

FIBERBOND® Piping Specification - Series 20JF and 20JF-C

Rev: D

Rating: ANSI B16.5 150# FF - FIBERBOND® FRP/GRP
 Service: Firewater "Dry" Deluge Systems
 Marine applications requiring IMO A.753(18) Level 3 "dry/wet" endurance
 Firewater deluge systems per USCG PFM1-98

Pressure: 200psig (13.8barg) up to 10"
 Temp: Up to 185F (85c)



1"	1.5"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
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Pipe	FIBERBOND® Series 20JF, plain ends, ASTM D2310 / D2996 RTRP-12ET1 or RTRP-11FT1; 200psig pressure rating up to 10"; all pipes have plain ends. ASTM F1173 / ISO15840 Type I, Resin 2, Class B, Rating Method 1&4, Fire Endurance: Fluid S, Fire Type IF, Integrity B, Duration 30, Fire Endurance: Fluid EF, Fire Type JF, Integrity C, Duration 25, Fire Endurance: Fluid EF, Fire Type IF, Integrity B, Duration 30. Series 20JF-C with an electrically conductive exterior is also available.												
Min. Thk	0.53"	0.53"	0.53"	0.53"	0.53"	0.53"	0.59"	0.65"	0.77"	0.83"			
Nom. Thk	0.56"	0.56"	0.56"	0.56"	0.56"	0.56"	0.63"	0.69"	0.81"	0.88"			
Nom. I.D.	2.00"	3.00"	4.00"	6.00"	8.00"	10.00"	12.00"	14.25"	16.25"				
Nom. O.D.	3.13"	4.13"	5.13"	7.13"	9.13"	11.25"	13.38"	15.88"	18.00"				
Flanges	FIBERBOND® Series 20JF, long welding neck, ANSI B16.5 150# drilling, flange thicknesses differ from 150#; ASTM D5421 CM-B4I; ASTM D4024 RTR-111D												
Nom. Thk	0.69"	0.81"	1.00"	1.19"	1.38"	1.63"	1.88"	1.94"	2.13"				
Neck Lg	6"	6"	6"	8"	8"	10"	10"	14"	14"				
Torque	65ft-lbs	67ft-lbs	35ft-lbs	63ft-lbs	67ft-lbs	73ft-lbs	76ft-lbs	115ft-lbs	91ft-lbs				
Elbows	FIBERBOND® Series 20JF, Fig.20 90degree elbows and Fig.30 45degree elbows with plain ends; ASTM D5685 RTRF 54K4E (up to 10"). These elbows have long radius dimensions. Other special angle elbows are available. Mitered elbows are available. Short radius elbows are available up to 12" diameter.												
Tees	FIBERBOND® Series 20JF, Fig.40 Tee, plain ends; ASTM D5685 RTRF 54K4E (up to 10"). Fig.40PPF and Fig.40F3 may also be used.												
Couplings	Couplings are not required nor necessary in FIBERBOND® piping systems.												
Reducing Branches	FIBERBOND® Series 20JF, Fig.46 Flanged End "Olet" and Fig.48 Plain End "Olet".												
Reducers	FIBERBOND® Series 20JF, Fig.60 Concentric Reducer and Fig.61 Eccentric Reducer, plain ends; ASTM D5685 RTRF 54K4E (up to 10").												
Threaded Branches	FIBERBOND® Series 20FR-E, Fig.47JF Threaded Alloy (316SS, 90/10 Cu-Ni, Gr2 Ti, Monel, etc.) MNPT Olet is available. Fig.47JF limited to 2" MNPT and smaller and is limited to certain applications (See Fittings Guide). If this is not suitable, a Fig.46 Flanged End Olet should be used with an alloy blind flange bolted to it; the alloy blind flange would be drilled-and-tapped for the necessary NPT size. A 2in. Fig.46 Flanged End Olet is recommended as this is more durable than the 1" size; however, a 1" size can be used. A FRP MNPT or FNPT connection is not available.												
Laterals	FIBERBOND® Series 20JF, Fig.80 Lateral, plain ends; pressure rating limited to 100psig (up to 16") and 50psig (above 16"). Fig.88 Reducing Laterals are also available.												

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Other Special Fittings	Refer to the FIBERBOND® Fittings Guide for other fittings. These include Fig.10-O Orifice Flanges, Fig.11 Vanstone "Stub" Flanges, Fig.17 Bleed Rings, Fig.19 Blind Flanges with NPT, and Fig.90 & Fig.91 "Dummy Legs"
Valves	Per customer specifications.
Unions	Unions are not available.
Plugs	Fig.16 Blind Flanges are available in all sizes. Fig.19 Blind Flange with a center- or high-point NPT connection is also available. Thicknesses match flange thicknesses. Fig.96 Hemicaps are available in sizes 2" and larger. Threaded NPT plugs are not available - use alloy materials such as 316SS or 90/10 Cu-Ni.
Bonding Method	All pipes and fittings have plain ends suitable for the TigerWrap™ bonding method.
Bolting	Per customer specifications. Either heavy hex or hex nuts may be used. SAE "Narrow" series washers must be used with FIBERBOND® flanges. USS washers will not fit.
Gaskets	1/8" thick full-face rubber gaskets, such as "SBR" red rubber or "CR" neoprene, are suitable for sizes up to 2" diameter. Garlock "Stress Saver" or CTG "ET-Energizer" gaskets are suitable for all sizes. "NBR" Buna-N "o-ring" gaskets are suitable for sizes 3" and larger (300psig, 20.7bar hydrotest). "O-ring" gaskets are also available in 2" diameter, but are not available in sizes smaller than 2" diameter. "O-ring" gaskets require a special groove in one of the mating pairs of flanges. The location of this groove is normally determined by the FIBERBOND(R) shop prefabricator. O-ring gaskets have zero takeout after torquing.
Notes	<ol style="list-style-type: none"> 1. Larger sizes are available (12", 14", 16", 18", 20", 24", 30", 36", 42", 48", 60" and other custom sizes). 2. All components have an external corrosion barrier pigmented "red" with UV absorbers. 3. FIBERBOND® flanges can be bolted to raised-face flanges, however, care should be taken when torquing these flanges. 4. A "filler" ring, made out of teflon or other suitable material, may be used to "shim" the raised-face flange. 5. An "o-ring" gasket can be used to mate to a raised-face flange, but a full-face rubber gasket is also suitable. 6. Lower torque values may be needed for bolting to raised-face surfaces; higher values may be needed for flat-face surfaces.

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Branch Size	Header (Run) Size													
	1"	1.5"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
0.50"			MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT			
.75"			MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT	MNPT			
1"			RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT			
1.5"			RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT			
2"			TEE	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT	RS/MNPT			
3"				TEE	RS	RS	RS	RS	RS	RS	RS			
4"					TEE	RS	RS	RS	RS	RS	RS			
6"						TEE	RS	RS	RS	RS	RS			
8"							TEE	RS	RS	RS	RS			
10"								TEE	RT/RS	RT/RS	RS			
12"									TEE	RT/RS	RT/RS			
14"										TEE	RT/RS			
16"											TEE			
18"														
20"														
24"														

- TEE FIBERBOND® Fig.40 Tee, plain ends. Fig.40PPF and Fig.40F3 can also be used.
- RT FIBERBOND® Fig.43 Reducing Tee
- RS FIBERBOND® Fig.46 Flanged End Olet (Saddle) or Fig.48 Plain End Olet (Saddle)
- TEE/RED FIBERBOND® Fig.40 Tee or Fig.43 Reducing Tee with Fig.60 or Fig.61 Reducer
- MNPT FIBERBOND® Fig.47JF Metallic MNPT Olet (Saddle) (limited applications)
- FNPT FIBERBOND® Fig.97 FRP FNPT Olet (Saddle) (limited pressure rating and applications)
- NPT Either the Fig.47JF Metallic MNPT Olet or the Fig.97 FRP FNPT Olet

Other branch options may be available. Please consult with Future Pipe Industries for any requests.