

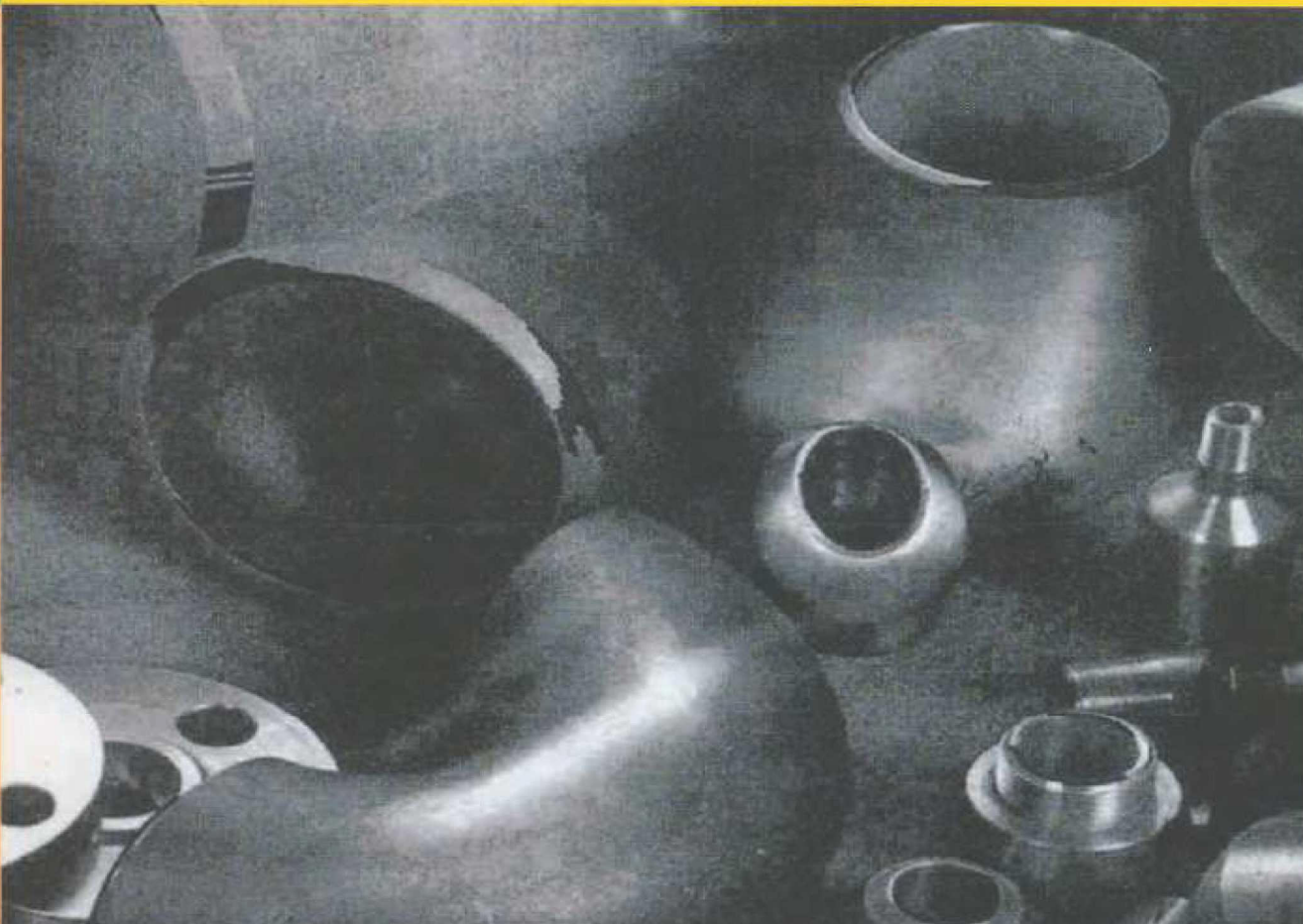
P. S. F.

BS1965 / EN10253

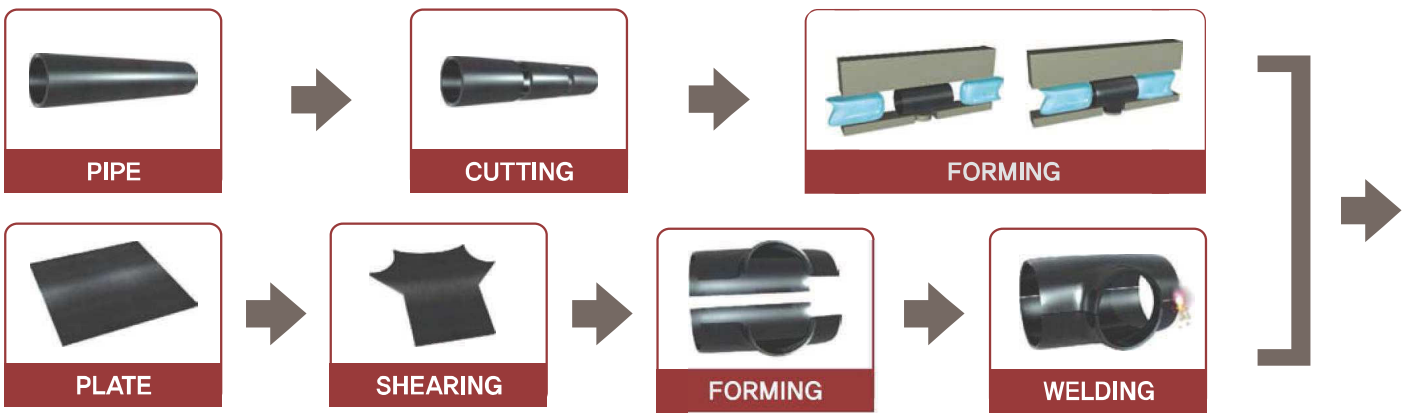
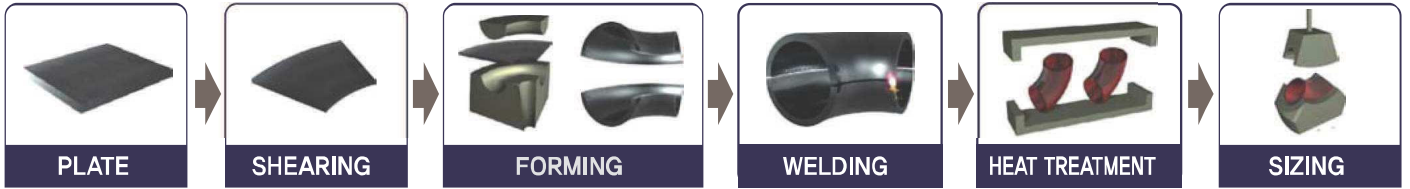
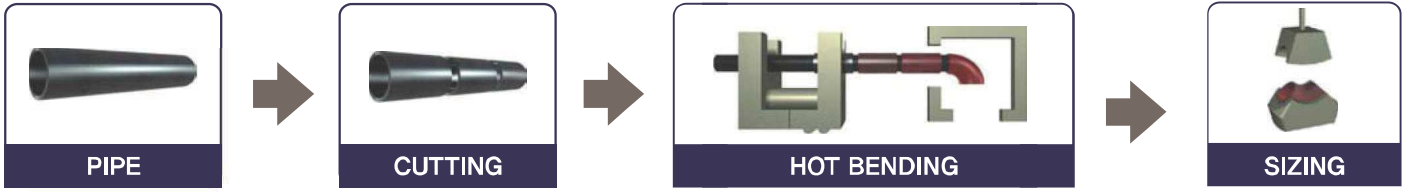
STEEL WELDING PIPE FITTINGS

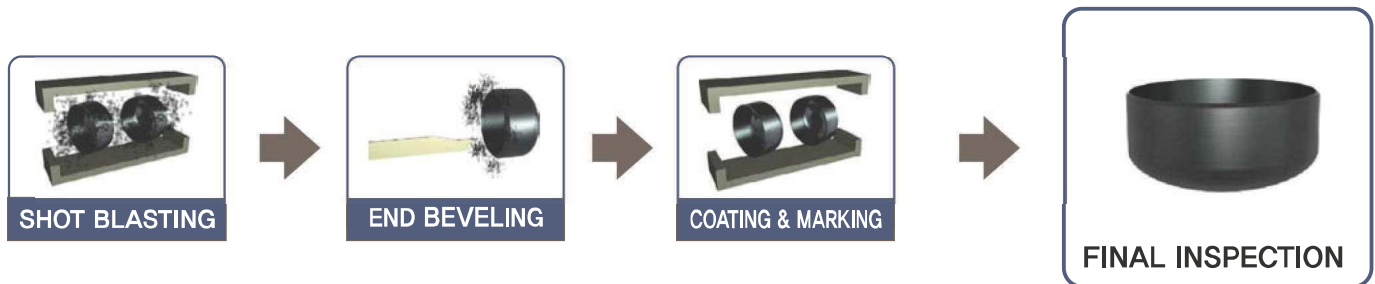
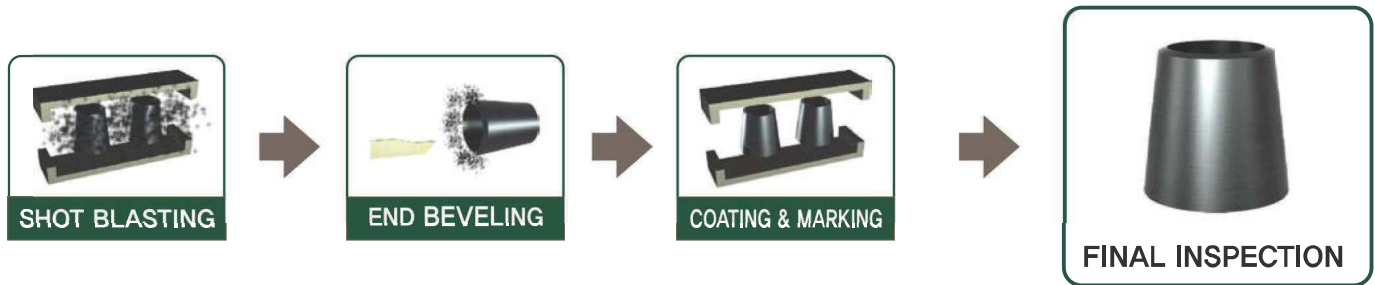
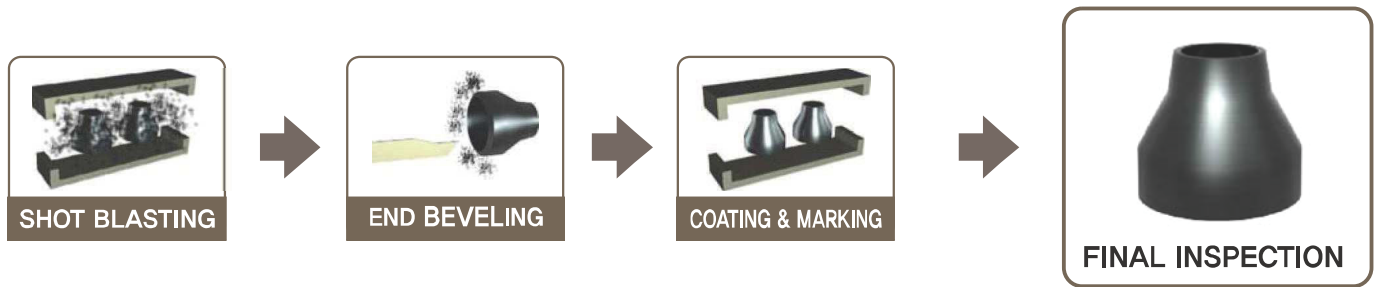
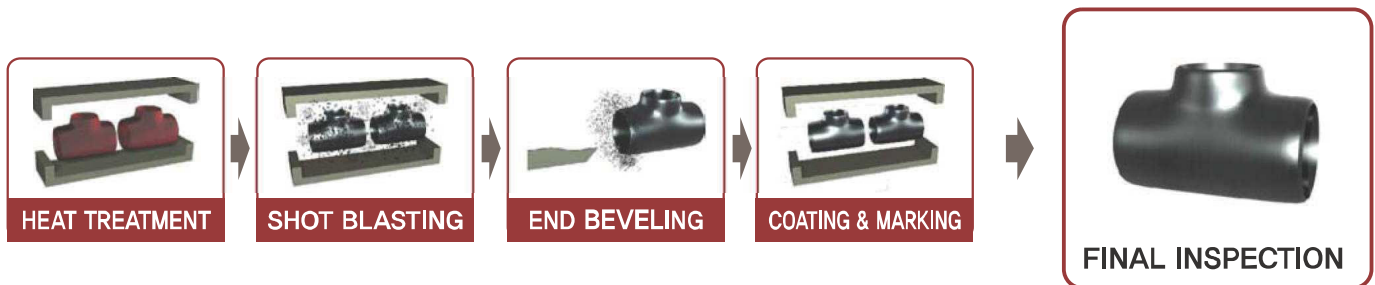
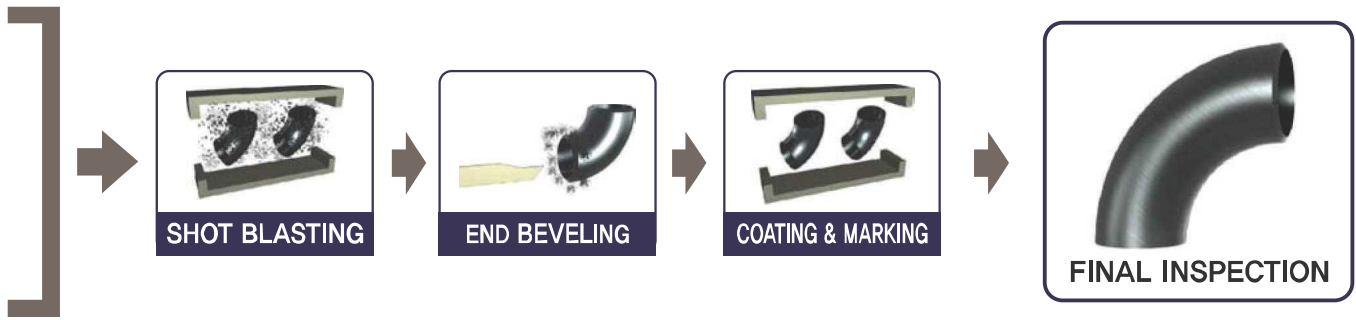


CARBON STEEL • STAINLESS STEEL



Process





► Wrought Steel Butt-Welding Fittings (Carbon & Alloy Steel)

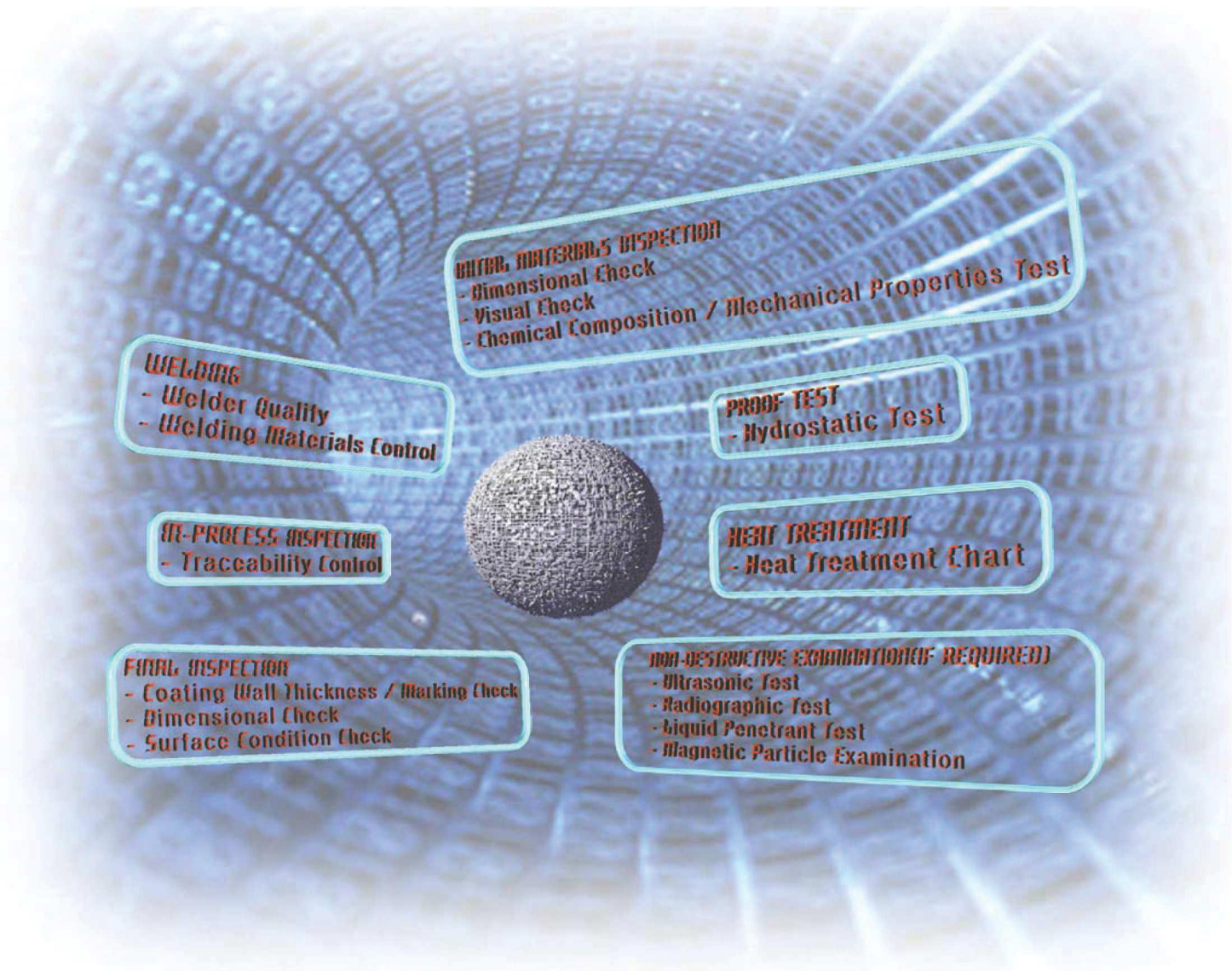
A long, smooth 90-degree elbow fitting.	A long, smooth 180-degree elbow fitting.	A concentric reducer fitting with a tapered top and bottom.	A concentric reducer fitting with a tapered top and bottom, slightly different profile.
90° Elbows (Long)	180° Elbows (Long)	Reducer I (Concentric)	Reducer II (Concentric)
A short, smooth 90-degree elbow fitting.	A short, smooth 180-degree elbow fitting.	An eccentric reducer fitting with a tapered top and a flat bottom.	An eccentric reducer fitting with a tapered top and a flat bottom, slightly different profile.
90° Elbows (Short)	180° Elbows (Short)	Reducer I (Eccentric)	Reducer II (Eccentric)
A long, smooth 45-degree elbow fitting.	A straight tee fitting with three equal diameter ports.	A reducing tee fitting with one larger diameter port and two smaller diameter ports.	A circular cap fitting with a flange.
45° Elbows (Long)	Tee (Straight)	Tee (Reducing)	Cap

► Galvanized Steel Butt-Welding Fittings

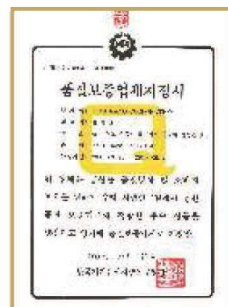
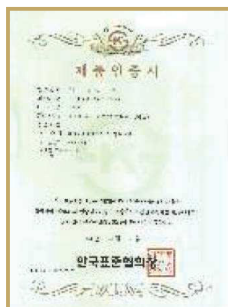
A long, smooth 90-degree elbow fitting, galvanized.	A concentric reducer fitting, galvanized.	A straight tee fitting, galvanized.
90° Elbows (Long)	Reducer I (Concentric)	Tee (Straight)
A short, smooth 90-degree elbow fitting, galvanized.	An eccentric reducer fitting, galvanized.	A reducing tee fitting, galvanized.
90° Elbows (Short)	Reducer II (Eccentric)	Tee (Reducing)
A long, smooth 45-degree elbow fitting, galvanized.	A circular cap fitting, galvanized.	
45° Elbows (Long)	Cap	

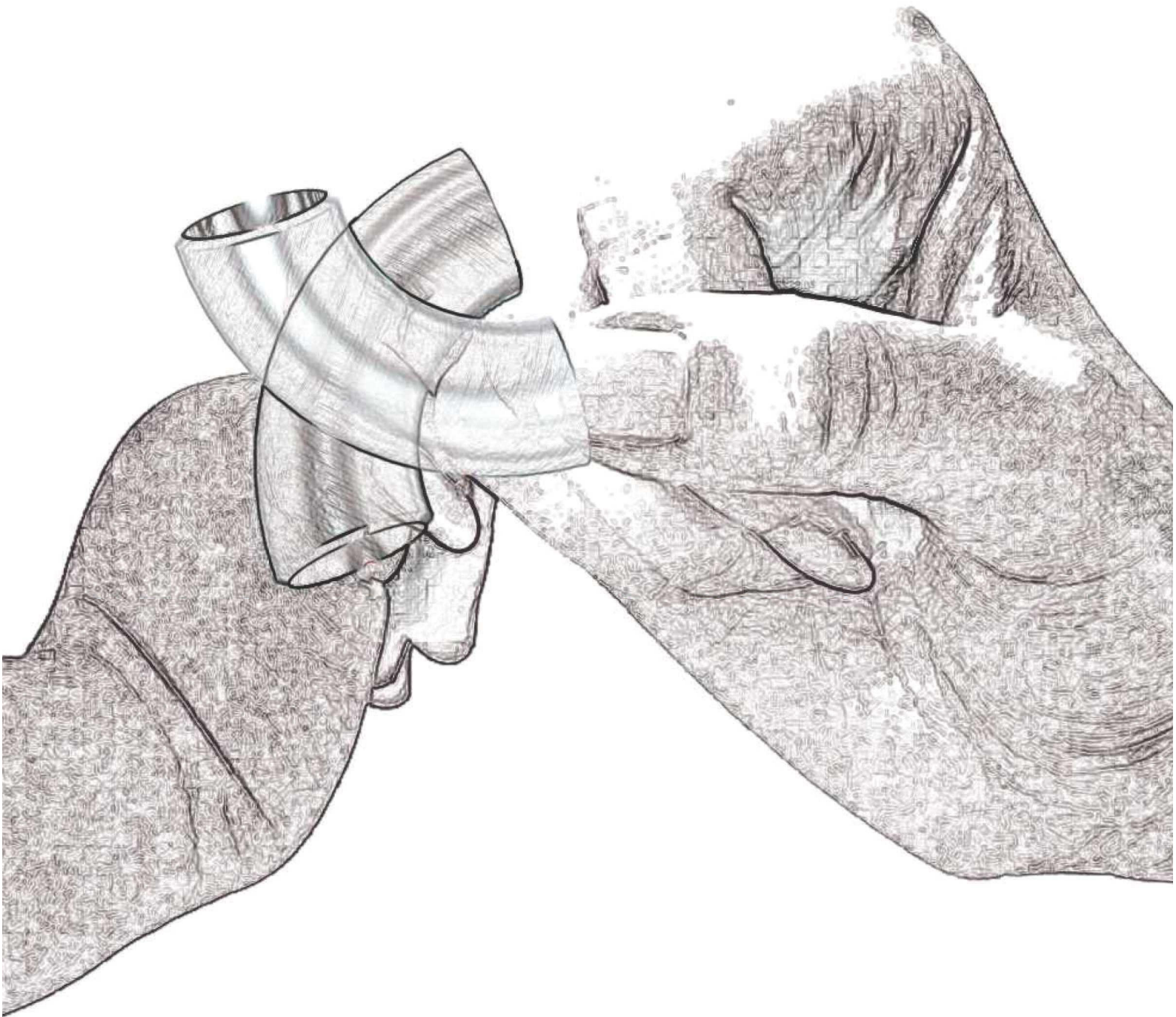
► Forged Steel Outlet Fittings

A socket outlet fitting with a hexagonal base.	A welding outlet fitting with a hexagonal base.	A thread outlet fitting with a hexagonal base.
Socket Outlet	Welding Outlet	Thread Outlet



► Certifications

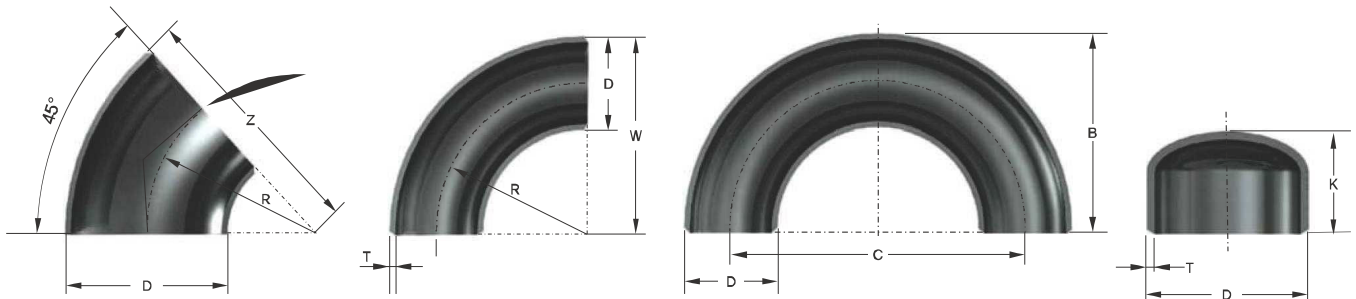




Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

45° Elbows (Long)
90° Elbows (Long, Short)
180° Elbows (Long, Short)
Cap



EN 10253

Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option (mm)

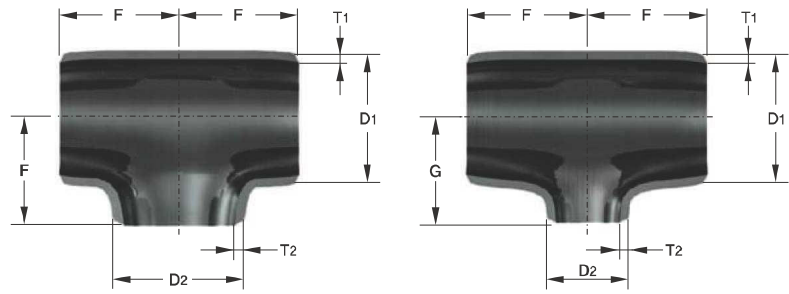
DN	D	Long			Short		B-W	K
		R	C	B-W-Z	R	C		
15	21.3	38	76	49	25	50	36	25
20	26.9	38	76	51	25	50	39	25
25	33.7	38	76	56	25	50	42	25
32	42.4	48	96	69	32	64	53	38
40	48.3	57	114	82	38	76	62	38
50	60.3	76	152	106	51	102	81	38
65	76.1	95	190	133	63	127	102	38
80	88.9	114	228	159	76	152	121	51
100	114.3	152	304	210	102	203	159	64
125	139.7	190	380	260	127	254	197	76
150	165.1	229	457	313	152	305	237	89
200	219.1	305	610	414	203	406	313	102
250	273	381	762	518	254	508	391	127
300	323.9	457	914	619	305	610	467	152
350	355.6	533	1066	711	356	711	533	165
400	406.4	610	1220	813	406	813	610	178
450	457	686	1372	914	457	914	686	203
500	508	762	1524	1016	508	1016	762	229
550	559	838	1676	1118	559	1118	838	254
600	610	914	1828	1219	610	1220	914	267
650	660	990	1980	1320	660	1320	990	267
700	711	1067	2134	1422	711	1422	1066	267
750	762	1143	2286	1524	762	1524	1143	267
800	813	1219	2438	1626	813	1626	1220	267
850	864	1296	2592	1728	864	1728	1296	267
900	914	1372	2744	1829	914	1828	1371	267
1000	1016	1524	3048	2032	1016	2032	1524	305
1050	1067	1600	3201	2134	1067	2134	1600	305
1100	1118	1677	3354	2236	1118	2236	1677	343
1150	1168	1752	3504	2336	1166	2332	1749	343
1200	1219	1829	3658	2438	1219	2438	1830	343

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Tees



EN 10253

(mm)

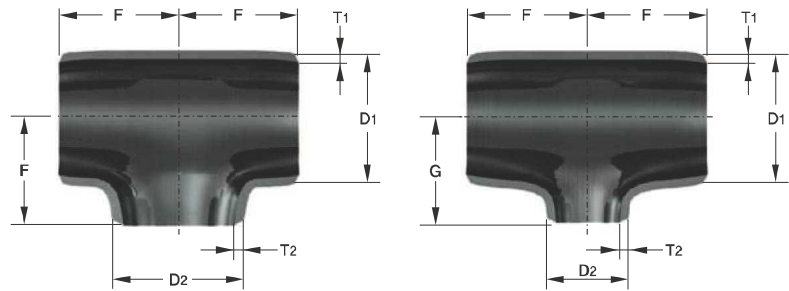
Nominal Pipe Size		D ₁	D ₂	F	G
A	B				
3/4	20	26.9	26.9	29	29
3/4 × 3/4 × 1/2	20 × 20 × 15	26.9	21.3	29	29
1	25	33.7	33.7	38	38
1 × 1 × 1/2	25 × 25 × 15	33.7	21.3	38	38
1 × 1 × 3/4	25 × 25 × 20	33.7	26.9	38	38
1 1/4	32	42.4	42.4	48	48
1 1/4 × 1 1/4 × 1/2	32 × 32 × 15	42.4	26.9	48	48
1 1/4 × 1 1/4 × 3/4	32 × 32 × 20	42.4	26.9	48	48
1 1/4 × 1 1/4 × 1	32 × 32 × 25	42.4	33.7	48	48
1 1/2	40	48.3	48.3	57	57
1 1/2 × 1 1/2 × 1/2	40 × 40 × 15	48.3	21.3	57	57
1 1/2 × 1 1/2 × 3/4	40 × 40 × 20	48.3	26.9	57	57
1 1/2 × 1 1/2 × 1	40 × 40 × 25	48.3	33.7	57	57
1 1/2 × 1 1/2 × 1/4	40 × 40 × 32	48.3	42.4	57	57
2	50	60.3	60.3	64	64
2 × 2 × 3/4	50 × 50 × 20	60.3	26.9	64	44
2 × 2 × 1	50 × 50 × 25	60.3	33.7	64	51
2 × 2 × 1 1/4	50 × 50 × 32	60.3	42.4	64	57
2 × 2 × 1 1/2	50 × 50 × 40	60.3	48.3	64	60
2 1/2	65	76.1	76.1	76	76
2 1/2 × 2 1/2 × 1	65 × 65 × 25	76.1	33.7	76	57
2 1/2 × 2 1/2 × 1 1/4	65 × 65 × 32	76.1	42.4	76	64
2 1/2 × 2 1/2 × 1 1/2	65 × 65 × 40	76.1	48.3	76	67
2 1/2 × 2 1/2 × 2	65 × 65 × 50	76.1	60.3	76	70
3	80	88.9	88.9	86	86
3 × 3 × 1	80 × 80 × 25	88.9	33.7	86	67
3 × 3 × 1 1/4	80 × 80 × 32	88.9	42.4	86	70
3 × 3 × 1 1/2	80 × 80 × 40	88.9	48.4	86	73
3 × 3 × 2	80 × 80 × 50	88.9	60.3	86	76
3 × 3 × 2 1/2	80 × 80 × 65	88.9	76.1	86	83
4	100	114.3	114.3	105	105
4 × 4 × 1 1/2	100 × 100 × 40	114.3	48.3	105	86
4 × 4 × 2	100 × 100 × 50	114.3	60.3	105	89
4 × 4 × 2 1/2	100 × 100 × 65	114.3	76.1	105	95
4 × 4 × 3	100 × 100 × 80	114.3	88.9	105	98
5	125	139.7	139.7	124	124

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Tees



EN 10253

(mm)

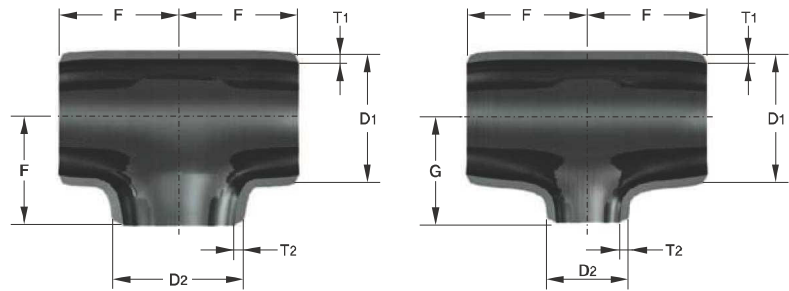
Nominal Pipe Size		D ₁	D ₂	F	G
A	B				
5 × 5 × 2	125 × 125 × 50	139.7	60.3	124	105
5 × 5 × 2 ^{1/2}	125 × 125 × 65	139.7	76.1	124	108
5 × 5 × 3	125 × 125 × 80	139.7	88.9	124	111
5 × 5 × 4	125 × 125 × 100	139.7	114.3	124	117
6	150	165.1	165.1	143	143
6 × 6 × 2	150 × 150 × 50	165.1	60.3	143	117
6 × 6 × 2 ^{1/2}	150 × 150 × 65	165.1	76.1	143	121
6 × 6 × 3	150 × 150 × 80	165.1	88.9	143	124
6 × 6 × 4	150 × 150 × 100	165.1	114.3	143	130
6 × 6 × 5	150 × 150 × 125	165.1	139.7	143	137
8	200	219.1	219.1	178	178
8 × 8 × 3	200 × 200 × 80	219.1	88.9	178	152
8 × 8 × 4	200 × 200 × 100	219.1	114.3	178	156
8 × 8 × 5	200 × 200 × 125	219.1	139.7	178	162
8 × 8 × 6	200 × 200 × 150	219.1	165.1	178	168
10	250	273.1	273.1	216	216
10 × 10 × 4	250 × 250 × 100	273.1	114.3	216	184
10 × 10 × 5	250 × 250 × 125	273.1	139.7	216	191
10 × 10 × 6	250 × 250 × 150	273.1	165.1	216	194
10 × 10 × 8	250 × 250 × 200	273.1	219.1	216	203
12	300	323.9	323.9	254	254
12 × 12 × 6	300 × 300 × 150	323.9	165.1	254	219
12 × 12 × 8	300 × 300 × 200	323.9	219.1	254	229
12 × 12 × 10	300 × 300 × 250	323.9	273.0	254	241
14	350	355.6	355.6	279	279
14 × 14 × 6	350 × 350 × 150	355.6	165.1	279	238
14 × 14 × 8	350 × 350 × 200	355.6	219.1	279	248
14 × 14 × 10	350 × 350 × 250	355.6	273.0	279	257
14 × 14 × 12	350 × 350 × 300	355.6	323.9	279	270
16	400	406.4	406.4	305	305
16 × 16 × 6	400 × 400 × 150	406.4	165.1	305	264
16 × 16 × 8	400 × 400 × 200	406.4	219.1	305	273
16 × 16 × 10	400 × 400 × 250	406.4	273.0	305	283
16 × 16 × 12	400 × 400 × 300	406.4	323.9	305	295
16 × 16 × 14	400 × 400 × 350	406.4	355.6	305	305
18	450	457.0	457.0	343	343

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Tees



EN 10253

(mm)

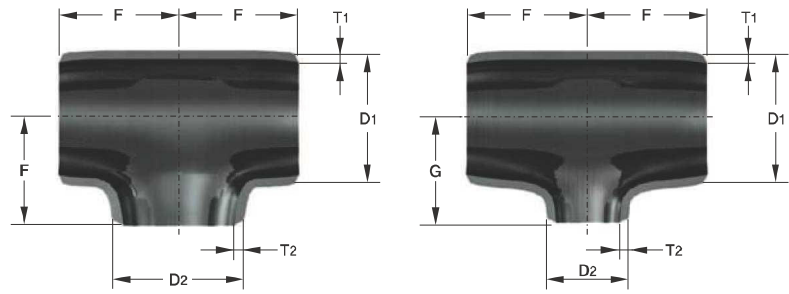
Nominal Pipe Size		D ₁	D ₂	F	G
A	B				
18 × 18 × 8	450 × 450 × 200	457.0	219.1	343	298
18 × 18 × 10	450 × 450 × 250	457.0	273.0	343	308
18 × 18 × 12	450 × 450 × 300	457.0	323.9	343	321
18 × 18 × 14	450 × 450 × 350	457.0	355.6	343	330
18 × 18 × 16	450 × 450 × 400	457.0	406.4	343	330
20	500	508.0	508.0	381	381
20 × 20 × 10	500 × 500 × 250	508.0	273.0	381	333
20 × 20 × 12	500 × 500 × 300	508.0	323.9	381	346
20 × 20 × 16	500 × 500 × 400	508.0	406.4	381	356
20 × 20 × 18	500 × 500 × 450	508.0	457.0	381	368
22	550	559.0	559.0	419	419
22 × 22 × 10	550 × 550 × 250	559.0	273.0	419	359
22 × 22 × 12	550 × 550 × 300	559.0	323.9	419	371
22 × 22 × 16	550 × 550 × 400	559.0	406.4	419	381
22 × 22 × 20	550 × 550 × 500	559.0	508.0	419	406
24	600	610.0	610.0	432	432
24 × 24 × 10	600 × 600 × 250	610.0	273.0	432	384
24 × 24 × 12	600 × 600 × 300	610.0	323.9	432	397
24 × 24 × 16	600 × 600 × 400	610.0	406.4	432	406
24 × 24 × 20	600 × 600 × 500	610.0	508.0	432	432
26	650	660.0	660.0	495	495
26 × 26 × 12	650 × 650 × 300	660.0	323.9	495	422
26 × 26 × 14	650 × 650 × 350	660.0	355.6	495	432
26 × 26 × 16	650 × 650 × 400	660.0	406.4	495	432
26 × 26 × 20	650 × 650 × 500	660.0	508.0	495	457
28	700	711.0	711.0	521	521
28 × 28 × 12	700 × 700 × 300	711.0	323.9	521	448
28 × 28 × 16	700 × 700 × 400	711.0	406.4	521	457
28 × 28 × 20	700 × 700 × 500	711.0	508.0	521	483
28 × 28 × 24	700 × 700 × 600	711.0	610.0	521	508
30	750	762.0	762.0	559	559
30 × 30 × 16	750 × 750 × 400	762.0	406.4	559	483
30 × 30 × 20	750 × 750 × 500	762.0	508.0	559	508
30 × 30 × 24	750 × 750 × 600	762.0	610.0	559	533
32	800	813.0	813.0	602	602

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Tees



EN 10253

(mm)

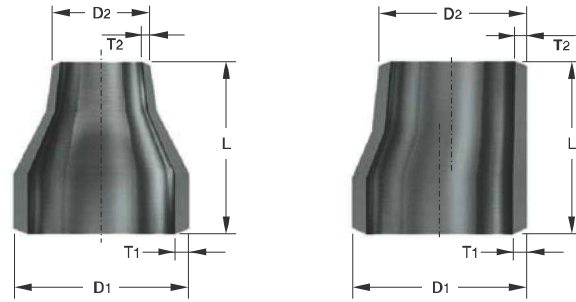
Nominal Pipe Size		D ₁	D ₂	F	G
A	B				
32 × 32 × 16	800 × 800 × 400	813.0	406.4	602	508
32 × 32 × 20	800 × 800 × 500	813.0	508.0	602	533
32 × 32 × 24	800 × 800 × 600	813.0	610.0	602	559
32 × 32 × 28	800 × 800 × 700	813.0	711.0	602	572
34	850	864.0	864.0	635	635
34 × 34 × 16	850 × 850 × 400	864.0	406.4	635	533
34 × 34 × 20	850 × 850 × 500	864.0	508.0	635	559
34 × 34 × 24	850 × 850 × 600	864.0	610.0	635	584
34 × 34 × 28	850 × 850 × 700	864.0	711.0	635	597
36	900	914.0	914.0	673	673
36 × 36 × 16	900 × 900 × 400	914.0	406.4	673	559
36 × 36 × 20	900 × 900 × 500	914.0	508.0	673	584
36 × 36 × 24	900 × 900 × 600	914.0	610.0	673	610
36 × 36 × 28	900 × 900 × 700	914.0	711.0	673	622
36 × 36 × 32	900 × 900 × 800	914.0	813.0	673	648
40	1000	1016.0	1016.0	749	749
40 × 40 × 24	1000 × 1000 × 600	1016.0	610.0	749	660
40 × 40 × 28	1000 × 1000 × 700	1016.0	711.0	749	698
40 × 40 × 32	1000 × 1000 × 800	1016.0	813.0	749	711
40 × 40 × 36	1000 × 1000 × 900	1016.0	914.0	749	737
42	1050	1067.0	1067.0	762	762
46 × 46 × 24	1150 × 1150 × 600	1067.0	610.0	762	660
46 × 46 × 28	1150 × 1150 × 700	1067.0	711.0	762	698
46 × 46 × 32	1150 × 1150 × 800	1067.0	813.0	762	711
46 × 46 × 36	1150 × 1150 × 900	1067.0	914.0	762	711
44	1100	1118.0	1118.0	813	813
44 × 44 × 24	1100 × 1100 × 600	1118.0	610.0	813	698
44 × 44 × 28	1100 × 1100 × 700	1118.0	711.0	813	698
44 × 44 × 32	1100 × 1100 × 800	1118.0	813.0	813	711
44 × 44 × 36	1100 × 1100 × 900	1118.0	914.0	813	724
48	1200	1219.0	1219.0	889	889
48 × 48 × 28	1200 × 1200 × 700	1219.0	711.0	889	762
48 × 48 × 32	1200 × 1200 × 800	1219.0	813.0	889	787
48 × 48 × 36	1200 × 1200 × 900	1219.0	914.0	889	787
48 × 48 × 40	1200 × 1200 × 1000	1219.0	1016.0	889	813

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Reducers



EN 10253

(mm)

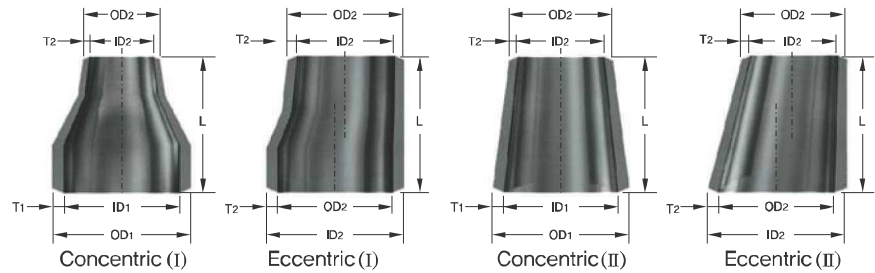
Nominal Pipe Size		D1	D2	Length L
A	B			
3/4 × 1/2	20 × 15	26.9	21.3	38
1 × 3/4	25 × 20	33.7	26.9	51
1 × 1/2	25 × 15	33.7	21.3	51
1 1/4 × 1	32 × 25	42.4	33.7	51
1 1/4 × 3/4	32 × 20	42.4	26.9	51
1 1/4 × 1/2	32 × 15	42.4	21.3	51
1 1/2 × 1 1/4	40 × 32	48.3	42.4	64
1 1/2 × 1	40 × 25	48.3	33.7	64
1 1/2 × 3/4	40 × 20	48.3	26.9	64
2 × 1 1/2	50 × 40	60.3	48.3	76
2 × 1 1/4	50 × 32	60.3	42.4	76
2 × 1	50 × 25	60.3	33.7	76
2 × 3/4	50 × 20	60.3	26.9	76
2 1/2 × 2	65 × 50	76.1	60.3	89
2 1/2 × 1 1/2	65 × 40	76.1	48.3	89
2 1/2 × 1 1/4	65 × 32	76.1	42.4	89
2 1/2 × 1	65 × 25	76.1	33.7	89
3 × 2 1/2	80 × 65	88.9	76.1	89
3 × 2	80 × 50	88.9	60.3	89
3 × 1 1/2	80 × 40	88.9	48.3	89
3 × 1 1/4	80 × 32	88.9	42.4	89
4 × 3	100 × 80	114.3	88.9	102
4 × 2 1/2	100 × 65	114.3	76.1	102
4 × 2	100 × 50	114.3	60.3	102
4 × 1 1/2	100 × 40	114.3	48.3	102
5 × 4	125 × 100	139.7	114.3	127
5 × 3	125 × 80	139.7	88.9	127
5 × 2 1/2	125 × 65	139.7	76.1	127
5 × 2	125 × 50	139.7	60.3	127
6 × 5	150 × 125	165.1	139.7	140
6 × 4	150 × 100	165.1	114.3	140
6 × 3	150 × 80	165.1	88.9	140
6 × 2 1/2	150 × 65	165.1	76.1	140
8 × 6	200 × 150	219.1	165.1	152
8 × 5	200 × 125	219.1	139.7	152
8 × 4	200 × 100	219.1	114.3	152
8 × 3	200 × 80	219.1	88.9	152
10 × 8	250 × 200	273.0	219.1	178
10 × 6	250 × 150	273.0	165.1	178
10 × 5	250 × 125	273.0	139.7	178
10 × 4	250 × 100	273.0	114.3	178
12 × 10	300 × 250	323.9	273.0	203
12 × 8	300 × 200	323.9	219.1	203

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Reducers



EN 10253

(mm)

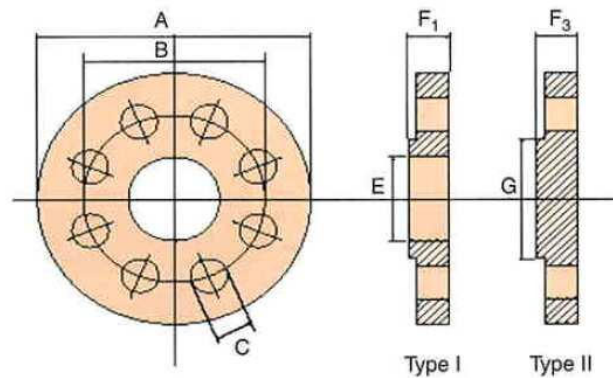
Nominal Pipe Size		D ₁	D ₂	Length L
A	B			
12 × 6	300 × 150	323.9	165.1	203
12 × 5	300 × 125	323.9	139.7	203
14 × 12	350 × 300	355.6	323.9	330
14 × 10	350 × 250	355.6	273.0	330
14 × 8	350 × 200	355.6	219.1	330
14 × 6	350 × 150	355.6	165.1	330
16 × 14	400 × 350	406.4	355.6	356
16 × 12	400 × 300	406.4	323.9	356
16 × 10	400 × 250	406.4	273.0	356
16 × 8	400 × 200	406.4	219.1	356
18 × 16	450 × 400	457.0	406.4	381
18 × 14	450 × 350	457.0	355.6	381
18 × 12	450 × 300	457.0	323.9	381
18 × 10	450 × 250	457.0	273.0	381
20 × 18	500 × 450	508.0	457.0	508
20 × 16	500 × 400	508.0	406.4	508
20 × 14	500 × 350	508.0	355.6	508
20 × 12	500 × 300	508.0	323.9	508
22 × 20	550 × 500	559.0	508.0	508
22 × 18	550 × 450	559.0	457.0	508
22 × 16	550 × 400	559.0	406.4	508
22 × 14	550 × 350	559.0	355.6	508
24 × 22	600 × 550	610.0	559.0	508
24 × 20	600 × 500	610.0	508.0	508
24 × 18	600 × 450	610.0	457.0	508
24 × 16	600 × 400	610.0	406.4	508
28 × 24	700 × 600	711.0	610.0	610
28 × 20	700 × 500	711.0	508.0	610
28 × 18	700 × 450	711.0	457.0	610
32 × 28	800 × 700	813.0	711.0	610
32 × 24	800 × 600	813.0	610.0	610
32 × 22	800 × 550	813.0	559.0	610
32 × 20	800 × 500	813.0	508.0	610
36 × 32	900 × 800	914.0	813.0	610
36 × 28	900 × 700	914.0	711.0	610
36 × 24	900 × 600	914.0	610.0	610
40 × 36	1000 × 900	1016.0	914.0	610
40 × 32	1000 × 800	1016.0	813.0	610
40 × 28	1000 × 700	1016.0	711.0	610
48 × 44	1200 × 1100	1219.0	1016.0	711
48 × 36	1200 × 900	1219.0	914.0	711
48 × 32	1200 × 800	1219.0	813.0	711

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Circular flange for pipes, valves and fittings to BS4504/EN1092 PN16 (For Steel)



REMARK: Type I: Plate Flange for Welding
Type II: Blank Flange

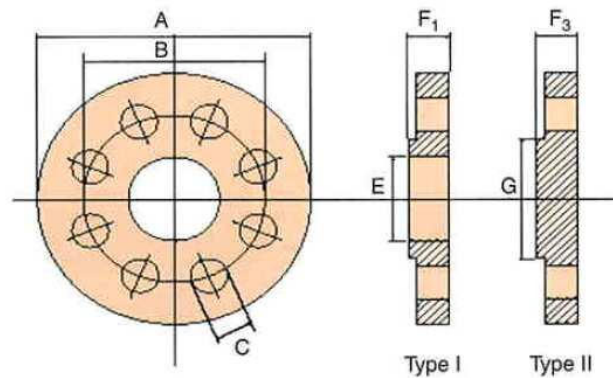
Nominal Size DN	Outside Diameter A	Diameter of Bolt Circle B	Diameter of Bolt Hole C	Bolting		Bore Diameter E (Type I)	Flange Thickness		Diameter of Shoulder G (Type II)
				Number	Size		F1 (Type I)	F3 (Type II)	
32	140	100	18	4	M16	43.5	18	18	-
40	150	110	18	4	M16	49.5	18	18	-
50	165	125	18	4	M16	61.5	19	18	-
65	185	145	18	4	M16	77.5	20	18	55
80	200	160	18	8	M16	90.5	20	20	70
100	220	180	18	8	M16	116.0	22	20	90
125	250	210	18	8	M16	141.5	22	22	115
150	285	240	22	8	M20	170.5	24	22	140
200	340	295	22	12	M20	221.5	26	24	190
250	405	355	26	12	M24	276.5	29	26	235
300	460	410	26	12	M24	327.5	32	28	285
350	520	470	26	16	M24	359.0	35	30	325
400	580	525	30	16	M27	411.0	38	32	380
450	640	585	30	20	M27	462.0	42	40	425
500	715	650	33	20	M30	513.5	46	44	475
600	840	770	36	20	M33	616.5	55	54	575
700	910	840	36	24	M33	-	63	58	670
800	1025	950	39	24	M36	-	74	62	770
900	1125	1050	39	28	M36	-	82	64	860
1000	1255	1170	42	28	M39	-	90	68	960
1200	1485	1390	48	32	M45	-	-	-	1160
1400	1685	1590	48	36	M45	-	-	-	1346
1600	1930	1820	56	40	M52	-	-	-	1546
1800	2130	2020	56	44	M52	-	-	-	1746
2000	2345	2230	62	48	M56	-	-	-	1950

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Butt-Welding Pipe Fittings

Butt-Welding Pipe Fittings

Circular flange for pipes, valves and fittings to BS4504/EN1092 PN25 (For Steel)



REMARK: Type I: Plate Flange for Welding
Type II: Blank Flange

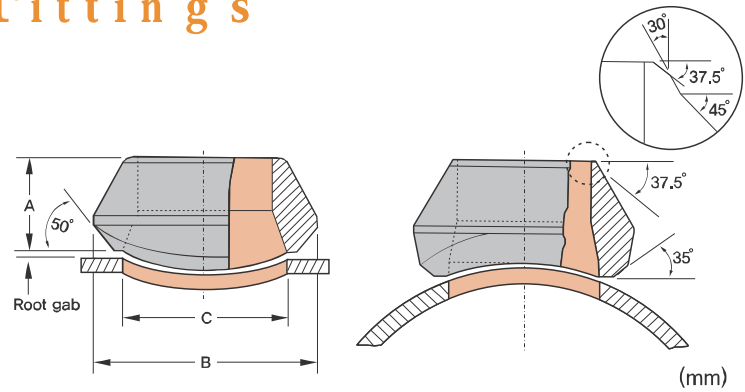
Nominal Size DN	Outside Diameter A	Diameter of Bolt Circle B	Diameter of Bolt Hole C	Bolting		Bore Diameter E (Type I)	Flange Thickness		Diameter of Shoulder G (Type II)
				Number	Size		F1 (Type I)	F3 (Type II)	
50	165	125	18	4	M16	61.5	20	20	-
65	185	145	18	8	M16	77.5	22	22	55
80	200	160	18	8	M16	90.5	24	24	70
100	235	190	22	8	M20	116.0	26	24	90
125	270	220	26	8	M24	141.5	28	26	115
150	300	250	26	8	M24	170.5	30	28	140
200	360	310	26	12	M24	221.5	32	30	190
250	425	370	30	12	M27	276.5	35	32	235
300	485	430	30	16	M27	327.5	38	34	285
350	555	490	33	16	M30	359.5	42	38	332
400	620	550	36	16	M33	411.0	48	40	380
450	670	600	36	20	M33	462.0	54	50	425
500	730	660	36	20	M33	513.5	58	51	475
600	845	770	39	20	M36	616.5	68	66	575
700	960	870	42	24	M39	-	85	-	-
800	1085	990	48	24	M45	-	95	-	-
900	1185	1090	48	28	M45	-	-	-	-
1000	1320	1210	56	28	M52	-	-	-	-
1200	1530	1420	56	32	M52	-	-	-	-
1400	1755	1640	62	36	M56	-	-	-	-
1600	1975	1860	62	40	M56	-	-	-	-
1800	2195	2070	70	44	M64	-	-	-	-
2000	2425	2300	70	48	M64	-	-	-	-

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

Forged Outlet Fittings

Forged Outlet Fittings

Welding outlet



STD , XS

Outlet Size	A		B		C		APP'Weight(kg)	
	STD	XS	STD	XS	STD	XS	STD	XS
1/2	19.1	19.1	34.9	34.9	23.8	23.8	0.08	0.09
3/4	22.2	22.2	44.5	44.5	30.2	30.2	0.11	0.14
1	27.0	27.0	54.0	54.0	36.5	36.5	0.23	0.21
1 1/4	31.8	31.8	65.1	65.1	44.5	44.5	0.36	0.41
1 1/2	33.3	33.3	73.0	73.0	50.8	50.8	0.45	0.5
2	38.1	38.1	88.9	88.9	65.1	65.1	0.80	0.8
2 1/2	41.3	41.3	103.2	103.2	76.2	76.2	1.14	12.0
3	44.5	44.5	122.2	122.2	93.7	93.7	1.82	1.9
4	50.8	50.8	152.4	152.4	120.7	120.7	2.86	2.9
5	57.2	57.2	179.4	179.4	141.3	141.3	4.66	4.7
6	60.3	77.8	215.9	225.4	169.9	169.9	6.45	10.5
8	69.9	98.5	263.5	292.1	220.7	220.7	10.68	16.8
10	77.8	93.7	322.3	323.9	274.7	265.1	17.73	20.9
12	85.7	103.2	377.8	379.4	325.4	317.5	26.82	27.7
14	88.9	100.0	409.6	431.8	357.2	350.8	30.0	31.8
16	93.7	106.4	463.6	466.7	408.0	403.2	34.1	46.4
18	96.8	111.1	520.7	523.9	458.8	455.6	44.1	59.1
20	101.6	119.1	571.5	582.6	508.0	509.6	53.6	71.8
24	115.9	139.7	689.0	708.0	614.4	638.2	100.0	131.8
26	119.1	146.1	738.2	765.2	666.8	692.2	120.5	159.1

Sch160 , XXS

(mm)

Outlet Size	A		B		C		APP'Weight(kg)	
	Sch160	XXS	Sch160	XXS	Sch160	XXS	Sch160	XXS
1/2	28.6	28.6	34.9	34.9	14.3	14.3	0.11	—
3/4	31.8	31.8	44.5	44.5	19.1	19.1	0.32	—
1	38.1	38.1	50.8	50.8	25.4	25.4	0.38	0.38
1 1/4	44.5	44.5	61.9	61.9	33.3	33.3	0.57	0.57
1 1/2	50.8	50.8	69.9	69.9	38.1	38.1	0.80	0.80
2	55.6	55.6	81.0	81.0	42.9	42.9	1.00	1.00
2 1/2	61.9	61.9	96.8	96.8	54.0	54.0	1.54	1.54
3	73.0	73.0	120.7	120.7	73.0	73.0	2.90	2.90
4	84.1	84.1	152.4	152.4	98.4	98.4	4.80	4.80
5	93.7	93.7	187.3	187.3	122.2	122.2	6.50	6.50
6	104.8	104.8	220.7	220.7	146.1	146.1	12.70	12.70
8	111.1	111.1	284.2	284.2	173.0	173.0	20.50	20.50
10	125.4	125.4	312.7	312.7	215.9	215.9	38.60	38.60

* Dimensions of fittings as shown in this catalogue will be subject to manufacturer's final option.

BS EN 10253-1/ BS EN 10253-2

Diameter Tolerances

(mm)

BS EN 10253-1	BS EN 10253-2
$\leq 273,0\text{mm} : \pm 1\% \text{ or } \pm 0,5\text{mm}$	$D \leq 273,0\text{mm} : \pm 1\% \text{ or } \pm 0,5\text{mm}$
$> 273,0\text{mm} : 2\%$	$\leq 273,0\text{mm} < D \leq 610\text{mm} : 2\%$
	$D > 610\text{mm} : 1\%$

Wall thickness tolerances at the welding ends

BS EN 10253-1				BS EN 10253-2			
D mm	T mm	Tolerance		D mm	T mm	Tolerance	
		Minus	Plus			Minus	Plus
$\leq 406,4$	≤ 4		+20%	≤ 610	≤ 4	-12,5%	+20%
	> 4	-12,5%	+15%		> 4		
				> 610	Seamless	-12,5%	+20%
					Welded		
					≤ 10		
			> 10	-0,5mm			

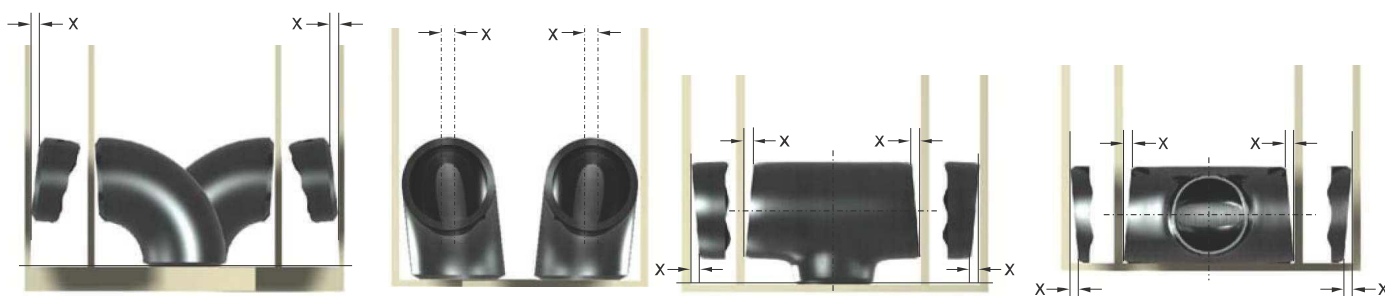
Tolerances on specific dimensions in millimetres

(mm)

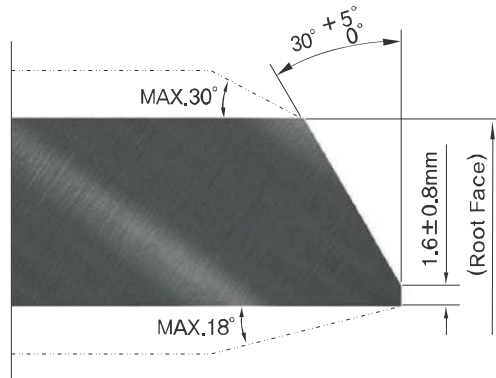
BS EN 10253-1						BS EN 10253-2					
D	F-G-H	B	C	K	L	D	F-G-L-W	B-Z	C	h	P
$\leq 114,3$	± 2	± 7	± 7	± 4	± 2	$\leq 114,3$	± 2	± 7	± 7	± 4	2
$114,3 < D \leq 219,1$	± 2	± 7	± 7	± 7	± 3	$114,3 < D \leq 219,1$	± 2	± 7	± 7	± 7	4
$219,1 < D \leq 406,4$	± 3	± 7	± 10	± 7	± 5	$219,1 < D \leq 406,4$	± 3	± 7	± 10	± 7	6
						$406,4 < D \leq 762$	± 3	± 10	± 10	± 7	7
						$762 < D$	± 5	± 12	± 10	± 10	9

Tolerances on the form of fittings

The tolerance on the form of every type of fitting (out-of-squareness, alignment) is following :
 $X \leq 1\%$ of the outside diameter at the point measured or 1mm, whichever is the greater



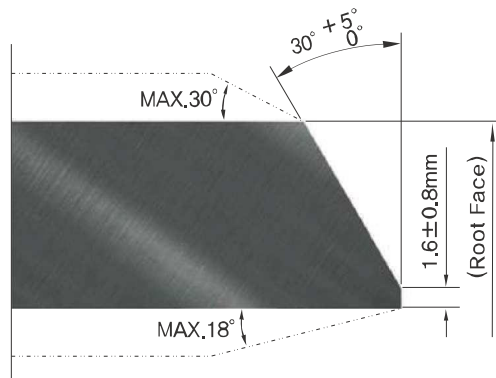
BS EN 10253-1



End Finishing

At the manufacture's option, for specified wall thickness below 3mm, the ends may be slightly chamfered. For wall thicknesses equal to or above 3mm, the ends shall be bevelled with an angle of $30^{\circ} -0 +5^{\circ}$ with a face of $1.6\text{mm} \pm 0.8\text{mm}$. Where necessary the dimensions at the welding ends may be achieved by taper boring of the inside surface with an angle of 18° and/or of the outside surface with an angle of 30° , the angles being related to the axis of the fitting.

BS EN 10253-2



End Finishing

At the manufacture's option, for specified wall thickness below 3mm, the ends may be square cut or slightly chamfered. For wall thicknesses equal to or above 3mm and 22mm the ends shall be bevelled with an angle of $30^{\circ} -0 +5^{\circ}$ with a face of $1.6\text{mm} \pm 0.8\text{mm}$.

For wall thicknesses above 22mm the type of bevel shall be agreed.

For wall thicknesses above 3mm, where machining at the welding ends is necessary, the wall thickness may be reduced by taper boring, the taper being not larger than :

- external : 30°
- internal : 18°

Approx Weight Equation

90° Elbow

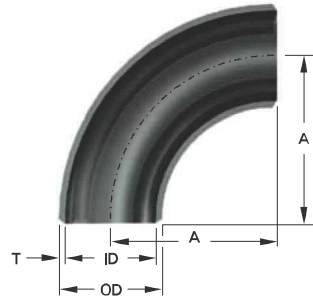
$$AW = 3.8699 \times A \times T \times (OD - T) \times 10^{-5}$$

AW : Approx Weight (Unit : Kgs)

T : Wall Thickness (mm)

OD : Outside Diameter (mm)

A : Radius (mm)



45° Elbow

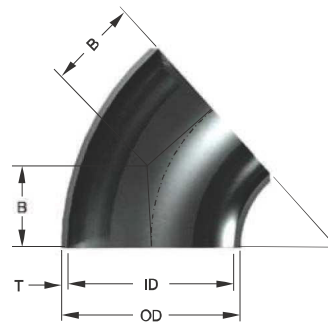
$$AW = 1.9350 \times B \times T \times (OD - T) \times 10^{-5}$$

AW : Approx Weight (Unit : Kgs)

T : Wall Thickness (mm)

OD : Outside Diameter (mm)

A : Radius (mm)



Tee

$$AW = 2.24649 \{ 2CT_1(OD_1 - T) +$$

$$T_2(OD_2 - T_2)(M - OD_2/2) \} \times 10^{-5}$$

AW : Approx Weight (Unit : Kgs)

T₁ : Wall Thickness (mm)

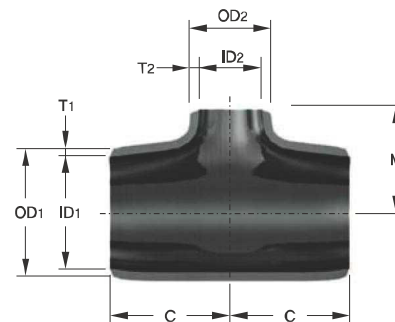
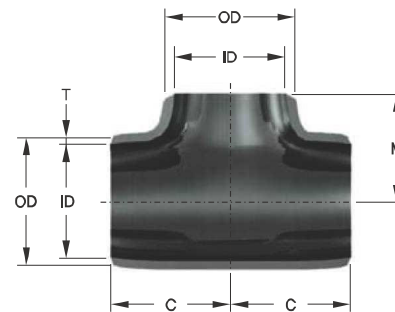
OD₁ : Outside Diameter (mm)

T₂ : Wall Thickness (mm)

OD₂ : Outside Diameter (mm)

C : Center to End Diameter (mm)

M : Center to End Diameter (mm)



Approx Weight Equation

Reducer

$$AW = 2.4649 \times H \times T \times$$

$$(OD_1 + OD_2 / 2 - T) \times 10^{-5}$$

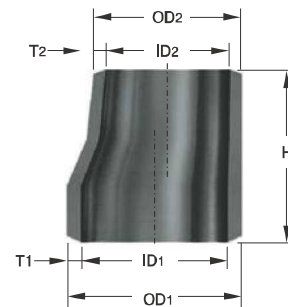
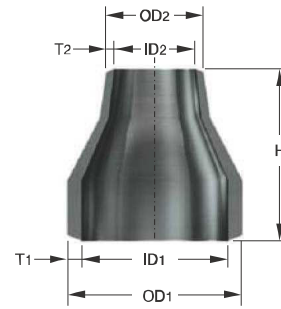
AW : Approx Weight (Unit :Kgs)

T : Wall Thickness (mm)

OD₁ : Outside Diameter (mm)

OD₂ : Outside Diameter (mm)

H : Length (mm)



CAP

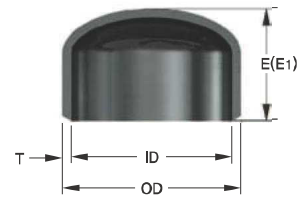
$$AW = 7.85 \times \pi / 4 (OD + E)^2 \times T \times 10^{-6}$$

AW : Approx Weight (Unit : Kgs)

OD₁ : Outside Diameter (mm)

T : Wall Thickness (mm)

E : End to End (mm)





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