Conventional Fusion: General Product Information

Due to the unique material characteristics of polyethylene, heat fusion allows successful joining of pipe and fittings into a single leak-free system with no connections to corrode or loosen.

"The basic principle of heat fusion (in this case butt, saddle or socket fusion) is to heat and melt the joint surfaces and force the melted surfaces together, which causes the materials to mix and fuse into a monolithic joint." ***AWWA PE Pipe - Design and Installation, Manual of Water Supply Practices M55***

Georg Fischer Central Plastics has been actively involved in the research and development of innovative joining methods for polyethylene piping systems since the early 1960's. Recognized as an industry leader in the world of manufactured Polyethylene (PE) fittings; Georg Fischer Central Plastics offers our customers the broadest and most complete line of Butt, Saddle, and Socket fusion fittings. All designed, manufactured and tested in Shawnee, Oklahoma. under ISO 9001 standards and serviced by an experienced staff of the most knowledgeable and customer friendly professionals you could hope to find.

Bringing unrivaled knowledge, experience and manufacturing capabilities to industries throughout the world, Georg Fischer Central Plastics delivers innovative and cost effective pipe joining solutions right to your door step. Servicing the polyethylene fitting needs in natural gas, potable water, municipal wastewater, oil and gas gathering, mining, landfill, telecommunications, geothermal, irrigation and other industries; Georg Fischer Central Plastics is helping to ensure that your conventional fusion job is done right - the first time.

With an extensive and state of the art in-house testing facility, Georg Fischer Central Plastics performs the following tests on all of our Butt, Saddle, and Socket fittings.

- ASTM D 1599 - Minimum Hydraulic Burst Pressure Test.
- ASTM D 1598 -Sustained Pressure Test Results.
- ASTM D638 Tensile Strength Test.
- PE3408/PE4710 Fittings are tested to the requirements of AWWA C906 (where applicable)
- PE3408/PE4710 FM Tested and Approved (where applicable)

Conventional Fusion: Allowable Operating Pressures

The following charts represent the **Allowable Operating Pressure** for fittings manufactured from three grades of polyethylene resin used in our products. These values represent the most common **Standard Dimension Ratios** (SDR) used in the industries that we service and are further divided based on the design factors determined by each of their related governing authorities.

- .32 for natural gas distribution systems regardless of resin used
- .50 for water applications for PE3408 resins
- .63 for water applications for PE4710 resins

} All design factors are assuming a standard operating temperature of 73°F

NOTE: For other fluids, temperatures, chemicals and environmental considerations additional design factors may be required. (i.e. Canadian gas utilities use a .40 design factor for their natural gas applications.)

DOT Allowable Operating Pressure for Natural Gas Plastic Pipe Systems

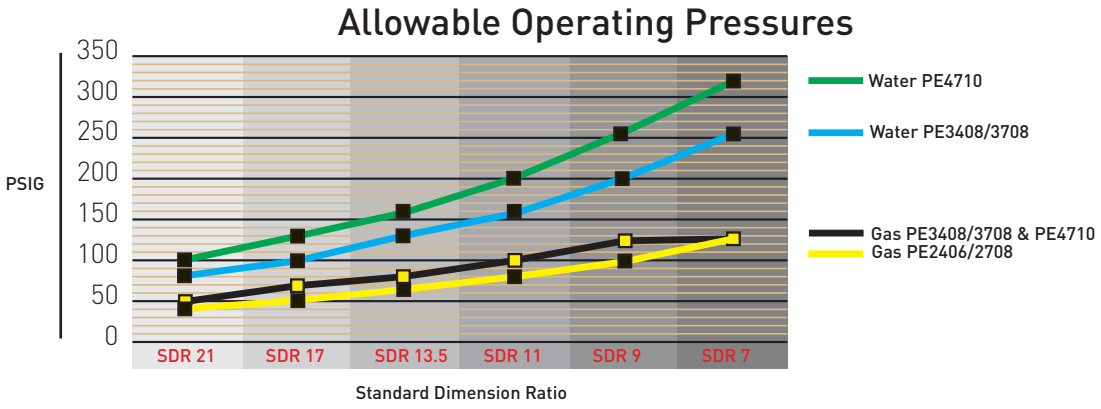
.32 design factor @ 73°F

SDR	PE2406/PE2708 **DOT Allowable**	PE3408 **DOT Allowable**	PE4710 **DOT Allowable**
21	40	50	50
17	50	64	64
13.5	64	80	80
11	80	100	100
9	100	125**	125**
7	125**	125**	125**

** DOT Regulations only allow a 125 psig max for natural gas plastic pipe systems regardless of the materials Maximum Allowable Operating Pressure (MAOP).

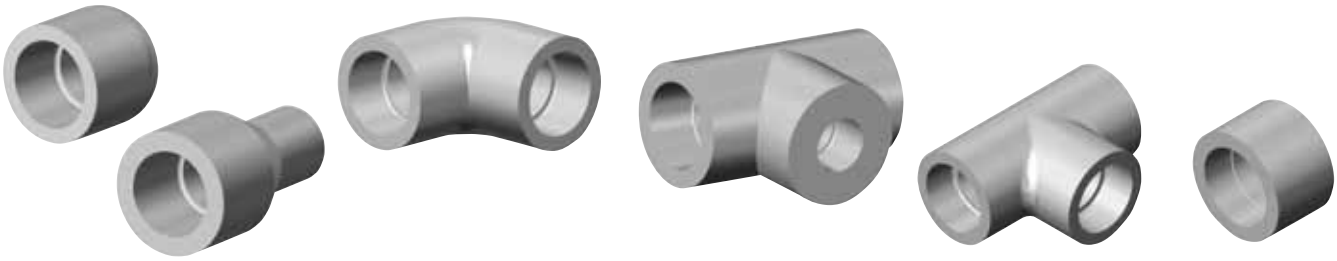
Allowable Operating Pressure for Municipal & Industrial Applications

SDR	PE3408 **.50 design factor @ 73°F**	PE4710 **.63 design factor @ 73°F**
21	80	100
17	100	130
13.5	130	160
11	160	200
9	200	255
7	265	335



NOTE: Operating Pressure for Conventional Tapping Tees and Conventional Branch Saddles are determined by the material used, the outlet SDR and the governing regulations.

Conventional Fusion: Socket Fusion Fittings



Georg Fischer Central's Molded PE2406/PE2708 Socket Fusion fittings are manufactured and tested to the requirements of ASTM D2513 and ASTM D2683 and are sized for use with pipe conforming to ASTM D2513. GF Central's PE2406/PE2708 Socket fittings are molded from a virgin yellow medium density resin in accordance with the material specifications listed in ASTM D3350. All Georg Fischer Central Plastic's PE2406/PE2708 Socket Fusion Fittings are compatible for heat fusion with any pipe or fitting manufactured from a like or similar resin. Georg Fischer Central's PE2406/PE2708 fittings have been qualified for fusion using ASTM D2657 generic fusion procedures.

Georg Fischer Central's Molded PE3408/PE4710 Socket Fusion fittings are fully manufactured and tested to the requirements of ASTM D2513 and ASTM D2683 and are manufactured for use with outside diameter controlled pipe and fittings conforming to ASTM D2513 and ASTM F-714. GF Central's PE3408/PE4710 Socket fittings are molded from a virgin black high density resin in accordance with the material specifications listed in ASTM D3350. All GF Central Plastic's PE3408/PE4710 Fusion fittings are manufactured and tested to the requirements of ASTM D2513 and ASTM D2683 and are compatible for heat fusion with any pipe and or fitting manufactured from a like or similar resin. GF Central's PE3408/PE4710 fittings have been qualified for fusion using ASTM D2657 generic fusion procedures.

AVAILABLE FEATURES

- Pressure ratings up to SDR7 on most sizes.
- IAPMO Approved (where applicable).
- CSA Approved (where applicable).
- Can be used with all socket fusion methods.

Conventional Fusion: PE Adapters

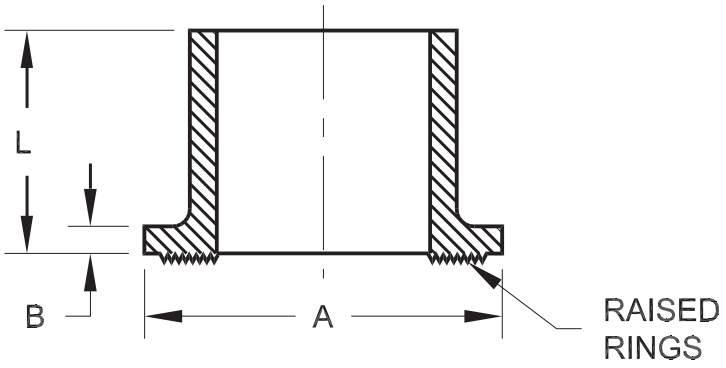
Georg Fischer Central's PE3408/PE4710 Flange Adapters and MJ Adapters are manufactured and tested to the requirements of ASTM D3261 and ASTM D3261 and ANSI/AWWA C906 for use with pipe conforming to ASTM D2513/3035, F-714 and with Butt fittings conforming to ASTM D3261 as applicable. Georg Fischer Central's PE3408/PE4710 Flange Adapters and MJ Adapters are molded from an NSF listed resin in accordance with the material specifications listed in ASTM D3350. All GF Central Plastic's PE3408/PE4710 Flange Adapters and MJ Adapters are compatible for heat fusion with any pipe or fitting manufactured from a like or similar resin.

FEATURES

- Pressure rated for municipal and trial applications.
- PE3408/PE4710 FM Approved (where applicable).
- PE3408/PE4710 fittings are tested to the requirements of AWWA C906.
- Can be heat fused using conventional and electrofusion fusion methods.
- Can be beveled for butterfly valves when requested.
- MJ Adapters can be provided with stiffeners when requested.

Flange Adapters

Beveled for Butterfly Valves available on request.
Standard 45° bevel unless otherwise specified by customer.**



**Due to variations in valve dimensions, the installer should verify proper function of the valve at the time of installation.

Call for availability of other sizes and dimensions.

IPS FLANGE ADAPTER DIMENSIONS

Nominal Size	A	B	L
2" IPS	3.94	0.39	6.00
3" IPS	5.00	0.63	6.00
4" IPS	6.00	0.54	6.00
6" IPS	8.50	0.78	8.00
8" IPS	10.63	1.00	11.00
10" IPS	12.75	1.28	12.00
12" IPS	15.00	1.54	12.00
14" IPS	17.50	1.50	12.00
16" IPS	20.00	1.75	12.00
18" IPS	21.38	1.88	12.00
20" IPS	23.47	2.27	12.00
22" IPS	25.59	2.50	12.00
24" IPS	27.85	2.82	12.00

(PE3408/PE4710) IPS FLANGE ADAPTERS

Size	SDR	Part Number	Pack. Qty.	Wt.	AWWA
2" IPS	DR 17	10004395	10	0.40	YES
2" IPS	DR 11	10007486	10	0.49	YES
2" IPS	DR 9/9.3	10004397	10	0.55	YES
2" IPS	DR 7/7.3	10004396	10	0.65	YES
3" IPS	DR 17	10004443	10	0.76	YES
3" IPS	DR 11	10007487	10	0.95	YES
3" IPS	DR 9/9.3	10004447	10	1.15	YES
3" IPS	DR 7/7.3	10004446	10	1.28	YES
4" IPS	DR 17	6910823	4	1.54	YES
4" IPS	DR 11	6912104	4	1.58	YES
4" IPS	DR9/9.3	10003642	4	1.74	YES
4" IPS	DR 7/7.3	6912368	4	2.38	YES
6" IPS	DR 17	6910835	2	4.16	YES
6" IPS	DR 11	6912105	2	4.43	YES
6" IPS	DR 9/9.3	6912377	2	4.25	YES
6" IPS	DR 7/7.3	10004473	2	5.91	YES
8" IPS	DR 17	6911501	2	10.10	YES
8" IPS	DR 11	6912124	2	10.10	YES