



FIRE SPRINKLER UNDERGROUND-RESIDENTIAL SUBMITTAL REQUIREMENTS AND DETAILS

These guidelines shall be followed when a business, facility or organization proposes to install an underground water supply serving an automatic fire sprinkler system, within the City of Keller.

All fire sprinkler system underground piping for the purposes of this guideline and any other guidelines or requirements of the Fire Department shall conform to the 2021 International Fire Code, as amended and adopted by the City of Keller and the Unified Development Code.

This guide does not replace, nor supersede any codes and/or ordinances adopted by the City of Keller, or determinations and positions of the Fire Marshal.

General Plan Requirements

1. Underground water lines that serve fire protection system shall meet NFPA requirements and be installed in accordance with the Texas Insurance Code Chapter 6003 Subchapter A. (formerly Article 5.43-3) Fire Protection Sprinkler System Service and Installation and 28 TAC §§ 34.700 The Fire Sprinkler Rules Section **§34.716. Installation, Maintenance, and Service as indicated below:**
 - (a) All fire protection sprinkler systems installed under Insurance Code Chapter 6003 must be installed under the supervision of the appropriate licensed responsible managing employee.
 - (1) An RME-General may supervise the installation of any fire protection sprinkler system including one and two-family dwellings.
 - (2) An RME-Dwelling may only supervise the installation of a fire protection sprinkler system in one- and two-family dwellings.
 - (3) An RME-Underground Fire Main may only supervise the installation of an assembly of underground piping or conduits that conveys water with or without other agents and used as an integral part of any type of fire protection sprinkler system.
 - (b) On completion of the installation, the licensed RME type G, D, or U (as applicable) must have affixed a contractor's material and test certificate for aboveground or underground piping on or near the system riser. If the adopted installation standard does not require testing, all other sections except the testing portion of the contractor's material and test certificate must still be completed. The contractor's material and test certificate must be obtained from the State Fire Marshal's Office. The certificate must be distributed as follows:
 - (1) original copy kept at the site after completion of the installation;
 - (2) second copy retained by the installing company at its place of business in a separate file used exclusively by that firm to retain all Contractor's Material and Test Certificates. The certificates must be available for examination by the state fire marshal or the state fire marshal's representative upon request. The certificates must be retained for the life of the system; and
 - (3) third copy to be sent to the local AHJ within 10 days after completion of the installation.
 - (c) Service, maintenance, or testing, when conducted by someone other than an owner, must be conducted by a registered firm and in compliance with the appropriate adopted standards. The inspection, test and maintenance service of a fire protection sprinkler system, except in a one- and two-family dwelling, must be performed by an individual holding a current RME -General Inspector or RME-General license. A visual inspection not accompanied by service, maintenance, testing, or certification does not require a certificate of registration. All underground lines shall begin at the point of connection to the underground circulating public/private water main. A valve shall be provided at the point of connection such that the

fire sprinkler underground service line can be isolated from public/private water distribution system.

2. All ductile iron, retaining rods, and other non-plastic components shall be externally coated for corrosion and poly- wrapped.
3. All underground piping shall be of the type listed and approved for residential use.
4. Installation street address must be provided for each separate underground line being permitted and installed. Subdivision or development street corner will not be accepted.
5. The designer and company of record is responsible for the entire system to be installed.
6. Civil construction drawings approved by the City of Keller Engineering Department shall not constitute approval of the underground line(s).
7. **Piping and equipment shall NOT be installed PRIOR TO approval of plans and issuance of permit(s).**

Submittal Requirements

8. Plans with a "Wet" RME signature and stamp, as required by the 2021 IFC Section 106.2.1 Plans shall show the location of the fire line and the domestic line.
9. Copy of Executed contract for project.
10. Scope of work letter
11. Manufacturer's data sheets for all components used in the project including manufacturer's parameters and listing organizations approval.
12. **The name, address, phone number and state license of the installing plumber shall be listed on the plans.**

Backflow Prevention

13. Sec. 19-2040. - Fire systems.

- a) An approved double check detector backflow prevention assembly (DCDA) or approved equivalent shall be the minimum protection on all new fire sprinkler systems using piping material that is not approved for potable water use, and/or that does not provide for periodic flow through during each twenty-four-hour period. A reduced pressure principle detector backflow prevention assembly (RPDA) must be installed, if any solution other than the potable water can be introduced into the sprinkler system. If the inspector determines a chemical loop system can be isolated by installing an RP assembly at the point of the chemical injection, this, in conjunction with the proper installation of the DCDA in accordance with this article, will be adequate protection.

Retrofitting on fire sprinkler systems will be required in each of the following circumstances:

- (1) Where improper maintenance has occurred;
 - (2) On all high hazard systems; and
 - (3) Wherever an inspector deems necessary.
- b) All fire line assemblies will be tested by certified testers employed by a state approved fire line contractor.
 - c) **All fire line systems, which are on a designated lateral shall install the assembly on the lateral at the point of connection.**

The assembly must be installed in accordance with this article.

14. Assemblies shall be listed for fire protection use.
15. Assemblies must be capable of being electronically or mechanically monitored.
16. Assemblies must be provided with a bypass valve.
17. All installations shall be inspected and tested upon installation. Testing documentation shall be provided prior to scheduling any system inspections.
18. The City of Keller Water Department shall be notified of all new installations by calling 817-743-4200.

General Requirements

Each submittal shall have a completed:

19. Copy of Executed Contract for the scope of work
20. Scope of Work Letter
21. Scale Drawings with a Wet Signature

22. Plans approved by the Keller Fire-Rescue, Fire Marshal's Office give authorization for construction and/or operation.
23. Final approvals are subject to field verification. Any approval issued by the Fire Marshal's Office does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.
24. Installation, fabrication or otherwise construction of the system is prohibited without approved plans and permit. Minimum fine for installation without a permit is \$250.00.
25. All installations and/or operations must concur with the approved plans. Any deviation from the approved plans requires a re-submittal to the Fire Marshal's Office.
26. All fire department inspection forms and permits shall be kept in a permit packet on the job site until final inspection.
27. Submittals that do not conform to the minimum above requirements will not be approved.

Important Inspection Information

28. Visual inspection of the installation shall be performed **PRIOR TO** cover. **If the piping and joints are covered prior to installation, you will be required to uncover the piping for inspection, regardless of cover. NO EXCEPTIONS.**
29. All underground piping shall be thoroughly flushed **PRIOR TO** connecting to the system risers or other aboveground piping system(s). If the underground piping is connected to the system riser, "stacked", both the overhead and underground piping are required to be flush in accordance with the requirements of NFPA 13, 13D, 13R.
30. Hydrostatic test of the fire sprinkler underground lines shall be required at the same time the visual inspection is performed. **NO EXCEPTIONS.** The piping shall be center loaded to prevent pipe movement.
31. See Fire Sprinkler Underground Inspection Guidelines for detailed criteria.
32. **Both the domestic water supply and fire line meters shall be set prior to scheduling the fire line hydro/visual and flush.**