NFPA 1also refers you to NFPA33</p> <ul style="list-style-type: none"> • 2 to 4 hour separations vs. 1 to 2'hour separations. • NFPA is not clear on spray booths in other than A, E, I, & R occupancies. • NFPA has some good illustrations. 	<p>IFC provides equal level of protection as CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p> <p>Note: NFPA 1 refers to NFPA Standards.</p>

Article-50 Organic Coatings

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>50-Manufacture of Organic Coatings Addresses Process Buildings, Storage, Spillage, & processes.</p>	<p>20-Manufacture of Organic Coatings</p> <ul style="list-style-type: none"> • Refers to NFPA 35 • No major differences between CFC & IFC 	<p>No Code Section for NFPA 1</p> <p>No Other than permitting requirements, there is no information in NFPA 1 document that references organic coatings</p> <ul style="list-style-type: none"> • Most regulations are found within normal controls of Chapter 66-Flammable Liquids or NFPA 35 	<p>IFC provides an equal level protection as CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC. Note: NFPA 1 does not cover this subject.</p>

Article-51 Semiconductor Fabrication Facilities

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>51 Semi- Conductor Fabrication Facilities</p> <ul style="list-style-type: none"> Designates as a Group H Occupancy 	<p>18 Semi-Conductor Fabrication Facilities</p> <ul style="list-style-type: none"> IFC states that existing buildings and fabrication areas shall comply with this chapter. Very similar documents Designates as a Group H-5 	<p>None</p> <ul style="list-style-type: none"> Only places in NFPA 1 were Chapter 23 – Clean-room and Chapter 60 – Haz-Mat. Chapter 23 also refers to NFPA 318 	<p>IFC Provides a lower level of protection than CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p> <p>NOTE: NFPA 1 does not have any requirements.</p>

Article-52 Motor Vehicle Fuel Dispensing Stations

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>52- Motor Vehicle Fuel Dispensing Stations</p> <ul style="list-style-type: none"> • Distance to Emergency shut off, 20 min; 100 max for fuel • 25 min; 100 max for LPG • Covers all operations for dispensing and requirements. 	<p>22- Motor Fuel-Dispensing Facilities & Repair Garages</p> <ul style="list-style-type: none"> • Language similar to CFC • IFC refers to NFPA 30A for fueling stations inside buildings, whereas CFC lists requirements in code. • IFC includes in Ch. 22 provisions pertaining to protected aboveground tanks from Appendices 11-F and 11-J. • IFC addresses aircraft fueling in Ch. 11. • IFC has more specificity in required detail of plan submittals. • LPG distance to shut off switch 20 min; 100 max • More details with regard to CNG fueling • Additional language on Hydrogen fuel 	<p>42 Refueling, 30 Motor Fuel-Dispensing Facilities & Repair Garages and some language in 28-Marinas</p> <ul style="list-style-type: none"> • Language appears to be the similar in both codes. Some differences in organization of subject matter. • Refers to NFPA 30A • NFPA has more specificity in required detail of plan submittals. • 42.2.2.3.3.2.3 Tank size the same as CFC except allows tanks in vault to 15,000 gallon • 42.2.3.3.2.5 On fleet ops, certain conditions allow tanks up to 20,000 gallons • More details with regard to CNG fueling • No specific language for emergency switch for LPG. Assume same as fuel 	<p>IFC & NFPA1 provides a lower level of protection than CFC.</p> <p>NFPA 1 refers to the NFPA Standards.</p>

Article-61 Special Equipment

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>61-Oil Burning Equipment requires permits, electrical wiring & equipment, & portable equipment</p>	<p>Chapter 6, Section 603 – Fuel Fired Appliances</p> <ul style="list-style-type: none"> • Similar Requirements for CFC & IFC • IFC more complete document 	<p>No specific chapter</p> <ul style="list-style-type: none"> • Only related language is: 20.2.3.4 Un-vented Fuel Fired Heating Equipment, other than heaters in compliance with NFPA 54, shall be prohibited. • NFPA also references NFPA 31 for Oil-Burning Equipment requirements. • NFPA 31 appears to be more restrictive than IFC & CFC. 	<p>IFC provides a higher level of protection than CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p> <p>Note: NFPA 1 has no requirements.</p>

Article-62 Industrial Ovens

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>62-Industrial Ovens</p> <ul style="list-style-type: none"> • CFC has placed code requirements on construction, location, explosion control, ventilation and duct in the body of the code. 	<p>21-Industrial Ovens</p> <ul style="list-style-type: none"> • Requires fire extinguisher with 50 feet • IFC requires fixed suppression systems in ovens processing combustible materials. • Also for Class C & D. IFC references NFPA Standards. • Also has Operations & Maintenance requirements not found in CFC. 	<p>51- Industrial Ovens and Furnaces</p> <ul style="list-style-type: none"> • NFPA 1 directs you to 3 different NFPA documents dependent on type of oven. • Other than requiring a permit, no other requirements are found within the body of NFPA 1. 	<p>IFC provides equal protection as CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p>

Article-63 Refrigeration

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>63-Refrigeration</p> <ul style="list-style-type: none"> CFC Art. 63 as adopted have required state amendments to coordinate it with the adopted mechanical code (which is amended to include the Int. Mechanical Code chapter on refrigeration). 	<p>606 Mechanical Refrigeration</p> <ul style="list-style-type: none"> Complete Article IFC Chapter 6 is titled building Services and Systems, of which Section 606 is titled Mechanical Refrigeration. IFC contains criteria for handling refrigerants, refrigerant releases and detection systems, whereas design and construction of refrigeration systems and machinery rooms is referred to the IMC. Also, some topics taken from the CFC have been included in a revised form in the IFC. 	<p>53-Mechanical Refrigeration</p> <ul style="list-style-type: none"> NFPA 1 Chapter 53 is a close reprint of UFC Article 63 Under Flaring, 53.8.1, NFPA, includes an exception that allows direct release if it is determined that no hazard would result 	<p>IFC provides a higher level protection than CFC. CFC refers to the mechanical code. NFPA 1 Provides a lower level of protection than CFC. NFPA 1 refers to IFC.</p>

Article-64 Stationary Lead-Acid Battery Sys

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>64- Lead Acid Battery Systems CFC requires permits, ventilation.</p>	<p>608- Stationary Lead-Acid Battery Systems</p> <ul style="list-style-type: none"> • IFC regulates any system of more than 50 gals (CFC & NFPA is 100 gals in unsprinklered) • IFC has no Occupancy Sep language for A, E, I and R. Both CFC and NFPA require 1 or 2 hr 	<p>52 Stationary Lead-Acid Battery Systems</p> <ul style="list-style-type: none"> • Similar to CFC • NFPA 1 identifies the need for thermal runaway protection. • Adds language that vessels +55 gals or aggregate is+1000, then spill control needed to prevent flow to adjoining areas_ • The proposal submitted to the Technical Council by the Task Group has been approved and forwarded to the Standards Council. 	<p>IFC provides a higher level of protection than CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p>

Article-74 Compressed Gas

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>74-Compressed Gas CFC requires permits, container storage, security, protection & uses.</p>	<p>30-Compressed Gases has the same requirements as CFC</p>	<p>63-Compressed Gases & Cryogenic Fluids</p> <ul style="list-style-type: none"> • Combines Comp gas with cryogenics • Refers to NFPA 55 • Requirements kept general in nature • For storage, use or handling of medical compressed gas, refers reader to NFPA 99 	<p>IFC provides an equal level of protection as CFC. NFPA 1 provides a lower level of protection than CFC.</p> <p>Note: NFPA 1 refers you to the NFPA standards.</p>

Article-75 Cryogenic

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>75- Cryogenic Addresses containers, storage, use & handling. Have very clear requirements.</p>	<p>32- Cryogenic</p> <ul style="list-style-type: none"> • No major differences between CFC & IFC. • Same basic document as CFC 	<p>63 Compressed Gases & Cryogenic Fluids</p> <ul style="list-style-type: none"> • Complete new document based on NFPA 55 • Classifies protection levels 1 – 5 • NFPA 1 refers to Sections 55, 60.1 and 60.2 of NFPA1. 	<p>IFC provides an equal level of protection as CFC. NFPA provides a lower level of protection than CFC.</p> <p>Note: NFPA 1 refers to several NFPA Standards.</p>

Article-76 Prevention of Dust Explosions

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>76-Prevention of Dust Explosions</p> <ul style="list-style-type: none"> • CFC makes general statements with respect to enclosures, separators, dust collection, housekeeping, electrical grounding, smoking and open flames, and explosions • Refers back to building code. 	<p>13- Comb. Dust-Producing Operations</p> <ul style="list-style-type: none"> • IFC relies on NFPA Standards, i.e. NFPA 61, 69, 120, 480, 481, 482, ,650, 651, 654, 655, 664, 8503 • Duplicates CFC on House keeping, explosion protection and sources of ignition 	<p>NFPA 1 has not section Covering this subject. NFPA 1 has no specific requirements</p> <p>References NFPA 61, 69, 120, 480, 481, 482, 485, 650, 651, 654, 655, 664, and 8503 concerning dusts and explosion.</p>	<p>IFC & NFPA 1 provides a lower level of protection than CFC. Note: IFC & NFPA 1 relies on NFPA Standards.</p>

Article-77 Explosive Materials

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>77-Explosive Materials</p> <ul style="list-style-type: none"> • UFC refers 1.3G to Art 78 (of which CFC only adopts 780.1.1.1) • Allows no display of Black Powder • Allows display of small arms primers or percussion caps increased to 25,000 in sprinklered bldg • 7702.3.10 specifies the construction standards of indoor magazine requires 2 inch wood covered with steel • has specific info on construction requirements on type 1-5 magazines 	<p>33-Explosives & Fireworks</p> <ul style="list-style-type: none"> • Similar to CFC • Combines in firework regs. • Adds exemption for transportation for DOT 49 CFR parts 100-178 • Refers also to NFPA 495, 498, 1122, 1125, 1127 and 490 • Allows display of up to 1 lbs Black Powder • 3304.5.1 requires indoor magazine only to be fire and theft resistant • refers reader to NFPA Std for Magazine construction requirements 	<p>65-Explosives, Fireworks & Model Rocketry</p> <ul style="list-style-type: none"> • Chapter specifically deals with fireworks • For manufacture, transportation, storage, sale, and use of explosives materials shall comply with NFPA 495, and NFPA 498 for Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives 	<p>IFC & NFPA 1 provide a lower level of protection than CFC.</p>

Article-81 High-Piled Combustibles

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>81- High Piled Combustible Storage</p> <ul style="list-style-type: none"> Refers to UFC Std 81-1, 81-2, 81-3 and 81-4 per quantities to be stored. This then sets requirements for fire protections & construction. 	<p>23- High Piled Combustible Storage</p> <ul style="list-style-type: none"> Very similar to CFC Refers to NFPA 231 and 231C IFC eliminates the requirement for Curtain Boards and smoke removal, in certain instances, when ESFR sprinklers are used. 	<p>None No requirements</p> <ul style="list-style-type: none"> NFPA 1 Draft is void of any requirements for high piled storage. 	<p>IFC Provides a lower level of protection than CFC.</p> <p>NFPA 1 has no requirements for this subject.</p> <p>NOTE: IFC refers to NFPA Standards</p>

Article-82 Liquid Petroleum Gases

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>82-LPG</p> <ul style="list-style-type: none"> • Refers to CFC Standard 82-1 (which is based on NFPA 58) • No smoking allowed within 15' 	<p>38-LPG</p> <ul style="list-style-type: none"> • Refers directly to NFPA 58 • Very similar document to CFC • 8203.2.1 of CFC refers to "industrial uses" IFC refines in 3803.2.1.3 "Group F" Occupancies • No smoking allowed within 25' 	<p>69-LPG</p> <ul style="list-style-type: none"> • Requirements appear to be out of NFPA 58. • States that when something between this doc or NFPA 58 conflicts with chapter 60 (HazMat), then NFPA 58 shall apply • Some requirements differ from CFC. Location of Containers table allows <125 gal to 0 ft. • Also includes distances for >120,000, which is not in other docs. 	<p>IFC provides an equal level of protection as CFC. NFPA provides a lower level of protection than CFC.</p>

(Article-84 Motion Picture Projection)

(Article-2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>84 Motion Picture Projection</p> <ul style="list-style-type: none">Refers to CBC for construction and protection requirements.	<p>3-General Precautions Section 306</p> <ul style="list-style-type: none">Only has 2 items in this sectionFirst refers reader to Section 409 of IBCSecond refers reader to NFPA 40	<p>NFPA 1 Does not have a section on this subject</p> <ul style="list-style-type: none">No dedicated chapter. Two applicable paragraphs added in Chapter 20, Occupancy Fire Safety. Dealing with projection rooms and safety film posting.CFC Article 84 is only eight paragraphs, with very few specific fire safety requirementsNFPA 1 in Chapter 20 references NFPA 40.	<p>IFC provides an equal level of protection CFC.</p> <p>NFPA 1 has a lower level of protection than CFC.</p>

Article-85 Electrical Equip and Wiring

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>85-Elect. Equip. and Wiring Just general safety Requirements and refers to CEC Electrical Code</p>	<p>Chapter 6 Section 605</p> <ul style="list-style-type: none"> • Refers to the ICC Electrical Code 	<p>Chapter 11 Electrical Fire Safety</p> <ul style="list-style-type: none"> • Refers to NFPA 70 • Allows the use of multi-plug adapters as long as “listed and used in accordance with their listing” 	<p>IFC provides an equal level of protection as CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p>

Article-87 Fire safety during Const & Demo

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>87-Construction, Demolition, Alterations Organized into separate sections for construction, alteration and demolition. Covers safety issues & exiting.</p>	<p>14- Fire Safety During Construction & Demolition</p> <ul style="list-style-type: none"> • A general reformat of requirements in the CFC • Requirements apply in all phases of construction or demolition, rather than being organized into separate sections for construction, alteration and demolition. The CFC also stipulates use of NFPA 241 when Chapter 14 does not cover a certain aspect of construction alteration or demolition. 	<p>16-Safeguards during Construction, Alterations And Demo Operations</p> <ul style="list-style-type: none"> • Many items taken directly and referenced from NFPA 241 • Separated into Construction, Alterations and demolition 	<p>ICF provides a higher level of protection than CFC.</p> <p>NFPA 1 provides a lower level of protection than CFC.</p>

Article-88 Aerosol Products

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>88- Aerosol Products</p> <ul style="list-style-type: none"> • Table 8802.3-A - Allows only 500 lbs per floor in unprotected rack storage • Table 8802.3-C requires a max 20 ft from storage to aisle <p>Covers storage & display requirements & amounts that can be displayed.</p>	<p>28 Aerosols</p> <ul style="list-style-type: none"> • IFC Scope requires compliance with NFPA 30B Manufacture and Storage of Aerosol Products as well as Chapters 27 & 28. • 2803.2 Cartons containing aerosols must be identified. • The requirement for fire alarm system in aerosol warehouses has been deleted. • 2804.4.2 requires a max 25 ft from storage to aisle • Table 2804.3.1 allows 2500 lbs per floor in unprotected racks • Other requirements similar to CFC 	<p>61 Aerosol Products</p> <ul style="list-style-type: none"> • NFPA 1 regulates manufacture as well as storage and display • Every line in Ch 61 is taken directly from (and references a specific spot) in NFPA 30B • NFPA1 includes classification guidelines found previously in UFC Standard 88-1. • NFPA 1 refers user to NFPA 30B for additional aerosol regulations, to NFPA 101 regarding design of sales display area, to NFPA 80 for Fire Doors, to NFPA 90A for Dampers, to NFPA 70 for electrical, and many other direct referrals to other NFPA documents 	<p>IFC provides a higher level of protection than CFC. NFPA 1 Provides a lower level of protection than CFC.</p>

Article-90 Standards

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>90-Standards</p> <ul style="list-style-type: none"> • Only Section adopted by CFC is 9001.1, which includes Section 9001 and 9002 (except 10-1 and 10-2) • NFPA 72 is as amended in Article 91 (1996 ed or 1999 ed as specified) • 9001.2, 9001.3 and Section 9003 are not included (which is the sections on recognized standards) 	<p>45-Referenced Standards</p> <ul style="list-style-type: none"> • The IFC references 84 NFPA Standards, (as well as other standards.) • Also listed are a number of AASHTO, AFSI, ANSI, API, ASME, ASTM, BHMA, CGA, CGR, CPSC, DOC, DOL, DOT, DOT, ICC, NEMA, UL and USC 	<p>2-Referenced Publications</p> <ul style="list-style-type: none"> • 133 NFPA Standards are identified in this chapter • All are the latest chapter (as of publication date) • Also listed are a number of ANSI, API, ASME, ASTM, ATA, CGA, IAS, ISO, NRFC, RVIA, UL, ULC and US Gov docs 	<p>This section shows what standards are adopted by what code.</p>

Article-91 California Standards

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
91-California Standards These are standards adopted by the SFM in the California Building Code Chapter 35.	45 Referenced Standards This chapter lists the standards that are referenced in various sections of this document.	2 Referenced Publications The documents there for listed in this chapter are referenced with in this code and shall be considered part of the requirements of this document.	These are the standards & publications that are adopted by these codes. They are listed in these chapters of these codes.

Appendix III-AA and III-BB - SFM

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 1 Scope:</p> <p>The State Fire Marshal adopts by reference Appendix IIIA and IIIB for schools. Section 1 specifically applies to school buildings or portions of school buildings that are constructed, reviewed and approved under Subdivision (a) of Section 39140 of the Education Code.</p>	<p>Section B101.1 Scope:</p> <p>Section B 101 outlines the procedures for determining the fire flow requirements for buildings or portions of buildings. Buildings constructed hereafter shall be in accordance with this appendix.</p>	<p>Annex H, H.1 Scope:</p> <p>Fire flow requirements for buildings.</p>	<p>IFC & NFPA 1 provide the same level of protection as CFC.</p>
<p>Section 2 Definitions:</p> <p>Section 2 definitions address fire area and fire flow.</p>	<p>Section B102 Definitions:</p> <p>Section B102 definitions address fire flow and fire flow calculation area.</p>	<p>H.2 Definitions:</p> <p>H.2 definitions address fire area and fire flow.</p>	<p>IFC & NFPA 1 provide the same level of protection as CFC.</p>
<p>Section 3 Modifications:</p> <p>The SFM adopts by reference an alternative method of providing water for fire protection or any other alternative in lieu of providing water for fire protection may be enforced when deemed appropriate by the fire chief or the State Fire Marshal.</p>	<p>Section B103 Modifications:</p> <p>Section B103 specifies that the local fire chief has the authority to decrease or increase the fire flow requirement depending upon the situation, community make up or possibility of conflagration. The fire flow increase shall not exceed more than double.</p> <p>Section B103 refers the local fire chief to NFPA 1142 for areas without water supply systems.</p>	<p>H.3 Modifications:</p> <p>Section H.3 specifies that the authority having jurisdiction has the authority to decrease or increase the fire flow requirement depending upon the situation, community make up or possibility of conflagration.</p> <p>The fire flow increase shall not exceed more than double.</p>	<p>IFC & NFPA 1 both provide a higher level of protection than CFC.</p>

Appendix III-AA and III-BB - SFM

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 4 Fire Area:</p> <p>Section 4 addresses the requirements' regarding what a fire area is and how a four-hour fire rated wall, that has no openings can be considered a separate fire area when that wall is constructed in accordance with the Calif. Building Code.</p> <p>This section also addresses the fire area of Types I and II F.R. constructed buildings.</p>	<p>Section B 104 Fire Area:</p> <p>Section B 104 addresses the requirements regarding what a fire flow calculation area is.</p> <p>This section also addresses how portions of buildings that are separated by fire rated walls, with no openings can be considered separate fire flow calculation area.</p> <p>This section also addresses the fire flow calculation area of Types IA and IB constructed buildings.</p>	<p>Section H.4 Fire Area:</p> <p>Gives information about what a fire area is and how a four-hour wall, without openings can create a separate fire area when that wall is constructed in accordance with the Building Code. Gives a descriptive definition of a fire area in Type I (443) Type I (332) and Type II (222) Buildings.</p>	<p>NFPA 1 provides the same level of protection as the CFC.</p> <p>IFC provides a lower level of protection than CFC by eliminating the four-hour firewall requirement for separate fire areas.</p>
<p>Section 5 Fire Flow Requirements for Buildings:</p> <p>The State Fire Marshal adopts by reference the minimum fire flow and flow duration for school buildings as specified in Table A-III-AA-1.</p> <p>A reduction of up to 75% is allowed when the building is fire sprinklered.</p>	<p>Section B 105 Fire Flow Requirements for Buildings:</p> <p>Section B 105 addresses the requirements for the minimum fire flow for one and two family single family dwellings less than 3,600 sq. ft. as 1000 gallons per minute.</p> <p>This section provides for up to a 50% reduction in fire flow requirements if the residence is equipped with at residential fire sprinkler system. For buildings, other then one or two family residential, the minimum fire flow and duration is specified in Table B105.1</p>	<p>H.5 Fire Flow Requirements for Buildings:</p> <p>Section H.5 addresses the requirements for schools, one & two family single-family dwellings. Which is the same as CFC & IFC.</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC.</p> <p>The State Fire Marshal has amended the CFC relative to fire flow requirements for schools.</p>

Appendix III-AA and III-BB - SFM

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Table A-III-AA-1 Minimum required fire flow and flow duration for buildings.</p> <p>Table A-III-AA-1 addresses the requirements for the minimum fire flow, measured at 20 psi, for the type of building constructed at the minimum and maximum square footage.</p> <p>This Table also provides the flow duration in number of hours.</p>	<p>Table B105.1 Minimum required fire flow and flow duration for buildings.</p> <p>Table B105.1 addresses the requirements for the minimum fire flow, measured at 20 psi, for the type of building constructed at the minimum and maximum square footage. This table also addresses the flow duration in number of hours.</p> <p>This Table provides for a 25% reduction in fire flow for residential construction.</p>	<p>Table H5.1 Minimum required fire flow and flow duration for buildings.</p> <p>Table H5.1 addresses the minimum fire flow, measured at 20 psi, for the type of building constructed at the minimum and maximum square footage.</p> <p>This Table also provides the flow duration in number of hours.</p>	<p>NFPA 1 provides the same level of protection as theCFC.</p> <p>IFC provides a lower level of protection than CFC by providing a 25% reduction in fire flow for residential occupancies without requiring equivalent or alternative methods of protection.</p>
<p>Appendix III-B Fire Hydrant Locations And Distribution.</p> <p>Section 1 Scope:</p> <p>Section 1 addresses where fire hydrants are to be located in accordance with Appendix III-B.</p>	<p>Appendix C Fire Hydrant Locations And Distribution.</p> <p>Section C101.1 Scope:</p> <p>Section C101.1 addresses where fire hydrants are to be located in accordance with Appendix C.</p>	<p>Annex I Fire Hydrant Locations And Distribution.</p> <p>Section 1.1 Scope:</p> <p>Section 1.1 addresses where fire hydrants are to be located in accordance with Annex 1.</p>	<p>IFC and NFPA 1 provide the same level of protection as the CFC.</p>
<p>Section 2 Location of Fire Hydrants:</p> <p>Section 2 addresses the requirements for where fire hydrants are to be located along all required fire apparatus roads and adjacent public streets.</p>	<p>Section 102.1 Location of Fire Hydrants:</p> <p>Section 102.1 addresses the requirements for where fire hydrants are to be located along all required fire apparatus roads and adjacent public streets.</p>	<p>Section 1.2 Location of Fire Hydrants:</p> <p>Section 1.2 addresses the requirements for where fire hydrants are to be located along all required fire apparatus roads and adjacent public streets.</p>	<p>IFC and NFPA 1 provides the same level of protection as CFC.</p>

Appendix III-AA and III-BB - SFM

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Section 3 Number of Fire Hydrants:</p> <p>Section 3 addresses the requirements for the number of fire hydrants and their spacing per Table A-III-B-1.</p> <p>Table A-III-B-1 footnote?? provides additional requirements for the spacing of hydrants with respect to street obstructions and configurations.</p>	<p>Section C103 Number of Fire Hydrants:</p> <p>Section C 103 addresses the requirements for the number of fire hydrants and their spacing per Table C105.1</p> <p>Table C105.1, footnote provides additional requirements for the spacing of hydrants with respect to street obstructions and configurations.</p>	<p>Section I.3 Number of Fire Hydrants:</p> <p>Section 1.3 addresses the requirements for the number of fire hydrants and their spacing per Annex 1.</p> <p>Annex 1, footnote provides additional requirements for the spacing of hydrants with respect to street obstructions and configurations.</p>	<p>IFC and NFPA 1 provide the same level of protection as CFC.</p>
<p>Section 5 Distribution of Fire Hydrants.</p> <p>Section 5 addresses the requirements for the average spacing of fire hydrants per Table A-III-BB-1.</p> <p>This section also provides for the local fire chief to accept a 10% deficiency where existing hydrants provide all or a portion of the required fire hydrants.</p>	<p>Section C105 Distribution of Fire Hydrants.</p> <p>Section C105 addresses the requirements for the average spacing of fire hydrants per Table C105.1.</p> <p>This section also provides for the local fire chief to accept a 10% deficiency where existing hydrants provide all or a portion of the required fire hydrants.</p>	<p>Section I.5 Distribution of Fire Hydrants.</p> <p>Section 1.5 addresses the requirements for the average spacing of fire hydrants per Annex 1.</p> <p>This section also provides for the local fire chief to accept a 10% deficiency where existing hydrants provide all or a portion of the required fire hydrants.</p>	<p>IFC and NFPA 1 provide the same level of protection as CFC.</p>

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Table 7901.1-A Classification of flammable and combustible liquids.	Sec. 3402.1 (Same)	Sec. 3.3.125,3.3.125.3 (Same)	NFPA1 provides the same level of protection as CFC and IFC
Table 7901.4-A Classification class I electrical locations	Table 3403.1.1 (Same)	Table 66.6.2.2 (Same)	NFPA 1 provides the same level of protection as CFC and IFC
7901.2 Majority of the definitions are found in Article 2.	Sec.3402 Not listed <ul style="list-style-type: none"> • Floating roof tank • Pre-connected flexible hose system • Rigid hose system • Mixing • Outdoor area 	Chapter 66 Found in chapter 3	CFC/NFPA I does not list under definitions remote emergency shutoff device, mobile fueling and fuel limited switch. NFPA I does not identify all the definitions outlined in CFC/IFC e.g., <ul style="list-style-type: none"> • Fuel limited switch • Liquid storage room • Mobile fueling
Sec. 79014.1 Conform to the electrical code	Sec.3403.1 Installed and maintained in accordance with ICC electrical code	Sec.66.4.6.3.2, 66.4.4.2.6 Reference NFPA 30/70	IFC and NFPA are more restrictive

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 7901.5 Classified as "H" occupancies fire protection for the storage, use, dispensing, mixing, handling of flammable and combustibles.</p> <ul style="list-style-type: none">• Automatic fire extinguishing system.	<p>Sec. 3403.2, 903.2. (Same)</p>	<p>Sec. 66.4.8 Not occupancy specific. Cross references NFPA 30.</p>	<p>IFC and CFC is more restrictive than NFPA 1</p>
<p>Sec. 7901.7.4 Site assessment in the event of a spill, leak or discharge from a tank system. The chief determines the potential for a fire or explosion. The report must be submitted to the fire dept. within 60 days.</p>	<p>Sec. 3403.3 (Same)</p>	<p>Sec. 66.5.8 Does not address site assessment by the fire chief.</p>	<p>IFC/ the AHJ is identified as the fire code official. NFPA is silent on the assessment of spilling containment.</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec.7901.7 Unauthorized discharge of such products is prohibited and must be reported to the fire chief.</p>	<p>Sec.2703.3. 2703.3 (Same)</p>	<p>Sec. 66.7 Handling of underground releases of flammable and combustible liquids shall be conducted by the AHJ</p>	<p>NFPA/the enforcement powers are directed to the AHJ e.g., Building Official, Health and Safety Dept. or fire dept.</p> <p>CFC/IFC specifies any release is prohibited excluding exceptions which is more restrictive.</p> <p>CFC/Identifies flammable and combustibles liquids and petroleum.</p> <p>NFPA/IFC provide a lower level of protection</p>
<p>Sec. 7901.9 Labeling and signs for flammable/ Combustible liquids.</p> <ul style="list-style-type: none"> • Chief authorized to require warning signs • Style 	<p>Sec.3403.5 (Same)</p>	<p>Sec. 60.1.14.1.3 Nationally recognized standards.</p> <ul style="list-style-type: none"> • AHJ authorized to require warning signs 	<p>NFPA 1 provides the same level of protection as CFC and IFC</p>
<p>Sec. 7901.9.4 Warning signs shall be in accordance with the Federal Hazardous Substance Labeling Act and applicable state laws.</p>	<p>Sec.3403.5.3 (Same)</p>	<p>Chapter 66 Not addressed</p>	<p>CFC and IFC are equal level of protection NFPA provides a lower level of protection than IFC and CBC</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 7901.11.1.1 Piping, valves and fittings shall be in accordance with nationally recognized standards	Sec.3403.6 Not addressed	Sec. 66.3 Not addressed	CFC provides a highest level of protection
Sec. 7901.11.1.2 Piping, valves and fittings with low melting point materials.	Sec.3403.6.2.1 (Same)	Sec.66.3 Not addressed	NFPA 1 provides a lower level of protection
Sec. 7901.11.2 Protection of vehicles	Sec.3403.6.4 (Same)	Sec. 66.3 Not Addressed	NFPA 1 provides a lower level of protection
Sec.7901.11.3 Protection from corrosion and galvanic action.	Sec. 3403.6.5 (Same)	Sec. 66.3 Not Addressed	NFPA 1 provides a lower level of protection
Sec. 7901.11.6 Piping supports <ul style="list-style-type: none"> • Drainage away of not less than 1 percent • Fire protection of 2hr • Other approved methods 	Sec. 3403.6.8 (Same)	Sec. 66.3 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 7901.11.7 Flexible joints\</p> <ul style="list-style-type: none"> • Where connects at the underground • Ends at pump islands and vent riser • Points at differential movement 	<p>Sec3403.6.9 (Same)</p>	<p>Sec. 66.3 Not addressed</p>	<p>NFPA 1 provides a lower level of protection than CFC and IFC</p>
<p>Sec. 7901.11.7.2 FRP not required to have flexible joints</p> <ul style="list-style-type: none"> • <4 inches diameter • Straight than 4-feet on one side as a result of change of direction. 	<p>Sec. 3403.6.9.1 (Same)</p>	<p>Sec. 66.3 Not addressed</p>	
<p>Sec. 7901.11.10 Testing pipe</p> <ul style="list-style-type: none"> • Hydro test 150 percent of anticipated pressure. 	<p>Sec. 3403.6.3 (Same)</p>	<p>Sec. 66.3 Not addressed</p>	<p>NFPA provides a lower level of protection than CBC and IFC</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec.7901.11.9 Pipe bends shall not be bent in excess of 90 degrees or at a radius less than five diameters of the nominal trade size.	Sec. 3403.6.11 Bends in pipe accordance with ANSI B31.9	Sec. 66.3 Not addressed	NFPA provides a lower level of protection than CBC and IFC
Sec 7902.1.1 Applicability Applicability, references Article 52	Sec 3404.1 Applicability Does not reference Article 22	Sec 66.2.1 Applicability Does not reference Chapter 30	CFC is more restrictive
Sec 7902.1.2 Change of Tank Contents Change of tank contents	Sec 3404.2.1 Change of Tank Contents Same	Sec 66.2.1 Change of Tank Contents Not addressed	NFPA1 provides lower level of protection than CBC and IFC
Sec 7902.1.3 Labeling Labeling	Sec 3404.2.3 Labeling Same	Sec 66.2.2.1 Labeling Not addressed	NFPA1 provides a lower level of protection
Sec 7902.1.4 – 1.6 Sources of ignition, explosion control, separation from incompatibles	Sec 3404.2.4 – 2.6 Same	Sec 66.2.4.3.1 Not addressed	NFPA1 provides a lower level of protection than CBC and IFC
Sec 7902.1.7.1 Tanks taken out of service	Sec 3404.2.13 Same	Sec 66.2.5.4.1 Same	Same level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.7.2.1 – 1.7.2.3 UST Out of Service UST's out of service	Sec 3404.2.13.1 , 2.13.1.1, 2.13.1.2, 2.13.1.3 UST Out of Service Same	Sec 66.2.5.5.2 UST Out of Service Same	Same level of protection
Sec 7902.1.7.2.4 Tanks Abandoned in Place Tanks abandoned in place	Sec 3404.2.13.1.4 Tanks Abandoned in Place Exempts home heating oil tanks <1100 gal	Sec 66.2.5.4.1 Tanks Abandoned in Place Same as CFC	IFC provides a lower level of protection than CFC and NFPA 1
Sec 7902.1.7.2.5 Reinstallation of UST Reinstallation of UST	Sec 3404.2.13.1.5 Reinstallation of UST Same	Sec 66.2.5.5.8 Reinstallation of UST Same	Same level of protection
Sec 7902.1.7.3.1 Aboveground tanks temporarily out of service	Sec 3404.2.13.2.1 Same	Sec 66.2.5.4.1 Not addressed	NFPA1 provides a lower level of protection than CFC and IFC
Sec 7902.1.7.3.2 Out of service for 90 days	Sec 3404.2.13.2.2 Exempts tanks connected to oil burners	Sec 66.2.5.4.1 Not addressed	CFC is more restrictive
Sec 7902.1.7.3.3 Out of service for 1 yr	Sec 3404.2.13.2.3 Same	Sec 66.2.5.4.1 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.7.4.1 – 1.7.4.2 Removal and disposal of tanks	Sec 3404.2.14.1 – 2.14.2 Same	Sec 66.2.5.4.1-2.5.5.4 Same	Same level of protection
Sec 7902.1.8.1.1 Design of containers	Sec 3404.3.1 Same	Sec 66.4.2.1 Same	Same level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.8.1.2 Use of tank cars for storage	Sec 3404.2.2 Same	Sec 66.2.2.1 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.8.1.3 Use of plastic containers	Sec 3404.3.1.1 Same	Sec 66.4.2.1 Same	Same level of protection
Sec 7902.1.8.2.1 Tank construction	Sec 3404.2.7 Same	Sec 66.2.2.1 Broad, nameplate not required	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.8.2.3 Pressure limits on tanks	Sec 3404.2.7.2 Same	Sec 66.2.2.1 Not addressed	NFPA1 provides a lower level of protection than CFC and IFC
Sec 7902.1.8.2.4 Locations subject to flooding	Sec 3404.2.7.8 Same	Sec 66.2.3.1.4 Same	Same level of protection
Sec 7902.1.8.2.5 Testing for aboveground tanks	Sec 3404.2.7 Not addressed	Sec 66.2.3 Same as CFC	IFC provides a lower level of protection than CFC and NFPA 1
Sec 7902.1.8.2.6 - 1.8.2.10 Materials for tank construction	Sec 3404.2.7.1 and NFPA 30 ref Same	Sec 66.2.2 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.8.2.11 Existing oil reservoirs	Sec 3404.2.7 Not addressed	Sec 66.2.2 Not addressed	CFC is more restrictive

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.8.2.12 Corrosion protection	Sec 3404.2.7.9 Same	Sec 66.2.2 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.1.9.2 – 1.9.4 Additional requirements for protected tanks	Sec 3404.2.9.6.1 – 2.9.6.3 Same	Sec 66.2.2.2.8 No provision for flame arresters, containment, overfill	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.9.5 Projectile protection	Sec 3404.2.9.6 Not addressed	Sec 66.2.2.2.8 Not addressed	CFC is more restrictive
Sec 7902.1.9.6 – 1.9.12 Additional requirements for protected tanks	Sec 3404.2.9.6.4 – 2.9.6.10 Same	Sec 66.2.2.2.8 Not addressed	NFPA 1 provides a higher level of protection than CFC and IFC
Sec 7902.1.10.1 Applies to below grade vaults only	Sec 3404.2.8 Above or below grade vaults	Sec 66.2.2.2.1 Same as IFC	IFC and NFPA 1 provide a lower level of protection
Sec 7902.1.10.4 Location of vaults, not beneath bldg, in accordance with UST	Sec 3404.2.8 Not addressed	Sec 66.2.2.2 Not addressed	CFC is more restrictive
Sec 7902.1.10.5.1 – 1.10.5.7 Vault construction	Sec 3404.2.8.1 – 2.8.18 Same	Sec 66.2.2.2.2 Same	Same level of protection
Sec 7902.1.10.5.8 Max capacity of 15000 gallons allowed	Sec 3404.2.8 No limit	Sec 66.2.2.2.2 No limit	CFC is more restrictive

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.10.6.2 Vaults storing Class II and IIIA need approved ventilation	Sec 3404.2.8 Not addressed	Sec 66.2.2.2.5 Not addressed	CFC is more restrictive
Sec 7902.1.10.7.1 – 1.10.8.2 Vault and tank construction	Sec 3404.2.8.7 – 2.8.18 Same	Sec 66.2.2.2.2-2.2.2.7 Same	Same level of protection
Sec 7902.1.10.8.3 Maintenance and testing of monitoring system	Sec 3404.2.8 Not addressed	Sec 66.2.2.2.6 Not addressed	CFC is more restrictive
Sec 7902.1.10.9 Dispensing systems	Sec 3404.2.8 Not addressed	Sec 66.2.2.2.7 Same as CFC	IFC provides a lower level of protection than CFC and NFPA 1
Sec 7902.1.10.11 Vault signs	Sec 3404.2.8 Not addressed	Sec 66.2.2.2 Not addressed	CFC is more restrictive
Sec 7902.1.11 –1.12 Repair and seismic of tanks and piping	Sec 3404.2.7.6 –2.7.7 Same	Sec 66.3.1 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.1.13.1 –1.13.6 Tank vents	Sec 3404.2.7.3 – 2.7.4 Same	Sec 66.2.2.2.4.1 Does not address flame arresters or manifolding	NFPA 1 provides a lower level of protection
Sec 7902.1.13.7 Vent sizing	Sec 3404.2.7.3 Not addressed	Sec 66.2.2.2.4.1 Not addressed	IFC and NFPA 1 provide a lower level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.13.8.1-1.13.8.4 Additional requirements for aboveground tanks	Sec 3404.2.7.3 – 2.7.4 Not as specific	Sec 66.2.2.1 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.1.13.9 Vent requirements for UST. outlet, drain, pressure vessels	Sec 3404.2.11 Not addressed	Sec 66.1 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.14.1 Emergency vent for stationary tank	Sec 3404.2.7.4 Same	Sec 66.2.2.2.4.2 Same	Same level of protection
Sec 7902.1.14.2 Emergency vent for portable tank	Sec 3404.2.7.4 Not addressed	Sec 66.4.2.2 Same as CFC	IFC provides a lower level of protection than CFC and NFPA 1
Sec 7902.1.15.1.1 Connections to tank at least 10 ft from building.	Sec 3404.2.7.5.2 Connections to tank at least 5 ft from building	Sec 66.2.3.2.4.5 Same as IFC	CFC is more restrictive
Sec 7902.1.15.1.2 Vapor recovery	Sec 3404.2.7.5.7 Same	Sec 66.2.3.2.4 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.15.1.3 Normally closed or automatic closing valves	Sec 3403.6.7 No criteria set	Sec 66.2.3.2.4.1 Same as IFC	CFC is more restrictive
Sec 7902.1.15.1.4 Overflow protection	Sec 3404.2.7.5.8 Same	Sec 66.2.3.2.4 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.1.15.1.5 Piping, valves, fittings	Sec 3404.2.7.5.3 Same	Sec 66.3.1.1 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.1.15.1.6 Manual gauging	Sec 3403.2.7.5.4 Same	Sec 66.2.5.7.4 Same	Same level of protection
Sec 7902.1.15.2.3 Fill pipe within 6 inches of bottom of tank	Sec 3404.2.7.5.5.2 Not addressed	Sec 66.2.3.2.4.4 Same as CFC	IFC provides a lower level of protection than CFC and NFPA
Sec 7902.1.15.2.4 Connections to tank >5 ft from bldg	Sec 3404.2.7.5.2 Same	Sec 66.2.3.2.4.5 Same	Same level of protection
Sec 7902.1.15.3 Manual gauging for exterior tanks	Sec 3404.2.7.5.4 Same	Sec 66.2.5.7.4 Same	Same level of protection
Sec 7902.1.16.2 –1.16.3 Tanks at and above grade	Sec 3404.2.9.2 and NFPA ref Same	Sec 66.2.3.1.1 Same	Same level of protection
Sec 7902.1.16.4 Fire Protection of Supports Fire protection of supports	Sec 3404.2.9.2 Fire Protection of Supports Same	Sec 66.2.3.1.3 Fire Protection of Supports Same	Same level of protection
Sec 7902.1.16.5-1.17 Design of Supports, Stairs. etc Design of supports, Stairs, etc...	Sec 3404.2.9.2-2.9.3 Design of Supports, Stairs. etc Same	Sec 66.2.3 Design of Supports, Stairs. etc Not addressed	NFPA 1 provides lower level of protection than CFC and NFPA

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.2.2.1-2.2.7 Tank Locations Tank locations	Sec 3404.2.9.5.1-2.9.5.1.6 Tank Locations Same	Sec 66.2.3.2.11 Tank Locations Same	Same level of protection
Table 7902.2-A Includes protected tank	NFPA Table 2.3.2.1.1(a) Does not include protected tanks	Table 66.2.3.2.1.1(a) Same as IFC	CFC is more restrictive
Sec 7902.2.3.1-2.3.3 Separation of stable, unstable and LPG tanks Separation of stable, unstable and LPG tanks	Sec 3404.2.9.5.2-2.9.5.3 Separation of stable, unstable and LPG tanks Same	Sec 66.2.3.2.2.4 Separation of stable, unstable and LPG tanks Same	Same level of protection
Sec 7902.2.3.4 Orientation of horizontal tanks Orientation of horizontal tanks	3404.2.9.5.2 Orientation of horizontal tanks Not addressed	Sec 66.2.3 Orientation of horizontal tanks Not addressed	CFC is more restrictive
Sec 7902.2.4.3 Time required to delivery foam <2 hours	3404.2.9.1.2.1 Time required to deliver to be consistent with hazards	Sec 66.2.3 Not addressed	CFC is more restrictive
Sec 7902.2.5 Inserting of tanks with boil-over liquids	Sec 3404.2.9.1.4 Exception for crude oil tanks with no exposures	Sec 66.2.3.2.1.3 Same as CFC	IFC provides a lower level of protection than CFC and NFPA
Sec 7902.2.6 Emergency venting	Sec 3404.2.7.4 and Ref to NFPA 30 Appears to be equivalent	Sec 66.2.3 Not addressed	NFPA 1 provides a lower level of protection than CFC and IFC
Sec 7902.2.8.3 Drainage control and diking	Sec 3404.2.10 Not as detailed	Sec 66.2.3.2.2.3 No criteria	CFC is more restrictive

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.2.8.4.3 Walls of diked areas	Sec 3404.2.10 Not addressed	Sec 66.2.3 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.2.2.8.4.6 Removing water from diked areas	Sec 3404.2.10 Not addressed	Sec 66.2.3 Not addressed	CFC is more restrictive
Sec 7902.2.8.4.8 Equipment controls and piping in diked areas	Sec 3404.2.10.5 Exceptions for pumps, manifold and piping integral to tank and for fire protection eq.	Sec 66.2.3 Not addressed	CFC is more restrictive
Sec 7902.3; Table 7902.1-A Does not allow Class 1A, 1B, or 1C in approved plastic containers	Sec 3404 4, NFPA Table 4.2.3 Allows 1 gal of 1A 5 gal of 1B 5 gal of 1C in approved plastic containers	Sec 66.4.2.3, Table 66.4.2.3 Same as IFC	CFC is more restrictive
Sec 7902.3.3.1-3.9 Location of containers and portable tanks outside	3404.4.2-4.8 Same	Sec 66.4.7.1 Same	Same level of protection
Sec 7902.4.2 Tanks in rooms or buildings shall comply with the building code	Sec 3404.2.9 Not addressed	Sec 66.2.3.2 Not addressed	CFC is more restrictive
Sec 7902.5.1.1 Indoor storage of fl/cl in containers and portable tanks	Sec 3404.3.3 Same	Sec 66.4.2.3.1 Same	Same level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.5.1.2.1 Requirements Portable extinguishers	Sec 3404. 3.3.1 Requirements Same	Sec 66.4 Requirements Not addressed	NFPA 1 provides lower level of protection
Sec 7902.5.1.2.2 Water supply at least 500 gal per min	Sec 3404.3.3 Not addressed	Sec 66.4 Not addressed	CFC is more restrictive
Sec 7902.5.2 Capacity limits for containers and portable tanks(60,660)	Sec 3404.3.3 Same	Sec 66.4.2.3 Portable tanks at 793 gal	NFPA 1 provides a lower level of protection
Sec 7902.5.3 Empty containers	Sec 3404.3.3.4 Same	Sec 66.4 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.5.4 Incompatible materials	Sec 3404.3.3.2 Same	Sec 66.4 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.5.5 Storage near egress	Sec 3404.3.3.3 Same	Sec 66.4.4.3.1 Same	Same level of protection
Sec 7902.5.6.1-5.6.3 Shelf storage	Sec 3404.3.3.5-3.3.5.3 Same	Sec 66.4 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.5.7.1, Table 7902.5-A Exempt Quantities 1A 30 gal 1B 60 1C 90	Sec 3404.3.4.1, Table 2703.1.1(1) Exempt Quantities 1A 30 gal 1B 120 1C 120	Sec 66.1, Table 60.2(a) Same as IFC	CFC is more restrictive

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.5.7.2 Occupancy limits	Sec 3404.3.4.2 Higher limits	Sec 66.4.5.3-5.5.5 Same as IFC	CFC is more restrictive
Sec 7902.5.7.3 Exceed quantities per control area then in rooms per bldg code	Sec 3404.3.4.3 Same	Sec 66.4.4 Does not reference building code	NFPA 1 provides a lower level of protection
Sec 7902.5.8 Provisions for maintenance and operation of equipment	Sec 3404.3.4.4 Same	Sec 66.4.5.1.3 Allows a 10 day supply outside of cabinets	NFPA 1 provides a lower level of protection
Sec 7902.5.9.1-5.9.3.4 Liquid storage cabinets	Sec 3404.3.2-3.2.2 Same	Sec 66.4.3.1,4.3.3,4.3.4, 4.3.5 Same	Same level of protection
Sec 7902.5.9.4 Group A occupancy limited to 1 cabinet	Sec 3404.3.2.3 Group A limit is 3 cabinets	Sec 66.4.3.2 Same as IFC	CFC is more restrictive
Sec 7902.5.10.1 Storage in control areas	Sec 3404.3.5 Does not address container storage height on shelves	Sec 66.4.5.1 Not addressed	CFC is more restrictive
Sec 7902.5.10.2.1-5.10.2.5 Group M storage	Sec 3404.3.6-3.6.5 Same; missing bottom of Table 3404.3.6.3(5)	Sec 66.4.5.6-4.5.6.7 Higher quantities allowed, protection performance based	NFPA 1 provides for lower level of protection
Sec 7902.5.11.1-5.11.6 Liquid storage rooms	Sec 3404.3.7-3.7.5.2 Same	Sec 66.4.4.1-4.4.4.5 No provisions for secondary containment or spill control	NFPA 1 provides for a lower level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.5.11.7 Explosion control for liquid storage room	Sec 3404.3.7 Not addressed	Sec 66.4.4.2.4 Same as CFC	IFC provides for a lower level of protection
Sec 7902.5.12.1-5.12.6 Liquid storage warehouse	Sec 3404.3.8-3.8.5 Same	Sec 66.4.5.2-4.5.2.9 No provisions for secondary containment or spill control	NFPA 1 provides for a lower level of protection
Sec 7902.5.12.7 Explosion control for warehouse	Sec 3404.3.8 Not addressed	Sec 66.4.5.2.1 Not addressed	IFC and NFPA 1 provide lower level of protection
Sec 7902.6.2 UST contents Products may not be a mixture of non petroleum	Sec 3404.2.11.1 Same	Sec 66.2.2 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.6.3 Location of UST	Sec 3404.2.11.2 Same	Sec 66.2.2 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.6.4 Depth and cover; Requires additional protection in traffic areas	Sec 3404.2.11.3 Requires only 6 inches of sand	Sec 66.2.2 Not addressed	CFC is more restrictive
Sec 7902.6.5.2 Requires 5 gal spill container	Sec 3404.2.11.4 No size requirement	Sec 66.2.2 Not addressed	CFC is more restrictive
Sec 7902.6.5.3 Overfill prevention system	Sec 3404.2.11.4 Same, Ref NFPA 30	Sec 66.2.5.1.4 Same	Same level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.6.6 Inventory control	Sec 3404.2.11.5.1 Same	Sec 66.2.2 Not addressed	NFPA 1 provides a lower level of protection
Sec 7902.6.7 Locations subject to flooding	Sec 3404.2.11 Not addressed	Sec 66.2.2 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.6.8 Leaking tanks to be emptied and removed	Sec 3404.2.11 Not addressed	Sec 66.2.5.7.2 Requires testing of tank	IFC and NFPA 1 provide a lower level of protection
Sec 7902.6.9 Used tank reinstalled	Sec 3404.2.13.1.5 Same	Sec 66.2.5.5.8 Same	Same level of protection
Sec 7902.6.10 Procedures for tank lining	Sec 3404.2.11 Not addressed	Sec 66.2.2 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.6.11 Containment for USTs	Sec 3404.2.11 Not addressed	Sec 66.2.2 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.6.12 Leak detection for USTs	Sec 3404.2.11.5.2 Same	Sec 66.2.5.6 Leak detection for Class I liquids only	NFPA 1 provides a lower level of protection
Sec 7902.6.13 Leak detection maintenance	Sec 3404.2.11 Not addressed	Sec 66.2.5.6 Not addressed	IFC and NFPA 1 provide a lower level of protection

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec 7902.6.14 Leak reported to Fire Department	Sec 3404.2.11 Not addressed	Sec 66.2.5.7 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.15 Corrosion protection	Sec 3404.2.11 Not addressed	Sec 66.2.2 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7902.6.16.1 Testing of USTs	Sec 3404.2.12.2 Same	Sec 77.7.2 Not addressed	IFC and NFPA 1 provide a lower level of protection
Sec 7903.1.3.5 Class I and class II liquid transfers <ul style="list-style-type: none"> • Safety cans • Closed piping system • Container/ • Tanks by approved pumps Approved engineered liquid transfer system	Sec 3405.2.4 Class I and class II liquid transfers (Same)	Sec 66.5.3.7, NFPA 30, 5-4.3.2 Class I and class II liquid transfers Permits additional options	Same level of protection
Sec. 7903.1.3.3 Pressure system Pressure system when gases are introduced to provide for liquid transfer.	Sec 3405.2.2 Pressure system Specifies the liquid transfer class I, class II, and class III.	Sec. 66.5.3.7.4 Pressure system (Same)	NFPA/IFC details the class of materials and the temperature and flash point when the product can be transferred more restrictive than CFC
Sec. 7903.1.3.4 Piping, hoses valves Piping, hoses and valves must be approved	Sec. 3405.2.3 Piping, hoses valves (Same)	Sec. 66.5.3.7.6, 66.3 Piping, hoses valves (Same)	IFC/NFPA has the same level of protection as CFC

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec.7903.1.4.1 Manual Operations Container-filling facilities using manual operations indicated class liquids	Sec. 3405.2.5 Manual Operations Expands the liquids to class I-class III	Sec. 66.5.3.7 Manual Operations Not addressed	IFC provide a higher level of protection than NFPA
Sec.7903.1.4.2 Automatic container Automatic container- filling operation for class I liquids	Sec. 305.2.6 Automatic container (Same)	Sec. 66.5.3.7 Automatic container Not addressed	IFC provide a higher level of protection than NFPA
Sec.7903.2.1.2 Closure of mixing or blending vessels	Sec. 3405.3.1 (Same)	Sec. 66.5.3.7 Not addressed	IFC provide a higher level of protection than NFPA
Sec 7903.2.1.3 Bonding of vessels	Sec.3405.3.2 (Same)	Sec. 66.5.3.7 Not addressed	IFC provide a higher level of protection than NFPA
Table 79032-B Exempt amounts for use, dispensing and mixing of flammable and combustible liquids maximum quantities per control area.	Not addressed	Not addressed	CFC has a higher level of protection
Table 7903.2-A Separation of processing vessels from property lines	Not addressed	Not addressed	CFC has a higher level of protection
Table 7903.3A Exempt amounts for dispensing of flammable and combustible liquids- maximum quantities allowed in outdoor area per single property	Table 3405.3.8.2 Maximum allowable quantities for dispensing of flammable and combustible liquids in outdoor control	Not addressed	CFC is more restrictive

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
under same ownership or control	areas.		
Sec. 7903.2.1.3 Heating, lighting and cooking appliances that uses class I liquids shall not operate in structure	Sec.3405.3.3 (Same)	Not addressed	
Sec. 7903.2.2.2 Cleaning operations using class I-A	Sec. 3405.3.6.1 (Same)	Not addressed	
Sec. 7903.2.2.3 Listed and approved machines for part cleaning solvents shall be classified.	Sec. 3405.3.6.2.1 (Same)	Not addressed	CFC and IFC provide a higher degree of protection
Sec.7903.2.3.2.2 H-2's and H-3's based on use, dispensing or mixing of flammable liquids shall not be in basements	Sec. 340.3.7.2 (Same)	Not addressed	CFC and IFC provide a higher degree of protection
Sec. 7903.2.3.2.3 Approved automatic fire-extinguishing system for your H-2's and H-3's	Sec. 3405.3.7.3 (Same)	Not addressed	CFC and IFC provide a higher degree of protection
Sec. 7903.2.3.4.2 Open system ventilation	Sec. 3405.3.7.5.1 (Same)	Not Addressed	CFC and IFC provide a higher degree of protection
Sec.7903.2.3.4.3 Explosion control for open systems for class I liquids	Sec. 3405.3.7.5.2 (Same)	Not Addressed	CFC/specifies if explosive vapors are present or can be develop. CFC is more restrictive

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 7903.2.3.4.4 Spill control and secondary containment for open systems.	Sec. 3405.3.7.5.3 (Same)	Not addressed	CFC and IFC are more restrictive
Sec. 7903.2.3.5.2 Closed system ventilation	Sec. 3405.3.7.6.1 (Same)	Not addressed	CFC and IFC are more restrictive
Sec.7903.2.3.4.3 Explosion control for closed systems	Sec. 3405.3.7.6.2 (Same)	Not addressed	CFC and IFC are more restrictive
Sec. 7903.2.3.5.4 Spill control and secondary containment for closed systems.	Sec. 3405.3.7.6.3 (Same)	Not addressed	CFC and IFC are more restrictive
Sec.7903.3.2 Use, dispensing, mixing and handling outside of buildings <ul style="list-style-type: none"> • Spill control and drainage control 	Sec.3405.3.8.1 (Same)	Not addressed	CFC and IFC provides a higher degree of protection
Sec.7903.3.3 Use, dispensing, mixing and handling outside of buildings <ul style="list-style-type: none"> • Location to property line 	Sec.3405.3.8.2 Tanks within 15 feet of class I,II,III liquids unless the tank has a 2-hour protection	Not addressed	CFC and IFC provides a higher degree of protection
Sec. 7903.4 Solvent distillation units Solvent distillation units	Sec.3405.4.1 Solvent distillation units (Same)	Not addressed	CFC and IFC provides a higher degree of protection

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec.7903.4.2 Solvent distillation chamber labeling Solvent distillation chamber labeling	Sec.3405.4.4 Solvent distillation chamber labeling (Same)	Not addressed	CFC and IFC provides a higher degree of protection
Sec.7903.4.7 Fire extinguisher class/placement Fire extinguisher class/placement	Sec.3405.4.9 Fire extinguisher class/placement (Same)	Not addressed	IFC and CFC is more restrictive
Special Operations Section 7904 Storage bulk plants, loading and unloading of flammable liquid	Special Operations Section 3406 Same as CFC	Chap 66 Flam & Comb. 66.5.5 Loading and unloading of tank vehicles. Refer to NFPA 30. Language same	NFPA w/Standards has higher level in certain areas, but overall NFPA has lower level of protection than IFC & CFC.
7904.3 Well drilling and operating	3406.3 Same language as CFC	No reference Silent	NFPA lower level of protection, IFC and CFC equal protection.
7904.2 Storage and Dispensing of Flammable & comb. Liquids on Farms and Construction sites.	3406.2 Same language as CFC	No reference Silent	NFPA has the lower level of protection. IFC and CFC are equal protection.
7904.2.5.1 Permanent aboveground tanks class I or II flam. liquid > 1,100 gal. Temporary tank Class I or II flam. liquid > 10,000 gals.	3406.2.4 Same language as CFC.	66.2.3.2 Refer to NFPA 30 Maximum aboveground class I or II flam. liquid > 1,100 gal. per pile. 42.2.3.3.2.7: Max above-ground tank class I or II > 10,000 gal.	IBC and CFC have a higher level of protection.
7904.4 Bulk plants or terminals.	3406.4 same as CFC	66.5.5 Transfer loading and unloading does not address tank vehicle stability.	NFPA has a higher level of protection for vehicle transfer operations, but is silent on vehicle tank stability.

Fire Code

Article 79

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
		Refer to NFPA Standards 30.5 and 385.6	
7904.5 Transfer operations bulk Transfer operations bulk	3406.5 Transfer of bulk operations same as CFC		Equal level of protection for bulk tank transfer and bulk plants.
7904.6 Tank vehicles and operations Tank vehicles and operations.	3406.6 Tank vehicles and operations same as CFC	66.6 same as CFC	Equal level of protection in both these areas.
7904.7 Requirements for refineries Refineries	3406.7 Requirements for refineries same as CFC	66.6 Requirements for refineries same as CFC	NFPA is more restrictive

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8001 Article 80 is a broad attempt to prevent, mitigate and control hazardous conditions related to the storage, dispensing, use and handling of a variety of materials that create physical or health hazards, plus provide information to EMS personnel.</p>	<p>Sec. 2701.1 same</p>	<p>Chapter 60 Does not provide a General scope.</p>	<p>NFPA 1 provides a lower level of protection than CFC</p>
<p>Sec. 8001.1.2 When a material has multiple hazards, all hazards shall be addressed.</p>	<p>Sec. 2701.1 Same</p>	<p>Sec. 60.1.5.3 Materials that have multiple hazards shall conform to each applicable hazard.</p>	<p>IFC and NFPA 1 have an equal level of protection to the CFC</p>
<p>Sec. 8001.3.2 Hazardous Material Management Plan (HMMP) is augmented with State law and Title 19, CCR.</p>	<p>Sec. 2701.5.1 Addresses Model Code.</p>	<p>Sec. 60.1.8 Addresses Model Code.</p>	<p>CFC Must complies with Health and Health and Safety Code, Chapter 6.95 Section 25500-25545 and Title 19, Division 2, Chapter 3. IFC and NFPA have a lower level of protection</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8001.3.3 Hazardous Material Inventory Statements (HMIS) is augmented with State law and Title 19, CCR.</p>	<p>Sec. 2701.5.2 Addresses Model Code</p>	<p>Sec. 60.1.8.2 Addresses Model Code</p>	<p>CFC Must comply with Health and Safety Code, Chapter 6.95 Section 25500-25545 and Title 19, Division 2, Chapter 3. CFC is more restrictive</p>
<p>Sec. 8001.10.2.2 Maximum number of control areas is 4 per building.</p>	<p>Table 2703.8.3.2 Maximum number of control areas is 4 per floor</p>	<p>Table 60.2.1.3.1 Same as IFC</p>	<p>IFC and NFPA have a lower level of protection than CFC.</p>
<p>Table 8001.15A Inside maximum allowable quantities per control area for cryogenic flammables, flammable solids, organic peroxide, flammable gases are lower. Outdoor quantities storage are lower</p>	<p>Table 2703.1.1(3), 2703.11.1 Quantities are higher both indoor and outdoor.</p>	<p>Table 60.2(a) Indoor quantities are higher. Outdoor storage organic peroxide class I closed systems both solid and liquid are slightly higher by (3) pounds.</p>	<p>IFC and NFPA have a lower level of protection than CFC.</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8003.15.2.3, 8003.13.1 Regulates the storage:</p> <ul style="list-style-type: none"> • Carcinogens • Irritants • Sensitizers • Other health hazards • Radioactive 	<p>Chapter 27 Not regulated</p>	<p>Chapter 60 Not regulated</p>	<p>IFC and NFPA have a lower level of protection than CFC.</p>
<p>Sec. 8002.1 Classified physical hazards: Compressed gases</p> <ul style="list-style-type: none"> • Air • Inert • Oxidizing • Pyrophoric • Simple asphyxiant • Unstable reactive • Health Hazards 	<p>Sec. 2701.2.2.1 Classified physical hazards: Compressed gases</p> <ul style="list-style-type: none"> • Flammable gases 	<p>Sec. 60.1.5.1 Classified physical hazards: Compressed gases</p> <ul style="list-style-type: none"> • Flammable • Oxidizing • Pyrophoric • Unstable reactive 	<p>IFC and NFPA have lower level of protection than CFC.</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8002.2.2 Classified Health Hazards:</p> <ul style="list-style-type: none"> • Highly toxic and toxic materials, including highly toxic and compressed gases • Radioactive materials • Corrosives • Carcinogens, irritants, sensitizers and other health hazards 	<p>Sec. 2701.2.2.3 Classified Health Hazards:</p> <ul style="list-style-type: none"> • Highly toxic and toxic materials. • Corrosives materials 	<p>Sec. 60.1.5.1 Classified Health Hazards:</p> <ul style="list-style-type: none"> • Compressed gases: Corrosive highly toxic and toxic, including highly toxic • Cryogenic fluids • Highly toxic and toxic solids and liquid • Corrosive solids and liquids. 	<p>IFC and NFPA have lower level of protection than CFC. Carcinogens, radioactive, sensitizers, irritants and other health hazards are not regulated in IFC and NFPA.</p>
<p>Sec. 8001.3.2, 8001.3.3 HMMP and HMIS When required by the AHJ must accompany Permit application.</p>	<p>Sec. 2701.5.1, 2701.5.2 Required by the fire code official</p>	<p>Sec. 60.1.8.1, 60.1.8.2 Required by the AHJ.</p>	<p>IFC and NFPA have an equal level of protection to the CFC</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8001.5 Prohibited hazardous material releases exceptions Identifies the approving agencies:</p> <ul style="list-style-type: none"> • Air Quality Management Board • Nationally Pollutant Discharge Elimination System Permit. • Local Sewer pretreatment requirements. 	<p>Sec. 2703.3 Release of Hazardous Materials (Exceptions)</p> <ul style="list-style-type: none"> • Release of Pesticides with a registered label. • Release fertilizer and soil Amendments is allowed when used per manufacture's specifications 	<p>Sec. 60.1.9.1 Release of Hazardous Materials (Exceptions)</p> <ul style="list-style-type: none"> • Air Quality Management Board • National Pollutant Discharge • Waste discharge • Local Sewer pretreatment requirements 	<p>CFC, IFC And NFPA 1 the general scope was typical. IFC identified exceptions to pesticides and fertilizers. It was silent on having to meet the Air Quality Management Board, Water Quality Control Board, Waste discharge Local Sewer pretreatment requirements.</p>
<p>Sec. 8001.10.6.2 Hazardous material storage cabinets</p>	<p>Sec. 2703.8.7.1 (same)</p>	<p>Sec. 60.2.2.2.2 (same)</p>	<p>IFC and NFPA meet the same level of protection as the CFC.</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8003.1.3., 8003.1.3.3 Spill control and secondary containment for hazardous materials liquids and solids. The section is silent regarding other design options.</p>	<p>Sec. 2704.2.1, Permits other approved engineered systems.</p>	<p>Sec. 60.4.6.2, 60.4.6.3, Chapter 5 Permits a performance-based option.</p>	<p>IFC and NFPA 1 have an equal level of protection to the CFC</p>
<p>Sec.8003.1.8 Standby power exceptions: Does not address approve fail-safe engineered system.</p>	<p>Sec. 2704.7 Approves a fail- safe engineered system.</p>	<p>Sec.60.4.3 Approves a fail- safe engineered system.</p>	<p>IFC and NFPA 1 provide a higher level of protection than CFC</p>

Fire Code

Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Table 8004.2-A Required Secondary containment for Health Hazards Identifies:</p> <ul style="list-style-type: none"> • Highly toxic and toxic materials • Radioactive materials • Corrosives • Carcinogens, irritants, sensitizers and other health hazards 	<p>Table 2705.2.1.4 Identifies</p> <ul style="list-style-type: none"> • Highly toxic and toxic materials. • Corrosives materials 	<p>Table 60.5.10.1.5.2 (Same)</p>	<p>IFC and NFPA have lower level of protection than the CFC. Carcinogens, radioactive, sensitizers, irritants and other health hazards are not regulated in IFC and NFPA.</p> <p>CFC is more restrictive than IFC and NFPA 1.</p>
<p>Sec.8003.1.7 Explosion control Explosion control required:</p> <ul style="list-style-type: none"> • Highly toxic flammable or toxic flammable gases when not stored in 	<p>Sec. 2705.2.2.3, 2704.6, 911.1 Explosion control Additional materials are added for explosion control.</p> <ul style="list-style-type: none"> • Acetylene generator rooms • Grain processing 	<p>Sec. 60.4.7</p>	<p>IBC and NFPA does not list Highly toxic flammable or toxic flammable gases when not stored in cabinets. The requirements for explosion control in the IBC list special uses and additional materials. CFC does not identify cryogenic fluids or flammable liquids.</p>

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Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>cabinets.</p> <ul style="list-style-type: none"> • Combustible dust • Class 4 oxidizers • Detonatable class I organic peroxides • Pyrophoric gases • Class 3 and 4 reactives • Class 2 and 3 water- reactive solids/ liquids. 	<ul style="list-style-type: none"> • Liquefied petroleum gas distribution facilities • Cryogenic fluids <p>Explosion control is not required for class I organic peroxides and class 4 oxidizers.</p>		CFC is more restrictive than IFC and NFPA1
<p>Sec. 8001.1.2 Classification of hazard categories based on the Code of Federal Regulations, Title 29 found in Appendix VI.</p>	<p>Chapter 27 Classification of hazard categories based upon DOL 29 CFR Appendix E.</p>	<p>Chapter 60 Cross-references the NFPA standards.</p>	IFC/NFPA have a lower level of protection than CFC. IFC/NFPA do not provide information regarding radiation materials, radiation emitted from isotopes, carcinogens, irritants and sensitizers.
<p>Sec.8003.1.4.1 Storage of hazardous materials the Minimum Ventilation rates.</p>	<p>Sec. 2704.3.1 (Same)</p>	<p>Sec. 60.4.2.4 (same)</p>	IFC and NFPA 1 have an equal level of protection to the CFC

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec. 8004.1.3 Noncombustible/liquid tight floors for where liquids or solid hazardous materials are dispensed or used.	Sec. 2705.1.2 (Same)	Sec. 60.5.7 (Same)	IFC and NFPA 1 have an equal level of protection to the CFC.
Sec. 8003.3, 1.3.2 Toxic gas cabinet construction.	Sec. 2703.8.6.1 Gas cabinets' interiors require corrosion treatment.	Sec.63.1.1, NFPA 55, Sec. 7-4, 7-4.6 (Same as IFC)	IFC/ NFPA has a higher level of protection
Sec. 8003.3.1.2 Toxic gas cabinet must be internally sprinklered.	Sec. 3704.2.2.6 (Addresses Rooms)	Sec. 63.1.1.1, NFPA 55, Sec. 7-4.7 Toxic gas cabinet must be internally sprinklered.	CFC is more restrictive
Sec. 8004.4.3 Emergency Alarm for hazardous materials	Sec. 2705.4.4 (Same)	Sec. 60.5.12.2 (Same)	Have an equal level of protection as the CFC
Sec. 8004.3.4 Outdoor dispensing clearance from combustibles minimum 30 feet.	Sec. 2705.3.8 (Same)	Sec. 60.5.11.2.3 (Same)	Have an equal level of protection as the CFC

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Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8004.1.10 Use, dispensing and handling of hazardous materials Fire extinguishing system Ordinary Hazard, Group 2, with design area of 3,000 sq ft.</p>	<p>Sec. 2705.1.8 (Same)</p>	<p>Sec. 60.3.3, NFPA 13 (Not specified)</p>	<p>NFPA cross-reference standard 13. Unable to obtain anything specific. IFC has equal level of protection to CFC</p>
<p>Sec. 8004.1.10, 8004.2.2.2 Open /closed systems fire extinguishing systems are required in laboratory fume hoods except interior surfaces < 25 flame spread < 450 smoke density.</p>	<p>Sec.2705.2.12705.2.2 (Not Addressed)</p>	<p>Sec.60.5.10.1.3, 60.5.10.2 Does not address exception.</p>	<ul style="list-style-type: none"> • IFC is silent on requiring a fire extinguishing system in fume hoods. • CFC will give exception to the requirement. • NFPA has a higher level of protection than CFC.
<p>Sec.8001.11.8 Separation of incompatible materials</p>	<p>Sec.2703.9.8 (Same)</p>	<p>Sec. 60.1.20 (Same)</p>	<p>IFC/NFPA have the same level of protection as the CFC.</p>

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Article 80

2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec. 8003.3.3.3 Leaking outside toxic gas cylinder requires gas cabinet or exhaust enclosure.</p>	<p>Sec.3704.3.2.2 (Same)</p>	<p>Sec.63.3.8.4 (Same)</p>	<p>IFC/NFPA have the same level of protection as the CFC.</p>
<p>Sec. 8003.6.1.6 An approved supervised smoke detection system/automatic fire sprinkler shall be installed for indoor storage of oxidizers.</p>	<p>Sec.4004.1.6 (Same)</p>	<p>Sec.70.2.4.9.2 Addresses automatic fire sprinkler system.</p>	<p>NFPA provides a lower level of protection than CFC. CFC is more restrictive</p>
<p>Table 8003.6-B Class 4-oxidizer liquids and solids separation of detached and outdoor storage over 10,000 pound distance is determined by the chief.</p>	<p>Table 4004.1.2 Storage over 10,000 pounds distance is determined by the fire code official.</p>	<p>Table 70.2.8.5 Storage over 10,000 pounds distance is determined by the AHJ.</p>	<p>IFC and NFPA have an equal level of protection as the CFC</p>

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
Sec.8004.1.6 Emergency power required for highly toxic liquids are used or dispensed.	Sec.2705.1.5 (Same)	Sec.60.4.3.3 (Same)	IFC and NFPA 1 have an equal level of protection as the CFC
Sec.8004.2.3.7.8 Gas cabinet not to exceed three cylinders.	Sec.2703.8.6.3 (Same)	Sec.63.2.14.3 (Same)	IFC and NFPA 1 have an equal level of protection as the CFC
Sec. 8001.11.9 Shelf storage, substantial construction, braced for seismic and be provided with lip guards.	Sec.2703.9.9 Shelf storage, substantial construction, braced for seismic, lip guards and treated for compatibility.	Sec.60.1.22.1 Shelf storage, substantial construction and be provided with lip guards.	CFC/NFPA do not address shelving having to meet the compatibility of the hazardous material. NFPA addresses seismic protection for machinery and equipment, not shelving. IFC provides a higher level of protection than both CFC and NFPA 1
Sec.8003.1.3.4 Containments pallets used for substitute for spill control.	Sec.2704.2.3 (Same)	Sec.60.4.6.4 (Same)	IFC and NFPA 1 have an equal level of protection as the CFC

Fire Code

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2001 CFC	2003 IFC Draft	2003 NFPA 1 Draft	Comments/References
<p>Sec.8001.1.1 Exceptions to the General Scope is limited:</p> <ul style="list-style-type: none"> • Alcoholic beverages, medicines, foodstuffs and cosmetics. • Application and release of pesticides for weed abatement or similar applications. 	<p>Sec.2701.1 Seven additional exceptions were added by which cross references specific chapters. Exceptions not chapter specific:</p> <ul style="list-style-type: none"> • Haz Mat transportation • Distilled spirits and wines in wooden barrels. • Building Materials • Corrosive materials display in mercantile occupancies intended for personal or household use. 	<p>Sec.60.1.2 Six additional exceptions were added by which cross references specific chapters.</p> <ul style="list-style-type: none"> • High hazard contents stored/used at farms. • Corrosive materials display in mercantile occupancies intended for personal or household use. • Beverages not exceeding 5 liters. • Distilled spirits and wines in wooden barrels 	<p>IFC/NFPA have a lower level of protection than CFC. The scopes of exceptions were expanded.</p>

Operation Code Comparison Code Process Comparison Group

DOCUMENTS PUBLISHED		
ICC	NFPA	COMMENTS
12 Codes	320 Codes & Standards	<ul style="list-style-type: none"> NFPA – 225 Committees process the Codes and Standards. ICC – References Standards within its codes.
PROCESS METHODOLOGY		
ICC	NFPA	COMMENTS
<p>Governmental consensus participation in the development of the codes includes code hearings and is open to all.</p> <ul style="list-style-type: none"> Anyone can submit a code change proposal or make a public comment. Code committees must consider all views before voting. A simple majority of the committee decides the action of the proposed code change. ICC Assembly Action allows all members to challenge the action of the Committee. <p>Public Safety officials make the final determination of the code provisions.</p>	<p>Open, balanced, consensus process.</p> <ul style="list-style-type: none"> Anyone can submit a code change proposal. Proposals processed by working Technical Committees. Anyone may attend and comment on proposal. Committee and Association vote on proposal and formalize recommendation to Standards Council. Consensus has been achieved when in the judgement of the Standards Council substantial agreement has been reached by materially affected interest categories. Substantial agreement means much more than a simple majority but not necessarily unanimity. 	<ul style="list-style-type: none"> ICC - The fundamental element of the code development process is the open Public Hearing. NFPA - The primary processing of code changes is through working Technical Committees. Public may attend.

ACCREDITATION		
ICC	NFPA	COMMENT
ICC is an ANSI accredited organization. However, the ICC has elected to develop codes under the Government Consensus process.	NFPA is ANSI accredited and develops its codes using the ANSI process.	<ul style="list-style-type: none"> The relevance of being “ANSI Accredited” is predicated on interpretations of pertinent federal guidelines.
REVISION CYCLES		
ICC	NFPA	COMMENTS
18 month process New edition printed every 3 years, supplement printed every 18 months	2-year process, continuously running staggered by 6 months. Revision cycles vary between 3-5 years (Max 10 yrs)	<ul style="list-style-type: none"> ICC - All codes are on the same revision cycle and are discussed and voted on at the same location. NFPA – Approximately 30 documents are considered at each spring and fall meeting. <p>Note: The UPC and UMC are not developed by the NFPA. Cycle’s conflict.</p>
GENERAL MEMBERSHIP		
ICC	NFPA	COMMENTS
Anyone can be a member. 55,000 members. Eligible to vote after 30 days.	Anyone can be a member. 75,000 members. Eligible to vote after 6 months.	<ul style="list-style-type: none"> For both, anyone may be a member.
COMMITTEE MEMBERSHIP		
ICC	NFPA	COMMENTS
Balance of interests represented. <ul style="list-style-type: none"> Each model code has one code development committee (11 total). Minimum 1/3 is code officials. 	Balance of interests represented on 225 working Technical Committees. <ul style="list-style-type: none"> Maximum 1/3 representing a single interest 	<ul style="list-style-type: none"> Both have a balance of interest represented.

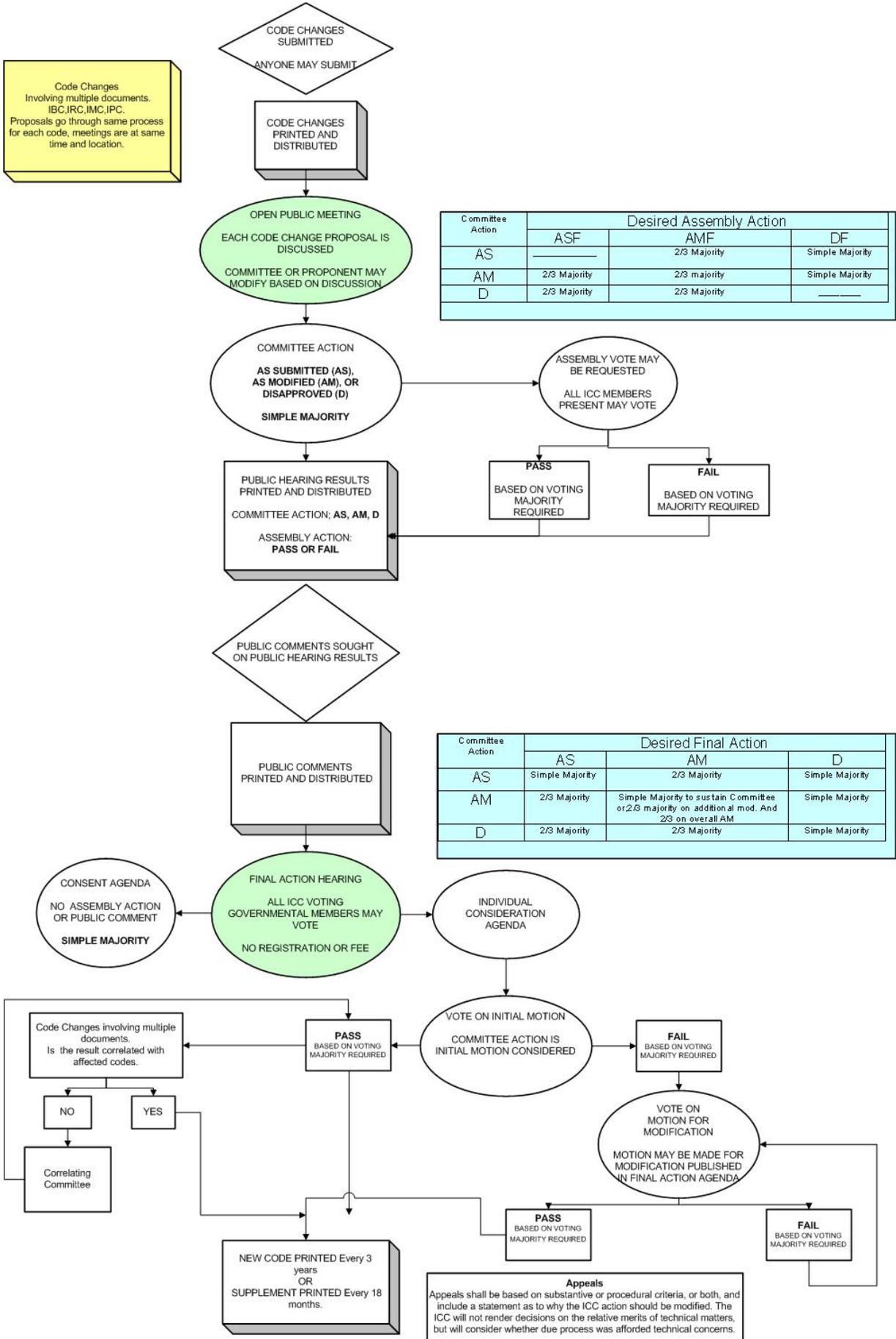
MEMBERSHIP DUES/VOTING FEE'S		
ICC	NFPA	COMMENTS
<p><u>Dues:</u> Govt. Member \$195 Annually Gen Member \$60 Annually</p> <p><u>Voting Fees:</u> No additional fee to vote</p>	<p><u>Dues:</u> Member- \$135 Annually</p> <p><u>Voting Fees:</u> The registration fee to attend the Annual (Spring) and Fall Meetings is \$500. Only registered members may vote.</p>	<ul style="list-style-type: none"> • Both have membership dues. • Only NFPA has voting fees.
MEETINGS		
ICC	NFPA	COMMENTS
<p>1. Public Hearing 2. Final Action Hearing</p> <p>Refer to Flowchart</p>	<p>For each code/standard</p> <ol style="list-style-type: none"> 1. TC meeting- ROP 2. TC meeting- ROC 3. Association Meeting W/ Technical Correlating Committee 4. TCC meeting- ROC 5. TCC meeting- ROP <p>Refer to Flowchart</p>	<ul style="list-style-type: none"> • For both, attendance is not mandatory, but necessary for effectiveness. • NFPA - Public may attend TC/TCC/SC meetings. Written request 7 days prior is required to address the committee.
VOTING		
ICC	NFPA	COMMENTS
<p>The Code Committee vote at the Public Hearing, taken after consideration of public discussion becomes part of the record, along with Assembly Actions taken.</p>	<p>Technical Committee vote on proposals and comments is conducted by letter ballot.</p>	<ul style="list-style-type: none"> • NFPA - Committee actions at TC meeting based on discussion of members present. Letter ballots are sent to all committee members for final vote. • ICC- Assembly can challenge Code Committee's action during Public Hearing.

FINAL ACTION VOTE

ICC	NFPA	COMMENTS
<p>Vote of Governmental Member Representatives at the Final Action Hearing renders the Final Action.</p> <ul style="list-style-type: none"> Number of Governmental Members for each jurisdiction eligible to vote is based on population and is calculated for each department within that jurisdiction with enforcing authority. <p align="center"><u>Voting Reps:</u></p> <ul style="list-style-type: none"> 50,000 = Fire 4 Bldg 4 150,000 = Fire 8 Bldg 8 150,000+ = Fire 12 Bldg 12 <p>Any ICC member can participate on Assembly Votes at the public hearing.</p> <ul style="list-style-type: none"> Only eligible Governmental Members may vote at Final Action Hearing. 	<p>The vote of the Technical Committee or Association is advisory to the 13 members Standards Council who issues the codes and standards based on TC reports, debate, membership vote and appeals.</p> <p>The Standards Council in 99% of the actions taken upholds the committee vote.</p>	<ul style="list-style-type: none"> NFPA - Vote of TC or Association is advisory to the Standards Council who issues the codes and standards. ICC - Board issues revised codes, pending any appeals filed.

THE ICC CODE DEVELOPMENT PROCESS-18 MONTH CYCLE

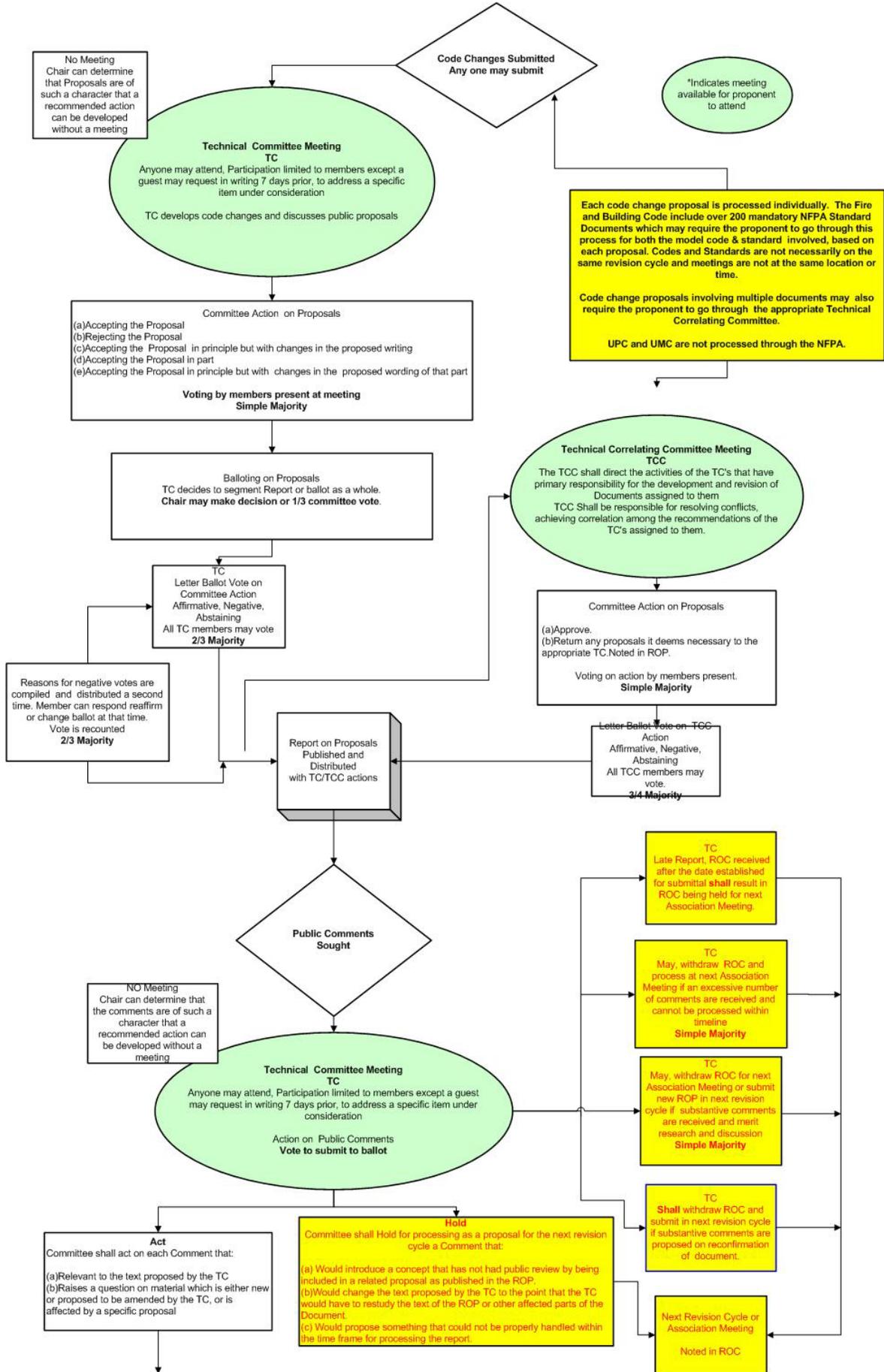
Code Changes
Involving multiple documents.
IBC, IRC, IMC, IPC.
Proposals go through same process
for each code, meetings are at same
time and location.



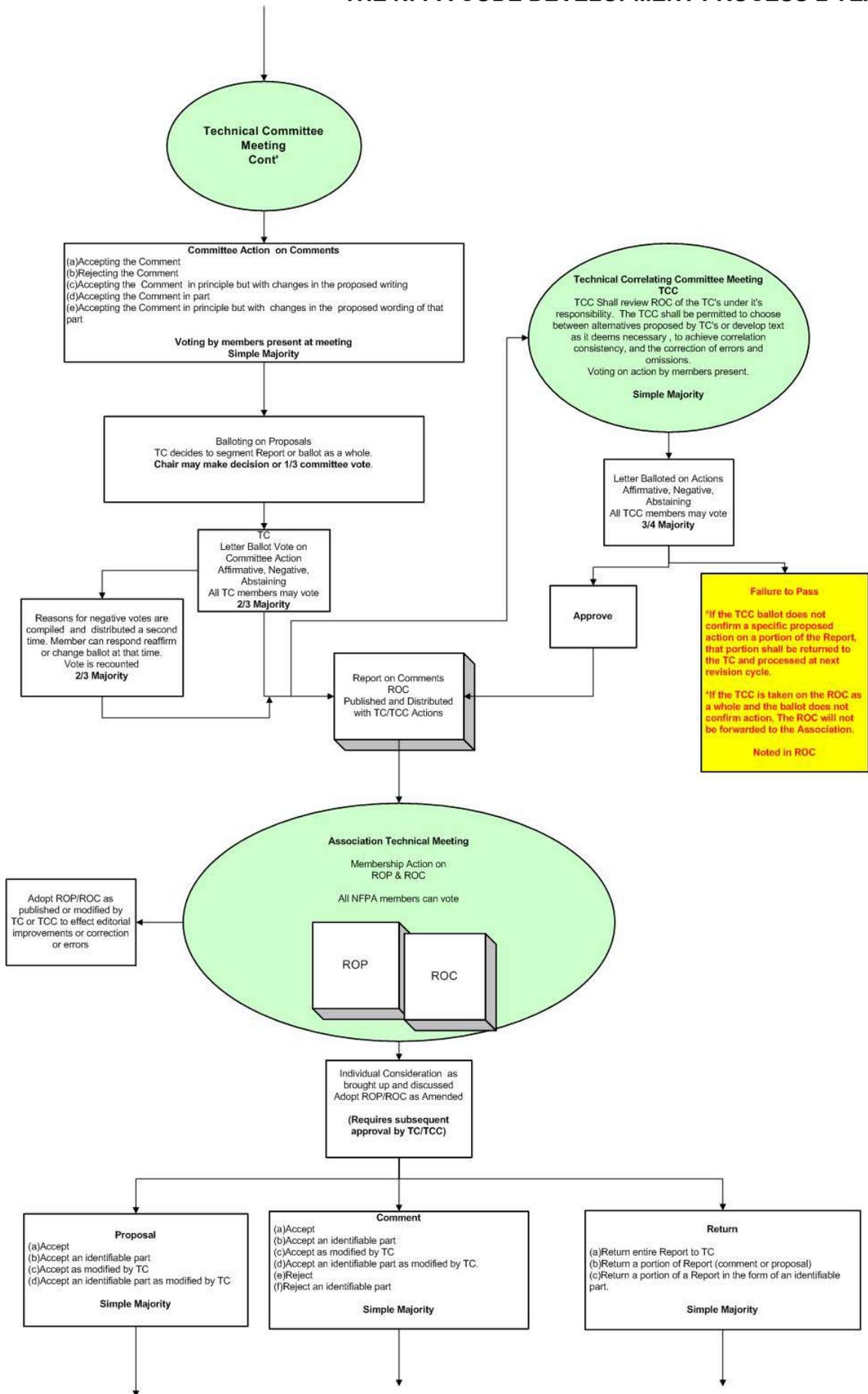
Committee Action	Desired Assembly Action		
	ASF	AMF	DF
AS	_____	2/3 Majority	Simple Majority
AM	2/3 Majority	2/3 majority	Simple Majority
D	2/3 Majority	2/3 Majority	_____

Committee Action	Desired Final Action		
	AS	AM	D
AS	Simple Majority	2/3 Majority	Simple Majority
AM	2/3 Majority	Simple Majority to sustain Committee or 2/3 majority on additional mod. And 2/3 on overall AM	Simple Majority
D	2/3 Majority	2/3 Majority	Simple Majority

THE NFPA CODE DEVELOPMENT PROCESS-2 YEAR CYCLE



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