



# QUICK RESPONSE

*Saving life and property through effective licensing, plan review, and inspection of fire protection systems.*

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## Plastic Underground Transition

The use of Polyvinyl Chloride (PVC) for underground supply piping is becoming more common. This type of piping material is permissible provided it is listed for fire protection service or complies with the American Water Works Association (AWWA) standards as specified in **NFPA 13(02) Table 10.1.1**. The question often asked is, “*Where plastic pipe is utilized underground, is it acceptable to transition to steel pipe aboveground?*” The answer is that PVC pipe is not permitted to extend into the building.



**NFPA 13(02):15.1.6.1.1** requires that the connection between the system piping and the underground piping to be made with a suitable transition piece, properly strapped or fastened by approved devices. **Section 15.1.6.1.2** requires the transition piece to be protected against possible damage from corrosive agents, solvent attack, or mechanical damage. Based on these two paragraphs, PVC is not a suitable piping material for transitioning into the building. The handbook commentary provides additional guidance by indicating that piping serving as the transition piece between the underground supply piping and the aboveground system piping at the base of the riser should be of a metallic material.

Many of the types of pipe acceptable for use as underground fire service mains are limited to conditions in below-grade applications only. The use of certain pipe materials, such as plastic and concrete, for aboveground fire service mains is restricted by their listings. As stated earlier, these transition pieces must be able to withstand damage from likely corrosive agents, solvent attack, and mechanical damage. Consequently, the need to use steel, iron, or copper pipe materials at these transition areas is evident. PVC pipe is listed only for underground and as soon as it penetrates the floor and emerges aboveground, that portion will have to comply with **Section 6.3**. There currently is no PVC product that meets the requirements of this section. In summary, PVC piping must terminate outside the building and connect to a metallic pipe for transitioning into the building.

