



Underground Fire Line Standard

Standard

National Fire Protection Association (NFPA) 13 and 24
RCW 18-160 Fire Sprinkler Contractors
WAC 212-80 Fire Sprinkler Contractors

Practice

All dedicated underground fire piping shall:

- Have its inspection and testing witnessed by the Fire Marshal's Office.
- Be installed by a state licensed Level "U" Fire Sprinkler Contractor. See the WSP website for a current listing of certified contractors.
- Have an underground visual inspection, where all piping is exposed and checked for adequate mega lugs or thrust blocks from the riser room to the water main. Mega lugs or thrust blocks shall be installed and inspected at every change of direction from the water main connection to the interior riser connection.
- Be checked against the City of Richland detail drawing, if used with an underground backflow assembly vault. Backflow work falls under the Public Works Department.
- Be buried a minimum of 48 inches from top of pipe to finished grade.
- Be hydrostatically tested at 200 PSI for two hours.
 - If the static pressure of the piping is above 150 PSI, the piping shall be hydrostatically tested at 50 PSI above the maximum static pressure.
 - Testing shall be completed from the point of service (usually a street valve) to the interior riser connection.

- Underground fire lines shall be flushed at a velocity of 10 feet per second using the following guidelines:
 - 2" to 4" underground fire lines require one 2 ½" flush line
 - 6" underground fire lines require two 2 ½" flush lines
 - 8" underground fire lines require three 2 ½" flush lines
 - 10" and larger are up to the AHJ discretion
- The underground fire line piping shall not be connected to the riser until the underground visual, underground hydro and underground flush have been passed by the Fire Marshal's Office. This is to prevent any debris from being pushed into the sprinkler system past the flush point.
- With the 10' per second requirement above, the full flow flush time required is twice the distance in feet of the underground fire line and attached fire hose combined divided by 10, not to be less than 1 minute. This will ensure all potential debris is flushed from the line. Flush test failures shall be repeated until no debris is found in the screening.

Guide

Contractors must ensure adequate and appropriate area for water dispersement created from the flow testing. The 2 ½" fire lines used for the fire line flush need to be mechanically secured to prevent injury to people and property prevention loss. At no point shall a 2 ½" fire line be held in place by human efforts alone. Water damage, loss prevention and personnel safety are the sole responsibility of the contractor conducting the testing.