

Bondstrand™ 2000, 4000, 5000 and 7000 Fittings Dimensions

Introduction

The Quick-Lock bell end has a $1/2^\circ$ taper and is the standard end configuration. All other end configurations, including size reductions, are made to order. Flanges are drilled in accordance with ANSI B16.5, Class 150. Other drilling specifications are available upon request. For pressure and temperature ratings; refer to product data sheet for specific series.

Tolerance for centerline-to-face dimensions on fittings with flanged ends is $\pm 1/8$ inch; for centerline-to-face dimensions with bell-end fittings $\pm 1/16$ inch; and for angular measures is $\pm 1^\circ$.

Shipping weights are approximate.

Manufacturing Methods

	Material	Applicable Fittings
Filament winding	<ul style="list-style-type: none"> · Epoxy resin · Vinyl ester resin · Glass fibers 	<ul style="list-style-type: none"> · Elbows, tees, couplings · Flanges, laterals, nipples · Saddles, crosses, reducers · Maintenance couplings · Special angle fittings
Compression molding	<ul style="list-style-type: none"> · Epoxy resin · Vinyl ester resin · Discontinuous glass fibers 	<ul style="list-style-type: none"> · Flanges, bushings, plugs · Caps, blind flanges · Elbows, 45°, 90°; tees · Eccentric reducers
Machining	<ul style="list-style-type: none"> · 316 stainless steel 	<ul style="list-style-type: none"> · Orifice flanges · Saddles for reductions

Assembly Instructions

Consult the following publications for installation details regarding Bondstrand Series 2000, 4000, 5000 and 7000 piping systems.

Quick-Lock Adhesive-bonded Bell and Spigot Joints, Contains instructions for preparing the Quick-Lock adhesive joint, using end preparation tools, applying and curing adhesives and mounting Bondstrand flanges on fiberglass pipe. Usage instructions for the various Bondstrand adhesives are included in the adhesive kits.

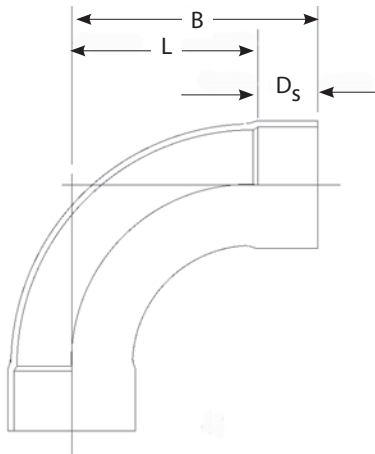
Assembly Instructions for Bondstrand fiberglass flanges, Contains information pertinent to selection of gaskets, nuts, washers, and bolts when joining Bondstrand fiberglass flanges to fiberglass flanges and to flanges of other materials. Includes recommended bolt torques and bolt tightening sequence diagrams.

Maintenance Coupling Assembly for butt-end joints, Assembly instructions for the Bondstrand maintenance coupling.

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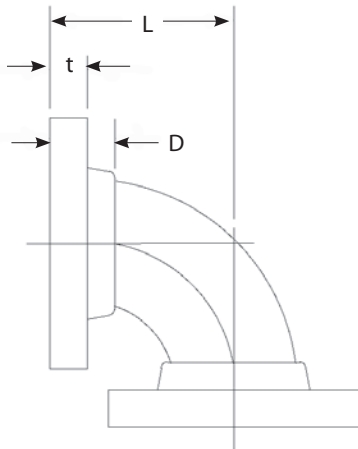
90° Elbows



Fittings are filament wound unless otherwise indicated. Fittings marked with an asterisk (*) are molded.

Nom Pipe Size	Laying Length (L)	Overall Length (B)	Socket Depth (D _s)	Approx Wt
in. mm	in. mm	in. mm	in. mm	lb. kg
1 25	2.56 65	3.62 92	1.06 27	1 0.5
1½ 40	3.19 81	4.44 113	1.25 32	1 0.5
2 50	3.00 76	4.82 122	1.82 46	1 0.5
	2.01* 51	3.83 97	1.82 46	1 0.5
3 80	4.50 114	6.32 161	1.82 46	3 1.4
	2.61* 66	4.43 113	1.82 46	2 0.9
4 100	6.00 152	7.82 199	1.82 46	4 1.8
	3.69* 94	5.51 140	1.82 46	3 1.4
6 150	9.00 229	11.25 286	2.25 57	8 3.6
	5.25* 133	7.50 191	2.25 57	7 3.2
8 200	12.00 305	14.50 368	2.50 64	15 6.8
10 250	15.00 381	17.75 451	2.75 70	25 11.3
12 300	18.00 457	21.00 533	3.00 76	41 18.6
14 350	14.12 359	17.62 448	3.50 89	37 16.8
16 400	15.62 397	19.62 498	4.00 102	68 30.8

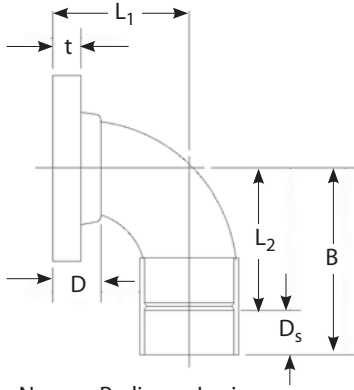
90° Flanged Elbows



Flanged 90° elbows feature filament-wound bodies and filament-wound (f/w) or molded (m) flanges. They are available in ANSI short-radius (s/r) or long-radius (l/r) laying lengths. Flanged short-radius elbows meeting ANSI laying lengths are not available in 1, 1½, 14 or 16 inch sizes. Fittings marked with two asterisks (**) are available only with filament-wound flanges.

Nom Pipe Size	Radius Type	Laying Length (L)	Flange Thickness		Approx Wt	
			At Face (t)	At Hub (D)	Flange Type (m)	Flange Type (f/w)
in. mm		in. mm	in. mm	in. mm	lb. kg	lb. kg
1 25	l/r	5.00**127**	1.13 29	1.13 29	- -	1 0.5
1½ 40	l/r	6.00**152	1.38 35	1.38 35	- -	1 0.5
2 50	s/r	4.50 114	1.00 25	2.00 51	5 2.3	4 1.8
	l/r	6.50 165	1.00 25	2.00 51	5 2.3	5 2.3
3 80	s/r	5.50 140	1.13 29	2.00 51	8 3.6	7 3.2
	l/r	7.75 197	1.13 29	2.00 51	9 4.1	8 3.6
4 100	s/r	6.50 165	1.25 32	2.00 51	11 5.0	10 4.5
	l/r	9.00 229	1.25 32	2.00 51	13 5.9	12 5.4
6 150	s/r	8.00 203	1.75 44	2.38 60	22 10.0	18 8.2
	l/r	11.50 292	1.75 44	2.38 60	26 11.8	22 10.0
8 200	s/r	9.00 229	2.00 51	2.63 67	35 15.9	29 13.2
	l/r	14.00 356	2.00 51	2.63 67	41 18.6	37 16.8
10 250	s/r	11.00 279	2.00 51	2.88 73	50 22.7	43 19.5
	l/r	16.50 419	2.00 51	2.88 73	57 25.9	54 24.5
12 300	s/r	12.00 305	2.13 54	3.13 80	82 37.2	77 34.9
	l/r	19.00 483	2.13 54	3.13 80	91 41.3	86 39.0
14 350	l/r	21.50**546	2.81 71	3.81 97	- -	150 68.0
16 400	l/r	24.00**610	3.25 83	4.25 108	- -	180 81.6

90° Combination Elbows

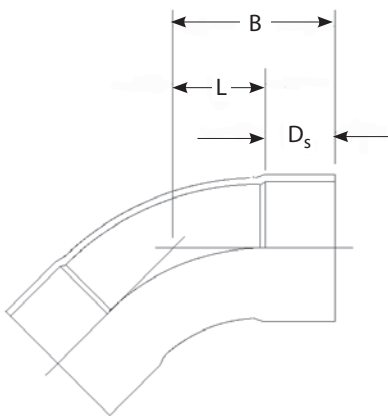


Only center-to-flange-face dimensions correspond to ANSI laying lengths. The fitting body is filament wound; flanges are available in molded (m) or filament-wound (f/w) variants. Dimensions marked with an asterisk (*) indicate molded flanges. Fittings marked with two asterisks (**) are available only with filament-wound flanges.

Nom Pipe Size	Radius Type	Laying Length (L ₁)		Flange Thickness		Overall Length (B)		Laying Length (L ₂)		Socket Depth (D _s)		Approx Wt					
		in. • mm	in. • mm	At Face (t)	At Hub (D)	in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	(m)	(f/w)				
1 25	l/r	5.00	127	1.13**	29	1.13	29	3.62	92	2.56	65	1.06	27	-	-	2	0.9
1½ 40	l/r	6.00	152	1.38**	35	1.38	35	4.44	113	3.19	81	1.25	32	-	-	3	1.4
2 50	s/r	4.50	114	1.00	25	2.00	51	6.56	167	4.75	121	1.81	46	4	1.8	3	1.4
	l/r	6.50	165	1.00	25	2.00	51	8.56	217	6.75	171	1.81	46	4	1.8	4	1.8
3 80	s/r	5.50	140	1.13	29	2.00	51	7.56	192	5.75	146	1.81	46	6	2.7	5	2.3
	l/r	7.75	197	1.13	29	2.00	51	9.81	249	8.00	203	1.81	46	6	2.7	6	2.7
4 100	s/r	6.50	165	1.25	32	2.00	51	8.56	217	6.75	171	1.81	46	8	3.6	8	3.6
	l/r	9.00	229	1.25	32	2.00	51	11.06	281	9.25	235	1.81	46	10	4.5	10	4.5
6 150	s/r	8.00	203	1.75	44	2.38	60	10.50	267	8.25	210	2.25	57	16	7.3	14	6.4
	l/r	11.50	292	1.75	44	2.38	60	14.00	356	11.75	298	2.25	57	20	9.1	18	8.2
8 200	s/r	9.00	229	2.00	51	2.63	67	11.75	298	9.25	235	2.50	64	26	11.8	23	10.4
	l/r	14.00	356	2.00	51	2.63	67	16.75	425	14.25	362	2.50	64	32	14.5	31	14.1
10 250	s/r	11.00	279	2.00	51	2.88	73	14.00	356	11.25	286	2.75	70	38	17.2	34	15.4
	l/r	16.50	419	2.00	51	2.88	73	19.50	495	16.75	425	2.75	70	45	20.4	45	20.4
12 300	s/r	12.00	305	2.13	54	3.13	80	15.25	387	12.25	311	3.00	76	61	27.7	61	27.7
	l/r	19.00	483	2.13	54	3.13	80	22.25	565	19.25	489	3.00	76	70	31.8	70	31.8
14 350	l/r	21.50	546	2.88**	73	3.75	95	17.62	448	14.12	359	3.50	89	-	-	85	38.6
16 400	l/r	24.00	610	3.25**	83	4.25	108	19.62	498	15.62	397	4.00	102	-	-	104	47.2

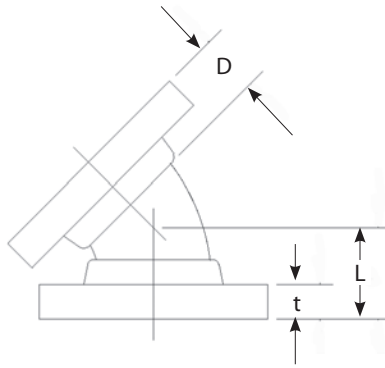
45° Elbows

Fittings are filament wound unless otherwise designated. Fittings marked with an asterisk (*) are molded.



Nom Pipe Size	Laying Length (L)		Overall Length (B)		Socket Depth (D _s)		Approx Wt	
	in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	lb. • kg	
1 25	0.88	22	1.94	49	1.06	27	1	0.5
1½ 40	1.12	28	2.37	60	1.25	32	1	0.5
	1.38	35	3.20	81	1.82	46	1	0.5
2 50	1.38*	35	3.20	81	1.82	46	1	0.5
	1.62*	41	3.43	87	1.82	46	2	0.9
3 80	2.00	51	3.82	97	1.82	46	2	0.9
	2.42*	61	4.23	107	1.82	46	3	1.4
4 100	2.50	64	4.32	110	1.82	46	3	1.4
	2.42*	61	4.23	107	1.82	46	3	1.4
6 150	3.75	95	6.00	152	2.25	57	5	2.3
	3.31*	84	5.56	141	2.25	57	8	3.6
8 200	5.00	127	7.50	191	2.50	64	9	4.1
10 250	6.25	159	9.00	229	2.75	70	16	7.3
12 300	7.50	191	10.50	267	3.00	76	26	11.8
14 350	4.69	119	8.19	208	3.50	89	38	17.2
16 400	5.38	137	9.38	238	4.00	102	45	20.4

45° Flanged Elbows

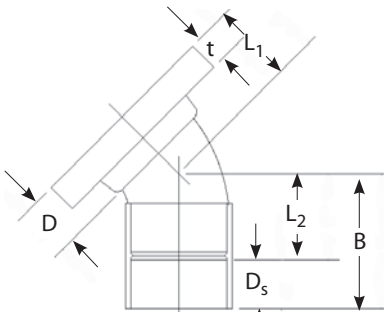


Flanges are filament wound unless otherwise designated. Fittings marked with an asterisk (*) have molded flanges. Laying lengths meet ANSI criteria.

Fittings with double asterisk (**) do not meet ANSI laying length.

Nom Pipe Size	Laying Length (L)		Flange Thickness		Approx Wt	
	in.	mm	At Face (t)	At Hub (D)	(m)	(f/w)
2	50	2.50 64	1.00 25	2.00 51	5 2.3	4 1.8
3	80	3.00 76	1.13 29	2.00 51	7 3.2	6 2.7
4	100	4.00 102	1.25 32	2.00 51	10 4.5	10 4.5
6	150	5.00 127	1.75 44	2.38 60	21 9.5	17 7.7
8	200	5.50 140	2.00 51	2.63 67	32 14.5	29 13.2
10	250	6.50 165	2.00 51	2.88 73	50 22.7	47 21.3
12	300	7.50 191	2.13 54	3.13 80	76 34.5	70 31.8
14	350	12.25** 311	2.81 71	3.81 97	- -	59 26.8
16	400	13.94** 354	3.25 83	4.25 108	- -	77 34.9

45° Combination Elbows

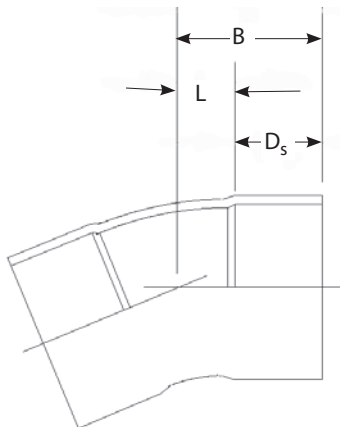


Flanges are available in molded (m) or filament-wound (f/w) construction. Dimensions marked with an asterisk (*) indicate molded flanges.

Fittings with double asterisk (**) do not meet ANSI laying length.

Nom Pipe Size	Laying Length (L ₁)		Flange Thickness		Overall Length (B)		Laying Length (L ₂)		Socket Depth (D _s)		Approx Wt Flange Type	
	in.	mm	At Face (t)	At Hub (D)	in.	mm	in.	mm	in.	mm	(m)	(f/w)
*2	50	2.50 64	1.00 25	2.00 51	4.56 116	2.75 70	1.82 46	3 1.4	*3 1.4			
*3	80	3.00 76	1.13 29	2.00 51	5.06 129	3.25 83	1.82 46	5 2.3	*4 1.8			
*4	100	4.00 102	1.25 32	2.00 51	6.06 154	4.25 108	1.82 46	7 3.2	7 3.2			
*6	150	5.00 127	1.75 44	2.38 60	7.50 191	5.25 133	2.25 57	15 6.8	13 5.9			
*8	200	5.50 140	2.00 51	2.63 67	8.25 210	5.75 146	2.50 64	23 10.4	23 10.4			
10	250	6.50 165	2.00 51	2.88 73	9.50 241	6.75 171	2.75 70	38 17.2	38 17.2			
12	300	7.50 191	2.13 54	3.13 80	10.75 273	7.75 197	3.00 76	55 24.9	54 24.5			
14	350	12.25** 311	2.81 71	3.81 97	8.18 208	4.69 119	3.50 89	63 28.6	60 27.2			
16	400	13.94** 354	3.25 83	4.25 108	9.38 238	5.38 137	4.00 102	69 31.3	66 29.9			

22 1/2° Elbows

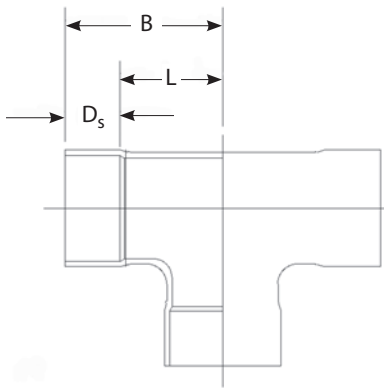


Fittings feature filament-wound Quick-Lock bell ends. Elbows with angles such as 11 1/4°, 30°, 60° and 75° and other special angles are available. Consult your representative.

Nom Pipe Size	Laying Length (L)		Overall Length (B)		Socket Depth (D _s)		Approx Wt	
	in.	mm	in.	mm	in.	mm	lb.	kg
1	25	0.38 10	1.44 37	1.06 27	0.3	0.1		
1 1/2	40	0.38 10	1.63 41	1.25 32	0.5	0.2		
2	50	0.50 13	2.31 59	1.82 46	0.7	0.3		
3	80	0.81 21	2.62 67	1.82 46	1.3	0.6		
4	100	1.12 28	2.94 75	1.82 46	2.0	0.9		
6	150	1.69 43	3.94 100	2.25 57	4.0	1.8		
8	200	2.25 57	4.75 121	2.50 64	7.0	3.2		
10	250	2.62 67	5.38 137	2.75 70	13.0	5.9		
12	300	3.00 76	6.00 152	3.00 76	16.0	7.3		
14	350	3.25 83	6.75 171	3.50 89	26.0	11.8		
16	400	3.50 89	7.50 191	4.00 102	30.0	13.6		

Tees

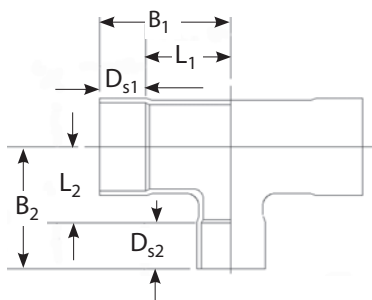
Fittings are filament wound unless otherwise noted. Molded fittings are indicated with an asterisk (*).



Nom Pipe Size	Laying Length (L)		Overall Length (B)		Socket Depth (D _s)		Approx Wt		
	in.	mm	in.	mm	in.	mm	lb.	kg	
1	25	1.06	27	2.12	54	1.06	27	1	0.5
1½	40	1.19	30	2.44	62	1.25	32	1	0.5
2	50	2.00*	51	3.81	97	1.82	46	3	1.4
		2.50	64	4.32	110	1.82	46	2	0.9
3	80	2.69*	68	4.50	114	1.82	46	5	2.3
		3.38	86	5.20	132	1.82	46	4	1.8
4	100	3.69*	94	5.50	140	1.82	46	7	3.2
		4.12	105	5.94	151	1.82	46	5	2.3
6	150	5.25*	133	7.50	191	2.25	57	14	6.4
		5.62	143	7.87	200	2.25	57	11	5.0
8	200	7.00	178	9.50	241	2.50	64	18	8.2
10	250	8.50	216	11.25	286	2.75	70	32	14.5
12	300	10.00	254	13.00	330	3.00	76	46	20.9
14	350	10.50	267	14.00	356	3.50	89	65	29.5
16	400	11.50	292	15.50	394	4.00	102	97	44.0

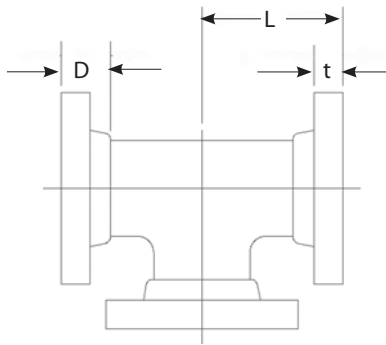
Reducing Tees

Fittings are filament wound



Nom Pipe Size	Laying Length (L ₁)		Laying Length (L ₂)		Overall Length (B ₁)		Overall Length (B ₂)		Socket Depth (D _{s1})		Socket Depth (D _{s2})		Approx Wt			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg		
2x2x1	50	50	25	64	2.25	57	4.31	109	3.31	84	1.81	46	1.06	27	3	1.4
3x3x2	80	80	40	101	3.38	86	5.19	132	4.81	122	1.81	46	1.82	46	4	1.8
4x4x2	100	100	50	127	4.12	105	5.93	151	5.31	135	1.81	46	1.82	46	5	2.3
4x4x3	100	100	50	127	4.12	105	3.88	99	5.93	151	1.81	46	1.82	46	5	2.3
6x6x2	150	150	75	190	5.62	143	4.50	114	6.31	160	2.25	57	1.82	46	8	3.6
6x6x3	150	150	75	190	5.62	143	4.88	124	6.69	170	2.25	57	1.82	46	9	4.1
6x6x4	150	150	75	190	5.62	143	5.12	130	6.93	176	2.25	57	1.82	46	10	4.5
8x8x3	200	200	100	254	7.00	178	5.88	149	7.69	195	2.50	64	1.82	46	14	6.4
8x8x4	200	200	100	254	7.00	178	6.12	155	7.94	202	2.50	64	1.82	46	15	6.8
8x8x6	200	200	100	254	7.00	178	6.62	168	8.87	225	2.50	64	2.25	57	17	7.7
10x10x4	250	250	125	318	8.50	216	7.25	184	11.25	286	2.75	70	1.81	46	20	9.1
10x10x6	250	250	125	318	8.50	216	7.62	194	11.25	286	2.75	70	2.25	57	24	10.9
10x10x8	250	250	125	318	8.50	216	8.00	203	11.25	286	2.75	70	2.50	64	28	12.7
12x12x4	300	300	150	381	10.00	254	8.12	206	13.00	330	3.00	76	1.81	46	30	13.6
12x12x6	300	300	150	381	10.00	254	8.62	219	13.00	330	3.00	76	2.25	57	34	15.4
12x12x8	300	300	150	381	10.00	254	9.00	229	13.00	330	3.00	76	2.50	64	38	17.2
12x12x10	300	300	150	381	10.00	254	9.50	241	13.00	330	3.00	76	2.75	70	42	19.1
14x14x6	350	350	175	443	10.50	267	9.62	244	14.00	356	3.50	89	2.25	57	45	20.4
14x14x8	350	350	175	443	10.50	267	10.00	254	14.00	356	3.50	89	2.50	64	50	22.7
14x14x10	350	350	175	443	10.50	267	10.50	267	14.00	356	3.50	89	2.75	70	55	24.9
14x14x12	350	350	175	443	10.50	267	11.00	279	14.00	356	3.50	89	3.00	76	60	27.2
16x16x6	400	400	200	508	11.50	292	10.38	264	15.50	394	4.00	102	2.25	57	70	31.8
16x16x8	400	400	200	508	11.50	292	10.75	273	15.50	394	4.00	102	2.50	64	75	34.0
16x16x10	400	400	200	508	11.50	292	11.12	282	15.50	394	4.00	102	2.75	70	80	36.3
16x16x12	400	400	200	508	11.50	292	11.62	295	15.50	394	4.00	102	3.00	76	85	38.6
16x16x14	400	400	200	508	11.50	292	11.50	292	15.50	394	4.00	102	3.50	89	90	40.8

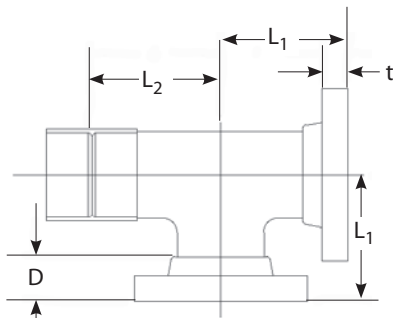
Flanged Tees



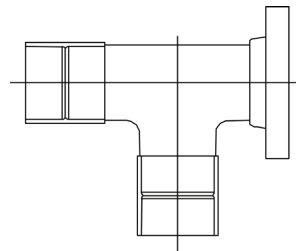
Flanges are filament wound unless otherwise noted. Molded flanges available in 2- through 12-inch sizes. Fittings noted with an asterisk (*) do not meet ANSI laying lengths. Flange thickness with double asterisk (**) represents molded flange dimension.

Nom Pipe Size	Laying Length (L)		Flange Thickness		Approx Wt
	At Face (t)	At Hub (D)	At Face (t)	At Hub (D)	
in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	lb. • kg
1 25	3.50	89	1.13	29	2 0.9
1½ 40	4.00	102	1.38	35	3 1.4
2 50	4.50	114	1.00	25	7 3.2
3 80	5.50	140	1.13	29	11 5.0
4 100	6.50	165	1.25	32	17 7.7
	6.50	165	1.56**	40	17 7.7
6 150	8.00	203	1.75	44	32 14.5
8 200	9.00	229	2.00	51	47 21.3
10 250	11.00	279	2.00	51	70 31.8
12 300	12.00	305	2.13	54	114 51.7
14 350	18.00*	457	2.81	71	220 99.8
16 400	20.00*	508	3.25	83	280 127.0

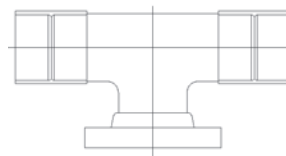
Combination Tees



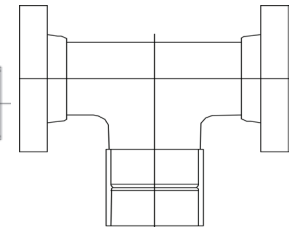
QL x FLG x FLG



QL x FLG x QL



QL x QL x FLG

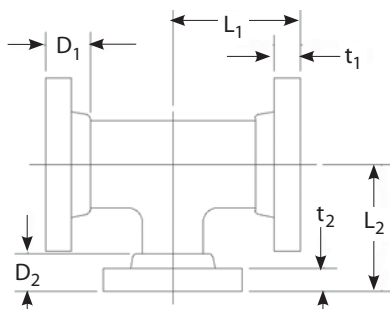


FLG x FLG x QL

Flanges are filament wound unless otherwise noted. Molded flanges are available in 2- through 12-inch sizes. Any combination of flanged or Quick-Lock ends is available. Fittings noted with an asterisk (*) do not match ANSI laying length dimensions. Quick-Lock bell ends in 14- and 16-inch sizes are integrally wound.

Nom Pipe Size	Laying Length		Laying Length		Flange Thickness		Approx Wt					
	At Face (t)	At Hub (D)	At Face (t)	At Hub (D)	1 cplg		2 cplg					
Size	(L ₁)	(L ₂)	(t)	(D)	2 flgs	1 flg						
in. • mm	in. • mm	in. • mm	in. • mm	in. • mm	lb. • kg	lb. • kg						
1 25	3.50	89	1.06	27	1.13	29	1.13	29	3	1.4	3	1.4
1½ 40	4.07	103	1.19	30	1.38	35	1.38	35	4	1.8	4	1.8
2 50	4.50	114	4.75	121	1.00	25	2.00	51	6	2.7	5	2.3
3 80	5.50	140	5.75	146	1.13	29	2.00	51	10	4.5	8	3.6
4 100	6.50	165	6.75	171	1.25	32	2.00	51	14	6.4	12	5.4
6 150	8.00	203	8.25	210	1.75	44	2.38	60	28	12.7	24	10.9
8 200	9.00	229	9.25	235	2.00	51	2.63	67	41	18.6	35	15.9
10 250	11.00	279	11.25	286	2.00	51	2.88	73	61	27.7	52	23.6
12 300	12.00	305	12.25	311	2.13	54	3.13	80	98	44.5	82	37.2
14 350	18.00*	457	10.50	267	2.81	71	3.81	97	130	59.0	120	54.4
16 400	20.00*	508	11.50	292	3.25	83	4.25	108	145	65.8	130	59.0

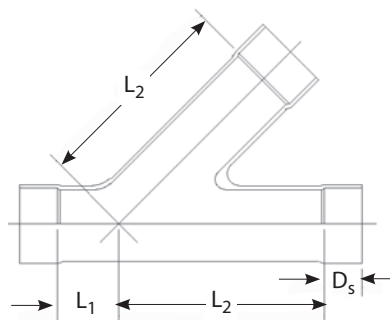
Flanged Reducing Tees



Flanges are filament wound unless otherwise noted. Molded flanges available in 2- through 12-inch sizes. Fittings with asterisk (*) do not meet ANSI laying lengths. Flange thicknesses with double asterisk (**) represent molded flange dimensions.

Nom Pipe Size		Laying Length (L ₁)		Laying Length (L ₂)		Flange Thickness At Face (t ₁)		Flange Thickness At Hub (D ₁)		Flange Thickness At Face (t ₂)		Flange Thickness At Hub (D ₂)		Approx Wt	
in. • mm		in. • mm		in. • mm		in. • mm		in. • mm		in. • mm		in. • mm		lb. • kg	
3x3x2	80x80x50	5.50	140	5.50	140	1.13	29	2.00	51	1.00	25	2.00	51	10	4.5
4x4x2	100x100x50	6.50	165	6.50	165	1.25	32	2.00	51	1.00	25	2.00	51	15	6.8
		6.50	165	6.50	165	1.56**	40	2.00	51	1.00	25	2.00	51	15	6.8
4x4x3	100x100x80	6.50	165	6.50	165	1.25	32	2.00	51	1.13	29	2.00	51	16	7.3
		6.50	165	6.50	165	1.56**	40	2.00	51	1.13	29	2.00	51	16	7.3
6x6x2	150x150x50	8.00	203	8.00	203	1.75	44	2.38	60	1.00	25	2.00	51	25	11.3
6x6x3	150x150x80	8.00	203	8.00	203	1.75	44	2.38	60	1.13	29	2.00	51	27	12.2
6x6x4	150x150x100	8.00	203	8.00	203	1.75	44	2.38	60	1.25	32	2.00	51	29	13.2
		8.00	203	8.00	203	1.75	44	2.38	60	1.56**	40	2.00	51	29	13.2
8x8x3	200x200x80	9.00	229	9.00	229	2.00	51	2.63	67	1.13	29	2.00	51	32	14.5
8x8x4	200x200x100	9.00	229	9.00	229	2.00	51	2.63	67	1.25	32	2.00	51	37	16.8
8x8x6	200x200x150	9.00	229	9.00	229	2.00	51	2.63	67	1.75	44	2.38	60	42	19.1
		9.00	229	9.00	229	2.00	51	2.63	67	1.56**	40	2.00	51	43	19.5
10x10x4	250x250x100	11.00	279	11.00	279	2.00	51	2.88	73	1.25	32	2.00	51	50	22.7
		11.00	279	11.00	279	2.00	51	2.88	73	1.56**	40	2.00	51	50	22.7
10x10x6	250x250x150	11.00	279	11.00	279	2.00	51	2.88	73	1.75	44	2.38	60	57	25.9
10x10x8	250x250x200	11.00	279	11.00	279	2.00	51	2.88	73	2.00	51	2.00	51	64	29.0
12x12x4	300x300x100	12.00	305	12.00	305	2.13	54	3.13	80	1.25	32	2.00	51	75	34.0
		12.00	305	12.00	305	2.13	54	3.13	80	1.56**	40	2.00	51	75	34.0
12x12x6	300x300x150	12.00	305	12.00	305	2.13	54	3.13	80	1.75	44	2.38	60	85	38.6
12x12x8	300x300x200	12.00	305	12.00	305	2.13	54	3.13	80	2.00	51	2.63	67	95	43.1
12x12x10	300x300x250	12.00	305	12.00	305	2.13	54	3.13	80	2.00	51	2.88	73	105	47.6
14x14x6	350x350x150	18.00*	457	14.39	366	2.81	71	3.81	97	1.75	44	2.38	60	155	70.3
14x14x8	350x350x200	18.00*	457	15.25	387	2.81	71	3.81	97	2.00	51	2.63	67	170	77.1
14x14x10	350x350x250	18.00*	457	16.25	413	2.81	71	3.81	97	2.00	51	2.88	73	185	83.9
14x14x12	350x350x300	18.00*	457	17.25	438	2.81	71	3.81	97	2.13	54	3.13	80	200	90.7
16x16x6	400x400x150	20.00*	508	15.12	384	3.25	83	4.25	108	1.75	44	2.38	60	200	90.7
16x16x8	400x400x200	20.00*	508	16.00	406	3.25	83	4.25	108	2.00	51	2.63	67	215	97.5
16x16x10	400x400x250	20.00*	508	16.88	429	3.25	83	4.25	108	2.00	51	2.88	73	230	104.3
16x16x12	400x400x300	20.00*	508	17.88	454	3.25	83	4.25	108	2.13	54	3.13	80	245	111.1
16x16x14	400x400x350	*20.00*	508	19.06	484	3.25	83	4.25	108	2.81	71	3.81	97	260	117.9

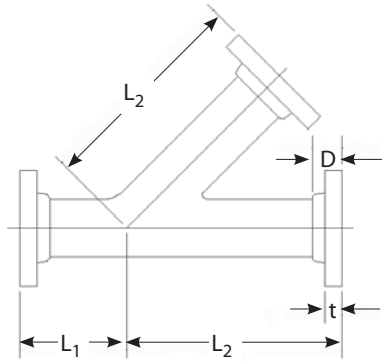
45° Laterals



Nom Pipe Size		Laying Length (L ₁)		Laying Length (L ₂)		Socket Depth (D _s)		Approx Wt	
in. • mm		in. • mm		in. • mm		in. • mm		lb. • kg	
2	50	2.50	64	8.00	203	1.82	46	4	1.8
3	80	3.00	76	10.00	254	1.82	46	7	3.2
4	100	3.00	76	12.00	305	1.82	46	9	4.1
6	150	3.50	89	14.50	368	2.25	57	15	6.8
8	200	4.50	114	17.50	445	2.50	64	27	12.2
10	250	5.00	127	20.50	521	2.75	70	47	21.3
12	300	5.50	140	24.50	622	3.00	76	67	30.4
14	350	5.50	140	24.50	622	3.50	89	87	39.5
16	400	5.50	140	24.50	622	4.00	102	110	49.9

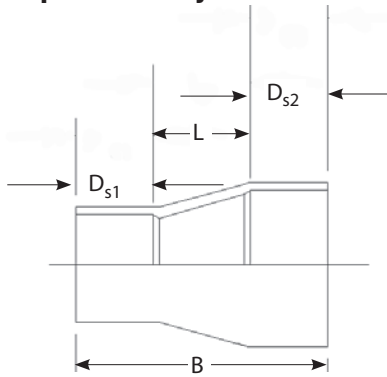
45° Flanged Laterals

Flanges are filament wound and meet ANSI B16.5 Cl 150 requirements.



Nom Pipe Size		Laying Length (L ₁)		Laying Length (L ₂)		Flange Thickness At Face (t)				Flange Thickness At Hub (D)		Approx Wt	
in. • mm		in. • mm		in. • mm		in. • mm		in. • mm		lb. • kg			
2	50	6.44	164	11.94	303	1.00	25	2.00	51	9	4.1		
3	80	6.94	176	13.94	354	1.13	29	2.00	51	14	6.4		
4	100	6.94	176	15.94	405	1.25	32	2.00	51	20	9.1		
6	150	8.25	210	19.25	489	1.75	44	2.38	60	34	15.4		
8	200	9.76	248	22.75	578	2.00	51	2.63	67	57	25.9		
10	250	10.75	273	26.25	667	2.00	51	2.88	73	89	40.4		
12	300	11.75	298	30.75	781	2.13	54	3.13	80	136	61.7		
14	350	13.06	332	32.00	813	2.81	71	3.81	97	201	91.2		
16	400	14.00	356	33.00	838	3.25	83	4.25	108	269	122.0		

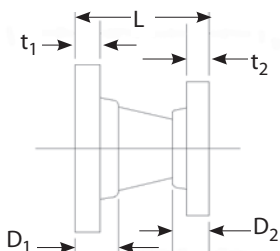
Tapered Body Reducers



Nom Pipe Size		Overall Length (B)		Laying Length (L)		Socket Depth (D _{s1})		Socket Depth (D _{s2})		Approx Wt	
in. • mm		in. • mm		in. • mm		in. • mm		in. • mm		lb. • kg	
1½x1	40x25	3.56	90	1.31	33	1.06	27	1.25	32	0.4	0.2
2x1	50x25	5.38	137	2.50	64	1.06	27	1.82	46	0.6	0.3
2x1½	20x40	4.32	110	1.25	32	1.25	32	1.82	46	1.0	0.5
3x2	80x50	5.75	146	2.12	54	1.82	46	1.82	46	1.4	0.6
4x2	100x50	6.62	168	3.00	76	1.82	46	1.82	46	2.0	0.9
4x3	100x80	6.50	165	2.88	73	1.82	46	1.82	46	2.0	0.9
6x3	150x80	7.88	200	3.81	97	1.82	46	2.25	57	4.0	1.8
6x4	150x100	7.75	197	3.69	94	1.82	46	2.25	57	4.0	1.8
8x4	200x100	9.75	248	5.44	138	1.82	46	2.50	64	7.0	3.2
8x6	200x150	8.63	219	3.88	99	2.25	57	2.50	64	7.0	3.2
10x6	250x150	9.62	244	4.62	117	2.25	57	2.75	70	9.0	4.1
10x8	250x200	9.37	238	4.12	105	2.50	64	2.75	70	8.0	3.6
12x8	300x200	11.38	289	5.88	149	2.50	64	3.00	76	14.0	6.4
12x10	300x250	11.12	282	5.38	137	2.75	70	3.00	76	13.0	5.9
14x10	350x250	13.50	343	7.25	184	2.75	70	3.50	89	36.0	16.3
14x12	350x300	13.50	343	7.00	178	3.00	76	3.50	89	37.0	16.8
16x12	400x300	13.50	343	6.50	165	3.00	76	4.00	102	54.0	24.5
16x14	400x350	13.50	343	6.00	152	3.50	89	4.00	102	57.0	25.9

Flanged Tapered Body Reducers

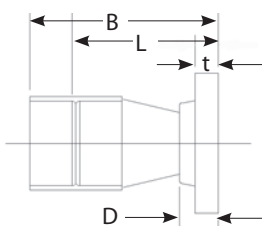
Flanges are filament wound. Flanges in 2-, 3- and 4-inch sizes are available only in heavy-duty (hubless) configuration. Molded flanges available in 2- through 12-inch sizes. Fittings with asterisk (*) meet ANSI laying lengths.



Nom Pipe Size	Nom Pipe Size	Laying Length (L)		Flange Thickness				Flange Thickness				Approx Wt	
		in.	mm	At Face (t ₁)	At Hub (D ₁)	At Face (t ₂)	At Hub (D ₂)	At Face (t ₂)	At Hub (D ₂)	lb.	kg		
1 1/2x1	40x25	6.50	165	1.38	35	1.38	35	1.13	29	1.13	29	4	1.8
2x1	50x25	8.75	222	1.00	25	2.00	51	1.13	29	1.13	29	5	2.3
2x1 1/2	20x40	8.00	203	1.00	25	2.00	51	1.38	35	1.38	35	6	2.7
3x2*	80x50	6.00	152	1.13	29	2.00	51	1.00	25	2.00	51	9	4.1
4x2*	100x50	7.00	178	1.25	32	2.00	51	1.00	25	2.00	51	10	4.5
4x3*	100x80	7.00	178	1.25	32	2.00	51	1.13	29	2.00	51	11	5.0
6x3*	150x80	9.00	229	1.75	44	2.38	60	1.13	29	2.00	51	15	6.8
6x4*	150x100	9.00	229	1.75	44	2.38	60	1.25	32	2.00	51	17	7.7
8x4*	200x100	11.00	279	2.00	51	2.63	67	1.25	32	2.00	51	21	9.5
8x6*	200x150	11.00	279	2.00	51	2.63	67	1.75	44	2.38	60	23	10.4
10x6*	250x150	12.00	305	2.00	51	2.88	73	1.75	44	2.38	60	28	12.7
10x8*	250x200	12.00	305	2.00	51	2.88	73	2.00	51	2.63	67	35	15.9
12x8*	300x200	14.00	356	2.13	54	3.13	80	2.00	51	2.63	67	45	20.4
12x10*	300x250	14.00	356	2.13	54	3.13	80	2.00	51	2.88	73	50	22.7
14x10*	350x250	16.00	406	2.81	71	3.81	97	2.00	51	2.88	73	73	33.1
14x12*	350x300	16.00	406	2.81	71	3.81	97	2.13	54	3.13	80	84	38.1
16x12*	400x300	18.00	457	3.25	83	4.25	108	2.13	54	3.13	80	100	45.4
16x14*	400x350	18.00	457	3.25	83	4.25	108	2.81	71	3.81	97	115	52.2

Combination Reducers (Flanged Small End)

Flanges are filament wound with tapered body. Molded flanges available in 2- through 12-inch sizes.

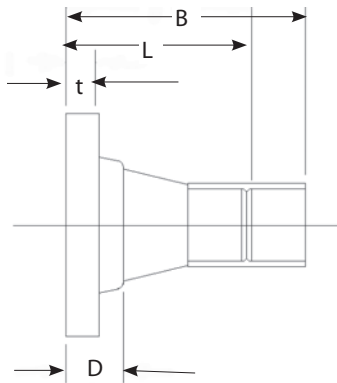


Nom Pipe Size	Nom Pipe Size	Laying Length* (L)		Overall Length (B)		Flange Thickness				Approx Wt	
		in.	mm	in.	mm	At Face (t)	At Hub (D)	At Face (t)	At Hub (D)	lb.	kg
3x2	80x50	6.25	159	8.06	205	1.13	29	2.00	51	8	3.6
4x2	100x50	7.25	184	9.06	230	1.25	32	2.00	51	9	4.1
4x3	100x80	7.25	184	11.06	281	1.25	32	2.00	51	10	4.5
6x3	150x80	9.25	235	11.06	281	1.75	44	2.38	60	13	5.9
6x4	150x100	9.25	235	11.06	281	1.75	44	2.38	60	14	6.4
8x4	200x100	11.25	286	13.06	332	2.00	51	2.63	67	18	8.2
8x6	200x150	11.25	286	13.50	343	2.00	51	2.63	67	19	8.6
10x6	250x150	12.25	311	14.50	368	2.00	51	2.88	73	24	10.9
10x8	250x200	12.25	311	14.75	375	2.00	51	2.88	73	29	13.2
12x8	300x200	14.25	362	16.75	425	2.13	54	3.13	80	39	17.7
12x10	300x250	14.25	362	17.00	432	2.13	54	3.13	80	41	18.6
14x10	350x250	16.13	410	19.88	505	2.82	72	3.81	97	59	26.8
14x12	350x300	16.13	410	19.13	486	2.82	72	3.81	97	56	25.4
16x12	400x300	18.38	467	22.38	568	3.25	83	4.25	108	78	35.4
16x14	400x350	18.38	467	21.88	556	3.25	83	4.25	108	82	37.2

* Laying length is measured from contact surface to pipe stop in Quick Lock bell.

Combination Reducers (Flanged Large End)

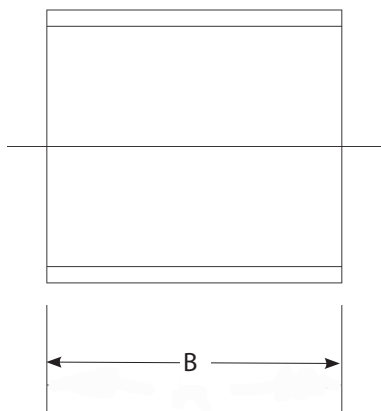
Standard flanges are filament wound. Molded flanges available in 2 through 12 inch sizes.



Nom Pipe Size		Laying Length* (L)		Overall Length (B)		Flange Thickness				Approx Wt	
in. • mm		in. • mm		in. • mm		At Face (t)		At Hub (D)		lb. • kg	
3x2	80x50	6.25	159	8.06	205	1.00	25	2.00	51	7	3.2
4x2	100x50	7.25	184	9.06	230	1.00	25	2.00	51	8	3.6
4x3	100x80	7.25	184	9.06	230	1.13	29	2.00	51	9	4.1
6x3	150x80	9.25	235	11.25	286	1.13	29	2.00	51	11	5.0
6x4	150x100	9.25	235	11.25	286	1.25	32	2.00	51	13	5.9
8x4	200x100	11.25	286	13.75	349	1.25	32	2.00	51	15	6.8
8x6	200x150	11.25	286	13.75	349	1.75	44	2.38	60	17	7.7
10x6	250x150	12.25	311	15.00	381	1.75	44	2.38	60	19	8.6
10x8	250x200	12.25	311	15.00	381	2.00	51	2.63	67	26	11.8
12x8	300x200	14.25	362	17.25	438	2.00	51	2.63	67	29	13.2
12x10	300x250	14.25	362	17.25	438	2.00	51	2.88	73	34	15.4
14x10	350x250	16.13	410	19.88	505	2.00	51	2.88	73	39	17.7
14x12	350x300	16.13	410	19.88	505	2.13	54	3.81	97	47	21.3
16x12	400x300	18.13	461	22.38	568	2.13	54	4.25	108	54	24.5
16x14	400x350	18.38	467	22.38	568	2.81	71	4.25	108	66	29.9

* Laying length is measured from contact surface to pipe stop in Quick Lock bell.

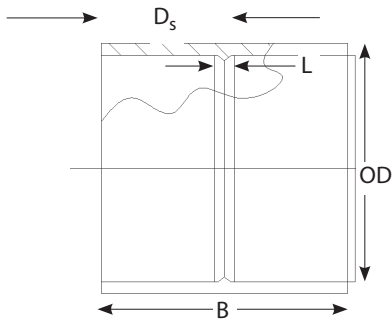
Pipe Nipples



Nom Pipe Size		Overall Length (B)		Approx Wt	
in. • mm		in. • mm		lb. • kg	
1	25	2.25	57	0.1	0.0
1½	40	2.62	67	0.2	0.1
2	50	3.75	95	0.2	0.1
3	80	3.75	95	0.3	0.1
4	100	3.75	95	0.5	0.2
6	150	4.62	117	0.9	0.4
8	200	5.12	130	1.4	0.6
10	250	5.62	143	1.9	0.9
12	300	6.12	155	2.4	1.1
14	350	7.25	184	6.7	3.0
16	400	8.25	210	9.7	4.4

Couplings and End Caps

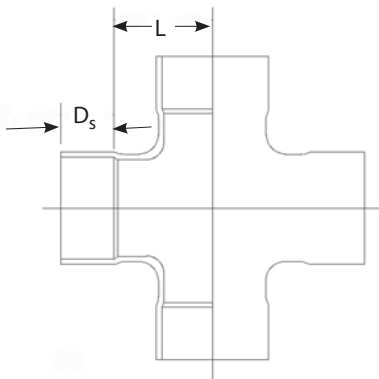
Couplings are filament wound. End caps consist of filament-wound couplings with molded plugs bonded in.



Nom Pipe Size	Overall Length (B)		Socket Depth (D _s)		Outside Dia (OD)		Pipe Stop (L)		Approx Wt		Cap			
	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg	lb.	kg		
1	25	64	2.50	64	1.06	27	1.62	41	0.38	10	0.2	0.1	0.9	0.4
1½	40	73	2.88	73	1.25	32	2.31	59	0.38	10	0.3	0.1	1.0	0.5
2	50	102	4.00	102	1.81	46	2.81	71	0.38	10	0.6	0.3	1.2	0.5
3	80	102	4.00	102	1.81	46	3.94	100	0.38	10	0.9	0.4	2.2	1.0
4	100	102	4.00	102	1.81	46	5.06	129	0.38	10	1.4	0.6	3.4	1.5
6	150	124	4.88	124	2.25	57	7.19	183	0.38	10	2.4	1.1	8.4	3.8
8	200	137	5.38	137	2.50	64	9.25	235	0.38	10	4.0	1.8	14.0	6.4
10	250	149	5.88	149	2.75	70	11.38	289	0.38	10	5.0	2.3	22.0	10.0
12	300	162	6.38	162	3.00	76	13.38	340	0.38	10	7.0	3.2	22.0	10.0
14	350	197	7.75	197	3.50	89	14.69	373	0.75	19	12.0	5.4	-	-
16	400	222	8.75	222	4.00	102	16.62	422	0.75	19	14.0	6.4	-	-

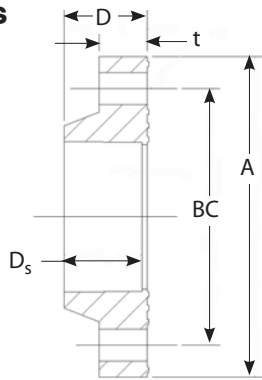
Crosses

Crosses are filament wound. Mitered crosses are available in 14- and 16-inch sizes. Contact FGS for dimensions and pressure ratings.



Nom Pipe Size	Laying Length (L)		Socket Depth (D _s)		Approx Wt	
	in.	mm	in.	mm	lb.	kg
2	50	64	2.50	64	3	1.4
3	80	86	3.38	86	6	2.7
4	100	105	4.12	105	7	3.2
6	150	143	5.62	143	13	5.9
8	200	178	7.00	178	23	10.4
10	250	216	8.50	216	37	16.8
12	300	254	10.00	254	61	27.7

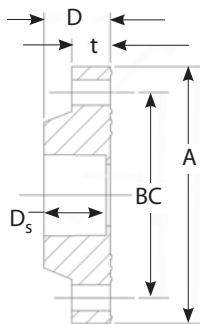
Flanges



Filament-wound and molded flanges correspond to ANSI B16.5 Cl. 150 classification. Sealing ring thicknesses for 1- and 1½-inch flanges are 0.035; for 2- through 8-inch flanges, 0.047; and for 10- through 16-inch flanges, 0.060, respectively. Molded flanges are indicated with an asterisk (*). See **Assembly Instructions for Bondstrand fiberglass flanges**, for recommendations on gasket selection, nut and washer dimensions, bolt lengths and torques, and tightening sequences.

Nom Pipe Size	Flange Dia (A)	Bolt Circle (BC)	Laying Length (L)	Flange Thickness		Socket Depth (D _s)	Hole Count	Hole Dia	Bolt Dia	Approx Wt
in. mm	in. mm	in. mm	in. mm	At Hub (D)	At Face (t)	in. mm		in. mm	in. mm	lb. kg
1 25	4.25 108	3.13 80	0.063 2	1.13 29	- -	1.06 27	4	0.63 16	0.50 13	1 0.5
1½ 40	5.00 127	3.88 99	0.125 3	1.38 35	- -	1.25 32	4	0.63 16	0.50 13	2 0.9
2 50	6.00 152	4.75 121	0.188 5	2.00 51	1.00 25	1.82 46	4	0.75 19	0.63 16	2 0.9
	6.00* 152	4.75 121	0.188 5	2.00 51	1.00 25	1.82 46	4	0.75 19	0.63 16	2 0.9
3 80	7.50 191	6.00 152	0.188 5	2.00 51	1.13 29	1.82 46	4	0.75 19	0.63 16	3 1.4
	7.50* 191	6.00 152	0.188 5	2.00 51	1.13 29	1.82 46	4	0.75 19	0.63 16	3 1.4
4 100	9.00 229	7.50 191	0.188 5	2.00 51	1.25 32	1.82 46	8	0.75 19	0.63 16	4 1.8
	9.00* 229	7.50 191	0.188 5	2.00 51	1.56 40	1.82 46	8	0.75 19	0.63 16	4 1.8
6 150	11.00 279	9.50 241	0.125 3	2.38 60	1.75 44	2.25 57	8	0.88 22	0.75 19	7 3.2
	11.00* 279	9.50 241	0.125 3	2.38 60	1.75 44	2.25 57	8	0.88 22	0.75 19	7 3.2
8 200	13.50 343	11.75 298	0.125 3	2.63 67	2.00 51	2.50 64	8	0.88 22	0.75 19	10 4.5
	13.50* 343	11.75 298	0.125 3	2.63 67	2.00 51	2.50 64	8	0.88 22	0.75 19	12 5.4
10 250	16.00 406	14.25 362	0.125 3	2.88 73	2.00 51	2.75 70	12	1.00 25	0.88 22	14 6.4
	16.00* 406	14.25 362	0.125 3	2.88 73	2.00 51	2.75 70	12	1.00 25	0.88 22	16 7.3
12 300	19.00 483	17.00 432	0.125 3	3.13 80	2.13 54	3.00 76	12	1.00 25	0.88 22	22 10.0
	19.00* 483	17.00 432	0.125 3	3.13 80	2.13 54	3.00 76	12	1.00 25	0.88 22	27 12.2
14 350	21.00 533	18.75 476	0.312 8	3.81 97	2.81 71	3.50 89	12	1.12 28	1.00 25	37 16.8
16 400	23.50 597	21.25 540	0.250 6	4.25 108	3.25 83	4.00 102	16	1.12 28	1.00 25	53 24.0

Reducing Flanges

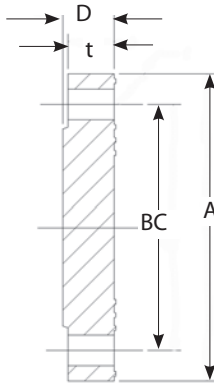


Reducing flanges are of molded construction. See assembly instructions for bolting and gasket recommendations. Use ½-inch drive to avoid wrench socket to flange hub interference while torquing bolts.

Nom Pipe Size	Flange Dia (A)	Bolt Circle (BC)	Laying Length (L)	Flange At Hub (D)	Thickness At Face (t)	Hole Dia (F)	Hole Count	Socket Depth (D _s)	Bolt Dia	Approx Wt
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm		in. mm	in. mm	lb. kg
2x1½ 50x40	6.00 152	4.75 121	0.75 19	2.00 51	1.00 25	0.75 19	4	1.25 32	0.63 16	2 0.9
3x2 80x50	7.50 191	6.00 152	0.12 3	1.93 49	1.12 28	0.75 19	4	1.81 46	0.63 16	3 1.4
4x2 100x50	9.00 229	7.50 191	0.12 3	1.93 49	1.25 32	0.75 19	8	1.81 46	0.63 16	6 2.7
4x3 100x80	9.00 229	7.50 191	0.12 3	1.93 49	1.25 32	0.75 19	8	1.81 46	0.63 16	5 2.3
6x3 150x80	11.00 279	9.50 241	0.69 18	2.50 64	1.75 44	0.88 22	8	1.81 46	0.75 19	12 5.4
6x4 150x100	11.00 279	9.50 241	0.69 18	2.50 64	1.75 44	0.88 22	8	1.81 46	0.75 19	11 5.0
8x4 200x100	13.50 343	11.75 298	0.94 24	2.75 70	2.00 51	0.88 22	8	1.81 46	0.75 19	21 9.5
8x6 200x150	13.50 343	11.75 298	0.50 13	2.75 70	2.00 51	0.88 22	8	2.25 57	0.75 19	17 7.7
10x6 250x150	16.00 406	14.25 362	0.75 19	3.00 76	2.00 51	1.00 25	12	2.25 57	0.88 22	29 13.2
10x8 250x200	16.00 406	14.25 362	0.50 13	3.00 76	2.00 51	1.00 25	12	2.50 64	0.88 22	24 10.9
12x8 300x200	19.00 483	17.00 432	0.75 19	3.25 83	2.12 54	1.00 25	12	2.50 64	0.88 22	43 19.5
12x10 300x250	19.00 483	17.00 432	0.50 13	3.25 83	2.12 54	1.00 25	12	2.75 70	0.88 22	36 16.3

Blind Flanges

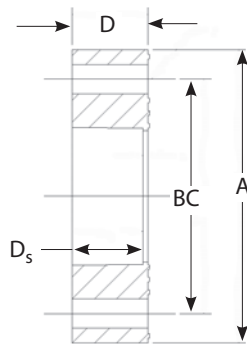
Blind flanges are molded.



Nom Pipe Size	Flange Dia (A)		Bolt Circle (BC)		Flange Thickness		Hole Count	Hole Dia (F)		Bolt Dia		Approx Wt				
	in.	mm	in.	mm	in.	mm		in.	mm	in.	mm	lb.	kg			
2	50	6.00	152	4.75	121	1.18	30	1.00	25	4	0.75	19	0.63	16	3	1.4
3	80	7.50	191	6.00	152	1.25	32	1.13	29	4	0.75	19	0.63	16	4	1.8
4	100	9.00	229	7.50	191	1.43	36	1.25	32	8	0.75	19	0.63	16	6	2.7
6	150	11.00	279	9.50	241	2.50	64	1.75	44	8	0.88	22	0.75	19	14	6.4
8	200	13.50	343	11.75	298	2.75	70	2.00	51	8	0.88	22	0.75	19	23	10.4
10	250	16.00	406	14.25	362	3.00	76	2.00	51	12	1.00	25	0.88	22	35	15.9
12	300	19.00	438	17.00	432	3.25	83	2.13	54	12	1.00	25	0.88	22	55	24.9

Heavy-Duty Flanges

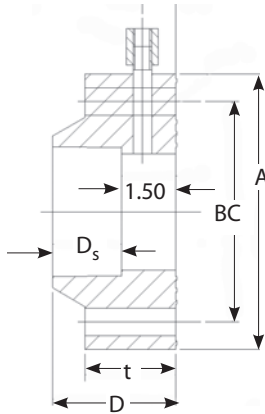
Heavy-duty (hubless) flanges are filament-wound.



Nom Pipe Size	Flange Dia (A)		Bolt Circle (BC)		Laying Length (L)	Flange Thickness (D)		Socket Depth (D _s)	Hole Count	Hole Dia (F)		Bolt Dia		Approx Wt				
	in.	mm	in.	mm		in.	mm			in.	mm	in.	mm	lb.	kg			
1	25	4.25	108	3.13	80	0.06	2	1.13	29	1.06	27	4	0.63	16	0.50	13	1	0.5
1½	40	5.00	127	3.88	99	0.13	3.	1.38	35	1.25	32	4	0.63	16	0.50	13	2	0.9
2	50	6.00	152	4.75	121	0.19	5	1.94	49	1.82	46	4	0.75	19	0.63	16	3	1.4
3	80	7.50	191	6.00	152	0.19	5	1.94	49	1.82	46	4	0.75	19	0.63	16	4	1.8
4	100	9.00	229	7.50	191	0.19	5	1.94	49	1.82	46	8	0.75	19	0.63	16	6	2.7
6	150	11.00	279	9.50	241	0.13	3	2.38	60	2.25	57	8	0.88	22	0.75	19	10	4.5
8	200	13.50	343	11.75	298	0.13	3	2.63	67	2.50	64	8	0.88	22	0.75	19	14	6.4
10	250	16.00	406	14.25	362	0.13	3	2.88	73	2.75	70	12	1.00	25	0.88	22	21	9.5
12	300	19.00	483	17.00	432	0.13	3	3.13	80	3.00	76	12	1.00	25	0.88	22	32	14.5
14	350	21.00	533	18.75	476	0.31	8	3.81	97	3.50	89	12	1.12	28	1.00	25	45	20.4
16	400	23.50	597	21.25	540	0.25	6	4.25	108	4.00	102	16	1.12	28	1.00	25	59	26.8

Orifice Flanges

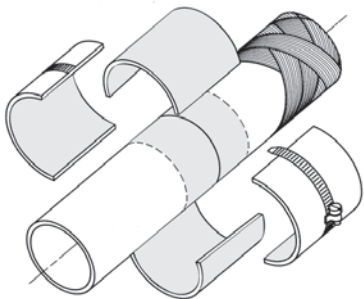
Orifice flanges are filament-wound.



Nom Pipe Size	Flange Dia (A)		Bolt Circle (BC)		Flange Thickness		Socket Depth (D _s)		Hole Count	Hole Dia	Bolt Dia	Approx Wt						
	in.	mm	in.	mm	Maximum (D)	Minimum (t)	in.	mm				in.	mm	lb.	kg			
2	50	6.00	152	4.75	121	3.38	86	2.38	60	1.82	46	4	0.75	19	0.63	16	3	1.4
3	80	7.50	191	6.00	152	3.38	86	2.50	64	1.82	46	4	0.75	19	0.63	16	5	2.3
4	100	9.00	229	7.50	191	3.38	86	2.63	67	1.82	46	8	0.75	19	0.63	16	7	3.2
6	150	11.00	279	9.50	241	3.75	95	2.94	75	2.25	57	8	0.88	22	0.75	19	11	5.0
8	200	13.50	343	11.75	298	4.00	102	3.19	81	2.50	64	8	0.88	22	0.75	19	17	7.7
10	250	16.00	406	14.25	362	4.25	108	3.25	83	2.75	70	12	1.00	25	0.88	22	24	10.9
12	300	19.00	483	17.00	432	4.50	114	3.50	89	3.00	76	12	1.00	25	0.88	22	36	16.3
14	350	21.00	533	18.75	476	5.00	127	4.00	102	3.50	89	12	1.12	28	1.00	25	49	22.2
16	400	23.50	597	21.25	540	5.50	140	4.50	114	4.00	102	16	1.12	28	1.00	25	57	25.9

Maintenance Couplings

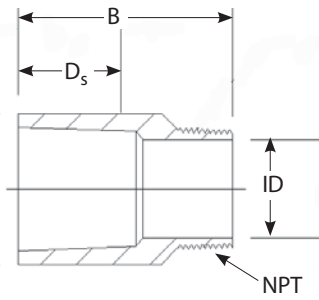
Bondstrand maintenance coupling kits include inner and outer sections, hose clamp(s), and instructions for assembly (**Bondstrand Installation Maintenance Coupling**). Adhesive must be ordered separately.



Nom Pipe Size		Overall Length		Pressure Rating		Adhesive Kits Required
in.	mm	in.	mm	psi.	N/m ²	6 oz.
1	25	2.50	64	150	1.03x10 ⁶	1/2
1 1/2	40	3.00	76	150	1.03x10 ⁶	1
2	50	4.00	102	150	1.03x10 ⁶	1
3	80	4.00	102	150	1.03x10 ⁶	1
4	100	4.00	102	150	1.03x10 ⁶	2
6	150	4.88	124	150	1.03x10 ⁶	2
8	200	5.38	137	150	1.03x10 ⁶	3
10	250	5.88	149	150	1.03x10 ⁶	4
12	300	6.38	162	150	1.03x10 ⁶	4
14	350	7.38	187	150	1.03x10 ⁶	6
16	400	8.38	213	150	1.03x10 ⁶	8

Adapters (Threaded and Victaulic)

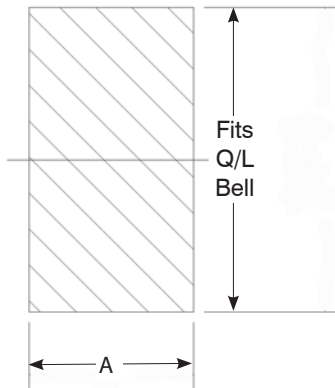
Adapters are available in Quick-Lock bell x NPT threaded male (M), and Quick-Lock bell x Victaulic male end (V) configurations. Sizes 1" (25 mm) and 1 1/2" are filament wound; 2" through 6" are compression molded. Consult manufacturer for dimensions of QL bell x victaulic adapters.



Nom Pipe Size	Overall Length (B)		Socket Depth (D _s)		Inside Dia (ID)		Approx Wt		
	in.	mm	in.	mm	in.	mm	lb.	kg	
1	25	2.38	60	1.06	27	0.76	19	0.3	0.1
1 1/2	40	2.81	71	1.25	32	1.43	36	0.4	0.2
2	50	3.57	91	1.81	46	1.89	48	0.6	0.3
3	80	4.36	111	1.81	46	2.80	71	1.2	0.5
4	100	4.63	118	1.81	46	3.89	99	1.6	0.7
6	150	4.67	119	2.25	57	5.90	150	2.6	1.2

Molded Plugs

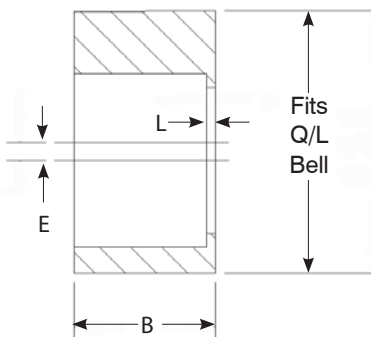
50 psi maximum



Nom Pipe Size	Total Thickness (T)		Approx Wt		
	in.	mm	lb.	kg	
2	50	1.94	49	0.6	0.3
3	80	1.94	49	1.3	0.6
4	100	1.94	49	2.0	0.9
6	150	2.38	60	6.0	2.7
8	200	2.63	67	10.0	4.5
10	250	2.88	73	17.0	7.7
12	300	3.13	80	27.0	12.2

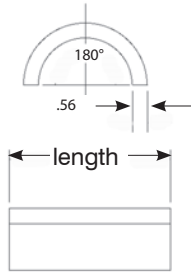
Molded Reducer Bushings

50 psi maximum



Nom Pipe Size	Overall Length (B)		Pipe Stop (L)		Eccentricity (E)		Approx Wt			
	in.	mm	in.	mm	in.	mm	lb.	kg		
3x2	80	50	1.94	49	0.13	3	0.25	6	0.7	0.3
4x2	100	50	1.94	49	0.13	3	0.75	19	1.5	0.7
4x3	100	80	1.94	49	0.13	3	0.13	3	0.8	0.4
6x3	150	80	2.38	60	0.56	14	1.25	32	4.1	1.9
6x4	150	100	2.38	60	0.56	14	0.63	16	3.1	1.4
8x4	200	100	2.63	67	0.81	21	1.63	41	8.0	3.6
8x6	200	150	2.63	67	0.38	10	0.63	16	5.0	2.3
10x6	250	150	2.88	73	0.63	16	1.63	41	12.0	5.4
10x8	250	200	2.88	73	0.38	10	0.63	16	7.0	3.2
12x8	300	200	3.13	80	0.63	16	1.63	41	15.0	6.8
12x10	300	250	3.13	80	0.38	10	0.63	16	8.0	3.6

Blank Saddles

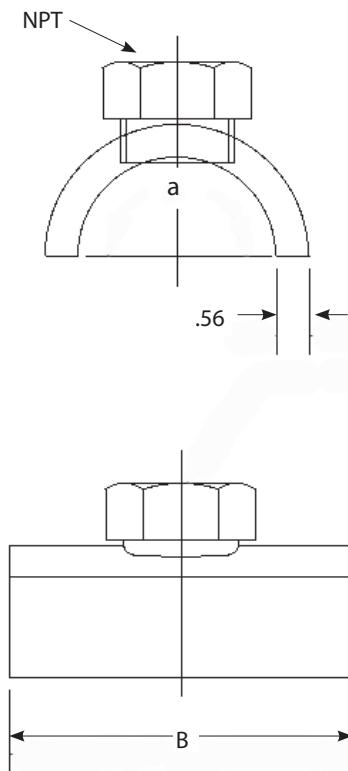


Blank saddles are filament wound and are used for pipe support and restraint. Thickness for all saddles is 0.56 inches. Available in same lengths as reducing saddles.

Nom Pipe Size	Approx Wt	Adhesive Kits Required	
		(3 oz)	(6 oz)
1 25	0.1 0.05	1	
1 1/2 40	0.2 0.09	1	
2 50	0.2 0.09	1	
3 80	0.3 0.14	1	
4 100	0.4 0.18	1	
6 150	0.5 0.23	1	
8 200	0.6 0.27	1	
10 250	0.8 0.36		1 1/2
12 300	1.0 0.45		1 1/2
14 350	1.1 0.50		2
16 400	1.2 0.54		2

Reducing Saddles (Bushed Outlets)

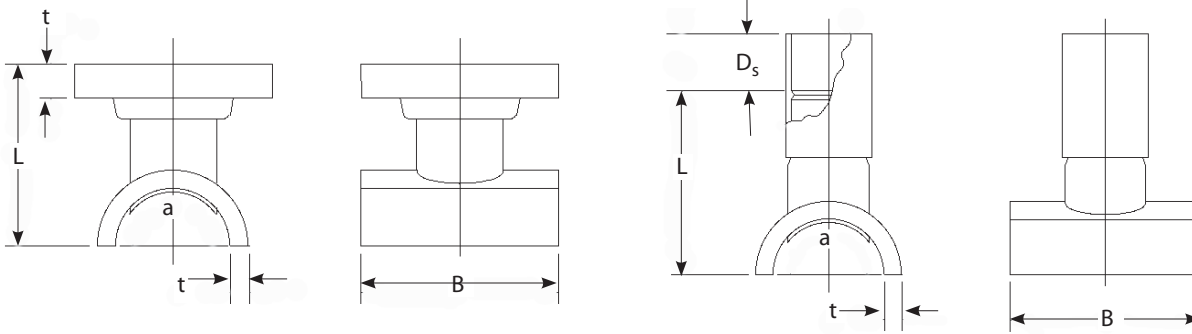
Standard reducing saddles come with 1 1/2-in NPT plastic bushing. All smaller bushings are 316 stainless steel. Other materials available on special order. Saddles are filament wound.



Nom Size Required	Outlet Nom Size	Length (B)	Saddle Girth (a)	Approx Wt		Adhesive Kits	
				in.-mm	degrees	lb.-kg	3 oz.
2 50	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	180	1.0 0.5	1	
	1	25	6.00 152	180	2.0 0.9	1	
3 80	1/4	6	4.00 102	90	1.6 0.7	1	
	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	180	1.6 0.7	1	
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	180	3.9 1.8	1	
4 100	1/4, 3/8	6, 9	4.00 102	90	2.0 0.9	1	
	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	180	2.0 0.9	1	
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	180	4.0 1.8	1	
6 150	1/4, 3/8, 1/2	6, 9, 13	4.00 102	180	2.4 1.1	1	
	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	180	2.4 1.1	1	
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	180	4.6 2.1		1
8 200	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	90	2.8 1.3		1
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	180	5.2 2.4		1
10 250	1/4, 3/8, 1/2	6, 9, 13	4.00 102	45	3.8 1.7		1
	3/4	19	4.00 102	90	3.8 1.7		1
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	90	6.3 2.9		1
12 300	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	45	4.2 1.9		1
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	90	7.4 3.4		1
14 350	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	45	4.2 1.9		2
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	90	7.4 3.4		2
16 400	1/4, 3/8, 1/2, 3/4	6, 9, 13, 19	4.00 102	45	4.2 1.9		2
	1, 1 1/4, 1 1/2	25, 30, 40	6.00 152	45	7.4 3.4		2

Reducing Saddles with Flanged and Quick-Lock Outlets

Both filament-wound and molded flanges are available. Saddles are filament wound. See Quick-Lock coupling table for socket depth, D_s . See Quick-Lock flange table for flange thickness.



Nom Size	Outlet Nom Size		Laying Length (L)		Nominal Thickness (t)		Length (B)		Saddle Girth (a)	Approx Wt (Flg)	Approx Wt (Q/L)		Adhesive Kits Required		
	in.-mm	in.-mm	in.-mm	in.-mm	in.-mm	in.-mm	in.-mm	degrees	lb.-kg		lb.-kg	3 oz.	6 oz.		
3 80	1,1 1/2, 2	25, 40, 50	5.25	133	0.56	14	6.00	152	180	4	1.8	3	1.4	1	-
4 100	1,1 1/2, 2	25, 40, 50	6.00	152	0.81	21	6.00	152	180	7	3.2	5	2.3	1	-
	3	80	6.00	152	0.81	21	9.50	241	180	7	3.2	5	2.3	1	-
6 150	1,1 1/2, 2	25, 40, 50	7.38	187	1.06	27	6.00	152	180	18	8.2	14	6.4		1
	3	80	7.38	187	1.06	27	9.50	241	180	18	8.2	14	6.4		1
	4	100	7.38	187	1.06	27	12.00	305	180	18	8.2	14	6.4		1
8 200	1,1 1/2, 2	25, 40, 50	8.13	207	1.31	33	6.00	152	90	14	6.4	11	5.0		1
	3	80	8.13	207	1.31	33	9.50	241	180	17	7.7	13	5.9		1
	4	100	8.63	219	1.31	33	12.00	305	180	22	10.0	16	7.3	1	1
	6	150	9.00	229	1.31	33	17.00	432	180	30	13.6	21	9.5	1	1
10 250	1,1 1/2, 2	25, 40, 50	9.13	232	1.31	33	6.00	152	90	17	7.7	14	6.4		2
	3	80	9.13	232	1.31	33	9.50	241	90	17	7.7	14	6.4		2
	4	100	9.63	245	1.31	33	12.00	305	180	31	14.1	27	12.2	1	2
	6	150	10.13	257	1.31	33	17.00	432	180	40	18.1	35	15.9		3
12 300	1,1 1/2, 2	25, 40, 50	10.38	264	1.31	33	6.00	152	90	27	12.2	23	10.4	1	2
	3	80	10.38	264	1.31	33	9.50	241	90	27	12.2	23	10.4	1	2
	4	100	10.38	264	1.31	33	12.00	305	90	27	12.2	23	10.4	1	2
	6	150	11.13	283	1.31	33	17.00	432	180	53	24.0	46	20.9		3
14 350	1,1 1/2, 2	25, 40, 50	11.00	279	1.31	33	6.00	152	90	37	16.8	35	15.9		3
	3	80	11.00	279	1.31	33	9.50	241	90	37	16.8	35	15.9		3
	4	100	11.00	279	1.31	33	12.00	305	90	37	16.8	35	15.9		3
	6	150	11.75	298	1.31	33	17.00	432	180	64	29.0	49	22.2		4
16 400	1,1 1/2, 2	25, 40, 50	12.00	305	1.31	33	6.00	152	90	53	24.0	41	18.6		2
	3	80	12.00	305	1.31	33	9.50	241	90	53	24.0	41	18.6		2
	4	100	12.00	305	1.31	33	12.00	305	90	53	24.0	41	18.6		2
	6	150	12.75	324	1.31	33	17.00	432	180	75	34.0	67	30.4		5

Fittings Pressure Ratings

Bondstrand Series 2000, 5000 and 7000 fittings

- 45° elbows, bell end
- 90° elbows, bell end
- 45° elbows, flanged
- 90° elbows, flanged
- Tees, bell end
- Tees, flanged

Nom Pipe		Filament-wound				Molded			
Size		Quick-Lock		Flanged		Quick-Lock		Flanged	
in.	mm	psi	bar	psi	bar	psi	bar	psi	bar
1	25	300	21	300	21	–	–	–	–
1½	40	300	21	300	21	–	–	–	–
2	50	375	26	375	26	300	21	300	21
		300*	21*	300*	21*	200*	14*	200*	14*
3	80	325	22	325	22	225	16	225	16
		275*	19*	275*	19*	150*	10*	150*	10*
4	100	300	21	300	21	175	12	175	12
		200*	14*	200*	14*	125*	9*	125*	9*
6	150	225	16	225	16	150	10	150	10
		175*	12*	175*	12*	100*	7*	100*	7*
8	200	225	16	225	16	–	–	–	–
		150*	10*	150*	10*	–	–	–	–
10	250	200	14	200	14	–	–	–	–
		150*	10*	150*	10*	–	–	–	–
12	300	175	12	150	10	–	–	–	–
		150*	10*	150*	10*	–	–	–	–
14	350	150	10	150	10	–	–	–	–
16	400	150	10	150	10	–	–	–	–

*Note: Pressure ratings for Series 5000 are lower than for other pipe series.

- Tapered body reducers
- Tapered body reducers, flanged
- Flanges
- Flanges, blind
- Saddles, bell end
- Crosses, bell end
- Crosses, flanged
- End caps
- Reducer bushings

Nom Pipe Size		Tapered body reducers		Saddles, bell end		Crosses, bell end		End caps	
		Tapered body reducers, flanged		Saddles, flanged		Crosses, flanged		Reducer bushings	
Size		Flanges		Blind Flanges					
in.	mm	psi	bar	psi	bar	psi	bar	psi	bar
1	25	600	41	150	10	–	–	50	3
1½	40	550	38	150	10	–	–	50	3
2	50	450	31	150	10	150	10	50	3
3	80	350	24	150	10	150	10	50	3
4	100	350	24	150	10	150	10	50	3
6	150	250	17	150	10	100	7	50	3
8	200	225	16	150	10	100	7	50	3
10	250	175	12	150	10	100	7	50	3
12	300	150	10	150	10	100	7	50	3
14	350	150	10	150	10	–	–	50	3
16	400	150	10	150	10	–	–	50	3

Fittings Pressure Ratings (cont'd.)

Bondstrand Series 2000, 5000 and 7000 fittings

- Laterals, bell end
- Laterals, flanged
- Sleeve couplings
- Adapters, threaded
- Adapters, grooved

Nom pipe Size		Laterals, bell end Laterals, flanged		Sleeve couplings		Adapters, threaded Adapters, grooved	
in.	mm	psi	bar	psi	bar	psi	bar
1	25	–	–	450	31	–	–
1½	40	–	–	450	31	–	–
2	50	150	10	450	31	200	14
		150*	10*	450	31	150*	10*
3	80	150	10	425	29	200	14
		150*	10*	350*	24*	150*	10*
4	100	150	10	400	28	150	10
		150*	10*	350	24*	100*	7*
6	150	100	7	300	21	150	10
		100*	7*	250	17*	100*	7*
8	200	100	7	250	17	–	–
		100*	7*	225*	16*	–	–
10	250	100	7	200	14	–	–
		100*	7*	175*	12*	–	–
12	300	100	7	170	12	–	–
		100*	7*	150*	10*	–	–
14	350	–	–	165	11	–	–
		–	–	150*	10*	–	–
16	400	–	–	165	11	–	–
		–	–	150*	10*	–	–

*Note: Pressure ratings for Series 5000 are lower than for other pipe series.

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