

Pipe Sizes - ANSI/ASME

This subsection summarises pipe dimensions and weights (per unit length) as defined in

ANSI/ASME Pipe Specifications

B36.19M-1985. (Reaffirmed 1994.) This applies specifically to stainless steel pipe, but has a restricted range of pipe sizes.

The schedule numbers for pipe ordered to this specification are suffixed with the letter 'S'.

B36.10M-1995. This applies to wrought steel pipe and may be used for pipe sizes not specified in B36.19M.

Weights quoted, from both the B36.10M and B36.19M specifications, assume plain ends and carbon steel (not stainless steel).

The quoted weights are calculated using the formula:

$W_{pe} = 0.02466 (OD-t)t$
where

W_{pe} = Nominal plain end mass rounded to the nearest 0.1 kg/m assuming carbon steel

OD = Outside diameter

t = Wall thickness, nominal

Weights for austenitic and duplex steel pipe.

Multiply the quoted weight (W_{pe}) by 1.014.

Weights for ferritic and martensitic steel pipe.

Multiply the quoted weight (W_{pe}) by 0.985.

Nominal Pipe Sizes (NPS)

The size of all pipe is identified by the nominal pipe size (NPS).

Description. The manufacture of pipe in the nominal sizes of 1/8 to 12 inches, inclusive is based on a standardised outside diameter (OD). Although the original relationship between nominal sizes, outside diameter and wall thickness no longer exists, these nominal sizes and standard ODs continue in use.

Wall Thicknesses

Standard, XS and XXS. The wall thickness designations 'Standard', 'Extra-Strong' (XS) and 'Double Extra-Strong' (XXS) have been used for many years.

Schedule Numbers were subsequently added as a convenient designation for use in ordering pipe. 'Standard' and Schedule 40 are identical for nominal pipe sizes up to 10 inches, inclusive.

All larger sizes of 'Standard' have 3/8 inch wall thickness. 'Extra-Strong' and 'Schedule 80' are identical for nominal pipe sizes up to 8 inches, inclusive. All larger sizes of 'Extra-Strong' have 1/2 inch wall thickness.

Stainless Steel Pipe. Schedule numbers for pipe ordered to the stainless steel pipe specification B36.19M-1985 are suffixed with the letter 'S'.

Pressure Ratings

Pressure rating calculations and pressure/temperature tables can be found.

Pipe Sizes - ANSI/ASME B36.19M-1985

Dimensions and weights per foot - stainless steel pipe

Nominal Pipe Size	Outside Dia.		Schedule 5S			Schedule 10S			Schedule 40S			Schedule 80S		
	in	mm	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft
1/8	0.405	10.30	-	-	-	0.049	1.24	0.19	0.068	1.73	0.25	0.095	2.41	0.32
1/4	0.540	13.70	-	-	-	0.065	1.65	0.33	0.088	2.24	0.42	0.119	3.02	0.54
3/8	0.675	17.10	-	-	-	0.065	1.65	0.42	0.091	2.31	0.56	0.126	3.20	0.74
1/2	0.840	21.30	0.065	1.65	0.54	0.083	2.11	0.67	0.109	2.77	0.85	0.147	3.73	1.09
3/4	1.050	26.70	0.065	1.65	0.69	0.083	2.11	0.86	0.113	2.87	1.13	0.154	3.91	1.48
1	1.315	33.40	0.065	1.65	0.87	0.109	2.77	1.40	0.133	3.38	1.68	0.179	4.55	2.17
1 1/4	1.660	42.20	0.065	1.65	1.11	0.109	2.77	1.81	0.140	3.56	2.27	0.191	4.85	3.00
1 1/2	1.900	48.30	0.065	1.65	1.28	0.109	2.77	2.09	0.145	3.68	2.72	0.200	5.08	3.63
2	2.375	60.30	0.065	1.65	1.61	0.109	2.77	2.64	0.154	3.91	3.65	0.218	5.54	5.02
2 1/2	2.875	73.00	0.083	2.11	2.47	0.120	3.05	3.53	0.203	5.16	5.79	0.276	7.01	7.65
3	3.500	88.90	0.083	2.11	3.02	0.120	3.05	4.33	0.216	5.49	7.57	0.300	7.62	10.24
3 1/2	4.000	101.60	0.083	2.11	3.47	0.120	3.05	4.96	0.226	5.74	9.10	0.318	8.08	12.49
4	4.500	114.30	0.083	2.11	3.82	0.120	3.05	5.61	0.237	6.02	10.78	0.337	8.56	14.97
5	5.563	141.30	0.109	2.77	6.35	0.134	3.40	7.76	0.258	6.55	14.60	0.375	9.53	20.77
6	6.625	168.30	0.109	2.77	7.59	0.134	3.40	9.28	0.280	7.11	18.95	0.432	10.97	28.54
8	8.625	219.10	0.109	2.77	9.92	0.148	3.76	13.38	0.322	8.18	28.53	0.500	12.70	43.34
10	10.750	273.10	0.134	3.40	15.17	0.165	4.19	18.63	0.365	9.27	40.44	0.500	12.70	64.38
12	12.750	323.90	0.156	3.96	20.96	0.180	4.57	24.14	0.375	9.53	49.54	0.500	12.70	88.57
14	14.000	355.60	0.156	3.96	23.04	0.188	4.78	27.70	0.375	9.53	54.57	0.500	12.70	72.09
16	16.000	406.40	0.165	4.19	27.87	0.188	4.78	31.71	0.375	9.53	62.58	0.500	12.70	82.77
18	18.000	457.00	0.165	4.19	31.39	0.188	4.78	35.72	0.375	9.53	70.59	0.500	12.70	93.45
20	20.000	508.00	0.188	4.78	39.73	0.218	5.54	46.01	0.375	9.53	78.60	0.500	12.70	104.13
22	22.000	559.00	0.188	4.78	43.75	0.218	5.54	50.65	0.375	9.53	86.61	0.500	12.70	114.81
24	24.000	610.00	0.218	5.54	55.30	0.250	6.35	63.33	0.375	9.53	94.62	0.500	12.70	125.49
30	30.000	762.00	0.250	6.35	79.33	0.312	7.92	98.81	0.375	9.53	118.65	0.500	12.70	157.53

Notes

1. Schedules 5S and 10S wall thicknesses do not permit threading in accordance with ANSI/ASME B1.20.1.
2. Underlined dimensions and weight do not conform to ANSI/ASME B36.10

The suffix 'S' after the schedule number indicates that the pipe dimensions and weight are in compliance with this stainless steel pipe specification, ANSI/ASME B36.19M-1985, and not the more general ANSI/ASME B36.10M-1995 specification. Although this specification is applicable to stainless steel, quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Pipe Sizes - ANSI/ASME B36.10M-1995

Dimensions and weights per foot - steel pipe

Nominal Pipe Size	Outside Dia.		Schedule 10			Schedule 20			Schedule 30			Schedule 40		
	in	mm	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft
1/8	0.405	10.30	-	-	-	-	-	-	0.057	1.45	0.21	0.068	1.73	0.25
1/4	0.540	13.70	-	-	-	-	-	-	0.073	1.85	0.36	0.088	2.24	0.42
3/8	0.675	17.10	-	-	-	-	-	-	0.073	1.85	0.47	0.091	2.31	0.56
1/2	0.840	21.30	-	-	-	-	-	-	0.095	2.41	0.75	0.109	2.77	0.85
3/4	1.050	26.70	-	-	-	-	-	-	0.095	2.41	0.97	0.113	2.87	1.13
1	1.315	33.40	-	-	-	-	-	-	0.114	2.90	1.46	0.133	3.38	1.68
1 1/4	1.660	42.20	-	-	-	-	-	-	0.117	2.97	1.92	0.140	3.56	2.27
1 1/2	1.900	48.30	-	-	-	-	-	-	0.125	3.18	2.37	0.145	3.68	2.72
2	2.375	60.30	-	-	-	-	-	-	0.125	3.18	3.00	0.154	3.91	3.65
2 1/2	2.875	73.00	-	-	-	-	-	-	0.188	4.78	5.39	0.203	5.16	5.79
3	3.500	88.90	-	-	-	-	-	-	0.188	4.78	6.65	0.216	5.49	7.57
3 1/2	4.000	101.60	-	-	-	-	-	-	0.188	4.78	7.65	0.226	5.74	9.10
4	4.500	114.30	-	-	-	-	-	-	0.188	4.78	8.66	0.237	6.02	10.78
5	5.563	141.30	-	-	-	-	-	-	-	-	-	0.258	6.55	14.60
6	6.625	168.30	-	-	-	-	-	-	-	-	-	0.280	7.11	18.95
8	8.625	219.10	-	-	-	0.250	6.35	22.34	0.277	7.04	24.68	0.322	8.18	28.53
10	10.750	273.00	-	-	-	0.250	6.35	28.01	0.307	7.80	34.22	0.365	9.27	40.44
12	12.750	323.80	-	-	-	0.250	6.35	33.35	0.330	8.38	43.72	0.406	10.31	53.46
14	14.000	355.60	0.250	6.350	36.67	0.312	7.92	45.53	0.375	9.53	54.54	0.438	11.13	63.40
16	16.000	406.40	0.250	6.350	42.00	0.312	7.92	52.19	0.375	9.53	62.54	0.500	12.70	82.68
18	18.000	457.00	0.250	6.350	47.32	0.312	7.92	58.81	0.438	11.13	82.06	0.562	14.27	104.47
20	20.000	508.00	0.250	6.350	52.67	0.375	9.53	78.56	0.500	12.70	104.02	0.594	15.09	122.99
22	22.000	559.00	0.250	6.350	58.03	0.375	9.53	86.59	0.500	12.70	114.73	-	-	-
24	24.000	610.00	0.250	6.350	63.39	0.375	9.53	94.63	0.562	14.27	140.58	0.688	17.48	171.27
26	26.000	660.00	0.312	7.920	85.40	0.500	12.70	135.94	-	-	-	-	-	-
28	28.000	711.00	0.312	7.920	92.08	0.500	12.70	146.64	0.625	15.88	181.86	-	-	-
30	30.000	762.00	0.312	7.920	98.76	0.500	12.70	157.36	0.625	15.88	195.92	-	-	-
32	32.000	813.00	0.312	7.920	105.44	0.500	12.70	168.07	0.625	15.88	209.32	0.688	17.48	229.94
34	34.000	864.00	0.312	7.920	112.12	0.500	12.70	178.78	0.625	15.88	222.71	0.688	17.48	244.69
36	36.000	914.00	0.312	7.920	118.66	0.500	12.70	189.28	0.625	15.88	235.84	0.750	19.05	281.92
38	38.000	965.00	-	-	-	-	-	-	-	-	-	-	-	-
40	40.000	1016.00	-	-	-	-	-	-	-	-	-	-	-	-
42	42.000	1067.00	-	-	-	-	-	-	-	-	-	-	-	-
44	44.000	1118.00	-	-	-	-	-	-	-	-	-	-	-	-
46	46.000	1168.00	-	-	-	-	-	-	-	-	-	-	-	-
48	48.000	1219.00	-	-	-	-	-	-	-	-	-	-	-	-

This specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Pipe Sizes - ANSI/ASME B36.10M-1995

Dimensions and weights per foot - steel pipe

Nominal Pipe Size	Outside Dia.		Standard (STD)			Schedule 60			Extra Strong (XS)			Schedule 80		
	in	mm	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft
1/8	0.405	10.30	0.068	1.73	0.25	-	-	-	0.095	2.41	0.32	0.095	2.41	0.32
1/4	0.540	13.70	0.088	2.24	0.42	-	-	-	0.119	3.02	0.54	0.119	3.02	0.54
3/8	0.675	17.10	0.091	2.31	0.56	-	-	-	0.126	3.20	0.74	0.126	3.20	0.74
1/2	0.840	21.30	0.109	2.77	0.85	-	-	-	0.147	3.73	1.09	0.147	3.73	1.09
3/4	1.050	26.70	0.113	2.87	1.13	-	-	-	0.154	3.91	1.48	0.154	3.91	1.48
1	1.315	33.40	0.133	3.38	1.68	-	-	-	0.179	4.55	2.17	0.179	4.55	2.17
1 1/4	1.660	42.20	0.140	3.56	2.27	-	-	-	0.191	4.85	3.00	0.191	4.85	3.00
1 1/2	1.900	48.30	0.145	3.68	2.72	-	-	-	0.200	5.08	3.63	0.200	5.08	3.63
2	2.375	60.30	0.154	3.91	3.65	-	-	-	0.218	5.54	5.02	0.218	5.54	5.02
2 1/2	2.875	73.00	0.203	5.16	5.79	-	-	-	0.276	7.01	7.65	0.276	7.01	7.65
3	3.500	88.90	0.216	5.49	7.57	-	-	-	0.300	7.62	10.24	0.300	7.62	10.24
3 1/2	4.000	101.60	0.226	5.74	9.1	-	-	-	0.318	8.08	12.49	0.318	8.08	12.49
4	4.500	114.30	0.237	6.02	10.78	-	-	-	0.337	8.56	14.97	0.337	8.56	14.97
5	5.563	141.30	0.258	6.55	14.6	-	-	-	0.375	9.53	20.77	0.375	9.53	20.77
6	6.625	168.30	0.280	7.11	18.95	-	-	-	0.432	10.97	28.54	0.432	10.97	28.54
8	8.625	219.10	0.322	8.18	28.53	0.406	10.31	35.59	0.500	12.70	43.34	0.500	12.70	43.34
10	10.750	273.00	0.365	9.27	40.44	0.500	12.70	54.68	0.500	12.70	54.68	0.594	15.09	64.38
12	12.750	323.80	0.375	9.53	49.54	0.562	14.27	73.06	0.500	12.70	65.35	0.688	17.48	88.57
14	14.000	355.60	0.375	9.53	54.54	0.594	15.09	84.97	0.500	12.70	72.01	0.750	19.05	106.02
16	16.000	406.40	0.375	9.53	62.54	0.656	16.66	107.37	0.500	12.70	82.68	0.844	21.44	136.48
18	18.000	457.00	0.375	9.53	70.52	0.750	19.05	137.96	0.500	12.70	93.31	0.938	23.83	170.69
20	20.000	508.00	0.375	9.53	78.56	0.812	20.62	166.18	0.500	12.70	104.02	1.031	26.19	208.66
22	22.000	559.00	0.375	9.53	86.59	0.875	22.23	197.31	0.500	12.70	114.73	1.125	28.58	250.68
24	24.000	610.00	0.375	9.53	94.63	0.969	24.61	238.22	0.500	12.70	135.94	1.219	30.96	442.08
26	26.000	660.00	0.375	9.53	102.51	-	-	-	0.500	12.70	135.94	-	-	-
28	28.000	711.00	0.375	9.53	110.54	-	-	-	0.500	12.70	146.64	-	-	-
30	30.000	762.00	0.375	9.53	118.58	-	-	-	0.500	12.70	157.36	-	-	-
32	32.000	813.00	0.375	9.53	126.62	-	-	-	0.500	12.70	168.07	-	-	-
34	34.000	864.00	0.375	9.53	134.32	-	-	-	0.500	12.70	178.78	-	-	-
36	36.000	914.00	0.375	9.53	142.53	-	-	-	0.500	12.70	189.28	-	-	-
38	38.000	965.00	0.375	9.53	150.57	-	-	-	0.500	12.70	200.00	-	-	-
40	40.000	1016.00	0.375	9.53	158.61	-	-	-	0.500	12.70	210.70	-	-	-
42	42.000	1067.00	0.375	9.53	166.65	-	-	-	0.500	12.70	221.41	-	-	-
44	44.000	1118.00	0.375	9.53	174.68	-	-	-	0.500	12.70	232.12	-	-	-
46	46.000	1168.00	0.375	9.53	182.56	-	-	-	0.500	12.70	235.92	-	-	-
48	48.000	1219.00	0.375	9.53	190.6	-	-	-	0.500	12.70	253.33	-	-	-

Notes

This specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Pipe Sizes - ANSI/ASME B36.10M-1995

Dimensions and weights per foot - steel pipe

Nominal Pipe Size	Outside Dia.		Standard 100			Schedule 120			Extra Strong 140			Schedule 160		
	in	mm	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft	in	mm	Lbs/ft
1/2	0.840	21.30	-	-	-	-	-	-	-	-	-	0.188	4.78	1.31
3/4	1.050	26.70	-	-	-	-	-	-	-	-	-	0.219	5.56	1.94
1	1.315	33.40	-	-	-	-	-	-	-	-	-	0.250	6.35	2.84
1 1/4	1.660	42.20	-	-	-	-	-	-	-	-	-	0.250	6.35	3.76
1 1/2	1.900	48.30	-	-	-	-	-	-	-	-	-	0.281	7.14	4.86
2	2.375	60.30	-	-	-	-	-	-	-	-	-	0.344	8.74	7.45
2 1/2	2.875	73.00	-	-	-	-	-	-	-	-	-	0.375	9.53	10.00
3	3.500	88.90	-	-	-	-	-	-	-	-	-	0.438	11.13	14.32
3 1/2	4.000	101.60	-	-	-	-	-	-	-	-	-	-	-	-
4	4.500	114.30	-	-	-	0.438	11.13	19.00	-	-	-	0.531	13.49	22.49
5	5.563	141.30	-	-	-	0.500	12.70	27.01	-	-	-	0.625	15.88	32.93
6	6.625	168.30	-	-	-	0.562	14.27	36.34	-	-	-	0.719	18.26	45.30
8	8.625	219.10	0.594	15.09	50.91	0.719	18.26	60.65	0.812	20.62	67.67	0.906	23.01	74.61
10	10.750	273.00	0.719	18.26	76.95	0.844	21.44	89.22	1.000	25.40	104.04	1.125	28.58	115.56
12	12.750	323.80	0.844	21.44	107.23	1.000	25.40	125.37	1.125	28.58	139.57	1.312	33.32	160.10
14	14.000	355.60	0.938	23.83	130.73	1.094	27.79	150.64	1.250	31.75	170.03	1.406	35.71	188.90
16	16.000	406.40	1.031	26.19	164.66	1.219	30.96	192.21	1.438	36.53	223.42	1.594	40.49	245.00
18	18.000	457.00	1.156	29.36	207.62	1.375	34.93	243.79	1.562	39.67	273.76	1.781	45.24	308.04
20	20.000	508.00	1.281	32.54	255.84	1.500	38.10	296.05	1.750	44.45	340.72	1.969	50.01	378.74
22	22.000	559.00	1.375	34.93	302.70	1.625	41.28	353.40	1.875	47.63	402.76	2.125	53.98	450.79
24	24.000	610.00	1.531	38.89	367.27	1.812	46.02	429.18	2.062	52.37	482.90	2.344	59.54	541.96

Nominal Pipe Size	Outside Dia.		Double Extra Strong (XXS)		
	in	mm	in	mm	Lbs/ft
1/2	0.840	21.30	0.294	7.47	1.71
3/4	1.050	26.70	0.308	7.82	2.44
1	1.315	33.40	0.358	9.09	3.65
1 1/4	1.660	42.20	0.382	9.70	5.21
1 1/2	1.900	48.30	0.400	10.15	6.41
2	2.375	60.30	0.436	11.07	9.01
2 1/2	2.875	73.00	0.552	14.02	13.70
3	3.500	88.90	0.600	15.24	18.60
3 1/2	4.000	101.60	-	-	-
4	4.500	114.30	0.674	17.12	27.50
5	5.563	141.30	0.750	19.05	38.50
6	6.625	168.30	0.864	21.95	53.10
8	8.625	219.10	0.875	22.23	72.40
10	10.750	273.00	1.000	25.40	104.00
12	12.750	323.80	1.000	25.40	125.00

LARGER PIPE SIZES ARE AVAILABLE

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