



Fire Systems, Residential Sprinkler Tenting Information

This handout outlines the conditions under which an automatic residential fire sprinkler system is to be protected (Tented) to prevent freezing of the sprinkler pipe in cold areas. If the home you are building is protected with fire sprinklers, most fire sprinkler piping is in the unheated attic space. This pipe will freeze unless the heat from the room or space below is able to rise through the sheetrock and keep the pipe warm. Blown in insulation under the pipe prevents the heat from reaching the pipe and will allow the pipe to FREEZE. Improper protection of the sprinkler pipe will damage the home and will require repair.

Preventing Damage - Sprinkler pipes must be covered in all unheated spaces with tented batt insulation, as shown in the attached diagrams. Proper tenting keeps the blown in insulation from getting under the sprinkler pipe, which will then allow for the heat from the building to reach the sprinkler pipe.

Please ensure your insulation contractor reviews this document. Please have one of your staff conduct a PRE-INSPECTION to verify the proper tenting has been completed.

Prior to covering of framing, a Deputy Fire Marshal must approve the tenting/sprinkler piping insulation. The insulation/tenting must be installed according to one of the diagrams within this document.

Failure to meet the requirements as identified in this document will result in construction delays and may result in a re-inspection fee.

If you have any questions, please email fmo.dper@kingcounty.gov.

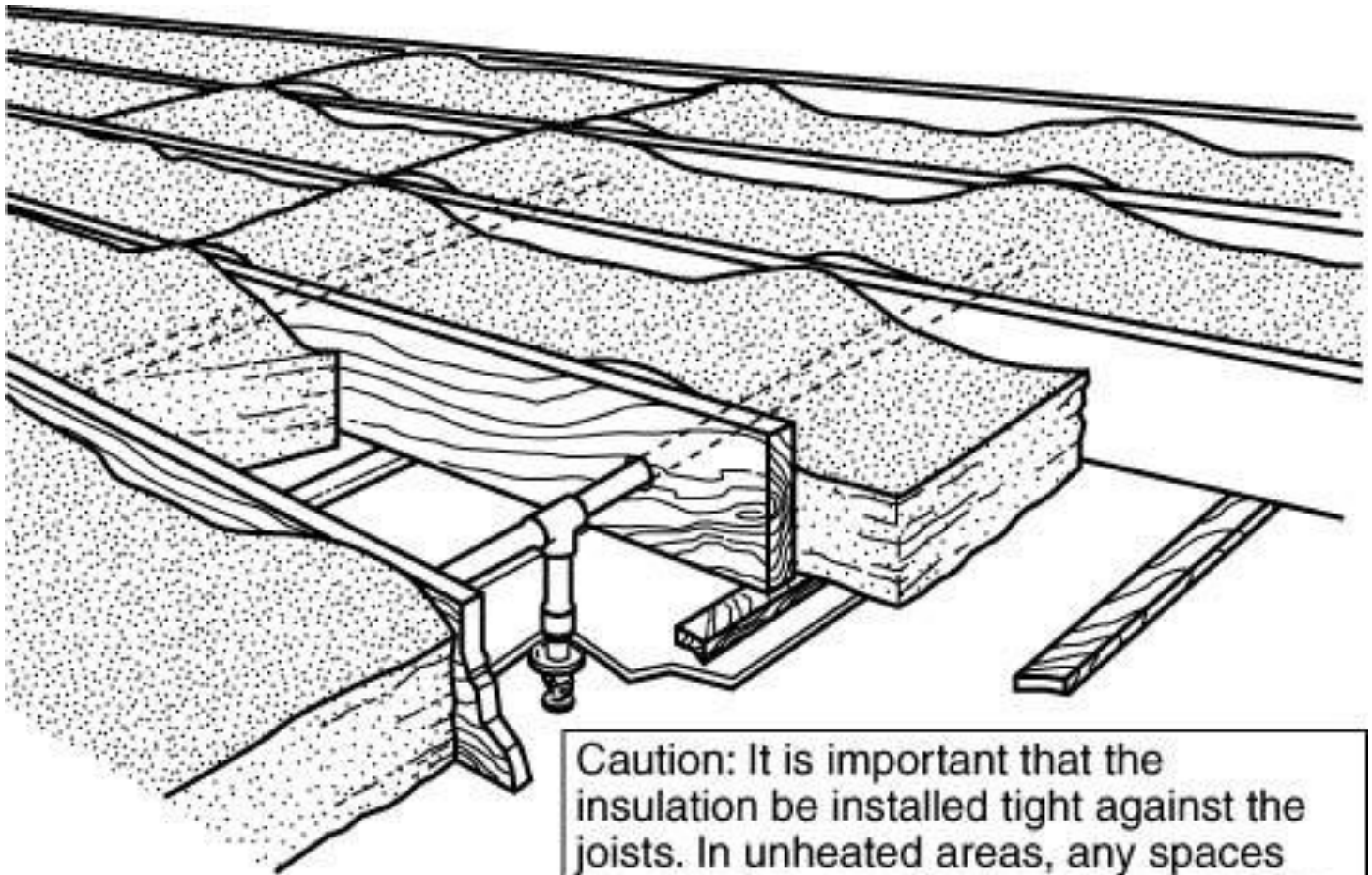
Tenting Sketch Example - Objective of sprinkler tenting is to capture the warm air coming through the sheetrock to keep sprinkler pipe warm and to seal out cold attic air and protect from blown in insulation getting between sprinkler pipe and sheetrock.

1. Overlap insulation batts 6 to 8 inches in the direction of blown in.
2. Extend batts 10 to 12 inches past the end of sprinkler lines and head drops.
3. Fill gaps or cuts to fit around/under black vent pipe, white vacuum tubing and gas piping.
4. Cut batts at joists and pipes to allow insulation to fill the joist space to the nailing face of the ceiling joist.
5. Tightly attach batts for vertical sprinkler piping tenting so as no gaps are present to allow cold attic air to get to sprinkler pipe.
6. All examples below are from National Fire Protection Association, 13D, 2019 edition.

Fire Sprinkler Systems, Commercial and Multifamily, continued

NFPA 13D, 2019 Edition

FIGURE A.9.1.1(a) INSULATION RECOMMENDATIONS - ARRANGEMENT 1.

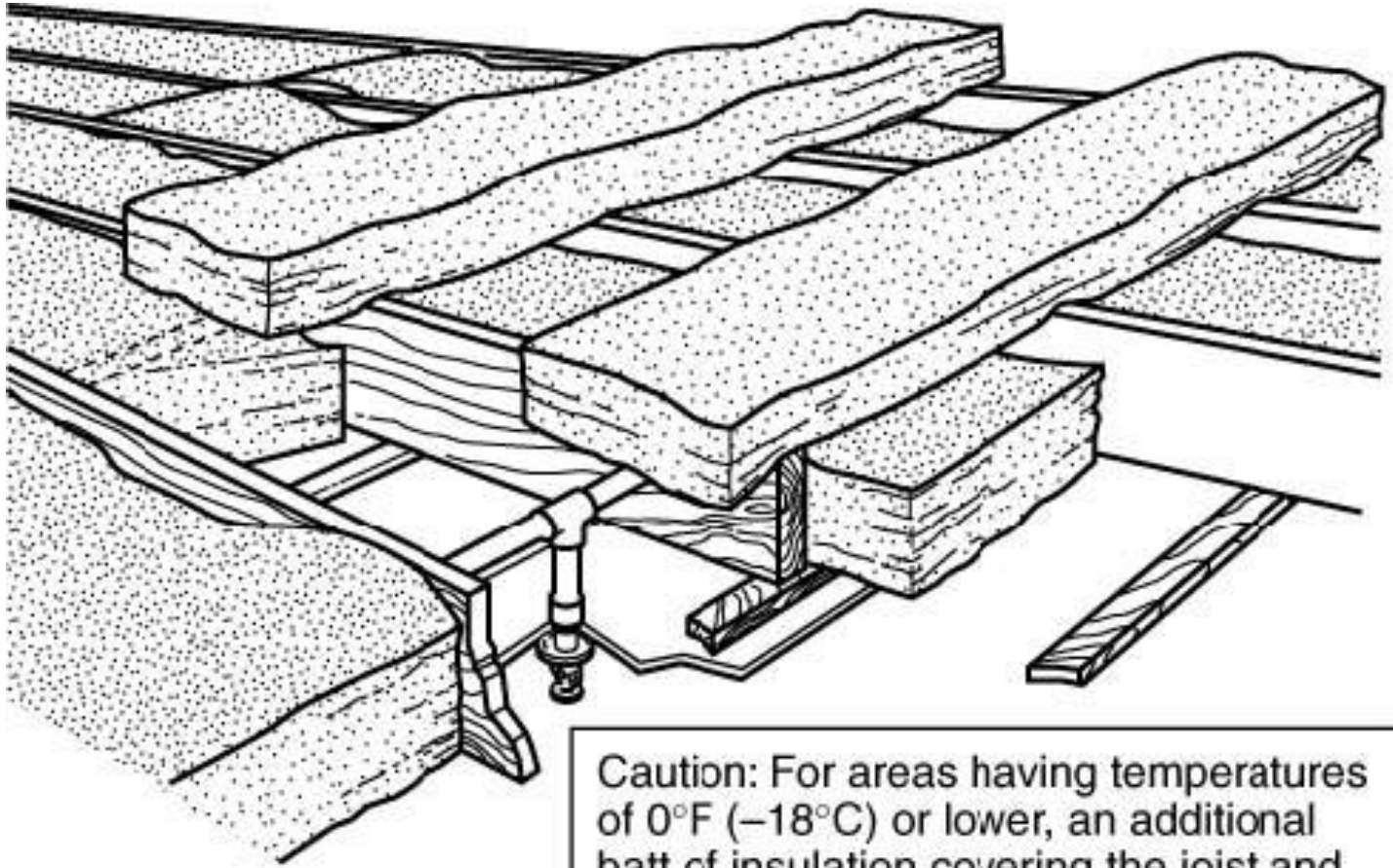


Caution: It is important that the insulation be installed tight against the joists. In unheated areas, any spaces or voids between the insulation and the joists causes the water in the fire sprinkler piping to freeze.

Fire Sprinkler Systems, Commercial and Multifamily, continued

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FIGURE A.9.1.1(b) INSULATION RECOMMENDATIONS - ARRANGEMENT 2.

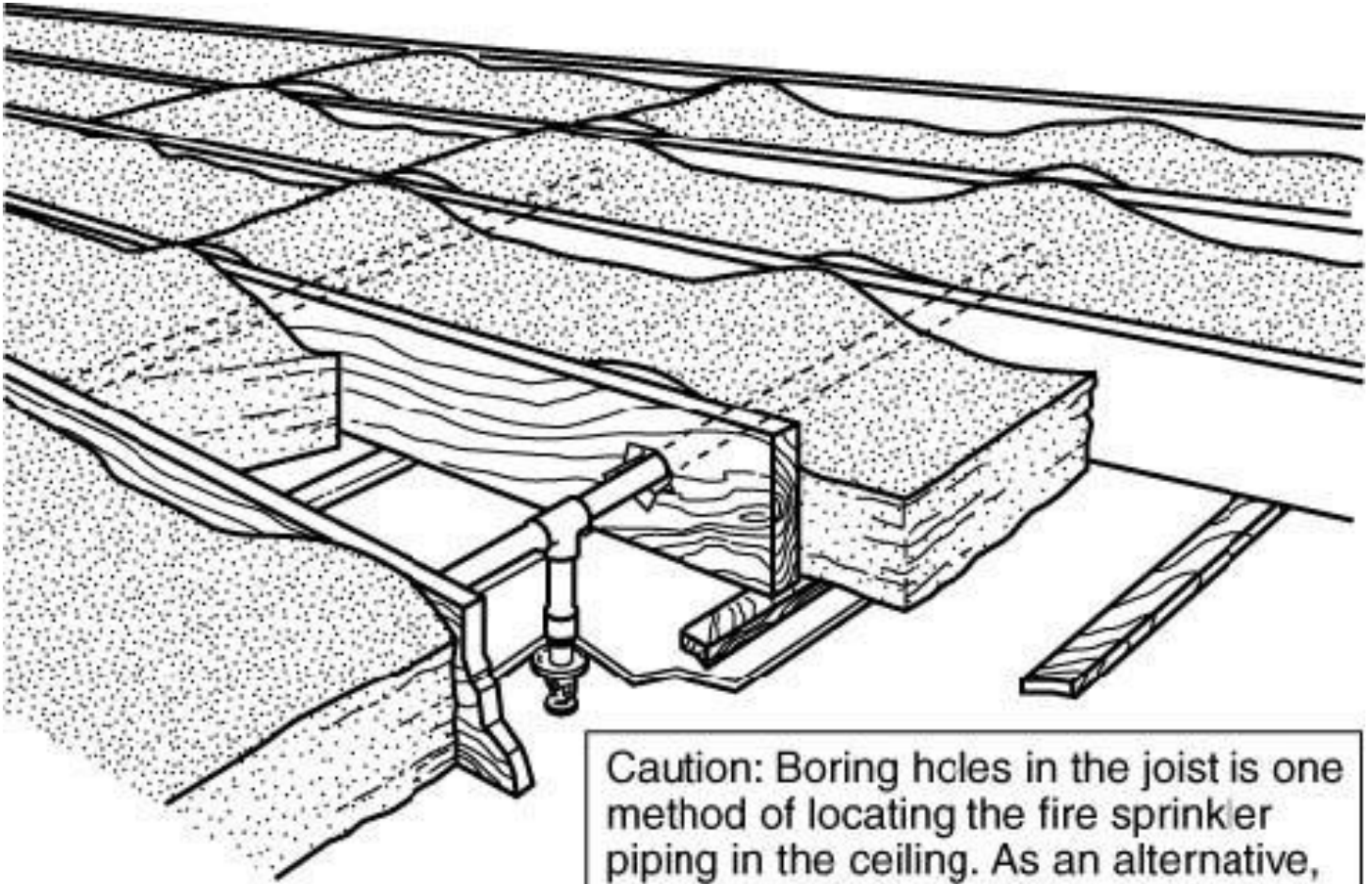


Caution: For areas having temperatures of 0°F (-18°C) or lower, an additional batt of insulation covering the joist and the fire sprinkler piping should be used. If this is not done, freeze-ups can occur in the sprinkler piping.

Fire Sprinkler Systems, Commercial and Multifamily, continued

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FIGURE A.9.1.1(c) INSULATION RECOMMENDATIONS - ARRANGEMENT 3.

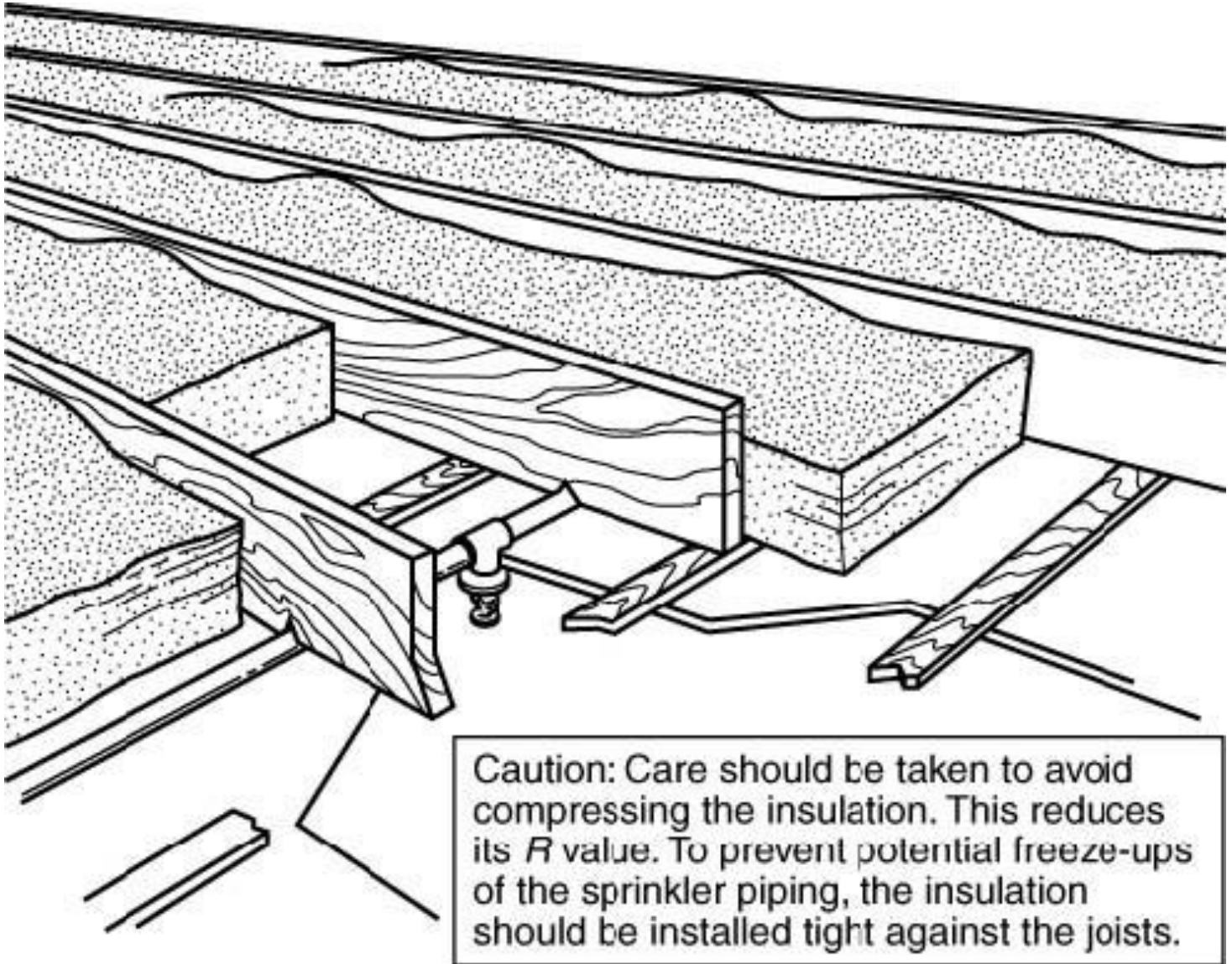


Caution: Boring holes in the joist is one method of locating the fire sprinkler piping in the ceiling. As an alternative, when temperatures are expected to be 0°F (-18°C) or lower, loose pieces of insulation should be stuffed in the bored holes around the piping.

Fire Sprinkler Systems, Commercial and Multifamily, continued

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FIGURE A.9.1.1(d) INSULATION RECOMMENDATIONS - ARRANGEMENT 4.



Fire Sprinkler Systems, Commercial and Multifamily, continued

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FIGURE A.9.1.1(e) INSULATION RECOMMENDATIONS - ARRANGEMENT 5.

