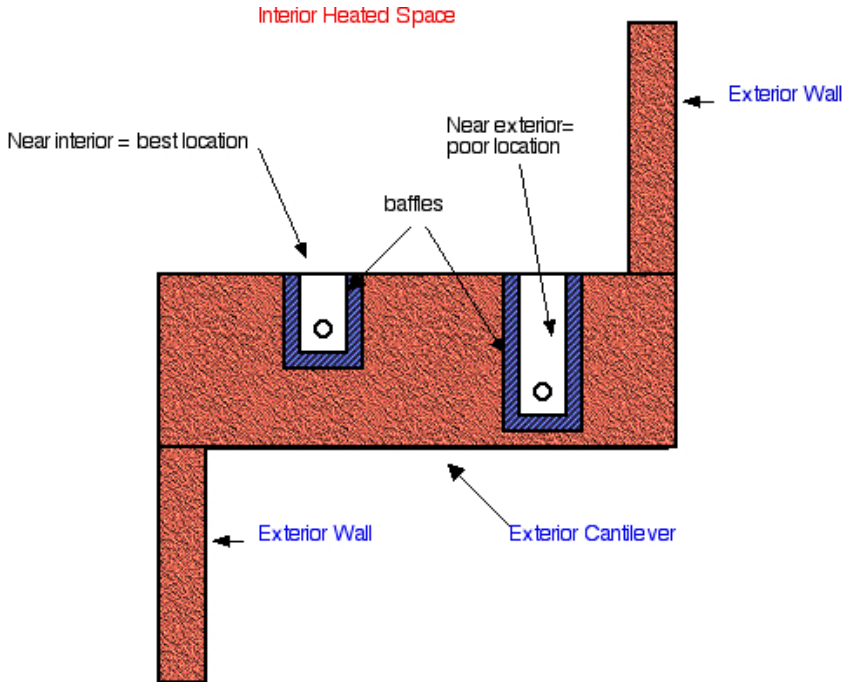
SPRAY FOAM AND FIRE SPRINKLER PIPING

The 2012 IRC (International Residential Code) Building Code has changed some requirements for fire sprinkler systems. Fire sprinkler systems are a designed system and specifics need to be discussed with your sprinkler contractor. This letter attempts to address a few concerns about the new code, insulation around the sprinkler pipes, and sprinkler pipe supports.

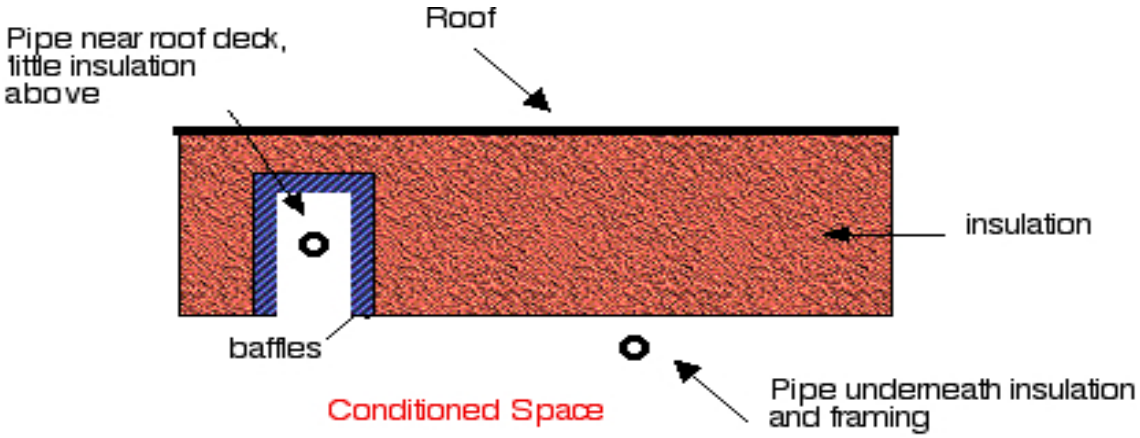
In relation to insulation, the biggest change in the 2012 code is that CPVC plastic pipes are now limited to the amount of "antifreeze" that can be used in the system. The NFPA (National Fire Protection Association) lists antifreeze concentrations of up to 38% when using propylene glycol, or to 48% if using glycerin. A 48% glycerin mix provides protection from freezing to about 15 degrees below zero. In our climate, this is insufficient to provide freeze protection when the pipes are located outside the building envelope.

When piping is located outside of the heated building envelope, the pipes must be tented to create an un-insulated void between the heated space and the building. Insulation is then applied over the tenting. If using spray foam to apply over the tenting, the tenting material needs to form a solid surface to adhere the foam to. Randomly throwing some plastic over the pipes does not work; it can collapse and can block off the warm air space void.

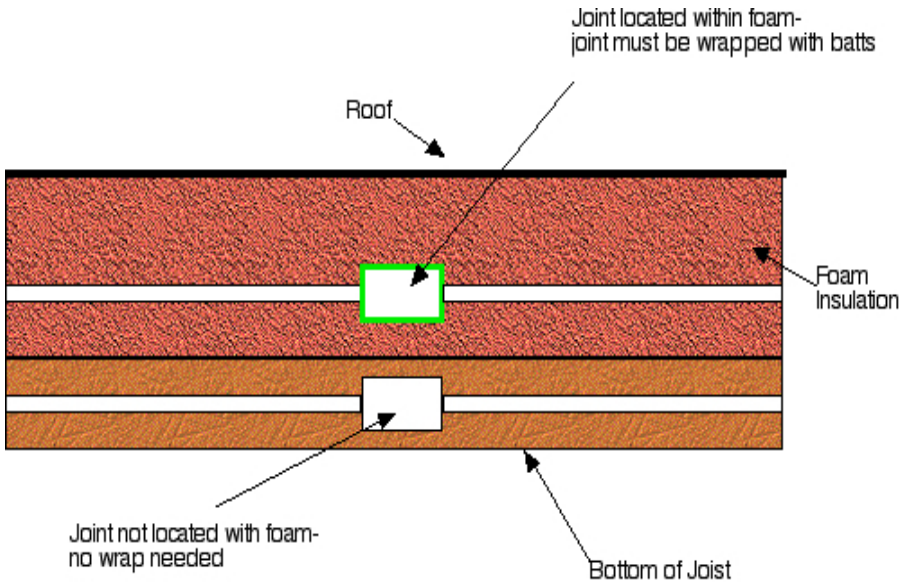


The height of the pipes from the substrate will be a determining factor in choosing a tenting material. As the height of the pipe from the heated substrate will be the factor in choosing the tenting material used, the tenting should be done by the sprinkler trade as only they will have control over the location/height of the pipes.

When the pipes are installed inside the heated envelope and spray foam is used in the same space as the piping, the pipes need to be firmly secured. Spray foam expands to over 30 times its size, and it will push the pipes around if they are not firmly braced. This can lead to stress on the pipe joints. Not having the pipes properly braced can delay progress on a job, as the foam can not be applied until the sprinkler trade returns to brace the pipes. Installing the pipes in the lower portion of the roof framing allows for more space over the pipes for the insulation and can reduce the amount of bracing needed if the pipes are installed low enough to be clear of the spray insulation.



CPVC pipe and spray foam are chemically compatible. There have been concerns regarding whether the spray foams' exothermic heat would soften the glue joints. While there is no evidence of this being a problem when the foam is properly applied, wrapping the pipe joints with fiberglass before applying spray foam should be done as a precaution and is generally installed by the insulation contractor.



Every job is different and we are happy to speak with the sprinkler contractor on the jobsite to make sure that everyone is on the same page so that there are no pipe/insulation issues down the road that would negatively impact the project.