

Firewater Piping Specification - HDPE

PRESSURE-TEMPERATURE RATINGS
(0.000" Corrosion Allowance)

PIPE MATERIAL
High Density Polyethylene

Temp.C 23 to 60
Temp.F 73 to 140

Max. Hydro.
Test Press.

SERVICE
Firewater (1)

Press. psig 150 or 200 @ 73.4°F (2) 375 (minimum hydro.=200psig. Minimum hold time per NFPA 24 is 2 hours for domestic US locations)

FLOW C=150 (Hazen-Williams)
COEFFICIENT

INSTALLATION Installation of High Density Polyethylene and their appurtenances,
METHODS per ASTM D 2774 and Manufacturer's Recommendation.

PIPE 2 to 24 HDPE pipe manufactured from high-density, extra high molecular weight
(2,3,4) polyethylene piping compounds. Compounds are stress rated PE 3408 materials in accordance with ASTM D 2837 and PPI-Listed in accordance with PPI TR-3. IN accordance with ASTM D 3350, the cell classification is 345464C.

FITTINGS 2 to 24 Polyethylene fittings shall be molded or fabricated by the materials supplied by
(4,5,6,8) the pipe manufacturer. Fittings shall be FMA Approved and shall be marked with the FM diamond logo.

TIE-INS 3 to 24 MJ Adapter, IPS, Specify pressure rating 150 or 200, provided with Stainless
(6,7) Steel stiffener, Extended T-bolts and Glands.

FLANGE 2 to 24 Flange Adapter, CL125# FF Flange. Adapters shall be FMA Approved. Class
ADAPTER 150 and Class 200 flange adapters shall be fitted with FMA Approved back-up
(6,7,9) rings. Flange bolts and nuts shall be Grade 3 or higher.

NOTES

- 1) All systems should be flushed in accordance with the following minimum flow rates are preferred. NPS 4-400 gpm (25dm /sec), NPS 6-900 gpm (57 /sec), NPS 8-1600 gpm (220dm /sec), NPS 14 and larger-4500 gpm (284dm /sec).
- 2) Pressure Classes 150 and 200 available. Pressures based on 73.4°F – see temperature de-rating tables for higher operating temperatures.
- 3) Permanent identification of the piping service shall be provided by co-extruding red color stripes into the pipe outside surface. Striping material shall be the same material as the pipe material except for color.
- 4) External and internal beads shall not be removed.
- 5) A maximum of one leg of a fabricated directional fitting 16" IPS and larger shall be butt fused to the end of a pipe string. The remaining fitting connections shall be made in the trench using butt fusion, flange or other connection means. Handling, lifting, moving or lowering a 16" IPS or larger fabricated fitting that is connected to more than one pipe length is prohibited.

- 6) Polyethylene pipe and fittings may be joined together or to other materials by means of FMA Approved flange adapter and back-up rings or FMA Approved MJ Adapters.
- 7) All Mechanical Joint bolts and nuts to be high-strength, low alloy Corr-Ten or equal.
- 8) Bolt threads shall be lubricated, and flat washers should be used under the nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the Manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and step recommendations.
- 9) Flange adapters shall have sufficient through-bore length to be clamped in a butt fusion-joining machine without the use of a stub-end holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves (serration) to promote gasketless sealing or restrain the gasket against blowout.
- 10) Piping, fittings and accessories having Factory Mutual Approval are preferred. Use of materials or components not bearing such approval should be reviewed for suitability by Fire Protection Engineer.