



PVDF Submittal

Polyvinylidene Fluoride (PVDF) SocketFusion

FLUOROSTAR SYSTEM

Material:

Flo Safe PVDF Material

All Flo Safe PVDF products are manufactured from virgin, natural PVDF (polyvinylidene fluoride) resin, meeting ASTM D3222, using no plasticizers or pigments. Resin is FDA and USDA approved and meets the 25/50 flame and smoke requirements of ASTM E84 (UL 723).

Pipe:

Flo Safe PVDF Pipe

Pipe will be manufactured to either (choose one) 150 psi or 230 psi in metric sizes, from virgin, unpigmented PVDF (polyvinylidene fluoride) resin, meeting ASTM D3222, using no plasticizers or pigments. Pipe will be furnished in 20' lengths, bagged and capped. Pipe will meet all dimensional tolerances of ISO 10931-2.

Fittings:

Flo Safe PVDF Fittings

Fittings will be manufactured to: 185 psi (12.5 bar) rated wall thickness, from virgin, unpigmented PVDF (polyvinylidene fluoride) resin meeting ASTM D3222. Dimensions according to ISO 10931-3. Fittings are to be joined by using the socket fusion method, conforming to ASTM 2657.

Valves:

Flo Safe PVDF Ball Valves

Ball valves will be manufactured from virgin unpigmented PVDF (polyvinylidene fluoride) to be fully compatible with the Flo Safe high purity PVDF system. All valves test to 150 psi @ 73° F. Each ball valve will be individually bagged.

Flo Safe PVDF Ball Check Valves

Ball check valves will be manufactured from virgin PVDF (polyvinylidene fluoride) to be fully compatible with the Flo Safe high purity PVDF system. All valves will test to 150 psi @ 73° F. Each valve will be individually bagged.

Needle Valves

Needle valves will be manufactured from virgin unpigmented PVDF (Polyvinylidene Fluoride) resin meeting ASTM D3222 to be fully compatible with the Flo Safe high purity system. Each valve shall be individually packaged.

Diaphragm Valves

Diaphragm valves will be manufactured from virgin unpigmented PVDF (Polyvinylidene Fluoride) resin meeting ASTM D3222 to be fully compatible with the Flo Safe high purity PVDF system. All diaphragm valves shall test to 150 psi at 73°F. All valves shall be individually bagged.

Flo Safe, Inc.

2850 Fairfax Trafficway.
Kansas City, KS 66115

Ph# 913-621-6789
Fax# 913-621-3810

www.flosafe.com

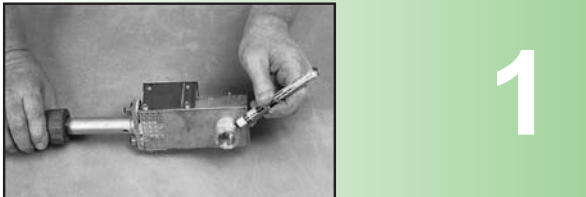
Socket Fusion Assembly



A socket fusion tool kit, including heat tool and various sizes of heads is available from FloSafe.

Note:

- Make all field cuts of pipe square and true using a pipe cutter designed for plastic pipe.
- Make certain heads are installed properly on heat tool. Heads are marked "M" and "F", indicating male and female.
- Bevel the leading edge of each pipe section with a 1/8" 45 degree chamfer. This will minimize the amount of bead on the inside of the fitting when fused.



1

STEP 1

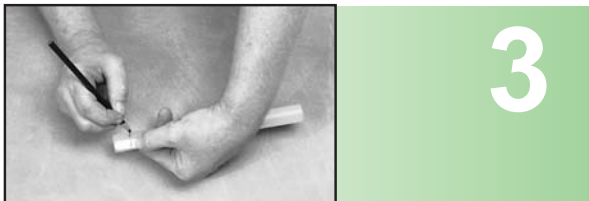
Check the heads for proper temperature (482 - 520°F or 250°- 270°C). If necessary, adjust the thermostat dial so that the 488°F Tempil stick burns, but the 525°F does not. **NOTE: The newest FloSafe fusion tools may have a temperature dial in degrees celcius which has a maximum temperature of 300°C. If this is the case, see temperature conversion chart below.** Heat tools are factory set, however settings can vary due to factors such as weather, current variances, cord lengths, generators, etc. These variables should be checked on site. To increase tool temperature, turn dial "in" (clockwise). To decrease, turn screw "out" (counterclockwise).



2

STEP 2

Measure depth of fitting. Subtract 1/16".



3

STEP 3

Transfer measurement to pipe. Mark pipe with measurement obtained in Step 2.



4

STEP 4

Insert fitting on the male side of the heat tool. Then insert pipe on the female side. Do not insert past the mark on the pipe.

STEP 5

Keep pipe and fitting absolutely straight on heat tool.

Use the chart below to determine how long to leave the pipe and fittings on the heater bushings. It should be noted that pipe and fittings will normally have a slight interference with the fusion tools. However, if the pipe and/or fittings do not fit tightly on the heater bushing, the heating time should be started when the components have swelled to just contact the surface of the bushing.



6

Step 6

Hold joint under pressure for 15 seconds to allow surfaces to fuse. Do not stress joint until fully cooled.

Clean any melted material from heater bushings using a cotton rag. Do not use abrasive materials to clean the heater bushings.

Confirm the heater bushings are the correct temperature before fusing next joint.

The following chart shows the approximate time that the pipe and fitting should be held on the heater bushings. These times are a guideline only. It may be necessary to increase or decrease times to obtain the correct melt conditions.

Fusion Times

	1/2"	3/4"	1"	1-1/2"	2"
PP	7-10 sec	7-10 sec	10-15sec	10-15 sec	15-20 sec
PVDF	10-15 sec	13-18 sec	14-20 sec	15-20 sec	20-25 sec

Temperature Conversion Factors

°F = Degrees in Farenheight
°C = Degrees in Celcius(Centigrade)

°F = (°C x 1.8) + 32
°C = (°F - 32) x .555

°F	°C
122	50
212	100
300	150
392	200
482	250
520	270
572	300

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NOTE: DO NOT TEST ANY FLOSAFE PIPING SYSTEM WITH COMPRESSED AIR OR GASSES. TEST HYDROSTATICALLY ONLY



High Purity PVDF Submittal Polyvinylidene Fluoride (PVDF) Butt Fusion FLUOROSTAR SYSTEM

Material:

Flo Safe PVDF Material

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Pipe:

Flo Safe PVDF Pipe

Pipe will be manufactured to either (choose one) 150 psi or 230 psi in metric sizes, from virgin, unpigmented PVDF (polyvinylidene fluoride) resin, meeting ASTM D3222, using no plasticizers or pigments. Pipe will be furnished in 20' lengths, bagged and capped. Pipe will meet all dimensional tolerances of ISO 10931-2.

Fittings:

Flo Safe PVDF Fittings

Fittings will be manufactured to: 230 psi (SDR21 psi) rated wall thickness, from virgin, unpigmented PVDF (polyvinylidene fluoride) resin meeting ASTM D3222. Dimensions according to ISO 10931-3. Fittings are to be joined by using the butt fusion method, conforming to ASTM 2657.

Valves:

Flo Safe PVDF Ball Valves

Ball valves will be manufactured from virgin unpigmented PVDF (polyvinylidene fluoride) to be fully compatible with the Flo Safe high purity PVDF system. All valves test to 150 psi @ 73° F. Each ball valve will be individually bagged.

Flo Safe PVDF Ball Check Valves

Ball check valves will be manufactured from virgin PVDF (polyvinylidene fluoride) to be fully compatible with the Flo Safe high purity PVDF system. All valves will test to 150 psi @ 73° F. Each valve will be individually bagged.

Needle Valves

Needle valves will be manufactured from virgin unpigmented PVDF (Polyvinylidene Fluoride) resin meeting ASTM D3222 to be fully compatible with the Flo Safe high purity system. Each valve shall be individually packaged.

Diaphragm Valves

Diaphragm valves will be manufactured from virgin unpigmented PVDF (Polyvinylidene Fluoride) resin meeting ASTM D3222 to be fully compatible with the Flo Safe high purity PVDF system. All diaphragm valves shall test to 150 psi at 73°F. All valves shall be individually bagged.

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SPECIFICATION FOR POLYSTAR™ POLYPROPYLENE COPOLYMER PIPING SYSTEMS – SOCKET FUSION

- 1.0 General: All piping and fitting materials shall be from FloSafe, Inc. of 2850 Fairfax Trafficway, Kansas City, KS 66103 USA.
- 2.0 Materials: Piping shall be produced from a type II high impact modified copolymer PP, with a cell classification of PP0348 according to ASTM D 4101. Fittings shall be produced from a type II Copolymer PP according to ASTM D 4101.
- 3.0 Piping: Piping shall have outside diameters and tolerances according to DIN 8077/8078 and ISO 15494. Wall thickness shall be any one of the following: SDR 11 (150 psi), SDR 17.6 (90 psi) or SDR 33 (45 psi).
- 4.0 Fittings:
Fittings shall be socket fusion fittings with tapered, interference-fit sockets. Fitting socket dimensions, wall thicknesses and tolerance requirements shall be according to DIN 16962.
- 5.0 Flanges: Flanges shall be stub flanges with glass-filled PP encapsulated steel backing rings having ANSI B16.5 class 150 psi dimensions and bolt patterns.
- 6.0 Valves: Ball Valves, diaphragm valves, check valves and automated valves shall be provided by FloSafe, Inc. to match the corresponding piping system.