



California State Fire Marshal Information Bulletin

National Fire Protection Association (NFPA) Standards Council Decision Regarding Antifreeze in Residential Sprinkler Systems

Issued: August 16, 2010

At the August meeting of the National Fire Protection Association (NFPA) Standards Council meeting held in Boston, Massachusetts a final decision was made to issue the tentative interim agreements (TIA) 1000, 995, and 994 on NFPA 13, NFPA 13R and NFPA 13D, respectively to prohibit the use of antifreeze solutions within all NFPA 13D applications and within the dwelling unit portions of NFPA13 and NFPA 13R sprinkler systems. It is important to note that this agreement is NOT A REGULATORY NOR A CODE REQUIREMENT but an avenue to move discussion and research further that may lead to changes in regulation.

The NFPA Research Foundation conducted Phase I and II research and testing; and were part of the presentation to the Standards Council. A copy of that reports are available on the California Office or the State Fire Marshal (OSFM) www.osfm.ca.gov and NFPA www.nfpa.org websites. The Research Foundation reports provide insight into the factors influencing the impact of antifreeze use in residential fire sprinklers. The OSFM will be carefully reviewing all the factors of the reports and determining if regulatory adjustments are needed.

The nexus for the research by NFPA is based on two incidents involving antifreeze protected residential fire sprinkler systems under pressure in excess of 100 psi. The second phase report include two separate scope tests. The results of Scope A testing indicated that certain concentrations of propylene glycol- or glycerin-water solution have the potential to ignite when discharged through residential fire sprinklers systems. The potential for ignition depends on several factors including the propylene glycol- or glycerin-water solution, ignition source, sprinkler model, sprinkler elevation, and discharge pressure. The NFPA Standards Council believes that the research and testimony at the recent council meeting suggest that antifreeze solutions of propylene glycol exceeding 40% and glycerin exceeding 50% by volume are not appropriate for use in home residential fire sprinkler systems until research and testing are completed and vetted through the appropriate technical committees. The Standards Council also recognizes the need to limit the use of on-site mixing; when antifreeze is used, whereas the product should be factory pre-mix to obtain the correct concentration.

For existing residential fire sprinkler systems, the NFPA recommends draining the system and replacing with water only. Within California, this drained antifreeze and water mixture must be treated as waste water and be disposed of in accordance with appropriate waste water standards (please contact your local water purveyor for more information). Jurisdictions may use the latest testing report to evaluate methods to protect the water from freezing. As more information is released by NFPA, the Standards Council or the Technical Committee, the OSFM will notify all interested parties. As mentioned in the last OSFM information bulletin on this subject, The the sustained efforts of all stakeholders must focus on sharing information; working together; and continue to support the message that fire sprinklers are one of the most effective ways to save lives and property from fire; and to that end, assure the successful implementation of the 2010 California Residential Code and the residential fire sprinkler provisions.

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