

Molded PE3408 / PE4710 / PE100 HDPE Fittings

Molded HDPE Fittings manufactured by Integrity Fusion Products, are all-purpose, injection molded **High-Density Polyethylene Fittings** that are designed and manufactured for use in applications that include, but are not limited to:

- Oil and gas production
- Municipal potable water distribution and service lines
- Stormwater conveyance
- Irrigation
- Mining
- Cable
- Natural gas distribution
- Wastewater conveyance
- Drainage
- Industrial piping applications
- Landfill
- Telecom Conduit

Integrity Fusion Products manufactures **Molded HDPE Fittings** in a variety of sizes, configurations and SDR's that are produced from virgin, pre-blended, bi-modal black high density polyethylene resin that has a cell classification of **445574C-CC3** that conforms to **ASTM D3350** and is recognized by the Plastic Pipe Institute as having a **PE3408 / PE4710 / PE100** rating with an **HDB** (Hydrostatic Design Basis) of **1600 psi @ 73° F**.

Injection Molded HDPE Fittings from Integrity Fusion Products are manufactured, tested, certified, and listed in accordance with standards and requirements that meet a wide range of project requirements that include:

- ASTM D2513 - Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings
- ASTM D3350 - Specification for Polyethylene Plastic Pipes and Fittings Materials
- ASTM D3261 - Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Pipe and Tubing
- ASTM F714 - Specifications for HDPE Pipe Dimensions
- AWWA C901 - Polyethylene (Pe) Pressure Pipe and Tubing, 3/4 In. Through 3 In. For Water Service
- AWWA C906 - Polyethylene (Pe) Pressure Pipe and Tubing, 4 In. Through 65 In. For Water Works
- FM 1613 - Approval Standard: Plastic Pipe and Fittings for Underground Fire Protection Service
- ANSI/NSF 61 - Plastic Piping System Components & Related Materials
- ASTM F2880 - Specification for lap-Joint Type Flange Adapters for use on Polyethylene Pressure Pipe

Integrity Fusion Products Injection Molded HDPE Fittings are tested in accordance with the following standard ASTM test methods.

- ASTM D1598 - Time-to-Failure of Plastic Pipe Under Constant Internal Pressure.
- ASTM D1599 - Short-Term Hydraulic Pressure Failure of Plastic Pipe, Tubing and Fittings.
- ASTM D2122 - Test method for Determining Dimensions of Thermoplastic Pipe and Fittings.

Injection Molded HDPE Fittings from Integrity Fusion Products can be heat fused to any manufacturers' PE pipe, molded fittings, or fabricated fittings manufactured from material made from PE3408 / PE4710 / PE100 resin that complies with ASTM D3350.

Injection Molded HDPE Fittings from Integrity Fusion Products are designed for use on HDPE pressure pipe applications that conform to ASTM F714, D2513 and D3350 and are pressure rated in accordance with industry guidelines for natural gas and water applications.

Pressure Rating of Integrity Fusion Products Molded PE4710 Fittings Based on SDR	
SDR (Standard Dimension Ration)	MAOP (Maximum Allowable Operating Pressure)
7	333
9	250
11	200
17	126
21	100
32.5	63

NOTE: Pressure ratings are based on an operating temperature of up to 73° ambient temperature and will need to be reduced for higher temperatures and certain applications.

The **Maximum Allowable Operating Pressures (MAOP)** for molded PE4710 fittings must de-rated for elevated temperatures in all service applications, including Oil & Gas Gathering Systems installed in Class 1 or Class 2 locations (low population areas not subject to DOT CFR *Title 49 Part 192* regulations) or where Federal Codes do not apply. *Including Water, Brine, Dry Natural Gas applications with NO associated hydrocarbons.*

API Specification 15LE (1995) states "In most circumstances, the HDB obtained at 73° F can be used for applications up to 100° F without further derating" Values stated in this table use a material design factor of .63 and a Fluid Service Factor of 1.0

The maximum operating temperature of Integrity Fusion Products PE4710 Molded Fittings should not exceed 140° F.

Fitting MAOP Range by SDR and Operating Temperature				
SDR	73.4° F	100° F	120° F	140° F
7	333 psi	260 psi	210 psi	166 psi
9	250 psi	195 psi	158 psi	125 psi
11	200 psi	156 psi	126 psi	100 psi
17	126 psi	98 psi	79 psi	63 psi

Injection Molded HDPE Fittings from Integrity Fusion Products have a strong resistance to many chemical compounds. For more information on the chemical resistance of PE4710 resin, please reference PPI Technical Report TR-19.

Integrity Fusion Product Injection Molded Black HDPE fittings can be stored outdoors but it is highly recommended that **they** be stored indoors. Black HDPE fittings stored properly indoors have an unlimited shelf life.