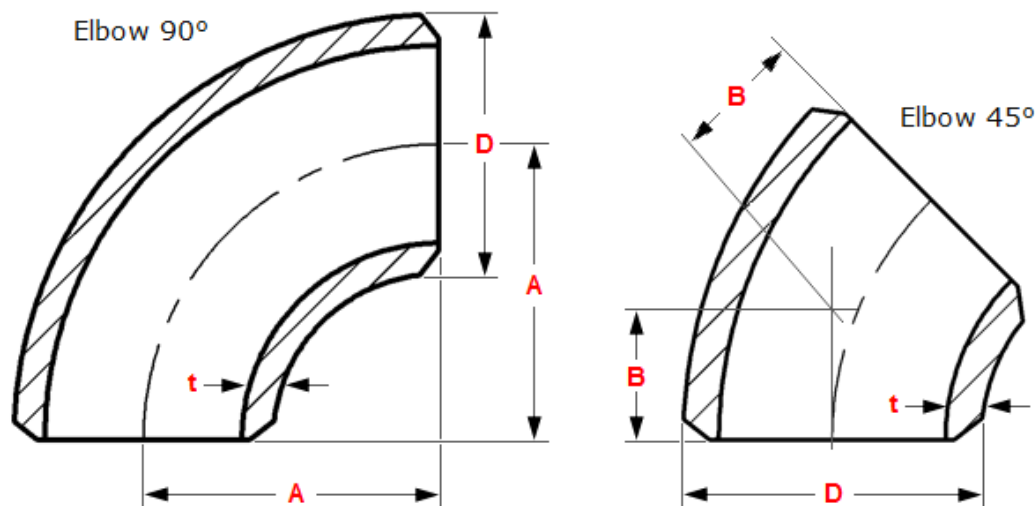


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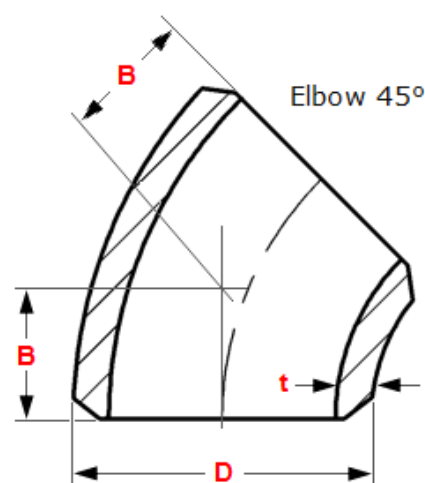
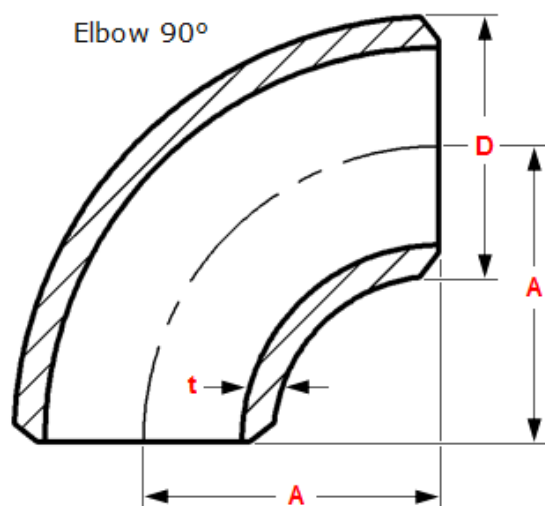


Dimensions Butt Weld Elbows 45°-90° LR & 3D according to ASME B16.9



NPS	O.D. D	90 degrees Long Radius Center-to-End A	45 degrees Long Radius Center-to-End B	90 degrees 3D Center-to-End A	45 degrees 3D Center-to-End B
1/2	21.3	38	16
3/4	26.7	38	19	57	24
1	33.4	38	22	76	31
1 1/4	42.2	48	25	95	39
1 1/2	48.3	57	29	114	47
2	60.3	76	35	152	63

2½	73	95	44	190	79
3	88.9	114	51	229	95
3½	101.6	133	57	267	111
NPS	O.D. D	90 degrees Long Radius Center-to-End A	45 degrees Long Radius Center-to-End B	90 degrees 3D Center-to-End A	45 degrees 3D Center-to-End B



NPS	O.D. D	90 degrees Long Radius Center-to-End A	45 degrees Long Radius Center-to-End B	90 degrees 3D Center-to-End A	45 degrees 3D Center-to-End B
4	114.3	152	64	305	127
5	141.3	190	79	381	157
6	168.3	229	95	457	189
8	219.1	305	127	610	252
10	273	381	159	762	316
12	323.8	457	190	914	378
14	355.6	533	222	1067	441
16	406.4	610	254	1219	505
18	457	686	286	1372	568
20	508	762	318	1524	632
22	559	838	343	1676	694

24	610	914	381	1829	757
26	660	991	406	1981	821
28	711	1067	438	2134	883
30	762	1143	470	2286	964
32	813	1219	502	2438	1010
34	864	1295	533	2591	1073
36	914	1372	565	2743	1135
38	965	1448	600	2896	1200
40	1016	1524	632	3048	1264
42	1067	1600	660	3200	1326
44	1118	1676	695	3353	1389
46	1168	1753	727	3505	1453
48	1219	1829	759	3658	1516
NPS	O.D. D	90 degrees Long Radius Center-to-End A	45 degrees Long Radius Center-to-End B	90 degrees 3D Center-to-End A	45 degrees 3D Center-to-End B

Dimensions are in millimeters unless otherwise indicated. Wall thickness (**t**) must be specified by customer.

Dimensional Tolerances of Butt Weld Elbows - 45° and 90° - LR and 3D - ASME B16.9 -

Nominal Pipe Size	1/2 to 2½	3 to 3½	4	5 to 8	10 to 18	20 to 24	26 to 30	32 to 48
Outside Diameter at Bevel (D)	+ 1.6 - 0.8	1.6	1.6	+ 2.4 - 1.6	+ 4 - 3.2	+ 6.4 - 4.8	+ 6.4 - 4.8	+ 6.4 - 4.8
Inside Diameter at End	0.8	1.6	1.6	1.6	3.2	4.8	+ 6.4 - 4.8	+ 6.4 - 4.8
Center-to-End LR (A/B)	2	2	2	2	2	2	3	5
Center-to-End 3D (A/B)	3	3	3	3	3	3	6	6
Wall Thickness (t)	Not less than 87.5% of Nominal Wall Thickness							

Dimensional tolerances are in millimeters unless otherwise indicated and are equal ± except as noted.

Note:

MSS SP-43 only covers stainless steel butt-weld fittings made for use with Schedule 5S and 10S pipe and Stub Ends suitable for use with Schedule 40S pipe, as defined in ASME B36.19. The dimensions and dimensional tolerances defined in MSS SP-43 are substantially the same as those in ASME B16.9 specifications from NPS 1/2 - NPS 24. Except with