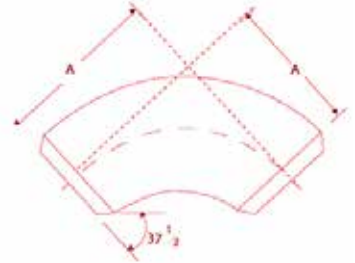


BUTT WELD FITTINGS



ELBOW 90° BW

ASME B16.9/B16.28

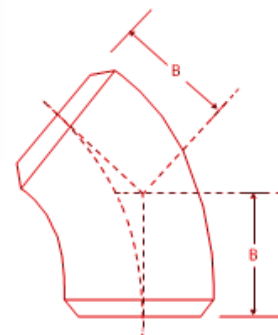


Elbow 90° BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234

Nominal Diameter	Outside Diameter (mm)	A (mm)		R/L Weight (Kg)			R/C Weight (Kg)	
		L/R	S/R	STD	XS	S40	STD	XS
1/2	21.3	38	-	0.07	0.10	0.07	-	-
3/4	26.7	29	-	0.10	0.12	0.10	-	-
1	33.4	38	25	0.15	0.18	0.15	0.10	0.12
1-1/4	42.2	48	32	0.25	0.33	0.25	0.16	0.21
1-1/2	48.3	57	38	0.35	0.48	0.35	0.23	0.31
2	60.3	76	51	0.65	0.88	0.65	0.42	0.58
2-1/2	73.0	95	64	1.30	1.70	1.30	0.86	1.13
3	88.9	114	76	2.02	2.72	2.02	1.35	1.81
3-1/2	101.6	133	-	2.81	3.90	2.81	1.87	2.60
4	114.3	152	102	3.82	5.35	3.82	2.55	3.56
5	141.3	190	127	6.55	9.22	6.55	4.36	6.15
6	168.3	229	152	10.12	15.30	10.12	6.75	10.20
8	219.1	305	203	20.40	30.91	20.40	13.60	20.60
10	273.0	381	254	36.16	48.75	36.16	24.11	32.5
12	323.8	457	305	52.82	69.90	57.20	35.21	46.6
14	355.6	533	-	67.86	89.74	79.20	-	-
16	406.4	610	-	88.95	117.93	118.20	-	-
18	457.0	686	-	112.99	149.67	167.57	-	-
20	508.0	762	-	139.82	185.33	218.15	-	-
24	610.0	914	-	202.02	268.08	366.03	-	-

ELBOW 45° BW

ASME B16.9/B16.28



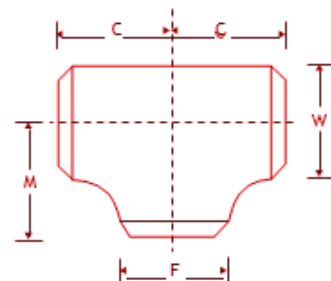
Elbow 45° BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234

Nominal Diameter	Outside Diameter (mm)	B	Weight (Kg)		
			STD	XS	S40
1	33.4	22	0.07	0.10	0.07
1-1/4	42.2	25	0.12	0.16	0.12
1-1/2	48.3	29	0.17	0.23	0.17
2	60.3	35	0.31	0.43	0.31
2-1/2	73.0	44	0.65	0.85	0.65
3	88.9	51	1.00	1.36	1.00
3-1/2	101.6	57	1.40	1.95	1.40
4	114.3	64	1.92	2.67	1.92
5	141.3	79	3.27	4.61	3.27
6	168.3	95	5.05	7.65	5.05
8	219.1	127	10.20	15.46	10.20
10	273.0	159	18.08	24.37	18.08
12	323.8	190	26.40	34.95	26.40
14	355.6	222	33.92	44.87	33.92
16	406.4	254	44.47	58.96	44.47
18	457.0	286	56.50	74.83	56.50
20	508.0	343	69.91	92.67	69.91
24	610.0	381	101.01	134.04	101.01

STRAIGHT TEE BW ASME B16.9/B16.28



STRAIGHT TEE BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234

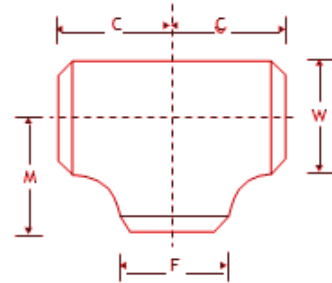


Nominal Diameter	W (mm)	F (mm)	M (mm)	C (mm)	Weight (Kg)	
					STD	XS
1/2	21.3	21.3	25.0	25.0	0.10	0.13
3/4	26.7	26.7	29.0	29.0	0.16	0.19
1	33.4	33.4	38.0	38.0	0.32	0.40
1-1/4	42.2	42.2	48.0	48.0	0.52	0.70
1-1/2	48.3	48.3	57.0	57.0	0.75	1.03
2	60.3	60.3	64.0	64.0	1.09	1.49
2-1/2	73.0	73.0	76.0	76.0	2.00	2.54
3	88.9	88.9	86.0	86.0	2.83	3.81
3-1/2	101.6	101.6	95.0	95.0	3.85	5.00
4	114.3	114.3	105.0	105.0	4.81	6.80
5	141.3	141.3	124.0	124.0	7.27	10.19
6	168.3	168.3	143.0	143.0	10.20	16.20
8	219.1	219.1	178.0	178.0	19.63	28.79
10	273.0	273.0	216.0	216.0	33.63	-
12	323.8	323.8	254.0	254.0	47.72	-

REDUCED TEE BW

ASME B16.9/B16.28

REDUCED TEE BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234

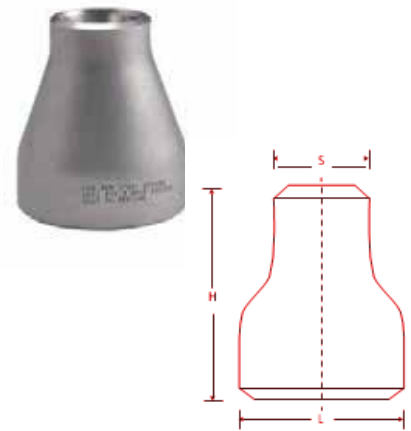


Nominal Diameter	W (mm)	F (mm)	M (mm)	C (mm)	Weight (Kg)	
					STD	XS
3/4x1/2	26.7	21.3	29	29	0.15	0.19
1x1/2	33.4	21.3	38	38	0.32	0.38
1x3/4	33.4	26.7	38	38	0.32	0.38
1-1/4x1/2	42.2	21.3	48	48	0.52	0.70
1-1/4x3/4	42.2	26.7	48	48	0.52	0.70
1-1/4x1	42.2	33.4	48	48	0.52	0.70
1-1/2x1/2	48.3	21.3	57	57	0.68	0.99
1-1/2x3/4	48.3	26.7	57	57	0.68	0.99
1-1/2x1	48.3	33.4	57	57	0.71	0.99
1-1/2x1-1/4	48.3	42.2	57	57	0.71	1.02
2x1/2	60.3	21.3	44	64	0.82	1.30
2x3/4	60.3	26.7	44	64	0.85	1.30
2x1	60.3	33.4	51	64	0.92	1.30
2x1-1/4	60.3	42.2	57	64	0.97	1.49
2x1-1/2	60.3	48.3	60	64	1.06	1.49
2-1/2x1/2	73.0	21.3	57	76	1.67	2.18
2-1/2x3/4	73.0	26.7	57	76	1.67	2.18
2-1/2x1	73.0	33.4	57	76	1.71	2.18
2-1/2x1-1/4	73.0	42.2	64	76	1.73	2.18
2-1/2x1-1/2	73.0	48.3	67	76	1.78	2.18
2-1/2x2	73.0	60.3	70	76	1.86	2.40
3x1	88.9	33.4	67	86	2.42	3.27

Nominal Diameter	W (mm)	F (mm)	M (mm)	C (mm)	Weight (Kg)	
					STD	XS
3x1-1/4	88.9	42.2	70	86	2.42	3.27
3x1-1/2	88.9	48.3	73	86	2.42	3.38
3x2	88.9	60.3	76	86	2.52	3.60
3x2-1/2	88.9	73.0	83	86	2.80	3.81
4x1-1/4	114.3	42.2	86	105	4.06	6.00
4x1-1/2	114.3	48.3	86	105	4.10	6.00
4x2	114.3	60.3	89	105	4.20	6.00
4x2-1/2	114.3	73.0	95	105	4.20	6.00
4x3	114.3	88.9	98	105	4.55	6.45
5x2	141.3	60.3	105	124	6.27	9.36
5x2-1/2	141.3	73.0	108	124	6.66	9.72
5x3	141.3	88.9	111	124	6.73	9.72
5x4	141.3	114.3	117	125	7.12	10.00
6x2	168.3	60.3	118	143	9.51	15.36
6x2-1/2	168.3	73.0	121	143	9.60	15.36
6x3	168.3	88.9	124	143	10.01	15.51
6x4	168.3	114.3	130	143	10.10	15.51
6x5	168.3	141.3	137	143	10.20	15.90
8x3	219.1	88.9	152	178	17.66	-
8x4	219.1	114.3	156	178	17.95	27.81
8x5	219.1	141.3	162	178	19.46	28.18
8x6	219.1	168.3	168	178	19.46	28.79
10x4	273.0	114.3	184	216	30.30	-
10x5	273.0	141.3	191	216	30.86	-
10x6	273.0	168.0	194	216	30.86	-
10x8	273.0	219.1	203	216	33.40	-
12x6	323.8	168.3	219	254	46.35	-
12x8	323.8	219.1	229	254	46.35	-
12x10	323.8	273.0	241	254	47.38	-

CONCENTRIC REDUCER BW ASME B16.9/B16.28

CONCENTRIC REDUCER BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234



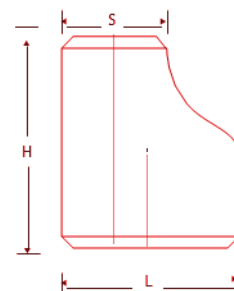
Nominal Diameter	L (mm)	S (mm)	H (mm)	Weight (Kg)	
				STD	XS
3/4x1/2	26.7	21.3	38	0.05	0.07
1x1/2	33.4	21.3	51	0.12	0.15
1x3/4	33.4	26.7	51	0.12	0.15
1-1/4x1/2	42.2	21.3	51	0.16	0.22
1-1/4x3/4	42.2	26.7	51	0.16	0.22
1-1/4x1	42.2	33.4	51	0.16	0.22
1-1/2x1/2	48.3	21.3	64	0.25	0.33
1-1/2x3/4	48.3	26.7	64	0.25	0.33
1-1/2x1	48.3	33.4	64	0.25	0.33
1-1/2x1-1/4	48.3	42.2	64	0.25	0.33
2x1/2	60.3	21.3	76	0.40	0.55
2x3/4	60.3	26.7	76	0.40	0.55
2x1	60.3	33.4	76	0.40	0.55
2x1-1/4	60.3	42.2	76	0.40	0.55
2x1-1/2	60.3	48.3	76	0.40	0.55
2-1/2x1	73.0	33.4	89	0.76	1.00
2-1/2x1-1/4	73.0	42.2	89	0.76	1.00
2-1/2x1-1/2	73.0	48.3	89	0.76	1.00
2-1/2x2	73.0	60.3	89	0.76	1.00
3x1	88.9	33.4	89	1.00	1.35
3x1-1/4	88.9	42.2	89	1.00	1.35

Nominal Diameter	L (mm)	S (mm)	H (mm)	Weight (Kg)	
				STD	XS
3x1-1/2	88.9	48.3	89	1.00	1.35
3x2	88.9	60.3	89	1.00	1.35
3x2-1/2	88.9	73.0	89	1.00	1.35
3-1/2x3	101.6	88.9	102	1.26	1.85
4x1	114.3	33.4	102	1.60	2.25
4x1-1/4	114.3	42.2	102	1.60	2.25
4x1-1/2	114.3	48.3	102	1.60	2.25
4x2	114.3	60.3	102	1.60	2.25
4x2-1/2	114.3	73.0	102	1.60	2.25
4x3	114.3	88.9	102	1.60	2.25
4x3-1/2	114.3	101.6	102	1.60	2.25
5x2	141.3	60.3	127	2.72	3.85
5x2-1/2	141.3	73.0	127	2.72	3.85
5x3	141.3	88.9	127	2.72	3.85
5x4	141.3	114.3	127	2.72	3.85
6x2	168.3	60.3	140	3.95	5.85
6x2-1/2	168.3	73.0	140	3.95	5.85
6x3	168.3	88.9	140	3.95	5.85
6x4	168.3	114.3	140	3.95	5.85

ECENTRIC REDUCER BW

ASME B16.9/B16.28

ECENTRIC REDUCER BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234



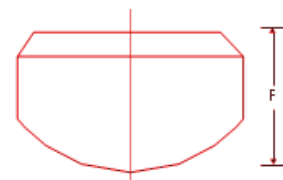
Nominal Diameter	L (mm)	S (mm)	H (mm)	Weight (Kg)	
				STD	XS
3/4x1/2	26,7	21,3	38	0,05	0,07
1x1/2	33,4	21,3	51	0,12	0,15
1x3/4	33,4	26,7	51	0,12	0,15
1-1/4x1	42,2	33,4	51	0,17	0,23
1-1/2x1	48,3	33,4	64	0,25	0,34
1-1/2x1-1/4	48,3	42,2	64	0,25	0,34
2x1	60,3	33,4	76	0,42	0,56
2x1-1/4	60,3	42,2	76	0,42	0,56
2x1-1/2	60,3	33,4	76	0,42	0,56
2-1/2x1-1/2	73,0	42,2	89	0,78	1,00
2-1/2x2	73,0	48,3	89	0,78	1,00
3x1-1/2	88,9	48,3	89	1,00	1,35
3x2	88,9	60,3	89	1,00	1,35
3x2-1/2	88,9	73,0	89	1,00	1,35
4x1-1/2	114,3	48,3	102	1,65	2,26
4x2	114,3	60,3	102	1,65	2,26
4x2-1/2	114,3	73,0	102	1,65	2,26
4x3	114,3	88,9	102	1,65	2,26
5x3	141,3	88,9	127	2,80	3,90
5x4	141,3	114,3	127	2,80	3,90
6x3	168,3	88,9	140	3,86	5,85
6x4	168,3	114,3	140	3,86	5,85

Nominal Diameter	L (mm)	S (mm)	H (mm)	Weight (Kg)	
				STD	XS
6x5	168,3	141,3	140	3,86	5,85
8x4	219,1	114,3	152	6,50	9,85
8x5	219,1	141,3	152	6,50	9,85
8x6	219,1	168,3	152	6,50	9,85
10x8	273,0	219,1	178	11,25	14,50
12x8	323,8	219,1	203	14,83	19,62
12x10	323,8	273,0	203	14,83	19,62
14x10	355,6	273,0	330	26,83	35,55
14x12	355,6	323,8	330	26,83	35,55
16x10	406,4	273,0	356	32,11	42,58
16x12	406,4	323,8	356	32,11	42,58
16x14	406,4	355,6	356	32,11	42,58

CAP BW

ASME B16.9/B16.28

CAP BW	
Specifications	
Material	Stainless steel ASTM A403
	Carbon steel ASTM A234



Nominal Diameter	Outside Diameter (mm)	E (mm)	CAP. Weight (Kg)	
			STD	XS
1-1/4	42.2	38	0.14	0.17
1-1/2	48.3	38	0.16	0.21
2	60.3	38	0.23	0.30
2-1/2	73.0	38	0.36	0.46
3	88.9	51	0.64	0.83
4	114.3	64	1.15	1.55
5	141.3	76	1.90	2.60
6	168.3	89	2.90	4.20
8	219.1	102	5.13	7.40
10	273.0	127	9.09	11.95
12	323.8	152	13.40	17.26
14	355.6	165	16.58	21.35
16	406.4	178	19.76	26.26

Conversion Tables

Weight Conversion Table					
	Kilogram	Ton	Ounce	Pound	Slug
Kilogram	1	0.001	35.27	2.2	0.0685
Ton	1000	1	35274	2204.62	68.58
Ounce	0.028349	0.000028	1	0.0625	0.00194
Pound	0.45359	0.000454	16	1	0.03111
Slug	14.59	0.01459	514.82	32.136	1

Length Conversion Table					
	Meter	Kilometer	Inch	Foot	Mile
Meter	1	0.001	39.37	3.28084	0.000621
Kilometer	1000	1	39370.1	3280.84	0.62137
Inch	0.0254	0.0000254	1	0.08333	0.000015
Foot	0.3048	0.000348	12	1	0.000189
Mile	1609.34	1.609	63.346	5280	1

Formulas

Linear weight formula for smooth end pipe	
P	$(D - e) * e * 0.02466$

Where:

P	Weight in Kg/m
D	Exterior Diameter in mm
e	Wall Thickness in mm

Hydrostatic Formula (Barlow's Formula)	
P(Psi)	$(2Se)/D$

Where:

P	Pressure in Psi
D	Exterior Diameter in inch
e	Wall Thickness in inch
S	Yield strength (Ys) in Psi

Hydrostatic Formula (Barlow's Formula)	
P(MPa)	$(2Se)/D$

Where:

P	Pressure in MPa
D	Exterior Diameter in mm
e	Wall Thickness in mm
S	Yield strength (Ys) in MPa

Conventional Terms	
API	American Petroleum Institute
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing Materials
NACE	National Association of Corrosion Engineers
AWWA	American Water Works Association
SSAW	Spiral / helical Seam Submerged Arc Welded pipe
DSAW	Double seam Submerged Arc Welded pipe
LSAW	Longitudinal seam Submerged Arc Welded pipe (one seam)
ERW-HFI	Electric Resistance Welded High Frequency Induced
EFW	Electric Fusion Welded Tube
SRL	Single Random Lengths: minimum average Lengths 17'6" - shortest length permissible is 9".
DRL	Double Random Lengths: minimum average Lengths 35" - shortest length permissible is 14".

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