



**UNDERGROUND PIPING SUPPLYING
FIRE SPRINKLER SYSTEMS AND
COMBINATION FIRE/DOMESTIC SYSTEMS**
(2020 MSFC)

Code Reference – MSFC Section 507 – Fire Protection Water Supplies

507.1 Required water supply. An *approved* water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

See MSFC 507 Sections 507.2 through 507.5.6 for additional requirements. Additional information from NFPA 24.

**Aboveground
General Requirements**

1. Refer to the following handout: Riser Location and Fire Sprinkler Systems.

**Underground
General Requirements**

1. Permits from the City of Shakopee are required for all underground water supply work.
2. All work shall be designed and constructed in accordance with nationally recognized standards.
3. Contact Shakopee Public Utilities (952-445-1988) for additional Water Department requirements.
4. The number of hydrants and distance between hydrants shall be in accordance with the Minnesota State Fire Code.
5. Hydrant locations for public and private hydrants shall be in accordance with the Water Policies of the Shakopee Public Utilities.
6. A minimum of one (1) fire hydrant shall be within 100 feet of the Fire Department Connection (FDC), but not less than 20 feet from the building. The hydrant shall be accessible via an asphalt access road. A separate service line with a minimum 6-inch diameter shall be provided to this required hydrant.
exception: 1. This required hydrant may be tapped off the automatic fire sprinkler service line; however, the minimum diameter of the automatic fire sprinkler service line shall be increased to the next largest diameter. In cases where the required diameter of the automatic fire sprinkler system service line is 12 inches, a separate service line with a minimum 6-inch diameter shall be provided to this hydrant.
7. All underground piping shall be visual inspection by the Shakopee Public Utilities and/or City of Shakopee Building Department before back filling.

Date: 04/01/2020
Page: 1/2
Underground Piping.doc

8. The riser base shall be provided with threaded rods as required by NFPA 24. Rods shall meet the following requirements.

Rod Number and Diameter				
Pipe Size	5/8"	3/4"	7/8"	1"
4	2	-	-	-
6	2	-	-	-
8	3	2	-	-
10	4	3	2	-
12	6	4	3	2

9. The Shakopee Fire Department, City of Shakopee, and/or Shakopee Public Utilities shall witness hydrostatic tests, flushing of underground lines and drawing of bacteria testing samples.
10. Appointments for inspections can be made by calling both the Shakopee Fire Department and Shakopee Public Utilities. The Shakopee Fire Department can be reached at 952-233-9570 between the hours of 8:00 a.m. and 4:30 p.m. and City of Shakopee Building Department can be reached at 952-233-9396 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday. Shakopee Public Utilities can be reached at 952-445-1988 between the hours of 7:30 a.m. and 4:00 p.m., Monday through Friday. Please arrange tests at least 24 hours in advance. Signed copies of the "Contractor's Material and Test Certificates" for underground piping shall be provided to the Shakopee Fire Department upon job completion.
11. The minimum inspections will include:
- Visual inspection prior to backfill.
 - Hydrostatic test at 200 psi for 2 hours
 - Flushing

4" main	1 – 2-1/2" hose line	Minimum flow of 390 gpm
6" main	1 – 2-1/2" hose line	Minimum flow of 880 gpm
8" main	2 – 2-1/2" hose lines	Minimum flow of 1,560 gpm
10" main	2 – 2-1/2" hose lines	Minimum flow of 2,440 gpm
12" main	3 – 2-1/2" hose lines	Minimum flow of 3,520 gpm
 - Conductivity testing.
 - Bacteria testing.

Combination Service Lines
General Requirements

- Combination fire sprinkler/domestic service lines are preferred by the City of Shakopee. Separate service lines are allowed in special situations where there will be a substantial domestic or fire service demand.
- The maximum size of the domestic water supply (including lawn sprinkler systems) on combination fire sprinkler/domestic water supply lines shall not exceed 1/4 size of the main water supply.

exception:

 - The maximum size of the domestic water supply may exceed 1/4 the size of the main water supply if an electric solenoid valve is installed on the domestic side of the service (including lawn sprinkler systems). This valve shall be normally powered open and shall close on loss of electric power or signal from the automatic fire sprinkler system flow indicator.
 - The maximum size of the domestic water supply may exceed 1/4 the size of the main water supply if the domestic service (including lawn sprinkler systems) usage can be designed into the hydraulic calculations for the automatic fire sprinkler system.

Date: 04/01/2020
 Page: 2/2
 Underground Piping.doc