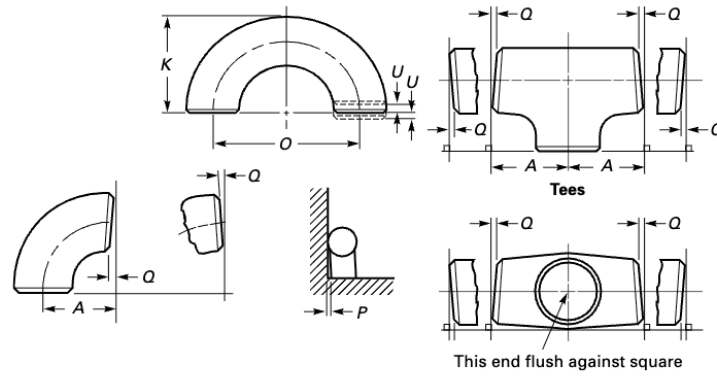


Table 11.2-1
Tolerances



All Fittings [Notes (1), (2)]			Center-to-End Dimensions, mm (in.)		Overall Length of Reducers and Lap Joint Stub Ends, F, H, mm (in.)	Overall Length of Caps, E, mm (in.)	180-deg Returns		
Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel, D, mm (in.) [Notes (3), (4)]	Inside Diameter at End, mm (in.) [Notes (3), (5)]	90-deg and 45-deg Long and Short Radius Elbows and Tees, A, B, C, M			Center-to-Center Dimension, O, mm (in.)	Back-to-Face Dimension, K, mm (in.)	Alignment of Ends, U, mm (in.)
1/2 to 2 1/2	15 to 65	+1.6, -0.8 (+0.06, -0.03)	0.8 (0.03)	2 (0.06)	3 (0.09)	2 (0.06)	3 (0.12)	6 (0.25)	1 (0.03)
3 to 3 1/2	80 to 90	1.6 (0.06)	1.6 (0.06)	2 (0.06)	3 (0.09)	2 (0.06)	3 (0.12)	6 (0.25)	1 (0.03)
4	100	1.6 (0.06)	1.6 (0.06)	2 (0.06)	3 (0.09)	2 (0.06)	3 (0.12)	6 (0.25)	1 (0.03)
5 to 8	125 to 200	+2.4, -1.6 (+0.09, -0.06)	1.6 (0.06)	2 (0.06)	3 (0.09)	2 (0.06)	6 (0.25)	6 (0.25)	1 (0.03)
10 to 18	250 to 450	+4.0, -3.2 (+0.16, -0.12)	3.2 (0.12)	2 (0.09)	3 (0.12)	2 (0.09)	6 (0.25)	10 (0.38)	2 (0.06)
20 to 24	500 to 600	+6.4, -4.8 (+0.25, -0.19)	4.8 (0.19)	2 (0.09)	3 (0.12)	2 (0.09)	6 (0.25)	10 (0.38)	2 (0.06)
26 to 30	650 to 750	+6.4, -4.8 (+0.25, -0.19)	4.8 (0.19)	3 (0.12)	6 (0.25)	5 (0.19)	10 (0.38)	...	...
32 to 48	800 to 1200	+6.4, -4.8 (+0.25, -0.19)	4.8 (0.19)	5 (0.19)	6 (0.38)	5 (0.19)	10 (0.38)	...	...
Lap Joint Stub Ends [Note (6)]					Angularity Tolerances, mm (in.)				
Nominal Pipe Size (NPS)	DN	Outside Diameter of Lap, G, mm (in.)	Fillet Radius of Lap, R, mm (in.)	Lap Thickness, mm (in.)	Nominal Pipe Size (NPS)	DN	Off Angle, Q	Off Plane, P	
1/2 to 2 1/2	15 to 65	+0, -1 (+0, -0.03)	+0, -1 (+0, -0.03)	+1.6, -0 (+0.06, -0)	1/2 to 4	15 to 100	1 (0.03)	2 (0.06)	
3 to 3 1/2	80 to 90	+0, -1 (+0, -0.03)	+0, -1 (+0, -0.03)	+1.6, -0 (+0.06, -0)	5 to 8	125 to 200	2 (0.06)	4 (0.12)	
4	100	+0, -1 (+0, -0.03)	+0, -2 (+0, -0.06)	+1.6, -0 (+0.06, -0)	10 to 12	250 to 300	3 (0.09)	5 (0.19)	

**Table 11.2-1
Tolerances (Cont'd)**

Lap Joint Stub Ends [Note (6)]					Angularity Tolerances, mm (in.)			
Nominal Pipe Size (NPS)	DN	Outside Diameter of Lap, G, mm (in.)	Fillet Radius of Lap, R, mm (in.)	Lap Thickness, mm (in.)	Nominal Pipe Size (NPS)	DN	Off Angle, Q	Off Plane, P
5 to 8	125 to 200	+0, -1 (+0, -0.03)	+0, -2 (+0, -0.06)	+1.6, -0 (+0.06, -0)	14 to 16	350 to 400	3 (0.09)	6 (0.25)
10 to 18	250 to 450	+0, -2 (+0, -0.06)	+0, -2 (+0, -0.06)	+3.2, -0 (+0.12, -0)	18 to 24	450 to 600	4 (0.12)	10 (0.38)
20 to 24	500 to 600	+0, -2 (+0, -0.06)	+0, -2 (+0, -0.06)	+3.2, -0 (+0.12, -0)	26 to 30	650 to 750	5 (0.19)	10 (0.38)
26 to 30	650 to 750	...	...	...	32 to 42	800 to 1 050	5 (0.19)	13 (0.50)
32 to 48	800 to 1 200	...	...	...	44 to 48	1 100 to 1 200	5 (0.19)	19 (0.75)

GENERAL NOTE: Tolerances are equal plus and minus except as noted.

NOTES:

- (1) The inside diameter and the nominal wall thicknesses at ends are to be specified by the purchaser.
- (2) For minimum wall thickness, see [para. 11.1](#).
- (3) Out-of-round is the sum of absolute values of plus and minus tolerances.
- (4) This tolerance may not apply in localized areas of formed fittings where increased wall thickness is required to meet design requirements of [para. 2.2](#).
- (5) Unless otherwise specified by the purchaser, these tolerances apply to the nominal inside diameter. When ordered on nominal wall basis, the nominal inside diameter equals the difference between the nominal outside diameter and twice the nominal wall thickness. When ordered on minimum wall basis, the nominal inside diameter equals the difference between the minimum outside diameter and twice the minimum wall thickness.
- (6) See [Table 6.1-9](#) for limiting dimensions of outside diameter of barrel.