



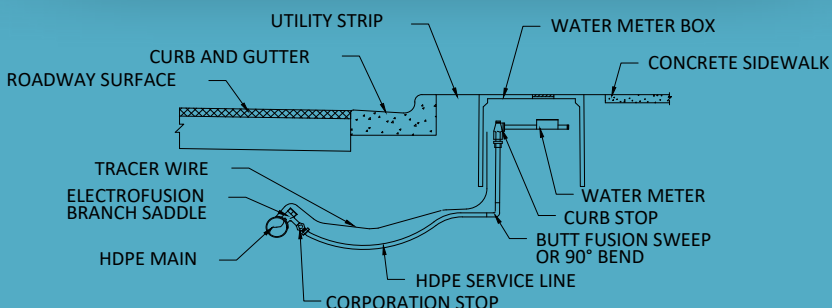
APPLICATIONS

Pipeline Plastics Municipal Water Service (MWS) Pipe is manufactured to meet the rigorous service conditions of municipal water service operating environment. Our MWS pipe meets all requirements of AWWA C901 *"Polyethylene "PE" Pressure Pipe and Tubing, 3/4in. through 3in. for Water Service"* and utilizes a high performance, bimodal, high density polyethylene (HDPE) PE4710-CC3 compound designed specifically for potable and municipal water service systems. HDPE pipe uses heat fusion for leak free joining, or many types of mechanical tapping tees and couplings. PE pipe is cost effective to install both in open cut and trenchless applications. NSF Standard 14 Certified to AWWA C901 for potable water service, our PE4710 MWS Pipe is extremely low maintenance by withstanding the effects of disinfectants, pressure cycling and seismic events better than traditional materials to achieve a >100 year design life.

FEATURES AND BENEFITS OF HDPE WATER PIPE

- PE4710-CC3 compound for 100 year design life from the effects of disinfectants
- Heat fused leak-free joints for the entire life cycle
- Small bend radius of 20x OD* makes installation faster with fewer fittings and joints
- Impact & Rapid Crack Propagation Resistant even at cold temperatures
- Capable of over 10 million pressure cycles from repetitive surge events
- Immune to corrosion & scale build up that can reduce flow capacities
- High fluid flow coefficient C=150 over the life of the piping system
- Available with blue, purple or green stripe

***See AWWA M55 for design and installation guidance.**



JOINING

With Pipeline Plastics' PE4710 MWS Pipe heat fused joints, the pipe joints are fully restrained and are designed to be at least as strong as the pipe itself, with no leaks for the entire 100 year design life. Other pipe materials typically see the joint as the "weak-link" in the system that is often the source of leaks and infiltration. HDPE pipe can be joined by heat fusion using the industry accepted ASTM F2620 procedure for butt-fusion and saddle fusion. Electro-fusion as well as many types of mechanical couplings and tapping tees designed for use on HDPE pipe can also be used. Always follow the fitting manufacturer installation procedure.

Corporate Headquarters

1301 Solana Blvd., Bldg. 1 Suite 1440, Westlake, TX 76262
O: 817-693-4100 F: 817-693-4101

DESIGN, INSTALLATION AND LEAK TESTING

Pipeline Plastics recommends following the practices and guidance of AWWA M55 and the Plastics Pipe Institute (PPI) Handbook of Polyethylene Pipe, second edition available on the PPI website, www.plasticpipe.org.

Leak testing can be performed up to 1.5x the maximum pressure rating of the piping system. Leak testing should be performed according to ASTM F2164, "Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure." Appropriate safety considerations should always be followed.

Follow AWWA C651 for disinfection practices before putting a line into potable water service.

CONFORMANCE

- ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing ¾" through 3" for Water Service"
- ASTM D3035 "Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter"
- Cell Classification PE445574C per ASTM D3350
- CC3 Chlorine Category Rating for the highest resistance to disinfectants in the most demanding water conditions
- NSF/ANSI Standard 14 Certified to AWWA C901 for Potable Water Contact
- Plastics Pipe Institute (PPI) TR-4 Listing as PE4710-CC3. Also, PE3408 as per ASTM D3350-02a.
- Hydrostatic Design Basis 1,600 psi @ 73°F (23°C) and 1,000 psi @ 140°F (60°C) per ASTM D2837
- Color & UV Stabilizer: © Black with 2% min Carbon Black per ASTM D3350
- Heat Fusion Joining as per ASTM F2620 and PPI TR-33/TR-41
- Installation as per AWWA M55 and PPI PE Handbook, 2nd edition

MUNICIPAL WATER DISTRIBUTION PIPE SIZES

| IPS | | DR 9 | | Coils (ft) |
|------|---------|--|-------------------------|--------------------------|
| Size | OD (in) | Working Pressure (WP) Pressure Class (PC) | 250 psi | |
| | | WP + Recurring Surge | 375 psi | |
| | | WP + Occasional Surge | 500 psi | |
| ¾" | 1.050 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 0.095 0.848 0.125 | 500, 1000, 1500, 2000 |
| 1" | 1.315 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 1.146 1.005 0.235 | 500, 1000, 1500, 2000 |
| 1 ¼" | 1.660 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 0.184 1.269 0.375 | 500, 1000, 1500, 2000 |
| 1 ½" | 1.900 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 0.211 1.452 0.491 | 500, 1000, 1500, 2000 |
| 2" | 2.375 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 0.264 1.816 0.767 | 500, 1000, 1500, 2000 |
| 3" | 3.500 | Min Wall (in) ID ^A (in) Wt ^B (lb/ft) | 0.389 2.676 1.663 | 500, 1000, 1500 |

| Physical Properties | Nominal Value* | Test Method |
|-------------------------------------|---------------------------------|-------------|
| Density | 0.960 g/cm ³ | ASTM 1505 |
| Melt Index (MI) 190°C/2.16kg | 0.07 g/10 min | ASTM D1238 |
| High Load Melt Index (190°C/2.16kg) | 7-16 g/10 min | ASTM D1238 |
| PENT | >500 hours | ASTM F1473 |
| Tensile Stress @ Yield | 3,500 psi | ASTM D638 |
| Tensile Stress @ Break | 5,000 psi | ASTM D638 |
| Elongation @ Break | >400% | ASTM D638 |
| Flexural Modulus | 150,000 psi | ASTM D790 |
| Brittleness Temperature | <-103°F | ASTM D746 |
| Hardness | 62 Shore D | ASTM D2240 |
| Vicat Softening Temperature | 256°F | ASTM D1525 |
| Thermal Expansion | 1.0 x 10 ⁻⁴ in/in/°F | ASTM D696 |

*Nominal values are typical results and are not guaranteed or intended to be used as a product specification.

Note - These tables represent standard sizes. IPS and other sizes in C901 are available. A - ID (in): Inside Diameter may vary due to manufacturing tolerances. B - Wt (lb/ft): Weight per foot in pounds may vary due to manufacturing tolerances.