

Underground Fire Line Information

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GRAND JUNCTION FIRE DEPARTMENT DIVISION OF FIRE PREVENTION



If you have any questions or comments regarding the information contained within, or if you need assistance interpreting these requirements, please contact:

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Installation, inspection, and testing of underground fire lines shall meet all current adopted International Fire Code, NFPA 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances, and Grand Junction Fire Department requirements.

Installation

1. All installation work shall be performed by a contractor holding a State of Colorado Division of Fire Prevention and Control certification for underground fire line installation
2. Piping shall be listed for fire protection service or shall comply with standard shown on table 10.1.1 of NFPA 24
3. Fittings shall comply with table NFPA 24 10.2.2.2 or section 10.2.3 of NFPA 24
4. The top of pipe shall be buried not less than 1 ft below frost line (10.4.2)
5. All joints are required to be restrained. Joint restraint shall meet all requirements of NFPA 24 (10.8)
6. Thrust blocks must be dug out to undisturbed soil and shall meet all requirements of NFPA 24 (10.8.2)
7. All exposed metal components shall be corrosion resistant
8. All ferrous pipe and fittings shall be wrapped in polyethylene to prevent corrosion

Inspection, Flushing, and Hydrostatic Testing

Note: It is the contractor's responsibility to notify the AHJ of inspection, performance of tests, and completion of Material and Test certificates (10.10.1)

1. All pipe and fittings shall remain exposed for visual inspection.
2. Flush line until water runs clear and line is free of debris in accordance with NFPA 24 (10.10.2.1).
3. Use chart below (figure 1.0) to determine appropriate number and size of hose lines for reach desired water flow for proper flushing. Example: a 6" underground fire line requires a flow of 880 gallons per minute for proper flushing. To achieve a proper flow 2 – 2 ½" hoses would need to be attached to the manifold. Alternately a single 4" hose could be attached to the manifold to achieve the same flow.

Suggested Number of Lines to Reach Required Flow

| Pipe Size | Required Flow Rate | 2 1/2" | 4" | 6" | 8" |
|-----------|--------------------|--------|----|----|----|
| 4" | 390 GPM | 1 | - | - | - |
| 6" | 880 GPM | 2 | 1 | - | - |
| 8" | 1,560 GPM | 4 | 2 | 1 | - |
| 10" | 2,440 GPM | 6 | 3 | 1 | - |
| 12" | 3,520 GPM | 8 | 4 | 2 | 1 |

Figure 1.0

4. **SAFETY IS THE CONTRACTORS RESPONSIBILITY** If unsafe conditions are observed Fire Prevention staff will request corrective measures be taken. If corrective measures are not sufficient Fire Prevention staff will end the inspection.
5. Burlap bags shall be connected to the ends of each hose line to collect any debris.
6. All pipes and fittings shall be hydrostatically tested to 200 PSI or 50 PSI above system working pressure, whichever is greater (10.10.2.2.1). System shall maintain pressure at +/- 5 PSI for 2 hours. The trench should be backfilled before testing per NFPA 24 (10.10.2.2.4 and 10.10.2.2.5).
7. At the conclusion of hydrostatic testing, pressure shall be relieved in presence of fire prevention to verify proper movement of gauge needle.
8. Contractor shall supply inspector with a contractors material and test certificate for underground piping per NFPA 24 (10.10.1).