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PRODUCT SPECIFICATION:**BUTT FUSION FITTINGS
PE3408/PE4710 PLUS HDPE BLACK**

FAMILY:	PE FITTINGS
PRODUCT:	BUTT FUSION FITTING
TYPE:	Specification
DOC:	PS-102 - REV 10 - 3/28/2019
PAGES:	3

SCOPE:

This document describes the standard specifications and features related to GF Central Plastics' PE4710 (PLUS) butt fusion fittings for pressure piping systems. This specification covers Tees, Elbows, Caps, and Reducers.

SIZES:

Tee: ½ CTS – 2 CTS, ½ IPS – 12 IPS, 4 DIPS – 12 DIPS
45 Degree Elbow: 2 IPS through 12 IPS, 4 DIPS through 12 DIPS
90 Degree Elbow: ¾ IPS through 12 IPS, 4 DIPS through 12 DIPS
Reducer, Cap: ½ CTS – 12 IPS

**REQUIREMENTS:**

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 \(PE\) Plastics Pipe and Tubing](#)
AWWA C906 [Standard for Polyethylene Pressure Pipe and Fittings, 4 in. Through 63 in., for Water Distribution](#)
CSA B137.4 [Polyethylene Piping Systems for Gas Service](#)

REFERENCE DOCUMENTS:

ASTM F2620 [Standard Practice for Heat Fusion Joining Polyethylene Pipe and Fittings](#)
AWWA C906 [Standard for Polyethylene Pressure Pipe and Fittings, 4 in. Through 63 in., for Water Distribution](#)
ANSI/NSF 61 [Standard for Drinking Water System Components and Health Effects](#)
PPI TR-19 [Thermoplastics Piping for the Transport of Chemicals](#)
PPI TR-31 [Underground Installation of Polyolefin Pipe](#)
ASTM F2164 [Standard Practice for Field Leak Testing of Polyethylene \(PE\) Pressure Piping Systems Using Hydrostatic Pressure](#)

CERTIFICATIONS/LISTINGS:

FM 1613 [Plastic Pipe and Fittings for Underground Fire Protection Service](#)
ANSI/NSF 61 [Standard for Drinking Water System Components and Health Effects](#)
CSA B137.4.1 [Polyethylene Piping Systems for Gas Service](#) (≤ 8 IPS - PE4710 PLUS listing)

MATERIALS:

PE Resin: Pre-blended black high density virgin resin. Recognized by the Plastic Pipe Institute as having a PE3408 / PE4710 / PE100 rating and a Hydrostatic Design Basis of 1600 psi @ 73°F. PE4710 PLUS rated per CSA Z662 and B137.4. This resin has a cell classification of 445574C* and a chlorine resistance rating of CC3 in accordance with ASTM D3350.

*Note: Previous editions of ASTM D3350 resulted in a cell classification of 345464C and 345564C.

TEST METHODS:

ASTM D1598 Standard Test Method for Time-to-Failure of Plastics Pipe Under Constant Internal Pressure

Must exceed 200 hours in 80°C bath @ 750 psi hoop stress, or
Must exceed 1000 hours in 80°C bath @ 660 psi hoop stress, or
Must exceed 1000 hours in 23°C bath @ 1600 psi hoop stress.

(All methods are considered equivalent)

ASTM D1599 Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fittings.

Uniform pressurization until failure occurs between 60 and 70 seconds from start of test. Must result in ductile failure of the pipe, independent of the fitting or fusion, at a pressure great enough to create a 2900 psi hoop stress in the pipe.

AWWA C906 Section 4.5 Fitting Test Requirements

Five second pressure test 4x's the rated working pressure performed on each production lot.

ASTM D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

FEATURES:

Made in USA from pre-blended virgin materials with CSA Z662 and B137.4 PE4710 PLUS designation. These fittings are available in various configurations and DR and are primarily intended for use in pressure piping applications. These fittings are compatible for heat fusion to any PE material made from a like or similar resin. NSF 61 Listed. Select sizes can be supplied with CSA, AWWA, or FM marking. Designed for use on pipe conforming to ASTM F714, D2513, and D3035.

PRESSURE RATING:

PE4710 Butt Fusion Fittings are pressure rated in accordance with industry and regulatory guidelines for natural gas or water @73°F using unit stresses and recommend design factors. Pressure ratings are subject to change depending on ambient temperatures. Pressure ratings vary according to wall thickness and the design factor for the intended application, see below for ratings:

Fitting DR	Pressure Rating (PSI) @ 73° F (23° C)			
	Water (.63 DSF)	Water (.5 DSF)	Natural Gas (.4 DSF) US	Natural Gas (.45 DSF) Canada PLUS
7	335	265	170*	215*
9	250	200	160*	180
11	200	160	125*	145
13.5	160	125	102	115
17	125	100	80	90
21	100	80	64	70
26	80	65	51	58
32.5	65	50	40	45

*49 CFR Part 192 limits the maximum operating pressure of regulated plastic pipeline to 125 psi.

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

The maximum operating temperature of PE4710 butt fusion fittings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

STORAGE/SHELF LIFE: Black high density polyethylene resin contains a minimum 2% of a finely dispersed concentration of carbon black which provides some degree of protection from UV effects for up to 10 years. Even so, it is recommended that fittings which are stored for extended periods (two years or greater) be stored indoors in their original packaging. Fittings stored indoors in their original packaging have virtually unlimited shelf-life.

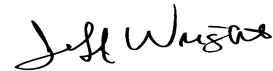
CHEMICAL RESISTANCE: Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION:

These fittings are compatible for heat fusion by butt, socket, or electrofusion joining products. They can be heat fusion joined to pipe or fittings manufactured from like or similar resin. Qualified mechanical joining products can be used to join these fittings, consult the manufacturer for recommendations. Fusion jointing should only be attempted by persons who have been trained and have qualified joints through destructive testing.

End of Life/Disposal: Polyethylene fittings are 100% recyclable and suitable for recycling into post-consumer products.

Approved by:



Jeff Wright
Technical Director

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PRODUCT SPECIFICATION:**BUTT FUSION FITTINGS
PE2708 MDPE YELLOW**

FAMILY:	PE FITTINGS
PRODUCT:	BUTT FUSION FITTING
TYPE:	Specification
DOC:	PS-101 - REV 2 - 5/28/2019
PAGES:	3

SCOPE:

This document describes the standard specifications and features related to GF Central Plastics' PE2708 butt fusion fittings for pressure piping systems. This specification covers Tees, Elbows, Caps, and Reducers.

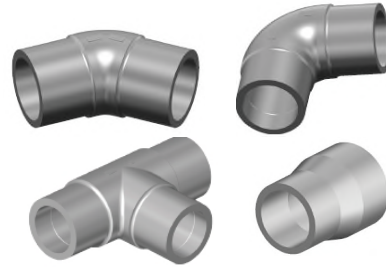
SIZES:

Tee: ½ CTS – 2 CTS, ½ IPS – 12 IPS

45 Degree Elbow: 2 IPS through 12 IPS

90 Degree Elbow: ¾ IPS through 12 IPS

Reducer, Cap: ½ CTS – 8 IPS

**REQUIREMENTS:**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 \(PE\) Plastics Pipe and Tubing](#)CSA B137.4 [Polyethylene Piping Systems for Gas Service](#)**REFERENCE DOCUMENTS:**ASTM F2620 [Standard Practice for Heat Fusion Joining Polyethylene Pipe and Fittings](#)PPI TR-19 [Thermoplastics Piping for the Transport of Chemicals](#)PPI TR-31 [Underground Installation of Polyolefin Pipe](#)ASTM F2164 [Standard Practice for Field Leak Testing of Polyethylene \(PE\) Pressure Piping Systems Using Hydrostatic Pressure](#)**CERTIFICATIONS/LISTINGS:**CSA B137.4.1 [Polyethylene Piping Systems for Gas Service](#)**MATERIALS:**

PE Resin: INEOS K38-20-160 pre-blended medium density virgin resin. Recognized by the Plastic Pipe Institute as having a PE2708 / PE80 rating and a Hydrostatic Design Basis of 1250 psi @ 73°F. This resin has a cell classification of 234373E* in accordance with ASTM D3350.

*Note: Previous editions of ASTM D3350 resulted in a cell classification of 234363E.

TEST METHODS:ASTM D1598 [Standard Test Method for Time-to-Failure of Plastics Pipe Under Constant Internal Pressure](#)

Must exceed 170 hours in 80°C bath @ 670 psi hoop stress, or
Must exceed 1000 hours in 80°C bath @ 580 psi hoop stress, or
Must exceed 1000 hours in 23°C bath @ 1600 psi hoop stress.

(All methods are considered equivalent)

ASTM D1599 Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fittings.

Uniform pressurization until failure occurs between 60 and 70 seconds from start of test. Must result in ductile failure of the pipe, independent of the fitting or fusion, at a pressure great enough to create a 2520 psi hoop stress in the pipe.

ASTM D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

FEATURES:

Made in USA from pre-blended virgin materials with CSA Z662 and B137.4 designation. These fittings are available in various configurations and DR and are primarily intended for use in pressure piping applications. These fittings are compatible for heat fusion to any PE material made from a like or similar resin. Designed for use on pipe conforming to ASTM F714, D2513, and D3035. Butt fusion fittings can be joined with qualified mechanical fittings deemed suitable by their manufacturer.

PRESSURE RATING:

PE2708 Butt Fusion Fittings are pressure rated in accordance with industry and regulatory guidelines for natural gas @73°F using unit stresses and recommend design factors. Pressure ratings are subject to change depending on ambient temperatures. Pressure ratings vary according to wall thickness and the design factor for the intended application, see below for ratings:

Fitting DR	Pressure Rating (PSI) @ 73° F (23° C)
	Natural Gas Distribution .4 DF
7	166*
9	125*
11	100
13.5	80
17	62
21	50
26	40
32.5	31

*49 CFR Part 192 limits the maximum operating pressure of regulated plastic pipeline to 125 psi.

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

The maximum operating temperature of PE2708 butt fusion fittings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

STORAGE/SHELF LIFE: Yellow medium density polyethylene resin contains a stabilization pack which provides some degree of protection from UV effects. Even so, it is recommended that fittings which are stored for extended periods (two years or greater) be stored indoors in their original packaging. Fittings stored indoors in their original packaging have virtually unlimited shelf-life.

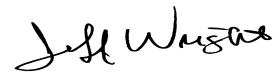
CHEMICAL RESISTANCE: Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION:

These fittings are compatible for heat fusion by butt, socket, or electrofusion joining products. They can be heat fusion joined to pipe or fittings manufactured from like or similar resin. Qualified mechanical joining products can be used to join these fittings, consult the manufacturer for recommendations. Fusion jointing should only be attempted by persons who have been trained and have qualified joints through destructive testing.

End of Life/Disposal: Polyethylene fittings are 100% recyclable and suitable for recycling into post-consumer products.

Approved by:



Jeff Wright
Technical Director

PRODUCT SPECIFICATION:ELECTROFUSION COUPLING
PE2708 MDPE YELLOW

FAMILY:	ELECTROFUSION
PRODUCT:	COUPLING
TYPE:	Specification
DOC:	PS-001 - REV 6 - 5/20/2018
PAGES:	3

SCOPE:

This document describes the standard specifications and features related to GF Central Plastics' PE2708 Electrofusion Couplings and Electrofusion Reducer Couplings for pressure piping systems.

SIZES:

1/2 CTS through 2 CTS.

1/2 IPS through 12 IPS.

**REQUIREMENTS:**

- ASTM D2513 Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings
- ASTM D3350 Specification for Polyethylene Plastic Pipes and Fittings Materials
- ASTM F714 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
- ASTM F1055 Specification for Electrofusion Type Polyethylene Fittings for OD Controlled PE Pipe and Fittings

REFERENCE DOCUMENTS:

- ASTM D3035 Standard for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
- ASTM F1290 Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
- PPI TR-19 Thermoplastics Piping for the Transport of Chemicals
- PPI TR-31 Underground Installation of Polyolefin Pipe
- ASTM F2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure

CERTIFICATIONS/LISTINGS:

- CSA B137.4.1 Polyethylene Piping Systems for Gas Service (<= 8" IPS for EF Couplings, <=1.25" for EF Reducer)

MATERIALS:

PE Resin: Pre-blended yellow medium density virgin resin. Recognized by the Plastic Pipe Institute as having a PE2708 rating and a Hydrostatic Design Basis of 1250 psi @ 73°F. This resin has a cell classification of 234373E* in accordance with ASTM D3350.

*Note: Previous editions of ASTM D3350 resulted in a cell classification of 234363E.

Heating Wire: Copper, nickel, or alloy.

Terminal Pin: Machined or die swaged 70/30 brass, nickel-plated carbon steel, or aluminum.

Resistor: Metal film type. ±1% tolerance.

TEST METHODS:

- ASTM D1598 Standard Test Method for Time-to-Failure of Plastics Pipe Under Constant Internal Pressure
Must exceed 170 hours in 80°C bath @ 670 psi hoop stress, or
Must exceed 1000 hours in 80°C bath @ 580 psi hoop stress, or
Must exceed 1000 hours in 23°C bath @ 1600 psi hoop stress.

(All methods are considered equivalent)

- ASTM D1599 Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fittings.
Uniform pressurization until failure occurs between 60 and 70 seconds from start of test. Must result in ductile failure of the pipe, independent of the fitting or fusion, at a pressure great enough to create a 2520 psi hoop stress in the pipe.
- ASTM F1055 Section 9.3 Tensile Strength Test
Test at a pull rate of 0.20 inches per minute. Test must result in a minimum of 25% elongation in the pipe without separation of the pipe from the coupling.
- Joint Integrity Test
Crush Test a sectioned assembly until the walls of the pipe meet. Should result in less than 15% separation of the fusion length.
- Fusion Evaluation Test (FET)
Bend a sectioned assembly along the bond line 90° in both directions four times each without separation along the bond line. Minor separation at the outer limits of the fusion heat source may be seen.
- Evaluation for Voids
Voids in the fusion interface are acceptable only if they are round or elliptical in shape, with no sharp corners. Individual voids cannot exceed 10% of the fusion zone with the combined sizes of multiple voids not exceeding 20% of the fusion zone length.

FEATURES:

40 Volt System. Installation temperature range from -10°F to 120°F. Can be supplied with an integral identification resistor which can be recognized by all Central Plastics' Processors to set the proper fusion time. All Central Plastics' Electrofusion Couplings are supplied with an ISO compliant 24 bit barcode to facilitate use with other brands of processors. Manufactured in the United States.

PRESSURE RATING:

PE2708 Electrofusion Couplings are pressure rated to an equivalent of 125psi for DOT regulated natural gas using unit stresses and a design factor of 0.4. Couplings and reducers are suitable for use on DR9 to DR17 pipes in general, but may be applicable to thinner pipes as well.

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

The maximum operating temperature of PE2708 Electrofusion Couplings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

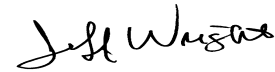
STORAGE/SHELF LIFE: Yellow medium density polyethylene resin contains a stabilization pack which provides some degree of protection from UV effects. Even so, it is recommended that fittings which are stored for extended periods (two years or greater) be stored indoors in their original packaging. Fittings stored indoors in their original packaging have virtually unlimited shelf-life.

CHEMICAL RESISTANCE: Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION: Please refer to Central Plastics' Electrofusion Installation Procedures Manual for proper installation instructions. Central Plastics strongly recommends that electrofusion fittings be installed only by persons that have received training from an authorized instructor, and have a strong working knowledge of polyethylene and heat fusion, and have qualified electrofusion joints through destructive testing. Persons responsible for the joining of polyethylene pipes by fusion methods must qualify according to the requirements of Title 49 Code of Federal Regulations, Section 192.285.

END OF LIFE/DISPOSAL: Polyethylene fittings are 100% recyclable and suitable for recycling into post-consumer goods and products. Electrofusion metallic components include copper and copper alloys, aluminum, and/or steel and are also recyclable.

Approved by:



Jeff Wright
Technical Director

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PRODUCT SPECIFICATION:**ELECTROFUSION SADDLE FITTINGS
PE2708 MDPE YELLOW**

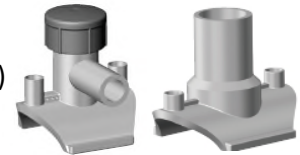
FAMILY:	ELECTROFUSION
PRODUCT:	TAPPING TEE / HVTT / BRANCH
TYPE:	Specification
DOC:	PS-005 - REV 5 - 1/22/2019
PAGES:	3

SCOPE:

This document describes the standard specifications and features related to GF Central Plastics' PE2708 Electrofusion saddle fittings for pressure piping systems. This specification covers Tapping Tees, High Volume Tapping Tees, and Branch Saddles with 4 inch or smaller outlets.

SIZES:

Tapping Tee: 1 ¼ IPS through 10 IPS (Main Size) x ½ CTS through 1 ¼ IPS (Outlet Size)
High Volume Tapping Tee: 2 IPS through 12 IPS (Main Size) x 1 ¼ and 2 IPS (Outlet Size)
Branch Saddle: 4 IPS, 6 IPS, 8 IPS (Main Size) x 4 IPS (Outlet Size)

**REQUIREMENTS:**

ASTM D2513 [Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings](#)
ASTM D3350 [Specification for Polyethylene Plastic Pipes and Fittings Materials](#)
ASTM F714 [Specification for Polyethylene \(PE\) Plastic Pipe \(SDR-PR\) Based on Outside Diameter](#)
ASTM F1055 [Specification for Electrofusion Type Polyethylene Fittings for OD Controlled PE Pipe and Fittings](#)
CSA B137.4.1 [Polyethylene Piping Systems for Gas Service](#)
CFR 49 [Part 192.283 – Plastic pipe: Qualifying joining procedures](#)

REFERENCE DOCUMENTS:

ASTM D3035 [Standard for Polyethylene \(PE\) Plastic Pipe \(DR-PR\) Based on Controlled Outside Diameter](#)
ASTM F1290 [Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings](#)
AWWA C906 [Standard for Polyethylene Pressure Pipe and Fittings, 4 in. Through 63 in., for Water Distribution](#)
ANSI/NSF 61 [Standard for Drinking Water System Components and Health Effects](#)
PPI TR-19 [Thermoplastics Piping for the Transport of Chemicals](#)
PPI TR-31 [Underground Installation of Polyolefin Pipe](#)
ASTM F2164 [Standard Practice for Field Leak Testing of Polyethylene \(PE\) Pressure Piping Systems Using Hydrostatic Pressure](#)

CERTIFICATIONS/LISTINGS:

CSA B137.4.1 [Polyethylene Piping Systems for Gas Service](#) (≤ 8 IPS main size)

MATERIALS:

PE Resin: Pre-blended yellow medium density virgin resin. Recognized by the Plastic Pipe Institute as having a PE2708 rating and a Hydrostatic Design Basis of 1250 psi @ 73°F. PE2708 rating under CSA B137.4. This resin has a cell classification of 234373E* in accordance with ASTM D3350.

*Note: Previous editions of ASTM D3350 resulted in a cell classification of 23463E.

Heating Wire: Copper, nickel, or alloy.
 Terminal Pin: Machined or die swaged 70/30 brass, nickel-plated carbon steel, or aluminum.
 Resistor: Metal film type. ±1% tolerance.
 Cutter: Carbon Steel

TEST METHODS:

ASTM D1598 Standard Test Method for Time-to-Failure of Plastics Pipe Under Constant Internal Pressure
 Must exceed 170 hours in 80°C bath @ 670 psi hoop stress, or
 Must exceed 1000 hours in 80°C bath @ 580 psi hoop stress, or
 Must exceed 1000 hours in 23°C bath @ 1600 psi hoop stress.
(All methods are considered equivalent)

ASTM D1599 Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fittings.
 Uniform pressurization until failure occurs between 60 and 70 seconds from start of test. Must result in ductile failure of the pipe, independent of the fitting or fusion, at a pressure great enough to create a 2520 psi hoop stress in the pipe.
 Five second pressure test 4x's the rated working pressure performed on each production lot.

ASTM F905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
 Impact the fused fitting 2 inches from the pipe until failure occurs or until 500 ft-lbs or higher impact with no failure occurs. Bending or tearing of the pipe or fitting is acceptable as long as the fused joint remains intact.
Joint Integrity Tests
Saddle Type Joint Crush Test
 Crush Test a sectioned assembly until the walls of the pipe meet. Should result in less than 15% separation of the fusion length.
Fusion Evaluation Test (FET)
 Bend a sectioned assembly along the bond line 90° in both directions four times each without separation along the bond line. Minor separation at the outer limits of the fusion heat source may be seen.
Evaluation for Voids
 Voids in the fusion interface are acceptable only if they are round or elliptical in shape, with no sharp corners. Individual voids cannot exceed 10% of the fusion zone with the combined sizes of multiple voids not exceeding 20% of the fusion zone length.

FEATURES:

40 Volt System. Installation temperature range from -10°F to 120°F. Can be supplied with an integral identification resistor which can be recognized by all Central Plastics' Processors to set the proper fusion time. All Central Plastics' Electrofusion Couplings are supplied with an ISO compliant 24 bit barcode to facilitate use with other brands of processors. Can be supplied AWWA or FM listed. Manufactured in the United States.

PRESSURE RATING:

PE2708 Electrofusion saddles are pressure rated according to the outlet DR using the appropriate unit stresses and design factor required for regulated natural gas in the US (49 CFR Part 192) and Canada.

Outlet	.4 DSF (Gas)
DR 9	125 psi
DR 11	100 psi

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

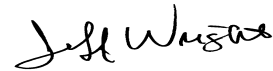
The maximum operating temperature of PE2708 Electrofusion saddle fittings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

STORAGE/SHELF LIFE: Yellow medium density polyethylene resin contains a stabilization pack which provides some degree of protection from UV effects. Even so, it is recommended that which are stored for extended periods remain in their original packaging bag and box.

CHEMICAL RESISTANCE: Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION: Please refer to Georg Fischer Central Plastics' Electrofusion Installation Procedures Manual for proper installation instructions. This installation procedure has been qualified by testing to the requirements of CFR 49 Part 192.283. Other qualified procedures may be suitable. Central Plastics strongly recommends that electrofusion fittings be installed only by persons that have received training from an authorized instructor, and have a strong working knowledge of polyethylene and heat fusion, and have qualified electrofusion joints through destructive testing. Persons responsible for the joining of polyethylene pipes by fusion methods must qualify according to the requirements of Title 49 Code of Federal Regulations, Section 192.285.

Approved by:



Jeff Wright
Technical Director