Main Drain

In addition to valves that are used to control fire sprinkler system supplies, other types of valves are used to test the system and/or drain the system pipe. One such valve each fire sprinkler system is required to have is a main drain valve assembly (A).

The main drain valve assembly is normally located at the system riser. Its purpose is twofold. First, it is used as a central point to drain water from the entire system. As such, where practicable, all system piping should be arranged to drain to the main drain valve. Its second purpose is to serve as a tool to measure incoming water flow. This is commonly referred to as the “main drain test.”

When fire sprinkler systems are to be taken out of service for any reason (e.g. maintenance, repair), properly sized and arranged drains help minimize the amount of time a system is out of service. Additionally, for systems installed in areas subject to freezing, proper drainage is critical due to the potential freezing of pipe after a system has tripped. The size of the main drain is relative to the size of the supply riser or main. NFPA 13 provides the specific size requirements for main drain valve assemblies.

The main drain should discharge outside the building at a point free from the possibility of causing water damage or to a drain connection capable of handling the flow of the drain.

A main drain discharging to the atmosphere outside a building shall be fitted with a turned-down elbow (B). The turned-down elbow minimizes the possibility of property damage and also discourages the use of the drain as a refuse receptacle.

When the main drain piping extends through a wall to the outside, subjecting it to freezing, not less than 4 feet of exposed drain pipe (C) shall be in the heated area between the main drain valve and the exterior wall.

Main drain valves shall be provided with permanently marked weatherproof metal or rigid plastic identification signs. The identification sign shall be secured with corrosion-resistant wire, chain, or other approved means.