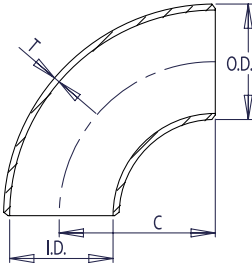


**LONG RADIUS
SCHEDULE STD**



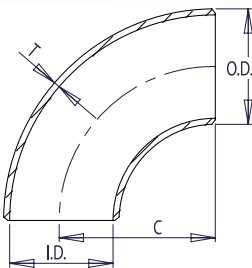
WELDBEND NOTES

1. Conforms to ASME B16.9 & ASTM A234 WPB.
 2. All dimensions are in inches.
 3. For bevel detail see page 107.
 4. For dimensional tolerances see page 108.
 5. For sizes larger than 48" please call.
 6. All weights are in pounds and approximated or estimated.
- * This size and thickness does not correspond to any pipe schedule number.

Pipe Size	Outside Diameter	Inside Diameter	Wall Thickness	Center to End	Pipe Schedule Number	Approx. Weight in Pounds
	O.D.	I.D.	T	C		
½	0.84	0.622	0.109	1.50	40	0.16
¾	1.05	0.824	0.113	1.50	40	0.17
1	1.32	1.049	0.133	1.50	40	0.40
1 ¼	1.66	1.380	0.140	1.88	40	0.55
1 ½	1.90	1.610	0.145	2.25	40	0.80
2	2.38	2.067	0.154	3.00	40	1.60
2 ½	2.88	2.469	0.203	3.75	40	3.20
3	3.50	3.068	0.216	4.50	40	4.80
3 ½	4.00	3.548	0.226	5.25	40	6.60
4	4.50	4.026	0.237	6.00	40	8.90
5	5.56	5.047	0.258	7.50	40	15.10
6	6.62	6.065	0.280	9.00	40	24.00
8	8.62	7.981	0.322	12.00	40	47.80
10	10.75	10.020	0.365	15.00	40	83.40
12	12.75	12.000	0.375	18.00	*	123.00
14	14.00	13.250	0.375	21.00	30	155.00
16	16.00	15.250	0.375	24.00	30	206.00
18	18.00	17.250	0.375	27.00	*	262.00
20	20.00	19.250	0.375	30.00	20	324.00
24	24.00	23.250	0.375	36.00	20	466.00
30	30.00	29.250	0.375	45.00	*	720.00
36	36.00	35.250	0.375	54.00	*	1039.00
42	42.00	41.250	0.375	63.00	*	1420.00
48	48.00	47.250	0.375	72.00	*	2000.00

FITTINGS

**LONG RADIUS
SCHEDULE XS**



WELDBEND NOTES

1. Conforms to ASME B16.9 & ASTM A234 WPB.
 2. All dimensions are in inches.
 3. For bevel detail see page 107.
 4. For dimensional tolerances see page 108.
 5. For sizes larger than 48" please call.
 6. All weights are in pounds and approximated or estimated.
- * This size and thickness does not correspond to any pipe schedule number.

Pipe Size	Outside Diameter	Inside Diameter	Wall Thickness	Center to End	Pipe Schedule Number	Approx. Weight in Pounds
	O.D.	I.D.	T	C		
½	0.84	0.546	0.147	1.50	80	0.26
¾	1.05	0.742	0.154	1.50	80	0.29
1	1.32	0.957	0.179	1.50	80	0.48
1 ¼	1.66	1.278	0.191	1.88	80	0.79
1 ½	1.90	1.500	0.200	2.25	80	1.20
2	2.38	1.939	0.218	3.00	80	2.10
2 ½	2.88	2.323	0.276	3.75	80	3.80
3	3.50	2.900	0.300	4.50	80	6.30
3 ½	4.00	3.364	0.318	5.25	80	8.60
4	4.50	3.826	0.337	6.00	80	12.50
5	5.56	4.813	0.375	7.50	80	21.20
6	6.62	5.761	0.432	9.00	80	34.40
8	8.62	7.625	0.500	12.00	80	71.30
10	10.75	9.750	0.500	15.00	60	111.00
12	12.75	11.750	0.500	18.00	*	158.00
14	14.00	13.000	0.500	21.00	*	201.00
16	16.00	15.000	0.500	24.00	40	270.00
18	18.00	17.000	0.500	27.00	*	348.00
20	20.00	19.000	0.500	30.00	30	422.00
24	24.00	23.000	0.500	36.00	*	604.00
30	30.00	29.000	0.500	45.00	20	997.00
36	36.00	35.000	0.500	54.00	20	1380.00
42	42.00	41.000	0.500	63.00	*	1880.00
48	48.00	47.000	0.500	72.00	*	2502.00

BOX QUANTITIES



FITTINGS

Box Quantities Size / Wall	Short Radius 90° Elbows		Long Radius 90° Elbows		Straight Tees		Caps	
	STD	XS	STD	XS	STD	XS	STD	XS
½"	—	—	6-bag	6-bag	6-bag	6-bag	—	—
¾"	—	—	4-bag	4-bag	6-bag	6-bag	6-bag	6-bag
1"	—	—	4-bag	4-bag	6-bag	6-bag	6-bag	6-bag
1 ¼"	—	—	12	4-bag	6-bag	6-bag	6-bag	6-bag
1 ½"	—	—	12	4-bag	6-bag	6-bag	6-bag	6-bag
2"	—	—	12	12	—	—	12	12
2 ½"	—	—	12	12	12	—	12	12
3"	—	—	12	12	6	—	12	12
3 ½"	—	—	8	8	—	—	—	—
4"	—	—	12	12	6	—	12	12
5"	—	—	6	6	—	—	6	6
6"	—	—	4	4	4	—	6	6
8"	—	—	1	1	—	—	4	4
10"	—	—	1	1	—	—	2	2
12"	—	—	1	1	—	—	2	2

Box Quantities Size / Wall	Reducing Tees		Concentric Reducers		Eccentric Reducers	
	STD	XS	STD	XS	STD	XS
¾ x ½"	6-bag	6-bag	—	—	—	—
1 x ½"	6-bag	6-bag	—	—	—	—
1 x ¾"	6-bag	6-bag	—	—	—	—
1 ¼ x ½"	6-bag	6-bag	—	—	—	—
1 ¼ x 1"	6-bag	6-bag	—	—	—	—
1 ½ x ½"	6-bag	6-bag	—	—	—	—
1 ½ x ¾"	6-bag	6-bag	—	—	—	—
1 ½ x 1"	6-bag	6-bag	—	—	—	—
1 ½ x 1 ¼"	6-bag	6-bag	—	—	—	—
2 x 1"	—	—	12	12	12	—
2 x 1 ¼"	—	—	12	12	12	—
2 x 1 ½"	—	—	12	12	12	—
2 ½ x 1 ¼"	—	—	12	12	12	—
2 ½ x 1 ½"	—	—	12	12	12	—
2 ½ x 2"	—	—	12	12	12	—
3 x 1 ½"	—	—	12	12	12	—
3 x 2"	—	—	12	12	12	—
3 x 2 ½"	—	—	12	12	12	—
4 x 2"	6	—	12	12	12	—
4 x 2 ½"	6	—	12	12	12	—
4 x 3"	6	—	12	12	12	—
5 x 2 ½"	—	—	6	6	6	—
5 x 3"	—	—	6	6	6	—
5 x 4"	—	—	6	6	6	—
6 x 3"	—	—	6	6	6	—
6 x 4"	—	—	6	6	6	—
6 x 5"	—	—	6	6	6	—

BUTTWELD FITTINGS TOLERANCES

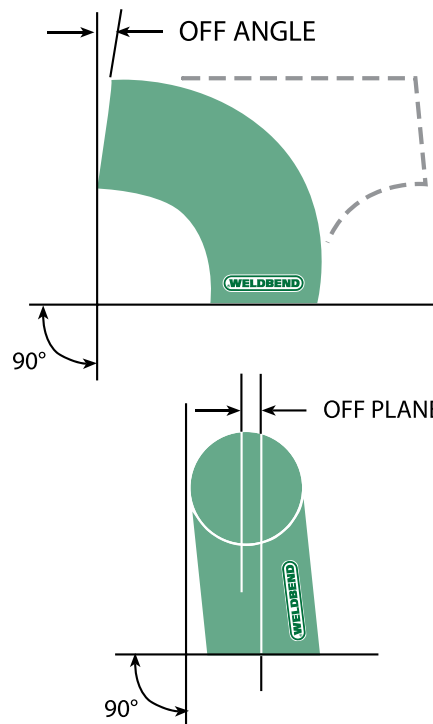


Weldbend Fittings			3R 90° and 3R 45° Elbows	90° and 45° Elbows and Tees	Reducers and Lap Joint Stub Ends	Caps	180° Return Bends			Stub Ends		
Pipe Size	Outside Diameter	Inside Diameter	Center to End	Center to End	Overall Length	Overall Length	Center to Center	Back to Face	Alignment of Ends	Outside Diameter of Lap	Thickness of Lap	Radius of Lap
	O.D.	I.D.	C, A	C, A, B, R	L, J	H	V	W		K	T	N
½ to 2 ½	+0.06, -0.03	0.03	0.09	0.06	0.06	0.12	0.25	0.25	0.03	+0, -0.03	+0, -0.03	+0.06, -0
3 to 3 ½	0.06	0.06	0.09	0.06	0.06	0.12	0.25	0.25	0.03	+0, -0.03	+0, -0.06	+0.06, -0
4	0.06	0.06	0.09	0.06	0.06	0.12	0.25	0.25	0.03	+0, -0.03	+0, -0.06	+0.06, -0
5 to 8	+0.09, -0.06	0.06	0.09	0.06	0.06	0.25	0.25	0.25	0.03	+0, -0.03	+0, -0.06	+0.06, -0
10 to 18	+0.16, -0.12	0.12	0.12	0.09	0.09	0.25	0.38	0.25	0.06	+0, -0.06	+0, -0.06	+0.12, -0
20 to 24	+0.25, -0.19	0.19	0.12	0.09	0.09	0.25	0.38	0.25	0.06	+0, -0.06	+0, -0.06	+0.12, -0
26 to 30	+0.25, -0.19	0.19	0.25	0.12	0.19	0.38						
30 to 48	+0.25, -0.19	0.19	0.38	0.19	0.19	0.38						

WELDBEND NOTES

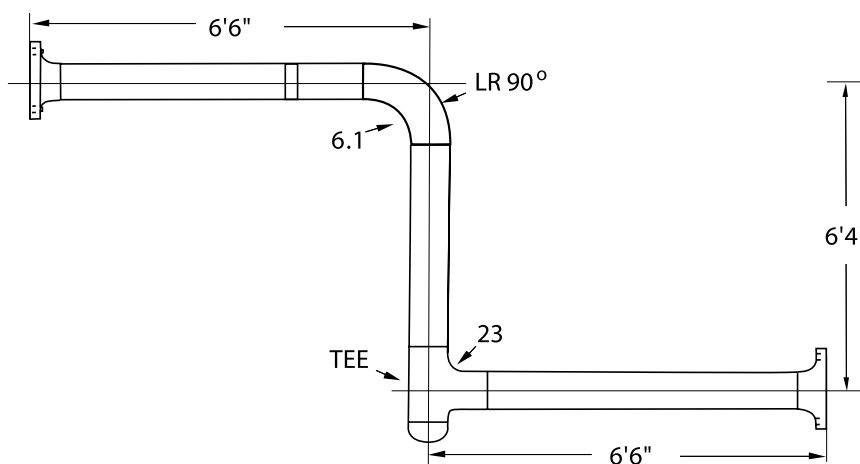
- All dimensions are in inches.
- Tolerances are equal plus and minus unless indicated.
- The inside diameter and nominal wall thickness at ends are to be specified by purchaser.
- Please refer to ASME B16.9 for further information regarding tolerances.
- Minimum wall thickness of 87.5% applies.
- The out-of-round is the sum of the absolute values of the plus and minus tolerances.

Pipe Size	Off Angle	Off Plane
½ - 4	0.03	0.06
5 - 8	0.06	0.12
10 - 12	0.09	0.19
14 - 16	0.09	0.25
18 - 24	0.12	0.38
26 - 30	0.19	0.38
32 - 42	0.19	0.50
44 - 48	0.19	0.75



EQUIVALENT LENGTH OF WELDBEND ELBOWS AND TEES

Nominal Pipe Size	Long Radius	Short Radius	Welding Tee
1	1.1	1.4	3.9
1 ¼	1.4	1.8	5.2
1 ½	1.6	2.1	6.0
2	2.1	2.8	7.8
2 ½	2.6	3.3	9.3
3	3.1	4.1	11.0
4	4.0	5.4	15.0
5	5.1	6.7	19.0
6	6.1	8.1	23.0
8	8.0	11.0	30.0
10	10.0	12.0	38.0
12	12.0	16.0	45.0
14	13.0	18.0	49.0
16	15.0	20.0	56.0
18	17.0	23.0	63.0
20	19.0	25.0	71.0
24	23.0	30.0	85.0
30	30.0	36.0	140.0
36	38.0	42.0	170.0
42	45.0	50.0	200.0
48	52.0	58.0	240.0



The information given in the chart above illustrates the resistance of fittings to the flow of liquids. This resistance is given in the equivalent of the straight pipe, and should be assumed as approximate information. Allowances have been made up for the curvature of elbows, so that the resistance values should be added to the total center-to-end dimensions of the piping configuration.

As an example: Using 6" pipe:

Resistance of Pipe:	(6.6 + 6.4 + 6.6) = 19.6
+ Resistance of Elbow:	= 6.1
Resistance of Tee:	= 23.0
	<hr style="width: 100%;"/>
	= 48.7

Therefore, the total resistance of the entire assembly to the flow of liquid would be equal to the resistance of 48.7 Linear feet of 6" straight pipe.

SCHEDULE XS

For reference only

Pipe Size	Wall Thickness Designation	Outside Diameter	Inside Diameter	Wall Thickness
		O.D.	I.D.	T
½	XS	0.840	0.546	0.147
¾	XS	1.050	0.742	0.154
1	XS	1.315	0.957	0.179
1 ¼	XS	1.660	1.278	0.191
1 ½	XS	1.900	1.500	0.200
2	XS	2.375	1.939	0.218
2 ½	XS	2.875	2.323	0.276
3	XS	3.500	2.900	0.300
3 ½	XS	4.000	3.364	0.318
4	XS	4.500	3.826	0.337
5	XS	5.563	4.813	0.375
6	XS	6.625	5.761	0.432
8	XS	8.625	7.625	0.500
10	XS	10.750	9.750	0.500
12	XS	12.750	11.750	0.500
14	XS	14.000	13.000	0.500
16	XS	16.000	15.000	0.500
18	XS	18.000	17.000	0.500
20	XS	20.000	19.000	0.500
24	XS	24.000	23.000	0.500
30	XS	30.000	29.000	0.500
36	XS	36.000	35.000	0.500
42	XS	42.000	41.000	0.500
48	XS	48.000	47.000	0.500

WELDBEND NOTES

1. All dimensions are in inches.
2. Designations per ASME B36.10.
XS = SCHEDULE **EXTRA-STRONG** WALL THICKNESS
3. Conforms to ASME B36.10.