

REQUIRED THICKNESSES OF PIPE OR TUBE PER ASME B31.3-2008 PROCESS PIPING CODE

Client:	Description:	Prepared By	Date	Rev.
Customer No:	Item No:			0
Owner No:	Dwg. No:			1
				2
				3
				4

The user is responsible to verify method and results. Dimensions units:

Design Temperature: -425 to **100** deg. F = min. to 38 deg. C

Design Pressure: Class: 300, ASME B16.5 -2009 Flanges, ASTM A105 Carbon Steel C-Si Forging, Group: 1.1
Design pressure: 740 psig = 52 kg/cm² = 51 bar-G = 5102 kPa

Pipe material: A 312 TP304 SS S30400 EFW(double butt) 18Cr-8Ni Electric fusion welded pipe, double butt seam

Pipe material data is per ASME B31.3 - 2008, Tables A-1 and A-1A

Pipe allowable stress at design temp: 20.0 ksi = 138 Mpa Weld: P-8 Longitudinal joint quality factor: E = 0.85

Coefficient from Table 304.1.1 of Code: Y = (Min. tensile stress: St = 75 ksi Weld joint strength reduction factor: W = 1.00

Notes: (1 thru 7, 26, 28) Min. yield stress: Sy = 30 ksi

Thickness tolerance, Mill = **12.5** % Corrosion/ mech. allowance, or tolerance, c = **0.0000** inch

Nominal Pipe Size	Pipe O.D, inch	h Thk, inch	c2 Thk, inch	Min. Req'd. Pipe Thk, t _m , inch	Refer to para. 304.1 of the Code:					
					Min. Thk, inch	T Thk, inch	T must be >= t _m	Min. Thk, inch	T Thk, inch	T must be >= t _m
1/2 (DN 15)	0.840	0.000	0.000	0.0180	0.109	0.095	0.109 is OK	0.147	0.129	0.147 is OK
3/4 (DN 20)	1.050	0.000	0.000	0.0225	0.113	0.099	0.113 is OK	0.154	0.135	0.154 is OK
1 (DN 25)	1.315	0.000	0.000	0.0281	0.133	0.116	0.133 is OK	0.179	0.157	0.179 is OK
1 1/4 (DN 32)	1.660	0.000	0.000	0.0355	0.140	0.123	0.14 is OK	0.191	0.167	0.191 is OK
1 1/2 (DN 40)	1.900	0.000	0.000	0.0406	0.145	0.127	0.145 is OK	0.200	0.175	0.2 is OK
2 (DN 50)	2.375	0.000	0.000	0.0508	0.154	0.135	0.154 is OK	0.218	0.191	0.218 is OK
2 1/2 (DN 60)	2.875	0.000	0.000	0.0615	0.203	0.178	0.203 is OK	0.276	0.242	0.276 is OK
3 (DN 80)	3.500	0.000	0.000	0.0749	0.216	0.189	0.216 is OK	0.300	0.263	0.3 is OK
4 (DN 100)	4.500	0.000	0.000	0.0963	0.237	0.207	0.237 is OK	0.337	0.295	0.337 is OK
5 (DN 125)	5.563	0.000	0.000	0.1190	0.258	0.226	0.258 is OK	0.375	0.328	0.375 is OK
6 (DN 150)	6.625	0.000	0.000	0.1417	0.280	0.245	0.28 is OK	0.432	0.378	0.432 is OK
8 (DN 200)	8.625	0.000	0.000	0.1845	0.322	0.282	0.322 is OK	0.500	0.438	0.5 is OK
10 (DN 250)	10.75	0.000	0.000	0.2300	0.365	0.319	0.365 is OK	0.500	0.438	0.5 is OK
12 (DN 300)	12.75	0.000	0.000	0.2728	0.375	0.328	0.375 is OK	0.500	0.438	0.5 is OK
14 (DN 350)	14.00	0.000	0.000	0.2995	0.375	0.328	0.375 is OK	0.500	0.438	0.5 is OK
16 (DN 400)	16.00	0.000	0.000	0.3423	0.375	0.328	Increase Nom. Thk.	0.500	0.438	0.5 is OK
18 (DN 450)	18.00	0.000	0.000	0.3851	0.375	0.328	Increase Nom. Thk.	0.500	0.438	0.5 is OK
20 (DN 500)	20.00	0.000	0.000	0.4278	0.375	0.328	Increase Nom. Thk.	0.500	0.438	0.5 is OK
24 (DN 600)	24.00	0.000	0.000	0.5134	0.375	0.328	Increase Nom. Thk.	0.500	0.438	Increase Nom. Thk.
26 (DN 650)	26.00	0.000	0.000	0.5562	0.375	0.328	Increase Nom. Thk.	0.500	0.438	Increase Nom. Thk.
28 (DN 700)	28.00	0.000	0.000	0.5990	0.375	0.328	Increase Nom. Thk.			
30 (DN 750)	30.00	0.000	0.000	0.6418	0.375	0.328	Increase Nom. Thk.	0.500	0.438	Increase Nom. Thk.
32 (DN 800)	32.00	0.000	0.000	0.6846	0.375	0.328	Increase Nom. Thk.	0.500	0.438	Increase Nom. Thk.
34 (DN 850)	34.00	0.000	0.000	0.7273	0.375	0.328	Increase Nom. Thk.			
36 (DN 900)	36.00	0.000	0.000	0.7701	0.375	0.328	Increase Nom. Thk.	0.500	0.438	Increase Nom. Thk.
42 (DN 1050)	42.00	0.000	0.000	0.8985						
46 (DN 1150)	46.00	0.000	0.000	0.9840						
48 (DN 1200)	48.00	0.000	0.000	1.0268						
3 OD	3.00	0.000	0.000	0.0642	0.109	0.0954	0.109 is OK	0.250	0.2188	0.25 is OK
54	54.00	0.000	0.000	1.1552	1.380	1.2075	1.38 is OK			
26	26.00	0.000	0.000	0.5562	0.630	0.5513	Increase Nom. Thk.			
28	28.00	0.000	0.000	0.5990	0.750	0.6563	0.75 is OK			