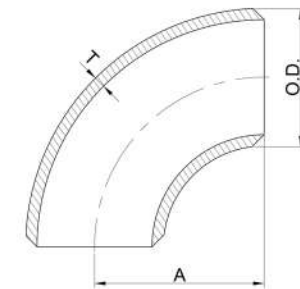


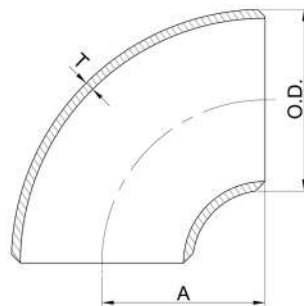


Pipe Size	Outside Diameter	Radius	Sch. Std		Sch. XS	
Inch	(O.D.)	(A)	Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1/2	21.30	38	2.77	0.07	3.73	0.10
3/4	26.70	38	2.87	0.11	3.91	0.14
1	33.40	38	3.38	0.16	4.55	0.20
1 1/4	42.20	48	3.56	0.26	4.85	0.34
1 1/2	48.30	57	3.68	0.37	5.08	0.48
2	60.30	76	3.91	0.66	5.54	0.90
2 1/2	73.00	95	5.16	1.29	7.01	1.73
3	88.90	114	5.49	2.08	7.62	2.74
4	114.3	152	6.02	3.85	8.56	5.36
5	141.3	190	6.55	6.51	9.53	9.27
6	168.3	229	7.11	10.10	10.97	15.30
8	219.1	305	8.18	20.40	12.70	30.90
10	273.1	381	9.27	36.10	12.70	48.80
12	323.9	457	9.53	53.10	12.70	70.00
14	355.6	533	9.53	68.10	12.70	90.00
16	406.4	610	9.53	89.50	12.70	119.0
18	457.0	686	9.53	132.00	12.70	151.0
20	508.0	762	9.53	140.00	12.70	186.0
24	610.0	914	9.53	202.00	12.70	269.0

90° LONG RADIUS ELBOW DIMENSIONS (mm) ANSI B16.9



90° SHORT RADIUS ELBOW DIMENSIONS (mm) ANSI B16.9



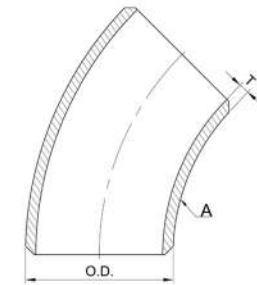
Pipe Size	Outside Diameter	Radius	Sch. Std		Sch. XS	
Inch	(O.D.)	(A)	Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1	33.40	25	3.38	0.10	-	-
1 1/4	42.20	32	3.56	0.20	-	-
1 1/2	48.30	38	3.68	0.20	5.08	0.30
2	60.30	51	3.91	0.40	5.54	0.70
2 1/2	73.00	64	5.16	0.90	7.01	1.20
3	88.90	76	5.49	1.40	7.62	1.70
4	114.3	102	6.02	2.70	8.56	3.40
5	141.3	127	6.55	4.40	9.53	6.30
6	168.3	152	7.11	7.60	10.97	10.30
8	219.1	203	8.18	14.70	12.70	21.50
10	273.1	254	9.27	25.50	12.70	32.20
12	323.9	305	9.53	36.00	12.70	47.20
14	355.6	356	9.53	47.10	12.70	62.10
16	406.4	406	9.53	58.50	12.70	77.60
18	457.0	457	9.53	73.90	12.70	97.00
20	508.0	508	9.53	95.20	12.70	125.6
24	610.0	610	9.53	134.70	12.70	176.9

*Material conforms to ASTM A-234 Grade B, others material available upon request.

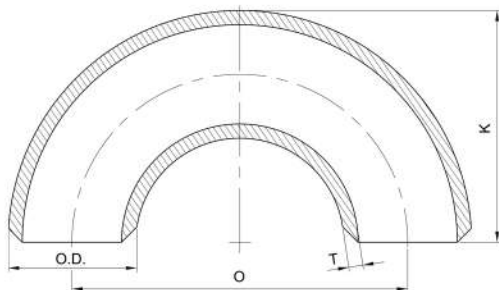


Pipe Size Inch	Outside Diameter (O.D.)	Radius (B)	Sch. Std		Sch. XS	
			Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1/2	21.30	16	2.77	0.04	3.73	0.07
3/4	26.70	19	2.87	0.05	3.91	0.07
1	33.40	22	3.38	0.09	4.55	0.10
1 1/4	42.20	25	3.56	0.10	4.85	0.20
1 1/2	48.30	29	3.68	0.20	5.08	0.30
2	60.30	35	3.91	0.40	5.54	0.50
2 1/2	73.00	44	5.16	0.80	7.01	0.90
3	88.90	51	5.49	1.10	7.62	1.50
4	114.3	64	6.02	2.00	8.56	2.80
5	141.3	79	6.55	3.40	9.53	4.70
6	168.3	95	7.11	5.30	10.97	7.70
8	219.1	127	8.18	10.60	12.70	15.60
10	273.1	159	9.27	18.60	12.70	24.30
12	323.9	190	9.53	27.90	12.70	35.20
14	355.6	222	9.53	35.40	12.70	45.40
16	406.4	254	9.53	45.80	12.70	60.10
18	457.0	286	9.53	58.10	12.70	77.10
20	508.0	318	9.53	72.10	12.70	137.0
24	610.0	381	9.53	104.80	12.70	178.0

45° LONG RADIUS ELBOW DIMENSIONS (mm) ANSI B16.9



180° LONG RADIUS ELBOW DIMENSIONS (mm) ANSI B16.9



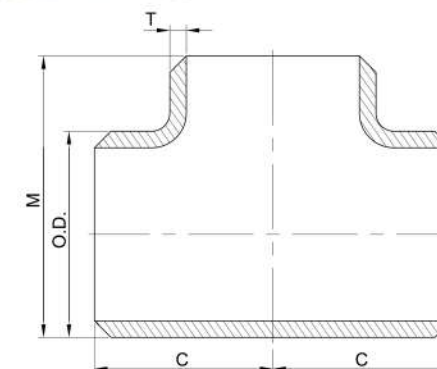
Pipe Size Inch	Outside Diameter (O.D.)	Center to Center (C)	Back to Face (K)	Sch. Std		Sch. XS	
				Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1/2	21.30	76	48	2.77	0.16	3.73	0.20
3/4	26.70	76	51	2.87	0.22	3.91	0.25
1	33.40	76	56	3.38	0.32	4.55	0.40
1 1/4	42.20	95	70	3.56	0.52	4.85	0.70
1 1/2	48.30	114	83	3.68	0.74	5.08	1.00
2	60.30	152	106	3.91	1.32	5.54	1.90
2 1/2	73.00	190	132	5.16	2.58	7.01	3.50
3	88.90	229	159	5.49	4.08	7.62	5.60
4	114.3	305	210	6.02	7.90	8.56	10.90
5	141.3	381	262	6.55	10.30	9.53	18.90
6	168.3	457	313	7.11	21.30	10.97	30.90
8	219.1	610	414	8.18	39.50	12.70	63.50
10	273.1	762	518	9.27	74.40	12.70	98.40
12	323.9	914	619	9.53	107.50	12.70	141.1
14	355.6	1067	711	9.53	141.10	12.70	181.4
16	406.4	1219	813	9.53	185.10	12.70	244.9
18	457.0	1372	914	9.53	233.20	12.70	311.2
20	508.0	1524	1016	9.53	288.50	12.70	381.0
24	610.0	1829	1219	9.53	411.90	12.70	548.9

*Material conforms to ASTM A-234 Grade B, others material available upon request.

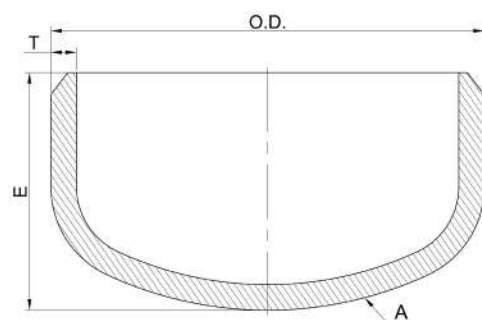


Pipe Size Inch	Outside Diameter (O.D.)	Center To End		Sch. Std		Sch. XS	
		(C)	(M)	Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1/2	21.30	25	25	2.77	(kg)	3.73	0.21
3/4	26.70	29	29	2.87	0.15	3.91	0.27
1	33.40	38	38	3.38	0.20	4.55	0.40
1 1/4	42.20	48	48	3.56	0.34	4.85	0.70
1 1/2	48.30	57	57	3.68	0.63	5.08	1.00
2	60.30	64	64	3.91	0.92	5.54	1.80
2 1/2	73.00	76	76	5.16	1.50	7.01	2.90
3	88.90	86	86	5.49	2.68	7.62	4.10
4	114.3	105	105	6.02	3.75	8.56	7.30
5	141.3	124	124	6.55	5.70	9.53	12.10
6	168.3	143	143	7.11	9.40	10.97	19.00
8	219.1	178	178	8.18	14.90	12.70	34.60
10	273.1	216	216	9.27	25.60	12.70	52.20
12	323.9	254	254	9.53	41.20	12.70	76.70
14	355.6	279	279	9.53	49.00	12.70	107.50
16	406.4	305	305	9.53	73.50	12.70	128.80

STRAIGHT TEE DIMENSIONS (mm)



END CAPS DIMENSIONS (mm)

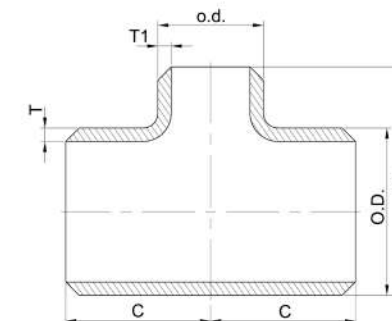


Pipe Size Inch	Outside Diameter (O.D.)	Radius (A)	Sch. Std		Sch. XS	
			Wall Thickness (T)	Approx. Weight (kg)	Wall Thickness (T)	Approx. Weight (kg)
1/2	21.30	25	2.77	0.03	3.73	0/04
3/4	26.70	25	2.87	0.06	3.91	0.08
1	33.40	38	3.38	0.10	4.55	0.13
1 1/4	42.20	38	3.56	0.14	4.85	0.19
1 1/2	48.30	38	3.68	0.20	5.08	0.23
2	60.30	38	3.91	0.23	5.54	0.30
2 1/2	73.00	38	5.16	0.35	7.01	0.45
3	88.90	51	5.49	0.65	7.62	0.85
4	114.3	64	6.02	1.10	8.56	1.60
5	141.3	76	6.55	1.90	9.53	2.60
6	168.3	89	7.11	2.93	10.97	4.20
8	219.1	102	8.18	5.07	12.70	7.30
10	273.1	127	9.27	9.00	12.70	12.00
12	323.9	152	9.53	13.70	12.70	17.20
14	355.6	165	9.53	16.10	12.70	21.30
16	406.4	178	9.53	19.70	12.70	26.20



REDUCING TEE DIMENSIONS (mm) ANSI B16.9

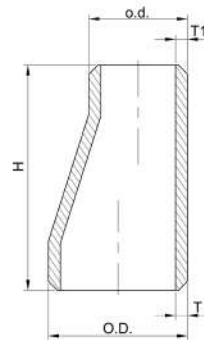
Pipe Size Inch	Outside Diameter		Center To End		Sch. Std			Sch. Xs		
	(O.D)	(o.d.)	(C)	(M)	Wall Thickness		Approx.	Wall Thickness		Approx.
					(T)	(T1)	Weight (kg)	(T)	(T1)	Weight (kg)
¾ x ½	26.70	21.30	29	29	2.87	2.77	0.15	3.91	3.73	0.19
1 x ¾	33.40	26.70	38	38	3.38	2.87	0.30	4.55	3.91	0.36
1 x ½	33.40	21.30	38	38	3.38	2.77	0.29	4.55	3.73	0.33
1¼ x 1	42.20	33.40	48	48	3.56	3.38	0.50	4.85	4.55	0.65
1¼ x ¾	42.20	26.70	48	48	3.56	2.87	0.45	4.85	3.91	0.58
1¼ x ½	42.20	21.30	48	48	3.56	2.77	0.40	4.85	3.73	0.50
1½ x 1¼	48.30	42.20	57	57	3.68	3.56	0.80	5.08	4.85	1.00
1½ x 1	48.30	33.40	57	57	3.68	3.38	0.76	5.08	4.55	0.90
1½ x ¾	48.30	26.70	57	57	3.68	2.87	0.73	5.08	3.91	0.85
1½ x ½	48.30	21.30	57	57	3.68	2.77	0.70	5.08	3.73	0.80
2 x 1½	60.30	48.30	64	60	3.91	3.68	1.20	5.54	5.08	1.55
2 x 1¼	60.30	42.20	64	57	3.91	3.56	1.11	5.54	4.85	1.42
2 x 1	60.30	33.40	64	51	3.91	3.38	1.05	5.54	4.55	1.35
2 x ¾	60.30	26.70	64	44	3.91	2.87	1.00	5.54	3.91	1.18
2½ x 2	73.00	60.30	76	70	5.16	3.91	2.08	7.01	5.54	2.60
2½ x 1½	73.00	48.30	76	67	5.16	3.68	2.04	7.01	5.08	2.45
2½ x 1¼	73.00	42.20	76	64	5.16	3.56	1.96	7.01	4.85	2.30
2½ x 1	73.00	33.40	76	57	5.16	3.38	1.90	7.01	4.55	2.18
3 x 2½	88.90	73.00	86	83	5.49	5.16	3.10	7.62	7.01	3.90
3 x 2	88.90	60.30	86	76	5.49	3.91	2.90	7.62	5.54	3.80
3 x 1½	88.90	48.30	86	73	5.49	3.68	2.80	7.62	5.08	3.62
3 x 1¼	88.90	42.20	86	70	5.49	3.56	2.70	7.62	4.85	3.50



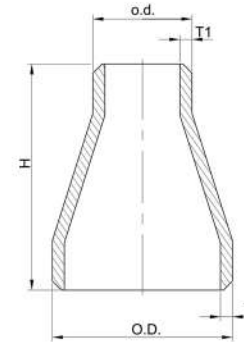
Pipe Size Inch	Outside Diameter		Center To End		Sch. Std			Sch. Xs		
	(O.D)	(o.d.)	(C)	(M)	Wall Thickness		Approx.	Wall Thickness		Approx.
					(T)	(T1)	Weight (kg)	(T)	(T1)	Weight (kg)
4 x 3	114.3	88.90	105	98	6.02	5.49	5.27	8.56	7.62	6.95
4 x 2½	114.3	73.00	105	95	6.02	5.16	5.10	8.56	7.01	6.73
4 x 2	114.3	60.30	105	89	6.02	3.91	4.85	8.56	5.54	6.48
4 x 1½	114.3	48.30	105	86	6.02	3.68	4.78	8.56	5.08	6.10
5 x 4	141.3	114.3	124	117	6.55	6.02	9.00	9.53	8.56	11.00
5 x 3	141.3	88.90	124	111	6.55	5.49	8.22	9.53	7.62	9.80
5 x 2½	141.3	73.00	124	108	6.55	5.16	8.00	9.53	7.01	9.35
5 x 2	141.3	60.30	124	105	6.55	3.91	7.85	9.53	5.54	8.80
6 x 5	168.3	141.3	143	137	7.11	6.55	13.10	10.97	9.53	17.18
6 x 4	168.3	114.3	143	130	7.11	6.02	12.20	10.97	8.56	16.00
6 x 3	168.3	88.90	143	124	7.11	5.49	11.50	10.97	7.62	14.20
6 x 2½	168.3	73.00	143	121	7.11	5.16	11.00	10.97	7.01	13.60
8 x 6	219.1	168.3	178	168	8.18	7.11	24.40	12.70	10.97	32.00
8 x 5	219.1	141.3	178	160	8.18	6.55	23.55	12.70	9.53	30.00
8 x 4	219.1	114.3	178	156	8.18	6.02	22.90	12.70	8.56	28.50
10 x 8	273.1	219.1	216	203	9.27	8.18	41.45	12.70	12.70	49.50
10 x 6	273.1	168.3	216	194	9.27	7.11	39.85	12.70	10.97	47.50
10 x 5	273.1	141.3	216	191	9.27	6.55	38.30	12.70	9.53	45.30
10 x 4	273.1	114.3	216	184	9.27	6.02	37.50	12.70	8.56	44.20
12 x 10	323.9	273.1	254	241	9.53	9.27	60.00	12.70	12.70	70.45
12 x 8	323.9	219.1	254	229	9.53	8.18	58.55	12.70	12.70	66.80
12 x 6	323.9	168.3	254	219	9.53	7.11	53.20	12.70	10.97	64.30
12 x 5	323.9	141.3	254	216	9.53	6.55	51.00	12.70	9.53	62.40



Pipe Size	Outside Diameter		Length	Sch. Std			Sch. Xs				
	Inch	O.D.		o.d.	H	Wall Thickness		Approx. Weight (kg)	Wall Thickness		Approx. Weight (kg)
						T	T1		T	T1	
1 x ¾	33.40	26.70	51	3.38	2.87	0.14	4.55	3.91	0.16		
1 x ½	33.40	21.30	51	3.38	2.77	0.14	4.55	3.73	0.16		
1¼ x 1	42.20	33.40	51	3.56	3.38	0.20	4.85	4.55	0.22		
1¼ x ¾	42.20	26.70	51	3.56	2.87	0.20	4.85	3.91	0.22		
1¼ x ½	42.20	21.30	51	3.56	2.77	0.19	4.85	3.73	0.20		
1½ x 1¼	48.30	42.20	64	3.68	3.56	0.26	5.08	4.85	0.35		
1½ x 1	48.30	33.40	64	3.68	3.38	0.24	5.08	4.55	0.30		
1½ x ¾	48.30	26.70	64	3.68	2.87	0.20	5.08	3.91	0.27		
1½ x ½	48.30	21.30	64	3.68	2.77	0.20	5.08	3.73	0.25		
2 x 1½	60.30	48.30	76	3.91	3.68	0.41	5.54	5.08	0.57		
2 x 1¼	60.30	42.20	76	3.91	3.56	0.39	5.54	4.85	0.50		
2 x 1	60.30	33.40	76	3.91	3.38	0.37	5.54	4.55	0.46		
2 x ¾	60.30	26.70	76	3.91	2.87	0.33	5.54	3.91	0.40		
2½ x 2	73.00	60.30	89	5.16	3.91	0.73	7.01	5.54	1.01		
2½ x 1½	73.00	48.30	89	5.16	3.68	0.68	7.01	5.08	0.97		
2½ x 1¼	73.00	42.20	89	5.16	3.56	0.67	7.01	4.85	0.93		
2½ x 1	73.00	33.40	89	5.16	3.38	0.59	7.01	4.55	0.85		
3 x 2½	88.90	73.00	89	5.49	5.16	0.98	7.62	7.01	1.90		
3 x 2	88.90	60.30	89	5.49	3.91	0.91	7.62	5.54	1.70		
3 x 1½	88.90	48.30	89	5.49	3.68	0.86	7.62	5.08	1.50		
3 x 1¼	88.90	42.20	89	5.49	3.56	0.77	7.62	4.85	1.30		
4 x 3	114.3	88.90	102	6.02	5.49	1.59	8.56	7.62	2.27		



CONCENTRIC REDUCERS / ECCENTRIC REDUCERS DIAMETER (mm) ANSI B16.9



Pipe Size	Outside Diameter		Length	Sch. Std			Sch. Xs				
	Inch	O.D.		o.d.	H	Wall Thickness		Approx. Weight (kg)	Wall Thickness		Approx. Weight (kg)
						T	T1		T	T1	
4 x 2½	114.3	73.00	102	6.02	5.16	1.52	8.56	7.01	1.96		
4 x 2	114.3	60.30	102	6.02	3.91	1.44	8.56	5.54	1.72		
4 x 1½	114.3	48.30	102	6.02	3.68	1.24	8.56	5.08	1.63		
5 x 4	141.3	114.3	127	6.55	6.02	2.72	9.53	8.56	3.93		
5 x 3	141.3	88.90	127	6.55	5.49	2.60	9.53	7.62	3.58		
5 x 2½	141.3	73.00	127	6.55	5.16	2.51	9.53	7.01	3.45		
5 x 2	141.3	60.30	127	6.55	3.91	2.29	9.53	5.54	3.30		
6 x 5	168.3	141.3	140	7.11	6.55	3.93	10.97	9.53	5.95		
6 x 4	168.3	114.3	140	7.11	6.02	3.72	10.97	8.56	5.50		
6 x 3	168.3	88.90	140	7.11	5.49	3.63	10.97	7.62	5.03		
6 x 2½	168.3	73.00	140	7.11	5.16	3.45	10.97	7.01	4.90		
8 x 6	219.1	168.3	152	8.18	7.11	6.31	12.70	10.97	9.86		
8 x 5	219.1	141.3	152	8.18	6.55	6.08	12.70	9.53	9.30		
8 x 4	219.1	114.3	152	8.18	6.02	5.95	12.70	8.56	8.62		
10 x 8	273.1	219.1	178	9.27	8.18	10.50	12.70	12.70	14.50		
10 x 6	273.1	168.3	178	9.27	7.11	10.10	12.70	10.97	12.30		
10 x 5	273.1	141.3	178	9.27	6.55	9.90	12.70	9.53	11.80		
10 x 4	273.1	114.3	178	9.27	6.02	9.58	12.70	8.56	9.80		
12 x 10	323.9	273.1	203	9.53	9.27	15.20	12.70	12.70	19.80		
12 x 8	323.9	219.1	203	9.53	8.18	14.60	12.70	12.70	17.50		
12 x 6	323.9	168.3	203	9.53	7.11	14.10	12.70	10.97	15.30		
12 x 5	323.9	141.3	203	9.53	6.55	13.80	12.70	9.53	14.80		
14 x 12	355.6	323.9	330	9.53	9.53	28.80	12.70	12.70	35.60		
14 x 10	355.6	273.1	330	9.53	9.27	27.40	12.70	12.70	33.80		
14 x 8	355.6	219.1	330	9.53	8.18	26.00	12.70	12.70	31.80		
14 x 6	355.6	168.3	330	9.53	7.11	25.39	12.70	10.97	29.70		