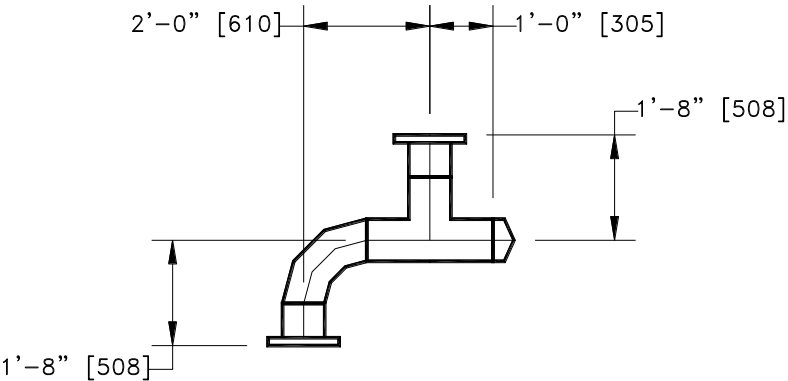


# FIBERBOND® Fiberglass Piping Systems

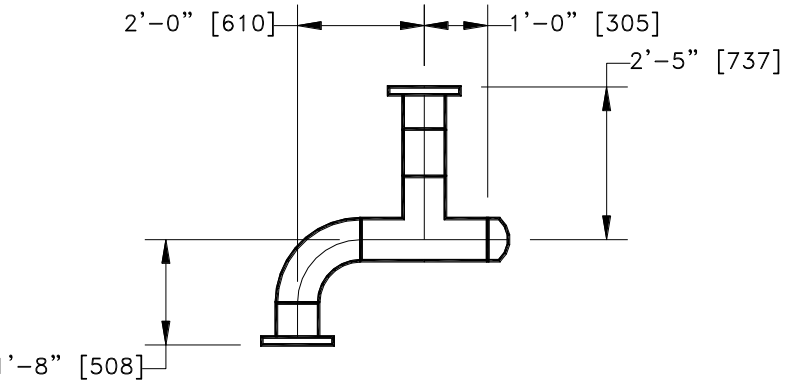
## Guidance on Pup Pieces

### Pieces

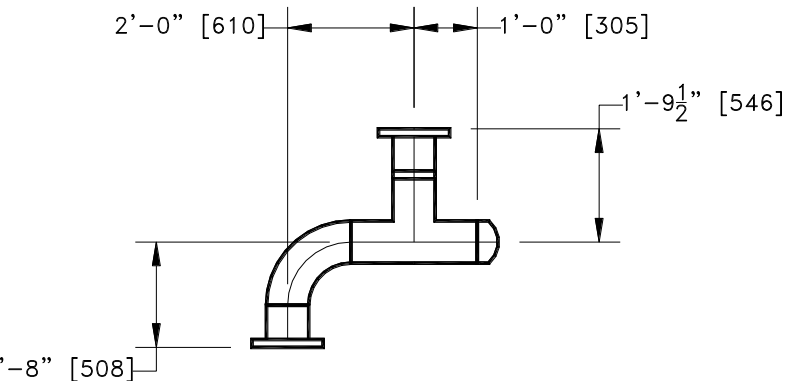
With FIBERBOND® TigerWrap™ bonding method, fittings and flanges can be assembled without any couplings or nipples. So, it is feasible to install a flange directly against an elbow and then against a tee with no takeout in between each fitting / flange.



However, in some instances, it may be necessary for "pup" pieces of pipe to be installed between fittings and flanges. For example, using the 20FR-E product, in the 8" size (200 DN), the actual layout distance from the face of the flange to the center of a tee is 2'-5" (737 mm). With the flange takeout of 8" (203 mm) and the tee takeout of 12" (305 mm), there is a gap of 9" (229 mm). Standard practice is to place a piece of pipe, 9" long, in between the flange and tee. A quick check of the standard "pup" lengths (which can be found in each product's Fitting Guide) shows the standard pup length for 20FR-E in the 8" size is 8" (203 mm). Since our piece of pipe (9" in length) is greater than this, there are no concerns with the layout. The butt weld between the tee/pipe and the butt weld between the pipe/flange may overlap each other slightly, but not in a manner that would require any special bonding precautions.



Let's look at the same case except now the actual layout distance from the face of the flange to the center of a tee is 1'-9 1/2" (546 mm). Now the gap is 1.5" (38 mm). Again, this gap can be made up with a piece of pipe that is 1.5" (38 mm) in length. However, now this length is shorter than the standard pup length of 8" (203 mm). This is acceptable, only requiring a slight modification to the bonding process. Once the assembly is fitup and puttied together, the bonder



will have two choices: 1) he may use a glass kit with wider reinforcement so that it covers the additional pipe piece (i.e. 1.5" or 38 mm wide than a standard kit) or 2) he may apply each bonding kit separately, with a significant overlap. In the case of a very short piece of pipe as in this example, option #1 is probably the preferred method. But, option #2 is also acceptable.

### Standard "Pup" Lengths

Size	20HV, 20FR-E, 20JF	20FR16, 20JF16	20FR20
1"	4"	4"	4"
1.5"	4"	4"	4"
2"	4"	4"	4"
2.5"	4"	4"	4"
3"	4"	4"	4"
4"	6"	6"	6"
5"	6"	6"	6"
6"	6"	6"	6"
8"	8"	9"	8"
10"	10"	12"	10"
12"	12"	14"	12"
14"	14"	17"	14"
16"	16"	19"	16"
18"	18"	21"	18"
20"	19"	24"	
24"	22"	28"	

In the above table, if the piece of pipe between two fittings (or two flanges or a fitting and a flange) is equal to or greater than the above value, then the bonding procedure can proceed without modification. If the piece of pipe is shorter, then there will be a slight modification to the bonding procedure (see the example on the preceding page). Note: in this case, it is recommended that this bonding procedure be conducted in a "shop" environment where there is good access to the parts being joined and where the assembled components can easily be rotated and/or moved to allow adequate bonding.

**FIBERBOND®**



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