



More on Antifreeze

In the last issue of e-TechNotes (247), we updated our members on the changes to the antifreeze rules that the NFPA had just released. Since that publication, there have been a number of follow-up questions asked, so we thought that we would continue the discussion in this week's newsletter in order to address these frequently asked questions.

First, we need to apologize for a typographical error that we introduced into the discussion regarding NFPA 25. In the summary of the TIA on that document, we used the date "September 30, 2012" three times. The first two times that date appears, it was correct. But the third time that date appeared, it was an error. Instead, that third date in the summary should have been "September 30, 2022". The correct summary of the NFPA 25 TIA is at the bottom of this newsletter.

The 10-year period of time is important. Basically, what the NFPA is saying at this time is that they do not want the existing systems of 48% glycerine or 50% glycerine (or the high concentration propylene glycol) to be grandfathered for all time. They want to give building owners some reasonable time to figure something out, but they do not want to continue the use of these concentrations. At the same time, the NFPA is trying to give the manufacturers of antifreeze solutions some time to develop non-combustible products and get them through the listing process.

The second frequently asked question that we need to address is in regards to the "approved deterministic risk assessment" that needs to be used in order to continue to be able to use glycerine between 35 and 50% (or propylene glycol between 30 and 40%). People are asking three questions with regard to this assessment, which we will address separately:

1. What does "approved" mean and who will approve this assessment?
2. Who is required to perform this assessment?
3. What is this assessment intended to include?

Answer to Question 1) NFPA standards define the word "approved" as, "An organization, office, or individual responsible for enforcing the requirement of a code or standard, or for approving equipment, material, an installation or a procedure." (See section 3.2.1 of NFPA 13 for example.) This means that any given building could have multiple people in a position to do the approval. At a bare minimum, the fire marshal and building owner would need to "approve" of the assessment. In some cases, insurance companies and tenants may also need to approve of the assessment.

Answer to Question 2) Technically, the assessment needs to be performed by the building owner because NFPA 25 makes the building owner responsible for the maintenance on the fire sprinkler system in their building. But most building owners will not have the expertise to perform this assessment, so they may hire fire protection engineers or contractors to perform the assessment for them.

Answer to Question 3) There is no set format for an assessment of this type. Compliance with NFPA 25 is established when you have provided the approval authority (see the answer to Question 1) with all of the information they need to determine that leaving the antifreeze system with the concentration of 38 to 50% glycerine or 30 to 40% propylene glycol is the best decision for the building owner. By using the term "deterministic" in the description of the assessment, the NFPA is trying to get across the point that they are looking for the risk of having the antifreeze solution quantified with a number X and the risk of changing the system quantified by a risk of Y and showing that keeping the antifreeze solution in place for now is the best decision because Y is greater than X, so even if you have the antifreeze system, it is better than the alternative, even though it poses some risk to the occupants.



For the TIA to NFPA 13D on this same subject, a deterministic risk analysis was used to justify the fact that different antifreeze solutions are considered acceptable by that standard. Users of NFPA 25 that want to perform a deterministic risk analysis may want to review the substantiation for the NFPA 13D TIA to at least see the thought process behind such an analysis. While the substantiations for TIA's are not published with the TIA when it is issued, they are on the NFPA website in the newsletters where the NFPA solicits comments on the TIA's when they are proposed (June 2012 edition of NFPA News, pages 8-9).

The following is a summary of the NFPA 25 TIA with the typo corrected:

NFPA 25 TIA Summary

- An assumption (stated in the annex) that NFPA 13 and NFPA 13R systems installed after September 30, 2012 will be in accordance with the antifreeze rules of NFPA 13 (2013 edition). This means that only listed antifreeze solutions will be used or ESFR sprinklers that have been listed with propylene glycol and installed in accordance with their listing.
- Existing systems installed prior to September 30, 2012 will be permitted to remain with unlisted antifreeze solutions as long as all of the following conditions are met:
 - The solution will need to be replaced by September 30, 2022 with something else (a listed antifreeze solution or another kind of sprinkler system appropriate for the situation like a dry-pipe system).
 - The concentration of glycerine is limited to 50% by volume; however, solutions in excess of 38% by volume need to be justified using an approved deterministic risk assessment.
 - The concentration of propylene glycol is limited to 40% by volume; however, solutions in excess of 30% by volume need to be justified using an approved deterministic risk assessment.
 - All newly introduced solutions that are not listed will be required to be premixed.
- Propylene glycol (premixed) will still be permitted to be used with ESFR sprinklers when the ESFR sprinklers are listed for use with the antifreeze and when the system is installed in accordance with the listing.
- Annex notes have been added that discuss the research on the subject to date, including the potential for certain antifreeze solutions to add to the heat release rate of a fire.

Upcoming NFSA “Technical Tuesday” Seminar – September 11

Topic: Piping and Valve Installation

Instructors: Kevin J. Kelly

Date: Tuesday, September 11, 2012- 10:30 am EST

Pipe and valves are key components of any sprinkler system. They need to be installed correctly and with consideration of how they will be used over the life of the system, which includes the ability to perform maintenance. The detailed locations and trim for valves, including control valves, check valves, and pressure-reducing valves, will be discussed in this seminar. The protection of system piping will also be reviewed.

To register or for more information, click [HERE](#) or contact Michael Repko at (845) 878-4207 or e-mail to seminars@nfsa.org.

Layout Technician Training Course (2-week course)

Fishkill, NY – October 8-19, 2012

For more information, contact Nicole Sprague using Sprague@nfsa.org or by calling 845-878-4200 ext. 149 or click [HERE](#).

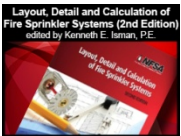
Upcoming In-Class Training Seminars



The NFSA training department also offers in-class training on a variety of subjects at locations across the country, and in recognition of the current recession has adopted a new reduced fee structure. Here are some upcoming seminars:

Aug 28	Colorado Springs, CO	Sprinkler System Installation Requirements
Aug 29	Colorado Springs, CO	Fire Service Mains & Their Appurtenances
Aug 30	Colorado Springs, CO	Inspection, Testing & Maintenance
Sept 4	Pagosa Springs, CO	Sprinkler System Installation Requirements
Sept 5	Pagosa Springs, CO	Fire Service Mains & Their Appurtenances
Sept 6	Pagosa Springs, CO	Inspection, Testing & Maintenance
Sept 11	Dayton, OH	Residential Sprinklers Homes to High-Rise
Sept 11	Keystone, CO	Sprinkler System Installation Requirements
Sept 12	Dayton, OH	Pumps for Fire Protection
Sept 12	Keystone, CO	Fire Service Mains & Their Appurtenances
Sept 13	Dayton, OH	Hydraulics for Fire Protection
Sept 13	Keystone, CO	Standpipe Systems/Commissioning & Acceptance Testing
Sept 14	Reading, PA	Inspection, Testing & Maintenance for the AHJ
Sept 19	Mashantucket, CT	Pumps for Fire Protection

These seminars qualify for continuing education as required by NICET, and meet mandatory Continuing Education Requirements for Businesses and Authorities Having Jurisdiction.



To register for these in-class seminars, click [HERE](#). Or contact Michael Repko at (845) 878-4207 or e-mail to seminars@nfsa.org for more information.

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About the National Fire Sprinkler Association

Established in 1905, the National Fire Sprinkler Association (NFSA) is the voice of the fire sprinkler industry. NFSA leads the drive to get life-saving and property protecting fire sprinklers into all buildings; provides support and resources for its members – fire sprinkler contractors, manufacturers and suppliers; and educates authorities having jurisdiction on fire protection issues. Headquartered in Patterson, N.Y., NFSA has regional operations offices throughout the country. www.nfsa.org.