



## Freeze Protection

TECHNICAL BULLETIN #8 3/23/2007

### Freeze Protection Solutions



#### **CAUTION**

**DO NOT USE GLYCOL BASE ANTI-FREEZE SOLUTIONS. THE USE OF IMPROPER ANTI-FREEZE SOLUTIONS SUCH AS ETHYLENE GLYCOL, PROPYLENE GLYCOL AND/OR CONTAMINATED GLYCERIN SOLUTIONS CAN CAUSE STRESS CRACKING OF CPVC RESULTING PIPING SYSTEM FAILURE.**

**DIRECT CONTACT WITH GLYCOL BASE ANTI-FREEZE IS NOT RECOMMENDED. THESE TYPES OF PRODUCTS SHOULD BE ISOLATED FROM DIRECT CONTACT WITH CPVC PIPING PRODUCTS.**

- Sprinkler systems must be protected from freezing.
- Standard cold weather design practices such as insulation techniques or the use of suitable anti-freeze solutions can be used. Local codes and techniques may indicate a particular method. Consult the local authority for suitable freeze protection methods prior to installation
- A properly insulated fire sprinkler system can provide adequate freeze protection without the use of an anti-freeze solution. Information for the proper use of batt insulation and construction techniques has been developed by many jurisdictions to ensure adequate freeze protection and wind blockage can be achieved by this method.
- When the use of an anti-freeze system is necessary:

DO NOT USE ETHYLENE GLYCOL OR PROPYLENE GLYCOL ANTI-FREEZE SOLUTIONS. The use of improper anti-freeze solutions (i.e. glycols) or contaminated glycerin solutions can cause environmental stress cracking of CPVC.

Anti-Freeze solutions of U.S.P. or C.P. grade GLYCERIN are acceptable for use with Harvel CPVC fire sprinkler products. Refer to appropriate NFPA Standards concerning Anti-Freeze Systems.

Consider the use of a glycerin and water solution antifreeze loop (zone) rather than the practice of installing glycerin and water solutions into the entire sprinkler system.

Keep glycerin anti-freeze loops/zones as small as possible

Consider alternate sprinkler layout and design methods to minimize the size of the glycerin anti-freeze loop (such as the use of interior sidewall sprinklers).

Follow the NFPA 13 guidelines regarding the use of expansion chambers [NFPA 13, Section 4-5.3.2] and 40-gallon maximum antifreeze volume [NFPA 13, Section A-4- 5.1] applicable for steel, copper and CPVC systems.

Glycerin and water require thorough mixing before introduction into the system.

Avoid contamination of the glycerin by not using recycled off-grade glycerin or by mixing the glycerin-water solution in contaminated drums.

Specify Teflon® tape or approved thread paste for threaded components installed on anti-freeze loops (never both)

- Consult the Local Authority Having Jurisdiction for additional freeze protection guidelines prior to use