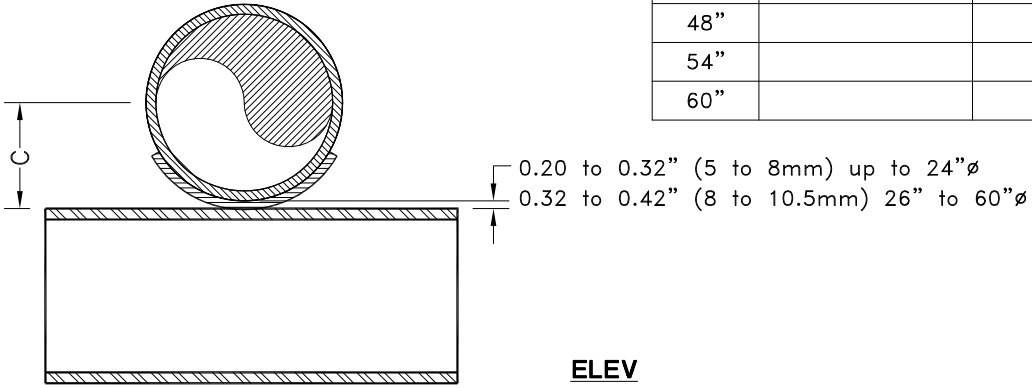
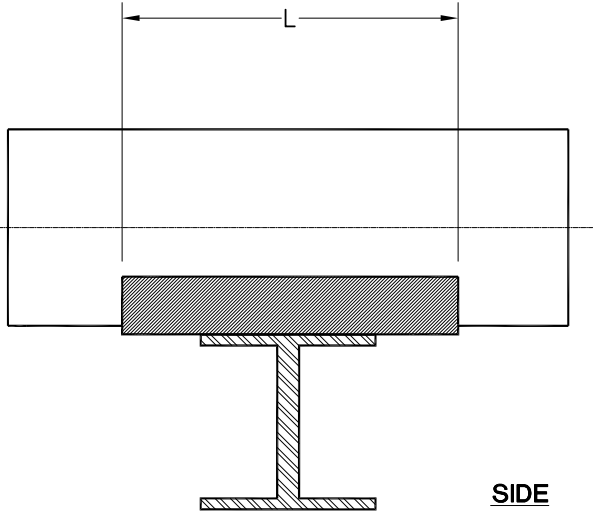


DO NOT DUPLICATE
 This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.



| Nominal Pipe Size | Nominal O.D. | | C | | L | | Minimum L | | Weight (lb/kg) | |
|---------------------|--------------|-------|-------|-------|-----|-------|-----------|-------|----------------|-----|
| SERIES 20JF, 20JF-C | | | | | | | | | | |
| 1" | 2.13" | 54mm | 1.32" | 33mm | 6" | 152mm | 4" | 102mm | 0.4 | 0.2 |
| 1.5" | 2.63" | 66mm | 1.57" | 40mm | 6" | 152mm | 4" | 102mm | 0.5 | 0.2 |
| 2" | 3.13" | 79mm | 1.82" | 46mm | 6" | 152mm | 4" | 102mm | 0.7 | 0.3 |
| 3" | 4.13" | 105mm | 2.32" | 59mm | 6" | 152mm | 4" | 102mm | 1.0 | 0.5 |
| 4" | 5.13" | 130mm | 2.82" | 72mm | 6" | 152mm | 4" | 102mm | 1.3 | 0.6 |
| 6" | 7.13" | 181mm | 3.82" | 97mm | 8" | 203mm | 4" | 102mm | 2.6 | 1.2 |
| 8" | 9.13" | 232mm | 4.82" | 122mm | 10" | 254mm | 4" | 102mm | 4.2 | 1.9 |
| 10" | 11.25" | 286mm | 5.88" | 149mm | 12" | 305mm | 4" | 102mm | 6.3 | 2.9 |
| 12" | 13.38" | 340mm | 6.94" | 176mm | 12" | 305mm | 4" | 102mm | 7.5 | 3.4 |
| 14" | 15.88" | 403mm | 8.20" | 208mm | 12" | 305mm | 4" | 102mm | 8.9 | 4.0 |
| 16" | 18.00" | 457mm | 9.26" | 235mm | 12" | 305mm | 4" | 102mm | 10.1 | 4.6 |
| 18" | | | | | | | | | | |
| 20" | | | | | | | | | | |
| 24" | | | | | | | | | | |
| 30" | | | | | | | | | | |
| 36" | | | | | | | | | | |
| 42" | | | | | | | | | | |
| 48" | | | | | | | | | | |
| 54" | | | | | | | | | | |
| 60" | | | | | | | | | | |

FIBERBOND®

FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS

Manufactured by Specialty Plastics
 Baton Rouge, LA, U.S.A.

www.fiberbond.com

| | | | |
|---------------|------|------------------|-------------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D102904 | |
| CH'KD: | KGS | D102904 | |
| | | DRAWING: | FIG210-20JF |
| | | FILENAME: | FIG210-20JF |

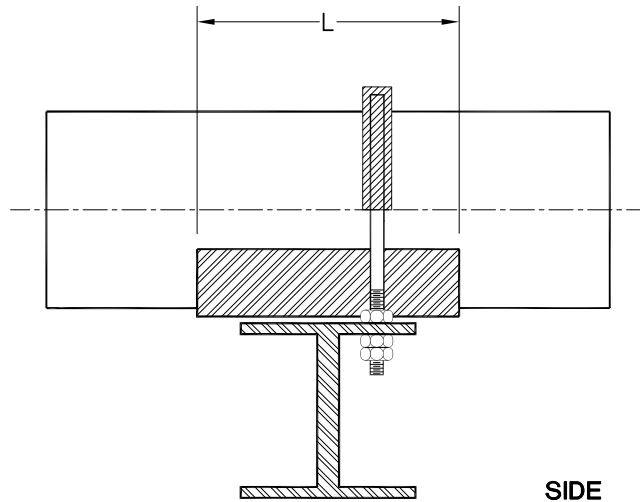
| | |
|-----------------------|-------------------|
| SUPPORT TYPE: | FRP WEAR PAD |
| SUPPORT GROUP: | ONEWAY SUPPORT |
| FIGURE NUMBER: | FIGURE 210 - 20JF |

REV
6

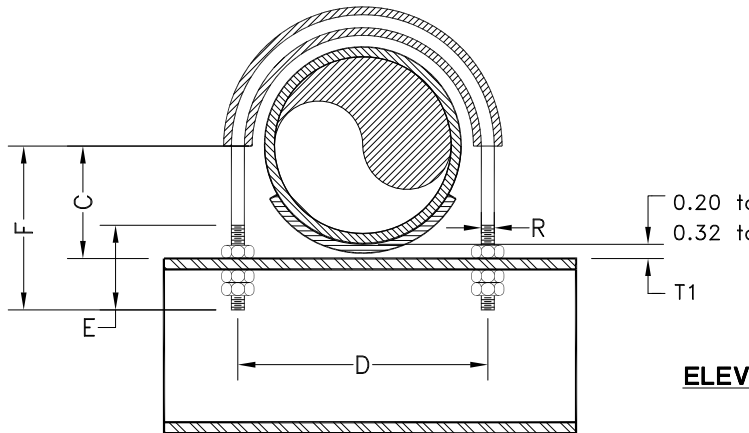
- NOTE 5. $C = 0.5 * \text{Nominal O.D.} + T1$.
- NOTE 4. T1 dimension is from T.O.S. to B.O.P.
- NOTE 3. Wear pad to be centered on structural support.
- NOTE 2. Wear pad to have minimum 120 degrees of contact (max. 180 degrees).
- NOTE 1. Wear pad to be of the same material as the pipe.

DO NOT DUPLICATE

This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.



SIDE



ELEV

| Nominal Pipe Size | L | | R | D +/- 0.12" | | E | | F | |
|---|-----|-------|------|----------------|--------|-------|-------|--------|-------|
| SERIES 20HV, 20FR-E, 20FR16, 20FR20, 20JF, 110FW, 20C, 20HV-D | | | | | | | | | |
| SERIES 20HV-C, 20FR-EC, 20FR16-C, 20FR20-C, 20JF-C, 20HV(FDA) | | | | | | | | | |
| 1" | 6" | 152mm | 3/8" | 2.75" | 70mm | 3.00" | 76mm | 2.75" | 70mm |
| 1.5" | 6" | 152mm | 3/8" | 3.25" | 83mm | 3.00" | 76mm | 3.00" | 76mm |
| 2" | 6" | 152mm | 3/8" | 3.75" | 95mm | 3.00" | 76mm | 3.25" | 83mm |
| 3" | 6" | 152mm | 1/2" | 4.88" | 124mm | 3.50" | 89mm | 4.13" | 105mm |
| 4" | 6" | 152mm | 1/2" | 5.88" | 149mm | 3.50" | 89mm | 4.63" | 118mm |
| 6" | 8" | 203mm | 5/8" | 8.13" | 206mm | 4.00" | 102mm | 6.06" | 154mm |
| 8" | 10" | 254mm | 5/8" | 10.25" | 260mm | 4.00" | 102mm | 7.13" | 181mm |
| 10" | 12" | 305mm | 3/4" | 12.50" | 317mm | 4.50" | 114mm | 8.56" | 217mm |
| 12" | 12" | 305mm | 7/8" | 14.75" | 375mm | 5.00" | 127mm | 10.00" | 254mm |
| 14" | 12" | 305mm | 7/8" | 16.95" | 430mm | 5.00" | 127mm | 11.23" | 285mm |
| 16" | 12" | 305mm | 7/8" | 19.11" | 485mm | 5.00" | 127mm | 12.31" | 313mm |
| 18" | 16" | 356mm | 1" | 21.42" | 544mm | 5.50" | 140mm | 13.77" | 350mm |
| 20" | 16" | 356mm | 1" | 23.38" | 594mm | 5.50" | 140mm | 14.75" | 375mm |
| 24" | 16" | 356mm | 1" | 27.68" | 703mm | 5.50" | 140mm | 16.90" | 429mm |
| 30" | 20" | 508mm | 1" | 33.78" | 858mm | 5.50" | 140mm | 19.72" | 501mm |
| 36" | 20" | 508mm | 1" | 40.06" | 1018mm | 5.50" | 140mm | 22.86" | 581mm |
| 42" | | | | | | | | | |
| 48" | | | | | | | | | |

0.20 to 0.32" (5 to 8mm) up to 24"ø
0.32 to 0.42" (8 to 10.5mm) 26" to 60"ø

FIBERBOND®

FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS

Manufactured by Specialty Plastics

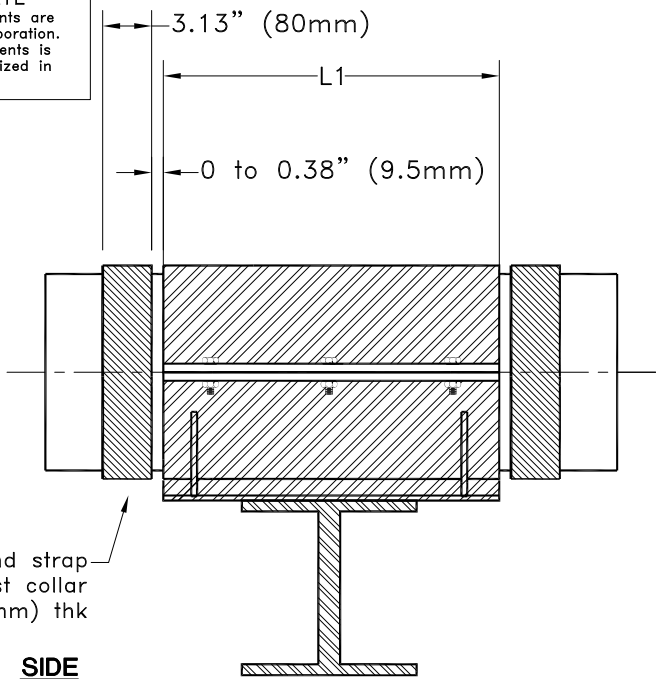
Baton Rouge, LA, U.S.A.

www.fiberbond.com

| | | | |
|-----------------------|--------------------------------------|------------------|------------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D072098 | |
| CH'KD: | KGS | D072098 | |
| | | DRAWING: | FIGURE 226 |
| | | FILENAME: | FIG226 |
| SUPPORT TYPE: | FRP WEAR PAD W/ RUBBER COATED U-BOLT | | |
| SUPPORT GROUP: | GUIDE | | |
| FIGURE NUMBER: | FIGURE 226 | | |
| | | REV | 10 |

- NOTE 11. An "extra-long" L dimension of 14" (356mm) may be used up to 16"ø.
NOTE 10. Minimum L dimensions per Fig.210 may also be used.
NOTE 9. $F = C + 1/2in. + 3 * R$ (or use values in table).
NOTE 8. $E = 4 * R + 1 1/2in.$
NOTE 7. $C = 0.5 * Avg O.D. + T1$ (See Fig.210 for C dimensions).
NOTE 6. $D = Pipe O.D. + 2 * T1 + R + 1/4in.$ (or use values in table).
NOTE 5. T1 dimension is from T.O.S. to B.O.P.
NOTE 4. The u-bolt shall not "anchor" the pipe.
NOTE 3. Wear pad to be centered on structural support.
NOTE 2. Wear pad to have minimum 120 degrees of contact (max. 180 degrees).
NOTE 1. Saddle to be of the same material as the pipe.

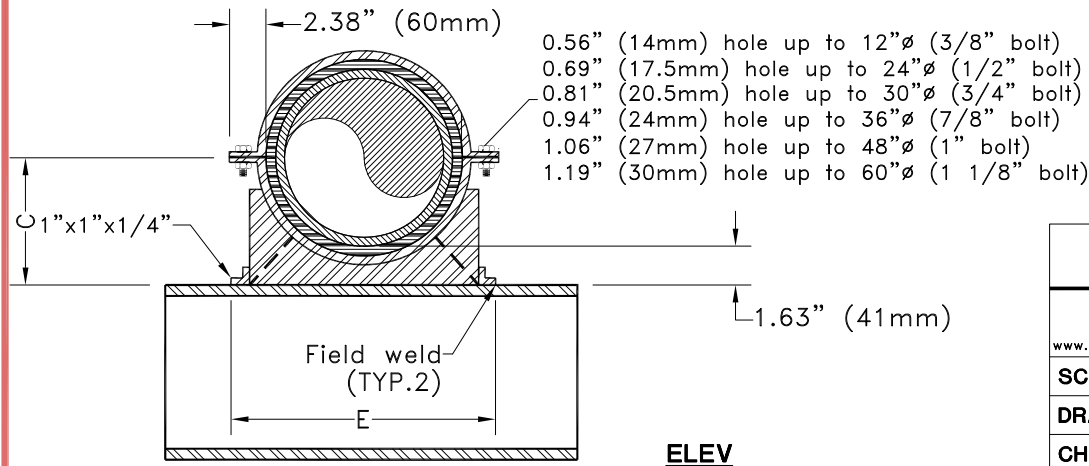
DO NOT DUPLICATE
 This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.



Butt and strap thrust collar
 0.50" (12.5mm) thk

SIDE

| Nominal Pipe Size | Nominal O.D. | | L1 | | C | | E | |
|---------------------|--------------|-------|-------|-------|--------|-------|--------|-------|
| SERIES 20JF, 20JF-C | | | | | | | | |
| 6" | 7.13" | 181mm | 8" | 203mm | 5.19" | 132mm | 12.00" | 305mm |
| 8" | 9.13" | 232mm | 10" | 254mm | 6.20" | 157mm | 14.00" | 356mm |
| 10" | 11.25" | 286mm | 12" | 305mm | 7.26" | 184mm | 16.00" | 406mm |
| 12" | 13.38" | 340mm | 12" | 305mm | 8.32" | 211mm | 18.00" | 458mm |
| 14" | 15.88" | 403mm | 8.20" | 208mm | 9.57" | 243mm | 20.25" | 514mm |
| 16" | 18.00" | 457mm | 9.26" | 235mm | 10.63" | 270mm | 22.25" | 565mm |
| 18" | | | | | | | | |
| 20" | | | | | | | | |
| 24" | | | | | | | | |
| 30" | | | | | | | | |
| 36" | | | | | | | | |
| 42" | | | | | | | | |
| 48" | | | | | | | | |
| 54" | | | | | | | | |
| 60" | | | | | | | | |



ELEV

- NOTE 5. Average O.D. is typically 0.03" to 0.10" larger than the nominal O.D.
 NOTE 4. C = 0.5 * Nominal O.D. + 1.63in.
 NOTE 3. Steel saddle includes 1/8in. thick neoprene liner.
 NOTE 2. 1.63in. (41mm) dimension is from T.O.S to B.O.P.
 NOTE 1. Thrust collar may need to be larger depending upon design conditions.

FIBERBOND®

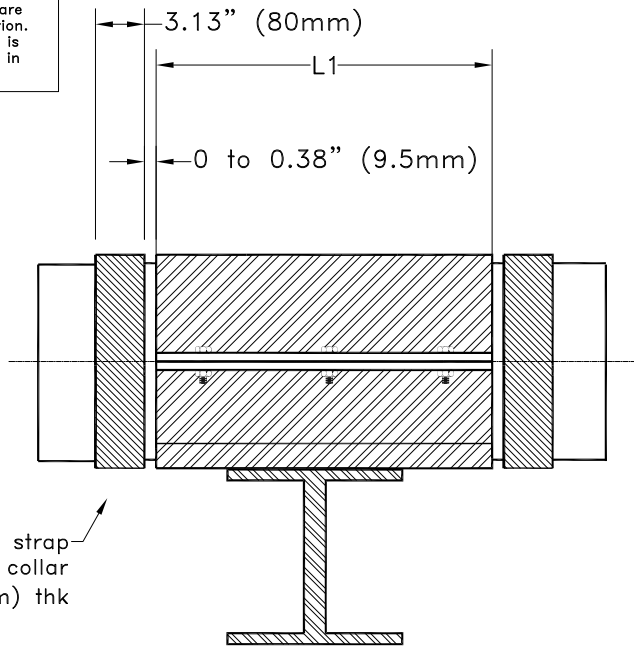
FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS
 Manufactured by Specialty Plastics
 Baton Rouge, LA, U.S.A.

www.fiberbond.com

| | | | |
|-----------------------|------------------------------------|------------------|---------------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D102904 | |
| CH'KD: | KGS | D102904 | |
| | | DRAWING: | FIG230 - 20JF |
| | | FILENAME: | FIG230 - 20JF |
| SUPPORT TYPE: | STEEL ANCHOR W/ FRP THRUST COLLARS | | |
| SUPPORT GROUP: | ANCHOR | | |
| FIGURE NUMBER: | FIGURE 230 - 20JF | | |

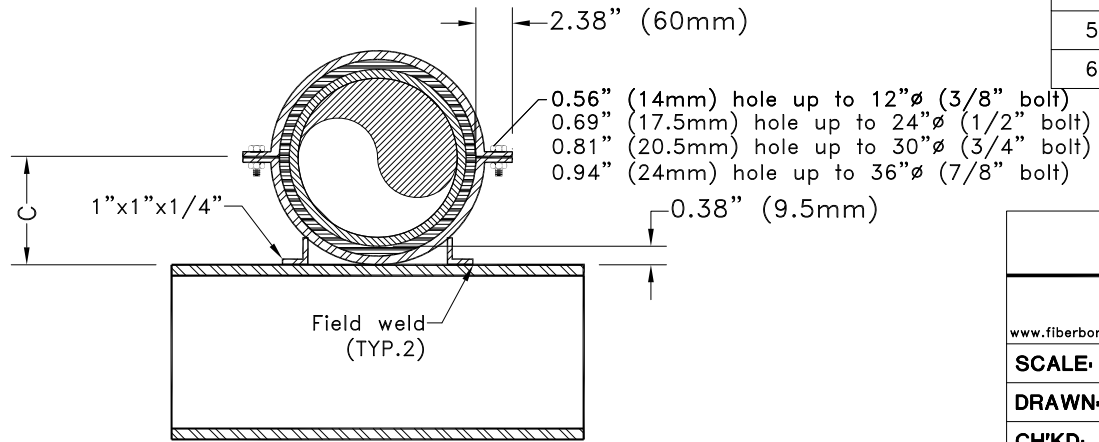
REV
3

DO NOT DUPLICATE
 This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.



Butt and strap thrust collar
 0.50" (12.5mm) thk

SIDE



ELEV

- NOTE 5. Average O.D. is typically 0.03" to 0.10" larger than the nominal O.D.
- NOTE 4. C = 0.5 * Nominal O.D. + 0.38in.
- NOTE 3. Steel saddle includes 1/8in. thick neoprene liner.
- NOTE 2. 0.38in. (9.5mm) dimension is from T.O.S. to B.O.P.
- NOTE 1. Thrust collar may need to be larger depending upon design conditions.

| Nominal Pipe Size | Nominal O.D. | | L1 | | C | |
|---------------------|--------------|-------|-----|-------|-------|-------|
| SERIES 20JF, 20JF-C | | | | | | |
| 2" | 3.13" | 79mm | 6" | 152mm | 1.94" | 49mm |
| 3" | 4.13" | 105mm | 6" | 152mm | 2.44" | 62mm |
| 4" | 5.13" | 130mm | 6" | 152mm | 2.94" | 75mm |
| 6" | 7.13" | 181mm | 8" | 203mm | 3.94" | 100mm |
| 8" | 9.13" | 232mm | 10" | 254mm | 4.94" | 125mm |
| 10" | 11.25" | 286mm | 12" | 305mm | 6.00" | 152mm |
| 12" | 13.38" | 340mm | 12" | 305mm | 7.07" | 180mm |
| 14" | 15.88" | 403mm | 12" | 305mm | 8.32" | 211mm |
| 16" | 18.00" | 457mm | 12" | 305mm | 9.38" | 238mm |
| 18" | | | | | | |
| 20" | | | | | | |
| 24" | | | | | | |
| 30" | | | | | | |
| 36" | | | | | | |
| 42" | | | | | | |
| 48" | | | | | | |
| 54" | | | | | | |
| 60" | | | | | | |

FIBERBOND®
 FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS
 Manufactured by Specialty Plastics
 Baton Rouge, LA, U.S.A.

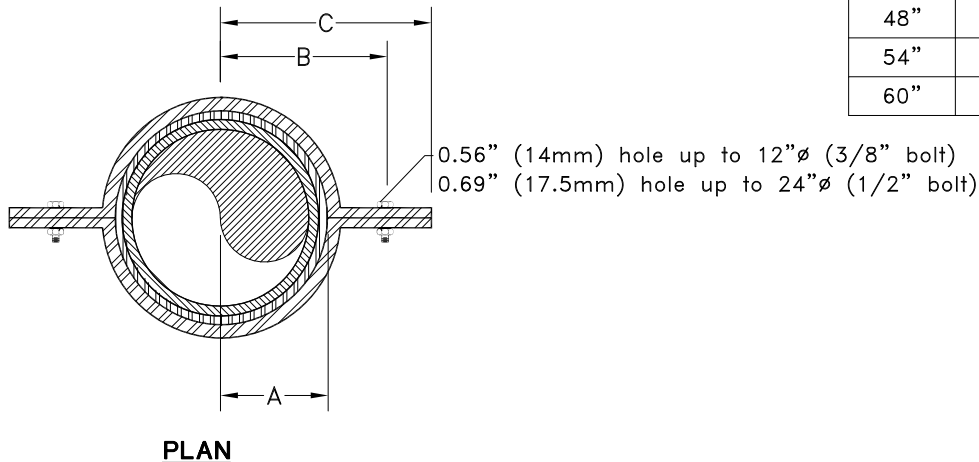
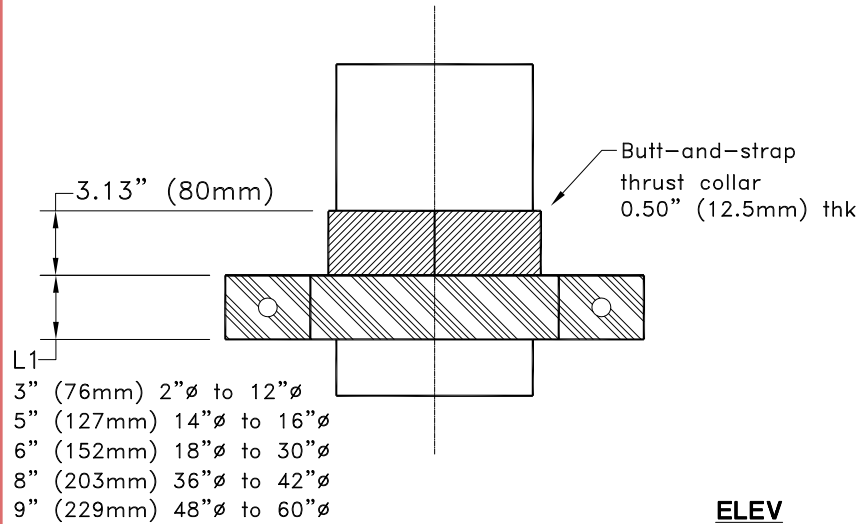
www.fiberbond.com

| | | | |
|-----------------------|------------------------------------|------------------|---------------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D102904 | |
| CH'KD: | KGS | D102904 | |
| | | DRAWING: | FIG232 - 20JF |
| | | FILENAME: | FIG232 - 20JF |
| SUPPORT TYPE: | SMALL STEEL SHOE W/ THRUST COLLARS | | |
| SUPPORT GROUP: | ANCHOR | | |
| FIGURE NUMBER: | FIGURE 232 - 20JF | | |

| | |
|------------|----------|
| REV | 3 |
|------------|----------|

DO NOT DUPLICATE

This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.



- NOTE 5. 'A' dimension is from pipe centerline to neoprene/steel interface.
 NOTE 4. $A = 0.5 * \text{Nominal O.D.} + 0.13\text{in.}$
 NOTE 3. $B = 0.5 * \text{Nominal O.D.} + 1.75\text{in.}; C = B + 1.25\text{in.}$
 NOTE 2. Steel saddle includes 1/8in. thick neoprene liner.
 NOTE 1. A separate bonded collar (two halves) may also be used.

| Nominal Pipe Size | Nominal O.D. | | A | | B | | C | |
|---------------------|--------------|-------|-------|-------|--------|-------|--------|-------|
| SERIES 20JF, 20JF-C | | | | | | | | |
| 2" | 3.13" | 79mm | 1.69" | 43mm | 3.31" | 84mm | 4.56" | 116mm |
| 3" | 4.13" | 105mm | 2.19" | 56mm | 3.81" | 97mm | 5.06" | 128mm |
| 4" | 5.13" | 130mm | 2.69" | 68mm | 4.31" | 109mm | 5.56" | 141mm |
| 6" | 7.13" | 181mm | 3.69" | 94mm | 5.31" | 135mm | 6.56" | 167mm |
| 8" | 9.13" | 232mm | 4.69" | 119mm | 6.32" | 161mm | 7.57" | 192mm |
| 10" | 11.25" | 286mm | 5.75" | 146mm | 7.38" | 187mm | 8.63" | 219mm |
| 12" | 13.38" | 340mm | 6.82" | 173mm | 8.44" | 214mm | 9.69" | 246mm |
| 14" | 15.88" | 403mm | 8.07" | 205mm | 9.69" | 246mm | 10.94" | 278mm |
| 16" | 18.00" | 457mm | 9.13" | 232mm | 10.75" | 273mm | 12.00" | 305mm |
| 18" | | | | | | | | |
| 20" | | | | | | | | |
| 24" | | | | | | | | |
| 30" | | | | | | | | |
| 36" | | | | | | | | |
| 42" | | | | | | | | |
| 48" | | | | | | | | |
| 54" | | | | | | | | |
| 60" | | | | | | | | |

FIBERBOND®

FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS
 Manufactured by Specialty Plastics
 Baton Rouge, LA, U.S.A.

www.fiberbond.com

| | | | |
|-----------------------|-------------------------------|------------------|-------------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D102904 | |
| CH'KD: | KGS | D102904 | |
| | | DRAWING: | FIG240-20JF |
| | | FILENAME: | FIG240-20JF |
| SUPPORT TYPE: | RISER CLAMP W/ THRUST COLLARS | | |
| SUPPORT GROUP: | VERTICAL RISER | | |
| FIGURE NUMBER: | FIGURE 240-20JF | | |

REV
3

DO NOT DUPLICATE

This print and its contents are the property of ITT Corporation. Use of print or its contents is prohibited unless authorized in writing.

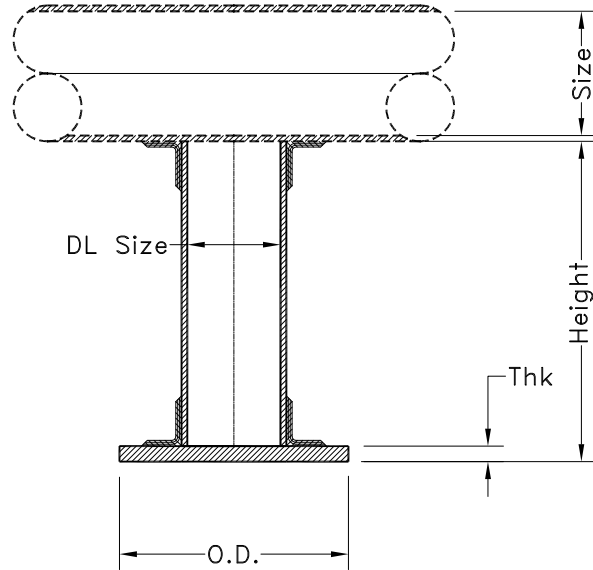


FIG.91 (shop fab'd to a tee or pipe)

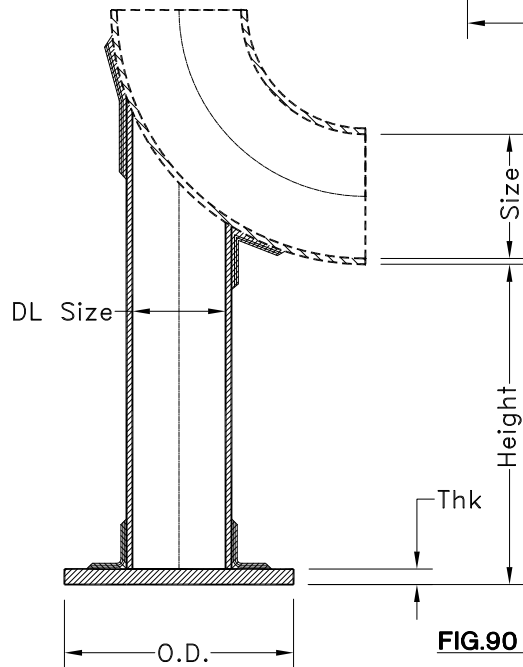


FIG.90 (shop fab'd to an elbow)

| Nominal Pipe Size | DL Size | O.D. | | Thk | |
|-------------------|---------|------|--------|------|--------|
| 2" | 2" | 5" | 127mm | 1/2" | 12.5mm |
| 3" | 2" | 5" | 127mm | 1/2" | 12.5mm |
| 4" | 3" | 6" | 152mm | 1/2" | 12.5mm |
| 6" | 4" | 7" | 178mm | 1/2" | 12.5mm |
| 8" | 6" | 9" | 229mm | 1/2" | 12.5mm |
| 10" | 6" | 9" | 229mm | 1/2" | 12.5mm |
| 12" | 8" | 12" | 305mm | 1/2" | 12.5mm |
| 14" | 10" | 14" | 356mm | 1/2" | 12.5mm |
| 16" | 12" | 16" | 406mm | 1/2" | 12.5mm |
| 18" | 14" | 18" | 457mm | 1/2" | 12.5mm |
| 20" | 18" | 22" | 559mm | 1/2" | 12.5mm |
| 24" | 18" | 22" | 559mm | 1/2" | 12.5mm |
| 30" | 24" | 28" | 711mm | 3/4" | 19mm |
| 36" | 24" | 28" | 711mm | 3/4" | 19mm |
| 42" | 36" | 40" | 1016mm | 3/4" | 19mm |
| 48" | 36" | 40" | 1016mm | 3/4" | 19mm |
| 54" | | | | | |
| 60" | 48" | 52" | 1321mm | 3/4" | 19mm |
| | | | | | |
| | | | | | |

FIBERBOND®

FIBERGLASS AND ADVANCED COMPOSITE PIPING SYSTEMS

Manufactured by Specialty Plastics

Baton Rouge, LA, U.S.A.

www.fiberbond.com

| | | | |
|---------------|------|------------------|-----------|
| SCALE: | NONE | BATCH: | |
| DRAWN: | KGS | D102904 | |
| CH'KD: | KGS | D102904 | |
| | | DRAWING: | FIGURE 90 |
| | | FILENAME: | FIG90 |

| | |
|-----------------------|------------------------|
| SUPPORT TYPE: | FRP "DUMMY LEG" |
| SUPPORT GROUP: | DUMMY LEG |
| FIGURE NUMBER: | FIGURE 90 - ALL SERIES |

REV
1

NOTE 4. Fig.90 and Fig.91 are identical except Fig.91 is on a tee or pipe.
 NOTE 3. Maximum recommended length of dummy leg is 3'-0" (914mm).
 NOTE 2. Plate to be shipped loose and field installed. 6" of trim to be included.
 NOTE 1. Dummy leg to be of the same material as the pipe.