



PLANNING AND BUILDING DEPARTMENT

BUILDING DIVISION
[Building Division - El Dorado County](#)

Determination of use of Antifreeze Solutions in Residential Fire Sprinkler Systems

1. What were the alternatives considered prior to selecting antifreeze to protect the residence? Why were these options not selected?

2. What is the minimum anticipated temperature at this site? This information can be obtained from websites such as <http://www.underground.com/climate/extremes.asp> and should be included with the submitted documentation.

3. What is the minimum concentration of antifreeze required to protect the system at this temperature? Reference NFPA 13D 2013 Table A.12.3.5 or manufacturer specific data.

4. What is the water pressure at this site? Some FPRF research suggests that optimum pressures in antifreeze systems are 50 psi or less.

5. What are the K factors of the sprinklers being utilized in the system design? Some FPRF research suggests that sprinklers with K factors of 4.20, or greater, are optimum for antifreeze systems.

6. What is the maximum ceiling height? Some FPRF research suggests that the optimum ceiling height for antifreeze systems is 20 feet, or less.

Proposed Antifreeze System

The 2013 edition of NFPA 13D, as amended by TIA 13-1, discourages the use of antifreeze solutions within residential fire sprinkler systems unless no other practical freeze protection options are available. Alternative freeze protection was considered for the following residence:

Date: _____ APN: _____
Project Owner: _____
Project Location: _____

1. A premixed antifreeze system of glycerine at a concentration of _____% is proposed.

2. The minimum anticipated temperature at this site is _____ °.

3. The antifreeze manufacturer is _____.

4. The maximum system pressure is _____ psi.

5. The maximum ceiling height is _____ feet.

6. The proposed sprinkler is _____ with a K factor of _____.

I have reviewed the requirements for determination of use of antifreeze solutions in residential fire sprinkler systems and have provided the documentation as required. I understand that if all the information necessary is not provided that additional documentation may be required as determined by the Fire and/or Building Departments.

Contractor and/or Engineers Name (Print) Title

Contractor and/or Engineer's Signature Date