



2025

**Transition Fitting Submittal Package**



Integrity Fusion Products  
Peachtree City, Georgia  
1/1/2025



## HDPE to Steel Transition Fittings

Integrity Fusion Products manufactures a full line of **Standard and Heavy-Duty Epoxy Coated Carbon Steel** and **Standard Stainless Steel**, HDPE Transition Fittings in a variety of sizes, configurations, SDR's. Current Transition offerings meet or exceed all **ASTM D2513 Cat.3** mechanical joint requirements, with **Cat.1 Transition Fittings to be released soon.** (**Cat.3 Transition Fittings 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.**



**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*

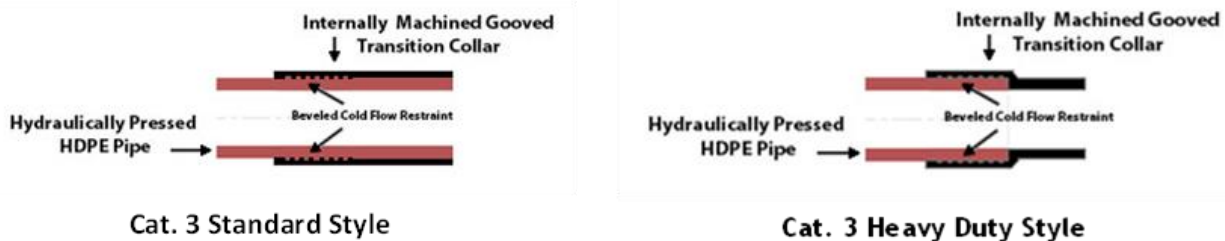
Integrity Fusion Products manufactures a full line of **Epoxy Coated Carbon Steel and Stainless Steel to HDPE Transition Fittings** in a variety of sizes, configurations, SDR's that meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**this fitting CANNOT be used in natural gas applications**). **Integrity Fusion Products Transitioning 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 Transitioning 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**.



**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

### 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.

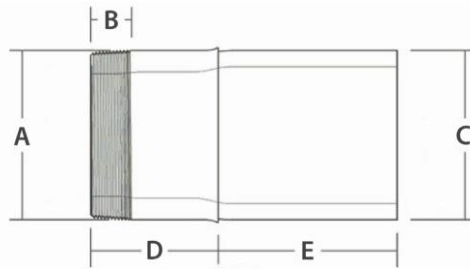
*Values in Table 3 use a material design factor of .63 and a Fluid Service Factor of 0.5*

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

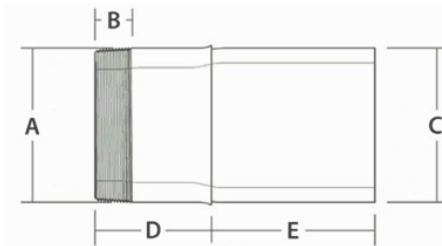


Integrity Fusion Products offers a full line of Standard **ANSI/ASME B1.20.1 NPT** (male MPT or Female FPT), **Epoxy Coated Carbon ASTM A53/API-5 Steel**, and **ASTM A249 or ASTM A269 304 Stainless Steel or 316 Stainless Steel** HDPE Transition Fittings that are **AWWA C116-01 & C213-01** compliant. **Integrity Fusion Products Standard Transition Fittings** provide a robust mechanical joint built around an internally machined and beveled groove design, allowing it to work at the MAOP (*maximum allowable operating pressure*) of the inserted HDPE pipes SDR. **Integrity Fusion Products Standard Transition Fittings** are designed to provide complete, unobstructed HDPE coverage through the ID of the transition collar for total corrosion protection, providing you with a **piggable** seal plus a pipe restraint rating equivalent to the expected thermal stresses that occur in a pipeline. **Integrity Fusion Standard Transition Fittings** meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**this fitting CANNOT be used in natural gas applications**) and are manufactured in a variety of nominal pipe sizes and SDR's. **Integrity Fusion Products Standard Transition Fittings** are manufactured and 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**. **Integrity Fusion Products Standard Transition Fittings** 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**. **Integrity Fusion Products Standard Transition Fittings** are also available in a **Standard Cut Groove design**.

**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:

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

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE PIPE WRENCHES. Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. Always pressure test for leaks before backfilling.** Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.



### Male (MIPT) NPT Transitions

SDR 17 (standard dimension ratio)

125 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter	B Thread Length	C HDPE Pipe OD	D Steel Collar Length	E Exposed HDPE Length	Weight [lbs.]	Item Code
6" IPS	Epoxy	6.625	1.56	6.625	5.00	8.00		400634
	304 Stainless	6.625	1.56	6.625	5.00	8.00		400626
	316 Stainless	6.625	1.56	6.625	5.00	8.00		400630

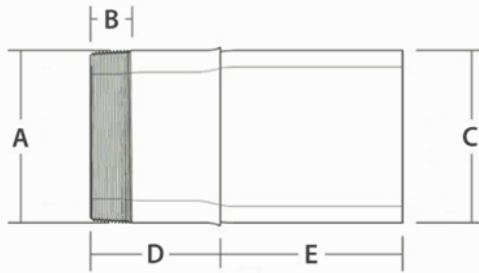
### Male (MIPT) NPT Transitions

SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter r [in.]	B Thread Length [in.]	C HDPE Pipe OD [in.]	D Steel Collar Length [in.]	E Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
¾" IPS	Epoxy	1.050	0.70	10.50	1.80	6.20		400563
	304 Stainless	1.050	0.70	10.50	1.80	6.20		400564
	316 Stainless	1.050	0.70	10.50	1.80	6.20		400571
1" IPS	Epoxy	1.315	0.99	1.315	2.00	6.00		400577
	304 Stainless	1.315	0.99	1.315	2.00	6.00		400573
	316 Stainless	1.315	0.99	1.315	2.00	6.00		400575
1 ¼" IPS	Epoxy	1.660	1.01	1.660	2.60	5.40		400583
	304 Stainless	1.660	1.01	1.660	2.60	5.40		400579
	316 Stainless	1.660	1.01	1.660	2.60	5.40		400581
1 ½" IPS	Epoxy	1.900	1.03	1.900	2.60	5.40		400586
	304 Stainless	1.900	1.03	1.900	2.60	5.40		400585
	316 Stainless	1.900	1.03	1.900	2.60	5.40		400614
2" IPS	Epoxy	2.375	1.06	2.375	3.00	5.00		400593
	304 Stainless	2.375	1.06	2.375	3.00	5.00		400587
	316 Stainless	2.375	1.06	2.375	3.00	5.00		400590
3" IPS	Epoxy	3.500	1.26	3.500	4.00	4.00		400602
	304 Stainless	3.500	1.26	3.500	4.00	4.00		400596
	316 Stainless	3.500	1.26	3.500	4.00	4.00		400599
4" IPS	Epoxy	4.500	1.48	4.500	4.00	8.00		400611
	304 Stainless	4.500	1.48	4.500	4.00	8.00		400605
	316 Stainless	4.500	1.48	4.500	4.00	8.00		400608
6" IPS	Epoxy	6.625	1.56	6.625	5.00	8.00		400633
	304 Stainless	6.625	1.56	6.625	5.00	8.00		400625
	316 Stainless	6.625	1.56	6.625	5.00	8.00		400629

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE TRADITIONAL PIPE WRENCHES (only use strap wrenches).** Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. **Always pressure test for leaks before backfilling.** Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.



### Male (MIPT) NPT Transitions

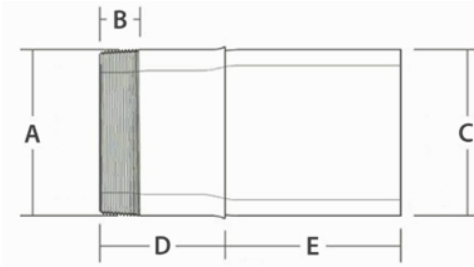
SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter [in.]	B Thread Length [in.]	C HDPE Pipe OD [in.]	D Steel Collar Length [in.]	E Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
1" IPS	Epoxy	1.315	0.99	1.315	2.00	6.00		400578
	304 Stainless	1.315	0.99	1.315	2.00	6.00		400574
	316 Stainless	1.315	0.99	1.315	2.00	6.00		400576
1 1/4" IPS	Epoxy	1.660	1.01	1.660	2.60	5.40		400584
	304 Stainless	1.660	1.01	1.660	2.60	5.40		400580
	316 Stainless	1.660	1.01	1.660	2.60	5.40		400582
2" IPS	Epoxy	2.375	1.06	2.375	3.00	5.00		400595
	304 Stainless	2.375	1.06	2.375	3.00	5.00		400589
	316 Stainless	2.375	1.06	2.375	3.00	5.00		400592
3" IPS	Epoxy	3.500	1.26	3.500	4.00	4.00		400604
	304 Stainless	3.500	1.26	3.500	4.00	4.00		400598
	316 Stainless	3.500	1.26	3.500	4.00	4.00		400601
4" IPS	Epoxy	4.500	1.48	4.500	4.00	8.00		400613
	304 Stainless	4.500	1.48	4.500	4.00	8.00		400607
	316 Stainless	4.500	1.48	4.500	4.00	8.00		400610
6" IPS	Epoxy	6.625	1.56	6.625	5.00	8.00		400636
	304 Stainless	6.625	1.56	6.625	5.00	8.00		400628
	316 Stainless	6.625	1.56	6.625	5.00	8.00		400632

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE TRADITIONAL PIPE WRENCHES (only use strap wrenches).** Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. Always pressure test for leaks before backfilling. Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.





### Male (MIPT) NPT Transitions

SDR 7 (standard dimension ratio)

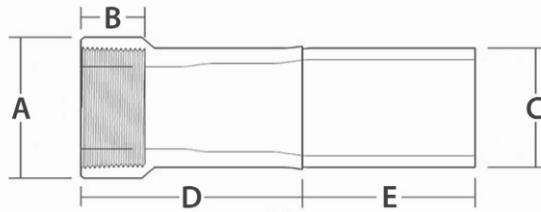
355 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter (in.)	B Thread Length (in.)	C HDPE Pipe OD (in.)	D Steel Collar Length (in.)	E Exposed HDPE Length (in.)	Weight [lbs.]	Item Code
1" IPS	Epoxy	1.315	0.99	1.315	2.00	6.00		400617
	304 Stainless	1.315	0.99	1.315	2.00	6.00		400621
	316 Stainless	1.315	0.99	1.315	2.00	6.00		400616
1 1/4" IPS	Epoxy	1.660	1.01	1.660	2.60	5.40		400620
	304 Stainless	1.660	1.01	1.660	2.60	5.40		400618
	316 Stainless	1.660	1.01	1.660	2.60	5.40		400619
2" IPS	Epoxy	2.375	1.06	2.375	3.00	5.00		400594
	304 Stainless	2.375	1.06	2.375	3.00	5.00		400588
	316 Stainless	2.375	1.06	2.375	3.00	5.00		400591
3" IPS	Epoxy	3.500	1.26	3.500	4.00	4.00		400603
	304 Stainless	3.500	1.26	3.500	4.00	4.00		400597
	316 Stainless	3.500	1.26	3.500	4.00	4.00		400600
4" IPS	Epoxy	4.500	1.48	4.500	4.00	8.00		400612
	304 Stainless	4.500	1.48	4.500	4.00	8.00		400606
	316 Stainless	4.500	1.48	4.500	4.00	8.00		400609
6" IPS	Epoxy	6.625	1.56	6.625	5.00	8.00		400635
	304 Stainless	6.625	1.56	6.625	5.00	8.00		400627
	316 Stainless	6.625	1.56	6.625	5.00	8.00		400631

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE TRADITIONAL PIPE WRENCHES (only use strap wrenches).** Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. Always pressure test for leaks before backfilling. Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.





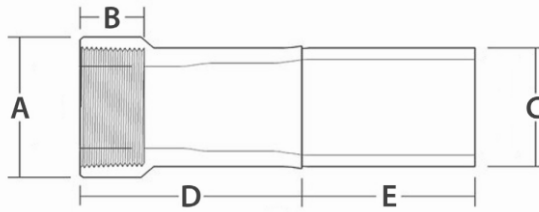


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## Female (FIPT) NPT Transitions

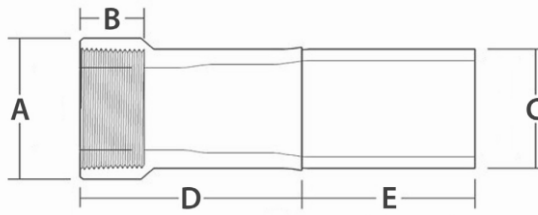
SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter [in.]	B Thread Length [in.]	C HDPE Pipe OD [in.]	D Steel Collar Length [in.]	E Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
¾" IPS	Epoxy	1.240	0.70	1.050	2.20	5.80		400502
	304 Stainless	1.240	0.70	1.050	2.20	5.80		400500
	316 Stainless	1.240	0.70	1.050	2.20	5.80		400501
1" IPS	Epoxy	1.485	0.91	1.315	2.60	5.40		400507
	304 Stainless	1.485	0.91	1.315	2.60	5.40		400503
	316 Stainless	1.485	0.91	1.315	2.60	5.40		400505
1 ¼" IPS	Epoxy	1.900	0.89	1.660	3.40	4.60		400513
	304 Stainless	1.900	0.89	1.660	3.40	4.60		400509
	316 Stainless	1.900	0.89	1.660	3.40	4.60		400511
1 ½" IPS	Epoxy	2.250	0.85	1.900	3.40	4.60		400516
	304 Stainless	2.250	0.85	1.900	3.40	4.60		400515
	316 Stainless	2.250	0.85	1.900	3.40	4.60		400615
2" IPS	Epoxy	2.750	1.00	2.375	3.40	4.60		400523
	304 Stainless	2.750	1.00	2.375	3.40	4.60		400517
	316 Stainless	2.750	1.00	2.375	3.40	4.60		400520
3" IPS	Epoxy	4.144	1.62	3.500	4.38	3.62		400532
	304 Stainless	4.144	1.62	3.500	4.38	3.62		400526
	316 Stainless	4.144	1.62	3.500	4.38	3.62		400529
4" IPS	Epoxy	5.160	1.88	4.500	4.62	7.38		400541
	304 Stainless	5.160	1.88	4.500	4.62	7.38		400535
	316 Stainless	5.160	1.88	4.500	4.62	7.38		400538

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE PIPE WRENCHES (only use strap wrenches). Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. Always pressure test for leaks before backfilling.** Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.





### Female (FIPT) NPT Transitions

SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4°F)

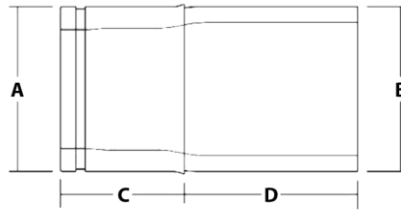
Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter [in.]	B Thread Length [in.]	C HDPE Pipe OD [in.]	D Steel Collar Length [in.]	E Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
1" IPS	Epoxy	1.485	0.91	1.315	2.60	5.40		400508
	304 Stainless	1.485	0.91	1.315	2.60	5.40		400504
	316 Stainless	1.485	0.91	1.315	2.60	5.40		400506
1 1/4" IPS	Epoxy	1.900	0.89	1.660	3.40	4.60		400514
	304 Stainless	1.900	0.89	1.660	3.40	4.60		400510
	316 Stainless	1.900	0.89	1.660	3.40	4.60		400512
2" IPS	Epoxy	2.750	1.00	2.375	3.40	4.60		400525
	304 Stainless	2.750	1.00	2.375	3.40	4.60		400519
	316 Stainless	2.750	1.00	2.375	3.40	4.60		400522
3" IPS	Epoxy	4.144	1.62	3.500	4.38	3.62		400534
	304 Stainless	4.144	1.62	3.500	4.38	3.62		400528
	316 Stainless	4.144	1.62	3.500	4.38	3.62		400531
4" IPS	Epoxy	5.160	1.88	4.500	4.62	7.38		400543
	304 Stainless	5.160	1.88	4.500	4.62	7.38		400537
	316 Stainless	5.160	1.88	4.500	4.62	7.38		400540

### Female (FIPT) NPT Transitions

SDR 7 (standard dimension ratio)

355 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar Epoxy or Stainless	A Thread Diameter [in.]	B Thread Length [in.]	C HDPE Pipe OD [in.]	D Steel Collar Length [in.]	E Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
1" IPS	Epoxy	1.485	0.91	1.315	2.60	5.40		400642
	304 Stainless	1.485	0.91	1.315	2.60	5.40		400640
	316 Stainless	1.485	0.91	1.315	2.60	5.40		400641
1 1/4" IPS	Epoxy	1.900	0.89	1.660	3.40	4.60		400645
	304 Stainless	1.900	0.89	1.660	3.40	4.60		400643
	316 Stainless	1.900	0.89	1.660	3.40	4.60		400644
2" IPS	Epoxy	2.750	1.00	2.375	3.40	4.60		400524
	304 Stainless	2.750	1.00	2.375	3.40	4.60		400518
	316 Stainless	2.750	1.00	2.375	3.40	4.60		400521
3" IPS	Epoxy	4.144	1.62	3.500	4.38	3.62		400533
	304 Stainless	4.144	1.62	3.500	4.38	3.62		400527
	316 Stainless	4.144	1.62	3.500	4.38	3.62		400530
4" IPS	Epoxy	5.160	1.88	4.500	4.62	7.38		400542
	304 Stainless	5.160	1.88	4.500	4.62	7.38		400536
	316 Stainless	5.160	1.88	4.500	4.62	7.38		400539



Integrity Fusion Products offers a full line of Standard, **Epoxy Coated Carbon ASTM A53/API-5 Steel** HDPE Transition Fittings that are **AWWA C116-01 & C213-01** compliant. **Integrity Fusion Products Standard Transition Fittings** provide a robust mechanical joint built around an internally machined and beveled groove design, allowing it to operate at the MAOP (*maximum allowable operating pressure*) of the inserted HDPE pipes SDR. **Integrity Fusion Products Standard Transition Fittings** are designed to provide complete, unobstructed HDPE coverage through the ID of the transition collar for total corrosion protection, providing you with a **piggable** seal plus a pipe restraint rating equivalent to the expected thermal stresses that occur in a pipeline. **Integrity Fusion Standard Transition Fittings** meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**this fitting CANNOT be used in natural gas applications**) and are manufactured in a variety of nominal pipe sizes and SDR's. **Integrity Fusion Products Standard Transition Fittings** are manufactured and 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**. **Integrity Fusion Products Standard Transition Fittings** 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**.

**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:

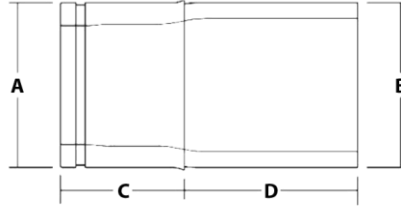
- Oil and gas production
- Municipal potable water distribution and service lines
- Saltwater Disposal
- Irrigation
- Mining
- Geothermal
- Dredging
- Wastewater conveyance
- Process Lines
- Industrial piping applications
- Landfill
- Telecom Conduit

## Machine Grooved Transitions

SDR 17 (standard dimension ratio)

125 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	A Collar Dia. [in.]	B HDPE Pipe OD [in.]	C Steel Collar Length [in.]	D Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
6" IPS	Epoxy	6.625	6.625	5.00	8.00		400551
8" IPS	Epoxy	8.625	8.625	7.00	8.00		400555
10" IPS	Epoxy	10.75	10.75	8.00	8.00		400559
12" IPS	Epoxy	12.75	12.75	9.00	9.00		400561



## Machine Grooved Transitions

SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4° F)

Nominal Size	Transition Collar	A Collar Diameter [in.]	B HDPE Pipe OD [in.]	C Steel Collar Length [in.]	D Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
3" IPS	Epoxy	3.500	3.500	4.00	4.00		400544
4" IPS	Epoxy	4.500	4.500	4.00	4.00		400547
6" IPS	Epoxy	6.625	6.625	5.00	8.00		400550
8" IPS	Epoxy	8.625	8.625	7.00	8.00		400554
10" IPS	Epoxy	10.75	10.75	8.00	8.00		400558
12" IPS	Epoxy	12.75	12.75	9.00	9.00		400560

## Machine Grooved Transitions

SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4° F)

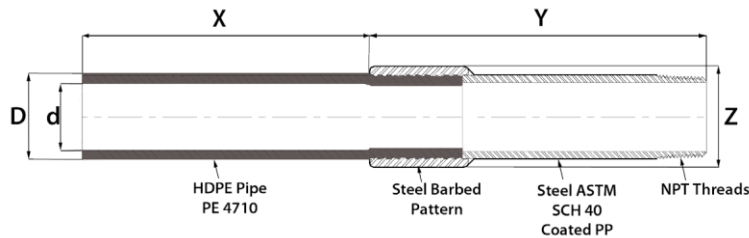
Nominal Size	Transition Collar	A Collar Diameter [in.]	B HDPE Pipe OD [in.]	C Steel Collar Length [in.]	D Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
3" IPS	Epoxy	3.500	3.500	4.00	4.00		400546
4" IPS	Epoxy	4.500	4.500	4.00	4.00		400549
6" IPS	Epoxy	6.625	6.625	5.00	8.00		400553
8" IPS	Epoxy	8.625	8.625	7.00	8.00		400557
10" IPS	Epoxy	10.75	10.75	8.00	8.00		400562

## Machine Grooved Transitions

SDR 7 (standard dimension ratio)

335 PSI (MAOP @ 73.4° F)

Nominal Size	Transition Collar	A Collar Diameter [in.]	B HDPE Pipe OD [in.]	C Steel Collar Length [in.]	D Exposed HDPE Length [in.]	Weight [lbs.]	Item Code
3" IPS	Epoxy	3.500	3.500	4.00	4.00		400545
4" IPS	Epoxy	4.500	4.500	4.00	4.00		400548
6" IPS	Epoxy	6.625	6.625	5.00	8.00		400552
8" IPS	Epoxy	8.625	8.625	7.00	8.00		400556

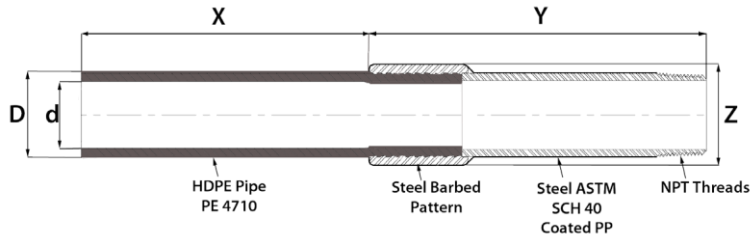


Integrity Fusion Products offers a full line of **Heavy-Duty ANSI/ASME B1.20.1 Male NPT, Internally and Externally Epoxy Coated ASTM A106/A5 Schedule 40 Carbon Steel** HDPE Transition Fittings. **Integrity Fusion Products Heavy-Duty Transition Fittings** provide a robust mechanical joint built around an internally machined and beveled groove design, allowing it to operate at the MAOP (*maximum allowable operating pressure*) of the inserted HDPE pipes SDR. **Integrity Fusion Products Heavy-Duty Transition Fittings** are designed to provide complete, unobstructed HDPE coverage through the ID of the transition collar for total corrosion protection, providing you with a **piggable** seal plus a pipe restraint rating equivalent to the expected thermal stresses that occur in a pipeline. **Integrity Fusion Heavy-Duty Transition Fittings** meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**this fitting CANNOT be used in natural gas applications**) and are manufactured in a variety of nominal pipe sizes and SDR's. **Integrity Fusion Products Heavy-Duty Transition Fittings** are manufactured and 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**. **Integrity Fusion Products Heavy-Duty Transition Fittings** 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**. **Integrity Fusion Products Heavy-Duty Transition Fittings** are also available in a **Heavy-Duty Weld-End** and **Heavy-Duty Cut Groove** design.

**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:

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

**NOTE:** When installing the standard transition fitting, the installer should always use pipe joint sealant or Teflon tape on the threads. First, hand tighten the transition fitting and then use two (2) strap wrenches to tighten the transition fitting the rest of the way. **DO NOT USE PIPE WRENCHES (only use strap wrenches). Pipe wrenches can deform the transition sleeve and result in compromising the seal created between the tightly pressed pipe and internally machined and beveled grooves creating a potential leak path. Over tightening may also damage the transition collar a cause ovality or damage. Always pressure test for leaks before backfilling.** Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.



### Male (MIPT) NPT Transitions

SDR 17 (standard dimension ratio)

125 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
6" IPS	Epoxy	10.54	7.70	6.625	5.845	6.95	17.1	400736

### Male (MIPT) NPT Transitions

SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.36	5.84	2.375	1.943	2.64	2.4	400709
3" IPS	Epoxy	8.87	6.80	3.500	2.864	3.76	5.2	400712
4" IPS	Epoxy	11.43	7.39	4.50	3.682	4.78	8.3	400715
6" IPS	Epoxy	10.54	7.70	6.625	5.421	6.95	18.3	400733

### Male (MIPT) NPT Transitions

SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4°F)

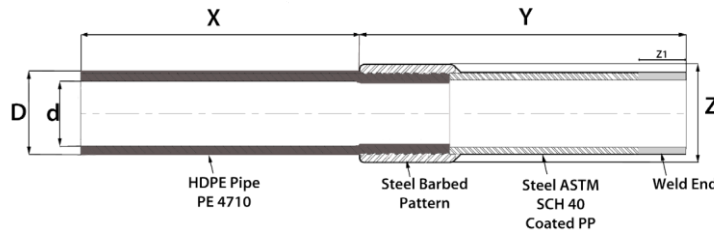
Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.36	5.84	2.375	1.943	2.64	2.6	400711
3" IPS	Epoxy	8.87	6.80	3.500	2.864	3.76	5.5	400714
4" IPS	Epoxy	11.43	7.39	4.50	3.682	4.78	9.9	400717
6" IPS	Epoxy	10.54	7.70	6.625	5.421	6.95	19.6	400734

### Male (MIPT) NPT Transitions

SDR 7 (standard dimension ratio)

335 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.36	5.84	2.375	1.943	2.64	2.8	400710
3" IPS	Epoxy	8.87	6.80	3.500	2.864	3.76	6.0	400713
4" IPS	Epoxy	11.43	7.39	4.50	3.682	4.78	10.7	400716
6" IPS	Epoxy	10.54	7.70	6.625	5.421	6.95	21.3	400735



Integrity Fusion Products offers a full line of **Heavy-Duty Internally and Externally Epoxy Coated, Weld-End ASTM A106/A5 Schedule 40 Carbon Steel** HDPE Transition Fittings. *Integrity Fusion Products Heavy-Duty Transition Fittings* provide a robust mechanical joint built around an internally machined and beveled groove design, allowing it to work at the MAOP (*maximum allowable operating pressure*) of the inserted HDPE pipes SDR. *Integrity Fusion Products Heavy-Duty Transition Fittings* are designed to provide complete, unobstructed HDPE coverage through the ID of the transition collar for total corrosion protection, providing you with a **piggable** seal plus a pipe restraint rating equivalent to the expected thermal stresses that occur in a pipeline. *Integrity Fusion Heavy-Duty Transition Fittings* meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**this fitting CANNOT be used in natural gas applications**) and are manufactured in a variety of nominal pipe sizes and SDR's. *Integrity Fusion Products Heavy-Duty Transition Fittings* are manufactured and 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**. *Integrity Fusion Products Heavy-Duty Transition Fittings* 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**. *Integrity Fusion Products Heavy-Duty Transition Fittings* are also available in a **Heavy-Duty Thread End** and **Heavy-Duty Cut Groove** design.

**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:

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

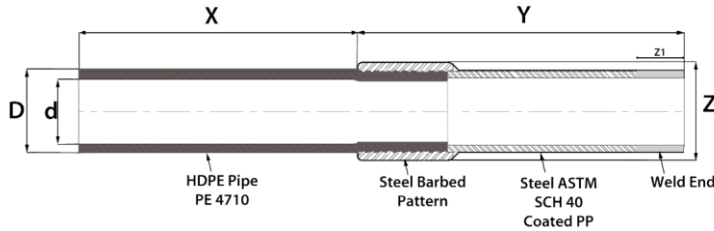
### Weld-End Transitions

SDR 17 (standard dimension ratio)

125 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Z1 Uncoated Weld Zone	Weight [lbs.]	Item Code
6" IPS	Epoxy	13.05	17.88	6.625	5.845	7.08	2.0	44.2	400737
8" IPS	Epoxy	11.72	22.82	8.625	7.611	9.81	2.0	89.1	400738





### Weld-End Transitions

SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4°F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Z1 Uncoated Weld Zone	Weight [lbs.]	Item Code
2" IPS	Epoxy	15.52	13.76	2.375	1.943	3.00	2.0	7.7	400718
3" IPS	Epoxy	15.23	17.84	3.500	2.864	4.03	2.0	13.6	400721
4" IPS	Epoxy	15.12	17.92	4.500	3.682	5.28	2.0	22.7	400724
6" IPS	Epoxy	13.05	17.88	6.625	5.421	7.08	2.0	46.2	400727
8" IPS	Epoxy	11.72	22.82	8.625	7.057	9.81	2.0	92.6	400730

### Weld-End Transitions

SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4°F)

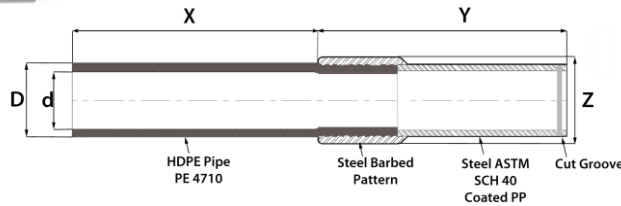
Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Z1 Uncoated Weld Zone	Weight [lbs.]	Item Code
2" IPS	Epoxy	15.52	13.76	2.375	1.943	3.00	2.0	7.9	400720
3" IPS	Epoxy	15.23	17.84	3.500	2.864	4.03	2.0	13.9	400723
4" IPS	Epoxy	15.12	17.92	4.500	3.682	5.28	2.0	23.3	400726
6" IPS	Epoxy	13.05	17.88	6.625	5.421	7.08	2.0	47.5	400729
8" IPS	Epoxy	11.72	22.82	8.625	7.057	9.81	2.0	94.6	400732

### Weld-End Transitions

SDR 7 (standard dimension ratio)

335 PSI (MAOP @ 73.4°F)

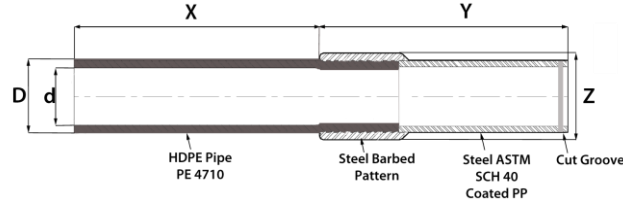
Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Z1 Uncoated Weld Zone	Weight [lbs.]	Item Code
2" IPS	Epoxy	15.52	13.76	2.375	1.943	3.00	2.0	8.1	400719
3" IPS	Epoxy	15.23	17.84	3.500	2.864	4.03	2.0	14.4	400722
4" IPS	Epoxy	15.12	17.92	4.500	3.682	5.28	2.0	24.1	400725
6" IPS	Epoxy	13.05	17.88	6.625	5.421	7.08	2.0	49.2	400728
8" IPS	Epoxy	11.72	22.82	8.625	7.057	9.81	2.0	97.6	400731



Integrity Fusion Products offers a full line of **Heavy-Duty Internally and Externally Epoxy Coated, Groove-End ASTM A106/A5 Schedule 40 Carbon Steel** HDPE Transition Fittings. **Integrity Fusion Products Heavy-Duty Transition Fittings** provide a robust mechanical joint built around an internally machined and beveled groove design, allowing it to work at the MAOP (*maximum allowable operating pressure*) of the inserted HDPE pipes SDR. **Integrity Fusion Products Heavy-Duty Transition Fittings** are designed to provide complete, unobstructed HDPE coverage through the ID of the transition collar for total corrosion protection, providing you with a **piggable** seal plus a pipe restraint rating equivalent to the expected thermal stresses that occur in a pipeline. **Integrity Fusion Heavy-Duty Transition Fittings** meet or exceed the **ASTM D2513 Category 3** mechanical joint requirements (**these fittings CANNOT be used in natural gas applications**) and are manufactured in a variety of nominal pipe sizes and SDR's. **Integrity Fusion Products Heavy-Duty Transition Fittings** are manufactured and 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**. **Integrity Fusion Products Heavy-Duty Transition Fittings** 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**. **Integrity Fusion Products Heavy-Duty Transition Fittings** are also available in a **Heavy-Duty Thread End** and **Heavy-Duty Weld-End** design.

**Steel to HDPE Transition Fittings** manufactured by Integrity Fusion Products, are all-purpose, steel to HDPE mechanical transition fittings designed and manufactured for use in applications that include:

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



AWWA  
C901/C906



### Grooved-End Transitions

SDR 11 (standard dimension ratio)

200 PSI (MAOP @ 73.4° F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.30	5.83	2.375	1.943	2.64	2.4	400700
3" IPS	Epoxy	8.80	6.80	3.500	2.864	3.77	5.4	400703
4" IPS	Epoxy	11.57	7.40	4.500	3.682	4.78	10.3	400706

### Grooved-End Transitions

SDR 9 (standard dimension ratio)

255 PSI (MAOP @ 73.4° F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.30	5.83	2.375	1.943	2.64	2.6	400702
3" IPS	Epoxy	8.80	6.80	3.500	2.864	3.77	5.7	400705
4" IPS	Epoxy	11.57	7.40	4.500	3.682	4.78	10.9	400708

### Grooved-End Transitions

SDR 7 (standard dimension ratio)

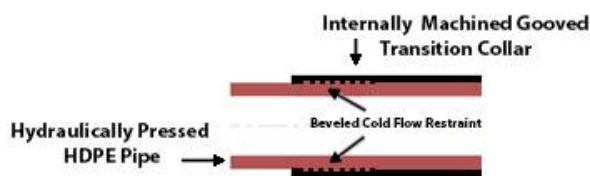
335 PSI (MAOP @ 73.4° F)

Nominal Size	Transition Collar	X Exposed HDPE Length	Y Steel Collar Length	D HDPE Pipe OD	d HDPE Pipe ID	Z Steel Collar Width	Weight [lbs.]	Item Code
2" IPS	Epoxy	9.30	5.83	2.375	1.943	2.64	2.8	400701
3" IPS	Epoxy	8.80	6.80	3.500	2.864	3.77	6.2	400704
4" IPS	Epoxy	11.57	7.40	4.500	3.682	4.78	11.7	400707

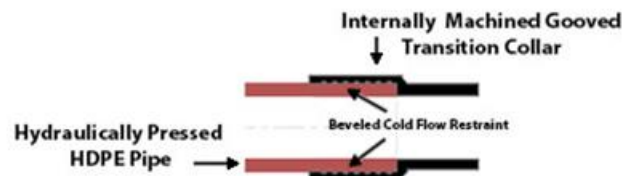
**poxy Coated Carbon Steel and Stainless-Steel Transition Fittings** are simple and reliable, and come in a variety of pipe diameters, configurations, SDR's that meet or exceed **ASTM D2513 Category 3** mechanical joint requirements. The Integrity Fusion Products Standard Transition Fitting design utilizes an internally machined and beveled groove on the interior circumference of the transition collar to hold the hydraulically pressed HDPE pipe in place with a robust mechanical joint that allows it to work at the MAOP of the inserted HDPE pipes SDR.



Once the HDPE pipe is hydraulically pressed into the transition collar, the pipe will "cold flow" into the machined grooves and relax, creating an airtight/watertight seal to prevent leakage. When subjected to pressure, the internal operating pressure flowing through the transition fitting will result in more force being placed on the pipe material that cold flowed into the machined grooves, creating stronger connection, and stronger seal between the pipe material and the transition collar.



**Cat. 3 Standard Style**



**Cat. 3 Heavy Duty Style**

## INSTALLATION RECOMMENDATIONS

**HDPE Transition Fitting Pipe Ends:** can be joined with Butt Fusion, Electrofusion or Compression fittings rated for use with HDPE pipe and fittings. All joints should comply with the pipe manufacturer's recommended procedures.

**Standard Transition Threaded Ends:** the installer should always use pipe joint sealant or Teflon tape on the threads, then hand tighten the transition fitting into place. Using two (2) **strap wrenches** - tighten the transition fitting the rest of the way.

**Do not use pipe wrenches when installing Standard Transition Fittings, only use strap wrenches!**

Pipe wrenches will deform the transition collar and compromise the HDPE pipe seal around internally machined grooves and create a potential leak path. Over tightening the transition collar may also cause ovality or damage. Always pressure test for leaks before backfilling. Backfill and compact carefully around the transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.



**Heavy Duty Transition Threaded Ends:** the installer should always use pipe joint sealant or Teflon tape on the threads, then hand tighten the transition fitting into place. It is **highly recommended** to use two (2) **strap wrenches** to tighten the transition fitting the rest of the way. However, **pipe wrenches can be used** but care must be taken to not be over-aggressive when tightening the transition and inadvertently break the seal around the internally machined grooves.

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Integrity Fusion Products, Inc. warrants its materials to be free of defects in workmanship under normal use and service, when used for purposes under the conditions for which they are intended for a period of one (1) year.

*This warranty shall not apply to any Integrity Fusion Products, Inc. material that has been altered, repaired and/or used in any way, stored outside, or has been subject to misuse, negligence, accident and/or has not been installed in accordance with installation instructions.*

*This warranty does not cover labor or other costs of installing or repairing the products. Buyer's sole remedy for defective product shall be to receive replacement product as provided in this Limited Warranty. Seller's liability arising out of or related to the product supplied by Integrity Fusion Products shall in no event exceed the original price of the defective product. Seller will not be liable for any consequential, incidental, special, indirect or punitive damages, loss of profits, loss of business opportunity or other loss even if seller knew or should have known of the possibility of such damages or losses. Buyer shall assume all responsibility and expenses for removal, reinstallation and freight charges in connection with the foregoing remedy.*

*Integrity Fusion Products, Inc. shall not be held liable for any delays caused by shipping any material or equipment by third party shipping companies. Integrity Fusion Products, Inc. shall not be responsible for any delays caused by shipping errors of material and/or equipment.*

*Any claim regarding shortage or damages from shipment of material must be submitted in writing to Integrity Fusion Products, Inc within 7 days after receipt of shipment. Buyer shall note loss or damage on shipment Bill of Lading and provide a delivery receipt stating such with driver's signature. Loss or damages to materials in transit is the responsibility of the carrier*

*The buyer must comply with the standard warranty investigation procedures for Integrity Fusion Products which includes providing sample of the product in question and completing Integrity Fusion Products Investigation Report Form. Failure to provide needed and required information and samples for investigation purposes will result in the limited warranty being null and void.*

#### **General Electrofusion Requirements**

*Installation of electrofusion fittings requiring 42V-48V must be carried out using an IntegriFuse or I Fuse 105 Electrofusion processor. For IntegriFuse Electrofusion fittings requiring an amperage of over 80 amps, the IntegriFuse I Fuse 105 Electrofusion Processor is required.*

*The I Fuse 105 Electrofusion processor is an 8-48-volt output multi-voltage fusion processor with temperature compensating feature operating at 220/230 VAC requiring power supplied through a portable power generator rated at the necessary continuous watts.*

*If the pipe is out of round the use of a Re-Round Clamp is required to ensure proper installation.*

*Improper scraping, cleaning, and alignment of pipe during the installation procedures results in limited warranty being null and void.*

*Electrofusion Installation instructions must be adhered to or our Limited Warranty is null and void. Installation of electrofusion fittings must be carried out by properly trained and qualified operator(s). Large diameter fittings require certification by Integrity Fusion Products, Inc.*

#### **Integrifuse Valve**

*The Limited Warranty shall apply only to operations which fall under the guidelines of conditions in which the valve was designed for and for applications of normal use. The limited liability will be null and void in the case that the valve failure was caused by excessive operating or surge pressure, introduction of any chemicals or acids that cause degradation to the seats or stem, excessive water hammer, introduction of abrasives such as sand and or grit, butt fusion of HDPE pipe material with SDR differences greater than 2 (SDR 11 to SDR 17 is not permitted), hot soil conditions, excessive temperature.*

#### **Integrifuse Butt Fusion Fittings**

*The Limited Warranty shall apply only to operations which fall under the guidelines of conditions in which the butt fusion fitting was designed for and for applications of normal use. The limited liability will be null and void in the case that the fitting failure was caused by excessive operating or surge pressure, excessive water hammer, introduction of abrasives such as sand and or grit that have cause abrasion of the fitting, butt fusion of HDPE pipe material with SDR differences greater than 2 (SDR 11 to SDR 17 is not permitted). This warranty does not cover failure resulting from improper fusion by the installer.*

**Purchaser is responsible for passing on this Limited Warranty to their customer.**