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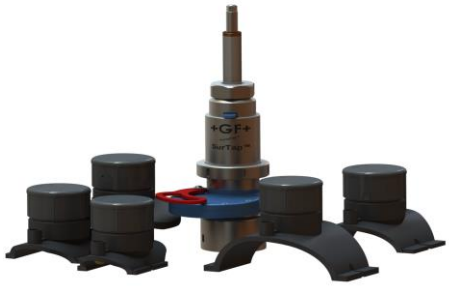
PRODUCT SPECIFICATIONS:

VERSATAP™ ELECTROFUSION SADDLE FITTINGS
PE4710 HDPE BLACK

FAMILY:	ELECTROFUSION
PRODUCT:	VERSATAP
TYPE:	SPECIFICATIONS
DOC:	PS-015/REV2
PAGES:	3

SCOPE:

This document describes the standard specifications and features related to GF Central Plastics' PE3408/ PE4710 Electrofusion VERSATAP™ saddle fittings for pressure piping systems. This specification covers 2" IPS through 12" IPS main sizes.



SIZES:

2" IPS through 12" IPS Main x Threaded PE Capped Outlet

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

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 listed in accordance with CSA B137.4. This resin has a cell classification of 445574C* in accordance with ASTM D3350.

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

O-ring: BUNA-N 75 Durometer

Plug: Acetal (POM)

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 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:

Designed for accessing pressurized piping systems using the SurTap™ tapping system for insertion of cameras, inflatable bladders, tracer devices, or other equipment small enough to pass through the 1.8 inch tap bore diameter.

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 fittings are supplied with an ISO compliant 24 bit barcode to facilitate use with other brands of processors. Manufactured in the United States.

PRESSURE RATING:

PE4710 Electrofusion saddles are pressure rated using the appropriate design factor required for the application.

.63 DSF (Water)	.5 DSF (Water)	.45 DSF (Canada PE4710 PLUS)	.32 DSF (US DOT)
200 psi	160 psi	145 psi	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 PE3408 / PE4710 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:

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. 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.

This fitting is designed to be tapped while under pressure using the SurTap™ hot tapping system. Refer to the operation manual SurTap Instruction Manual 10014100 for details and guidance.

END OF LIFE/DISPOSAL:

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