Steel to HDPE Transition Fitting Specification Sheet

Steel to HDPE Transition Fittings manufactured by Integrity Fusion Products, are all-purpose, steel to HDPE mechanical transition fittings that are designed and manufactured for use in applications that include, but are not limited to:

- ***Municipal water distribution & service lines***
- ***Wastewater conveyance***
- ***Irrigation***
- ***Geothermal***
- ***Industrial piping applications***
- ***Process Lines***
- ***Mining***
- ***Landfill***
- ***Oil and gas production***
- ***Saltwater Disposal***
- ***Dredging***
- ***Telecom Conduit***

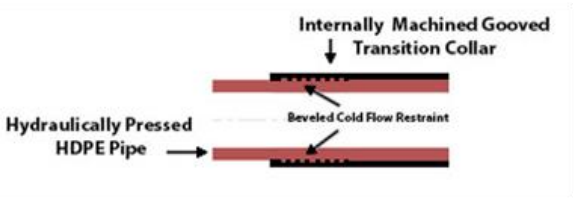
Integrity Fusion Products manufactures a full line of **Epoxy Coated Carbon Steel and Stainless Steel to HDPE Transition Fittings** in a variety of sizes, configurations, SDR's that meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements **(this fitting CANNOT be used in natural gas applications).** **Integrity Fusion Products Transiting Fittings** are manufactured in a variety of nominal pipe sizes and SDR's and are tested to meet the requirements of **ASTM D3261**, **ASTM 1598, ASTM 1599, ANSI/AWWA C901**, **C906**, and **NSF/ANSI/ CAN-61, and NSF/ANSI-372 (where applicable)**, for use with outside diameter-controlled pipe and fittings conforming to **ASTM D2513**, **ASTM D3035**, and **ASTM F-714.**

PIPE:

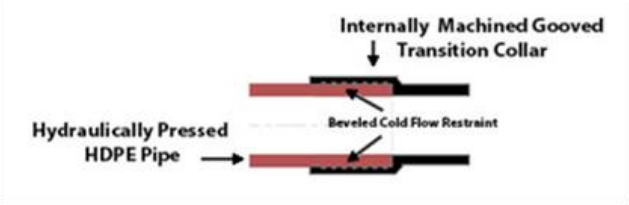
Integrity Fusion Products Transiting Fittings are manufactured using pipe stock produced from virgin, pre-blended, bi-modal black high density polyethylene resin that has a cell classification of **445574C-CC3** that conforms to **ASTM D3350** and is recognized by the Plastic Pipe Institute as having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

TRANSITION COLLAR:

The internally machined and beveled groove design in our **Epoxy Coated Carbon ASTM A53/API-5 Steel**, and **ASTM A249 or ASTM A269 304 Stainless Steel or 316 Stainless Steel Transition Collars,** provides a robust mechanical joint allowing it to work at the MAOP of the inserted HDPE pipes SDR. **Standard Transition Fittings** provide complete, unobstructed HDPE coverage through the ID of the transition collar, while the **Heavy-Duty Transition Fittings are Epoxy Coated internally and externally,** with both designs providing you with a **piggable seal**, and total corrosion protection. All NPT threads are made to **ANSI/ASME B1.20.1,** and the Standard Machine Groove to **ASME B31.1.**



Cat. 3 Standard Style



Cat. 3 Heavy Duty Style

Transition 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**
ANSI/NSF 61	-	**Plastic Piping System Components & Related Materials**

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Conditions for the Required De-Rating of a Transition Fitting Fittings MAOP

The **Maximum Allowable Operating Pressures (MAOP)** for molded PE4710 fittings ***must be 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 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.*** **(TABLE 2)**

Fitting MAOP by SDR vs. 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	125 psi	98 psi	79 psi	63 psi

TABLE 2

Dry, gaseous hydrocarbons have no adverse effect on our molded fittings normal expected service life, and naturally occurring chemicals in the soil will not attack or cause our fittings to degrade. They do not rust, rot, or corrode; they naturally resist the buildup of scale and other deposits, and they do not support the growth of algae, bacteria, fungi, or other marine life.

Table 3 provides an added derated MAOP of a molded electrofusion fitting when installed into services and applications subjected to an extended exposure of liquid hydrocarbon concentrations of 2% and greater.

Values in Table 3 use a material design factor of .63 and a Fluid Service Factor of 0.5

MAOP by SDR Derated for Operating Temperature and Transporting a Media Containing 2% or greater Hydrocarbon Content				
SDR	**73.4° F**	**100° F**	**120° F**	**140° F**
7	166 psi	129 psi	105 psi	83 psi
9	125 psi	98 psi	79 psi	63 psi
11	100 psi	78 psi	63 psi	50 psi

TABLE 3

Fluid Service Factors

Produced Water, Brine, Process Water with no associated liquid hydrocarbons	**1.0**
Dry Natural Gas (no hydrocarbon liquids used in Class 1 and Class 2 locations and in low population area not subject to DOT CFR *Title 49 part 192*	**1.0**
Crude Oil, Wet Natural Gas, Liquid Hydrocarbons, Process Water with >2% liquid hydrocarbons	**.5**
Gas Distribution piping that is permeated by solvating chemicals, liquid hydrocarbons or liquified gas condensate	**.5**

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