



California State Fire Marshal Information Bulletin 14-005

Issued: July 25, 2014

Underground Fuel Storage Tanks Prohibited for Use as Aboveground Fuel Storage Tanks

This information bulletin has been developed to inform and advise the public on the prohibited use of converted steel underground storage tanks (UST) as aboveground storage tanks (AST) storing flammable or combustible liquids.

Section 5704.2.7, California Fire Code, 2013 Edition states, "*The design, fabrication and construction of tanks shall comply with NFPA 30. Each tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design.*" The National Fire Protection Association (NFPA) Standard 30, 2012 Edition, Section 3.3.51.1, defines an aboveground tank as a storage tank that is installed above grade, at grade, or below grade without backfill. NFPA 30 Section 21.3.4 states, "Tanks designed and intended for underground use shall not be used as aboveground tanks."

The design, construction, and installation standards of USTs are different than ASTs. Since the core structure of the USTs is designed for an underground placement, it is difficult, dangerous and costly to convert USTs for aboveground placement. For example, tank heads of a UST lack the reinforcement necessary to support the heads if converted into an AST. The soil around a UST provides additional structural support and, therefore, no additional reinforcement is necessary. However, an AST requires larger tank heads to be reinforced with structural steel to stiffen and strengthen the heads.

It is vitally important to recognize the proper installation, maintenance and inspection of ASTs. Tanks which are not listed by industry standards or approved by fire code officials, specifically for aboveground flammable or combustible liquid storage, pose a significant danger and safety threat to owners, operators and others working around these tanks. See references at the end of this bulletin.

If you have questions regarding this Informational Bulletin, please contact Senior Environmental Scientist Denise Gibson at denise.gibson@fire.ca.gov or (916) 445-8289.

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References:

To assist local fire departments and other enforcing agencies, CAL FIRE - OSFM is providing the following information relating to these tanks:

- Section 5704.2.7, California Fire Code, 2013 Edition - *The design, fabrication and construction of tanks shall comply with NFPA 30. Each tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design.*
- Section 21.3.3, NFPA 30, 2012 Edition - *Tanks designed and intended for aboveground use shall not be used as underground tanks.*
- Section 21.3.4, NFPA 30 - 2012 Edition - *Tanks designed and intended for underground use shall not be used as aboveground tanks.*
- Section 21.3.5, NFPA 30 - 2012 Edition - *Tanks shall be designed and built in accordance with recognized engineering standards for the material of construction being used.*
- Steel Tank Institute Tank Talk. *Repurposing underground fuel tanks for aboveground use: A dangerous game.* Volume 29, No.1, February 2014,
<http://www.steeltank.com/Portals/0/TTNewsletter/TT2014/TTFeb14FINAL.pdf>.

For more information please visit our website <http://osfm.fire.ca.gov>