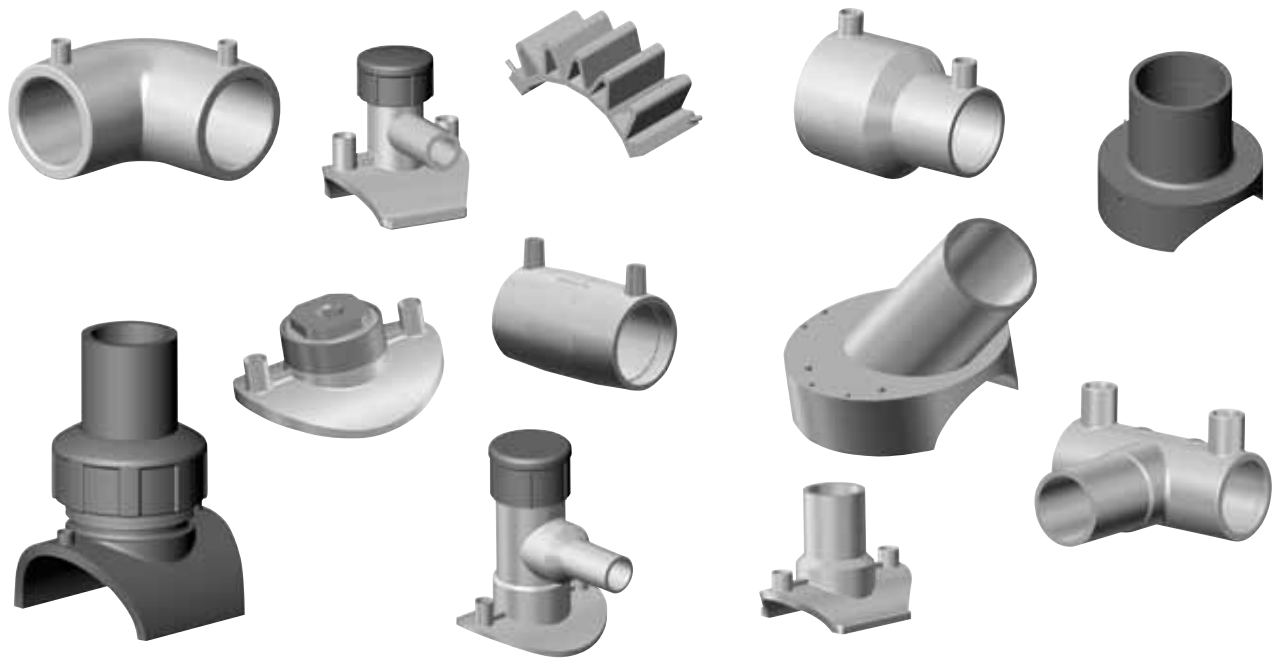


## Electrofusion: Fittings Information



Georg Fischer Central Plastics Electrofusion fittings are designed and manufactured in accordance with ASTM F-1055 for use with pipe conforming to ASTM D2513/3035, F-714 and with Butt fittings conforming to ASTM D3261 as applicable. These fittings can be supplied with an integral identification resistor which is recognized by GF Central Plastics' processors to automatically set the proper fusion parameters. Electrofusion fittings are supplied with a 24 digit ISO compliant barcode label which facilitates the simple input of correct fusion parameters.

PE2406/PE2708 and PE3408/PE4710 Electrofusion fittings are produced from high quality virgin resins that have designated listings of PE2406/2708 or PE3408/PE4710 both of which comply with ASTM D3350.

### AVAILABLE FEATURES

- Compatible for fusion to either PE2406/PE2708 or PE3408/PE4710 and other similar pipe.
- Cross-fusion compatible without special fusion instructions
- Pressure rated for natural gas and potable water applications.
- PE3408/PE4710 fittings utilize NSF listed resin
- PE3408/PE4710 fittings are tested to the requirements of AWWA C906
- PE3408/PE4710 fittings are FM approved (where applicable – see FM Section)
- CSA Certification (where applicable)
- Available in metric sizes

## Electrofusion: Product Information

According to ASTM F1290-90, electrofusion is defined as

**“a heat fusion joining process where the heat source is an integral part of the fitting, such that when an electrical current is applied, heat is produced that melts and joins the plastic.”**

At Georg Fischer Central Plastics, we are proud to be recognized as the company that pioneered and introduced the concept of electrofusion to industries throughout the United States in 1983.

Recognized as an industry leader in the world of electrofusion fitting design and manufacturing, GF Central Plastics offers our customers the most complete package of electrofusion fittings. All designed, manufactured and tested in Shawnee, Oklahoma, under the highest ISO 9001 quality 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, GF 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 all of the following tests on all of our Electrofusion fittings.

- ASTM D1599 - Minimum Hydraulic Burst Pressure Test.
- ASTM D1598 - Sustained Pressure Test.
- ASTM F1055 Tensile Strength Test.
- Joint Integrity Test.
- ASTM F1055 9.4.1 Crush test of pipe without separation from electrofusion zone.
- ASTM D3034 - Gasketed Outlet Tested to 30 psi > 100 hrs (where applicable)
- PE3408/PE4710 fittings are tested to the requirements of AWWA C906 (where applicable).

# Electrofusion: 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 two primary industries that we service and are further divided up based on the design factors determined by each of their related governing authorities.

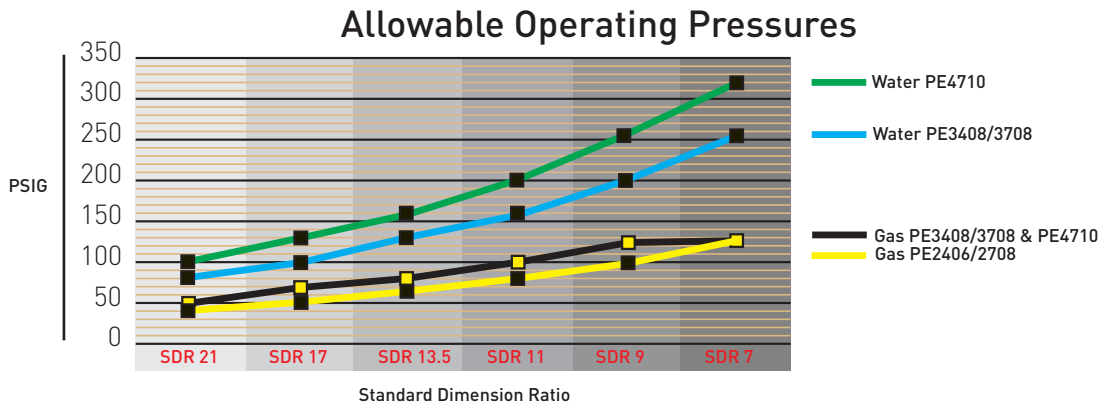
- .32 for natural gas distribution systems regardless of resin used
  - .50 for water applications for PE3408/PE3608 resins
  - .63 for water applications for PE4710 resins
- } All designs factors are assuming a standard operating temperature of 73°F

**NOTE:** For other fluids, temperatures, chemicals and environmental considerations additional design factors may be required. (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	PE 2406/PE2708 DOT Allowable	PE 3408 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**

Allowable Operating Pressure for Municipal & Industrial Applications		
SDR	PE 3408 (.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

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



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

## Electrofusion: Equipment Information

Whether the installer of an electrofusion fitting is in a controlled environment or in one of many rigorous field applications, Georg Fischer Central Plastics recommends the proper use of approved installation equipment in order to ensure the successful installation of the fitting. Electrofusion installation equipment typically falls into one of three general categories:

1. **Pipe preparation equipment** which includes various pieces of equipment used to prepare the pipe surface before the fusion process is initiated. Examples of this type of equipment include tools that are designed to remove calculated amounts of surface material from the pipe as well as re-rounding tools which are necessary at times to ensure that the pipe surface is not outside the published out-of-round pipe tolerances in order for the fusion process to take place.
2. **Pipe restraint devices** include various types of equipment (i.e. clamps and straps) designed to fit specific Georg Fischer Central Plastics fittings for the purpose of holding the fitting in place for the duration of the fusion process and then continuing to immobilize the fitting being installed until the cooling cycle is complete.
3. **Electrofusion Processors** which are specially designed computer-controlled equipment that subject the fitting being installed to a regulated amount of voltage for a designated amount of time.

### MANUFACTURERS NOTE

Permanent field installation of electrofusion fittings should be done only by operators who have been properly trained and qualified. Please refer to the Georg Fischer Central Plastics Electrofusion Installation Manual for proper installation techniques. Should you have any questions or need installation training please contact:

**Georg Fischer Central Plastics at (800) 654-3872**

or

**Your Local GF Central Plastics Representative**

## Electrofusion Fittings: Couplings

NOTE: Operating Pressure is 200 psi for PE4710 Couplings in allowable applications.

### (PE3408/PE4710) ELECTROFUSION COUPLINGS

Size	Description	Pin Type	Part Number	Pack. Qty.	Wt.	AWWA
½" CTS	ASTM D2513/F1055	4.7 R	5760019	50	0.09	YES
¾" CTS	ASTM D2513/F1055	4.7 R	10004578	40	0.10	YES
1" CTS	ASTM D2513/F1055	4.7 R	5760023	25	0.18	YES
1¼" CTS	ASTM D2513/F1055	4.7 R	10004573	30	0.16	YES
2" CTS	ASTM D2513/F1055	4.7 S	10004580	30	0.46	-
½" IPS	ASTM D2513/F1055	4.7 R	10004627	40	0.13	YES
¾" IPS	ASTM D2513/F1055	4.7 R	5760022	25	0.29	YES
1" IPS	ASTM D2513/F1055	4.7 R	5760024	25	0.14	YES
1¼" IPS	ASTM D2513/F1055	4.7 R	5760026	50	0.28	YES
1½" IPS	ASTM D2513/F1055	4.7 R	5760028	35	0.34	YES
2" IPS	ASTM D2513/F1055	4.7 R	5760030	25	0.38	YES
2½" IPS	CONDUIT PSI=0	3 Pin	call	20	0.55	-
3" IPS	ASTM D2513/F1055	4.7 R	10000358	36	1.57	YES
4" IPS	ASTM D2513/F1055	4.7 R	10000360	10	1.67	YES
6" IPS	ASTM D2513/F1055	4.7 R	10000359	8	4.37	YES
7" IPS	ASTM F1055	4.7 S	10003970	4	7.86	-
8" IPS	ASTM D2513/F1055	4.7 R	10000361	4	8.43	YES
10" IPS	ASTM D2513/F1055	4.7 R	10004579	1	15.40	YES
10" IPS **	ASTM D2513/F1055	4.7 S	10000362	1	15.24	YES
12" IPS	ASTM D2513/F1055	4.7 R	10004571	1	23.10	YES
12" IPS **	ASTM D2513/F1055	4.7 S	10000363	1	23.90	YES
1¼" SIDR 7	1.488 OD CONDUIT PSI=0	4.7 R	10004575	40	0.29	-
1¼" SIDR 9	1.580 OD CONDUIT PSI=0	4.7 R	10004577	30	0.24	-
4" DIPS	ASTM D2513/ F1055	4.7 S	10000353	10	2.34	YES
6" DIPS	ASTM D2513/ F1055	4.7 S	10000354	8	4.59	YES
8" DIPS	ASTM D2513/ F1055	4.7 S	10000355	4	8.37	YES
10" DIPS	ASTM D2513/ F1055	4.7 S	10000356	1	17.43	YES
12" DIPS	ASTM D2513/F1055	4.7 S	10000357	1	25.67	YES

Call for availability of other sizes and dimensions.

\*\* For Use with Bar-Code Processor Only

4.7R = 4.7 Pin with Resistor

4.7S = 4.7 Solid Pin