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STEEL TUBES INDIA

(SHAH SIREMAL VANNAJI JAIN ENTERPRISES)

PED 97/23/EC Certified Co.

European Pressure Equipment

Title

STAINLESS STEEL PIPE DIMENSION AS PER ASTM & WEIGHT-KG. PER MTR. (ANSI B36.19)

Nominal Bore		Outside Diameter	Sch-5S		Sch-10S		Sch-40S		Sch-80S		Sch-160S		Sch-XXS	
mm	INCH	mm	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)	Wt mm	Weight (Kg/mt)
3	1/8	10.3	1.24	0.276	1.24	0.28	1.73	0.37	2.41	0.47	-	-	-	-
6	1/4	13.7	1.24	0.390	1.65	0.49	2.24	0.631	3.02	0.80	-	-	-	-
10	3/8	17.1	1.24	0.490	1.65	0.63	2.31	0.845	3.20	1.10	-	-	-	-
15	1/2	21.3	1.65	0.800	2.11	1.00	2.77	1.27	3.75	1.62	4.75	1.94	7.47	2.55
20	3/4	26.7	1.65	1.03	2.11	1.28	2.87	1.68	3.91	2.20	5.54	2.89	7.82	3.63
25	1	33.4	1.65	1.30	2.77	2.09	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45
32	1 1/4	42.2	1.65	1.65	2.77	2.70	3.56	3.38	4.85	4.47	6.35	5.61	9.70	7.77
40	1 1/2	48.3	1.65	1.91	2.77	3.11	3.68	4.05	5.08	5.41	7.14	7.25	10.16	9.54
50	2	60.3	1.65	2.40	2.77	3.93	3.91	5.44	5.54	7.48	8.74	11.1	11.07	13.44
65	2 1/2	73.0	2.11	3.69	3.05	5.26	5.16	8.63	7.01	11.4	9.53	14.9	14.2	20.39
80	3	88.9	2.11	4.51	3.05	6.45	5.49	11.30	7.62	15.2	11.1	21.3	15.24	27.65
100	4	114.3	2.11	5.84	3.05	8.36	6.02	16.07	8.56	22.3	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.47	3.40	11.57	6.55	21.8	9.53	31.97	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.32	3.40	13.84	7.11	28.3	10.97	42.7	18.2	67.56	21.95	79.22
200	8	219.1	2.77	14.79	3.76	19.96	8.18	42.6	12.7	64.6	23.0	111.2	22.23	107.8
250	10	273.1	3.40	22.63	4.19	27.78	9.27	60.5	12.7	96.0	28.6	172.4	25.40	155.15
300	12	323.9	3.96	31.25	4.57	36.00	9.52	73.88	12.7	132.0	33.32	238.76	25.40	186.97
350	14	355.6	3.96	34.36	4.78	41.3	11.13	94.59	19.05	158.08	35.71	281.70	-	-
400	16	406.4	4.19	41.56	4.78	47.29	12.7	123.30	21.41	203.33	40.46	365.11	-	-
450	18	457.2	4.19	46.80	4.78	53.42	14.27	155.80	23.8	254.36	45.71	466.40	-	-
500	20	508.0	4.78	59.25	5.54	68.71	15.09	183.42	26.19	311.2	49.99	564.68	-	-
600	24	609.6	5.54	82.47	6.35	94.45	17.48	255.41	30.96	442.08	59.54	808.22	-	-



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WEIGHT & THICKNESS OF S.S GAUGE PIPES

DIMENSION		10 SWG (3.2 MM)	12 SWG (2.6 MM)	14 SWG (2.1 MM)	16 SWG (1.65 MM)	18 SWG (1.2 MM)	19 SWG (1.0 MM)
Size	OD	Weight/MTR	Weight/MTR	Weight/MTR	Weight/MTR	Weight/MTR	Weight/MTR
1/2"	12.7	0.754	0.651	0.552	0.452	0.342	0.290
5/8"	15.875	1.006	0.856	0.718	0.582	0.437	0.369
3/4"	19.05	1.258	1.061	0.883	0.712	0.531	0.448
1"	25.4	1.762	1.470	1.214	0.972	0.720	0.605
1 1/4"	31.75	2.266	1.880	1.544	1.232	0.909	0.763
1 1/2"	38.1	2.770	2.289	1.875	1.492	1.098	0.920
2"	50.8	3.778	3.108	2.537	2.012	1.476	1.235
2 1/2"	63.5	4.786	3.928	3.198	2.531	1.854	1.550
3"	76.2	5.794	4.747	3.860	3.051	2.232	1.865
3 1/2"	88.9	6.802	5.566	4.521	3.571	2.610	2.180
4"	101.6	7.810	6.385	5.183	4.091	2.988	2.495

Title

SPECIFICATION & TOLERANCE FOR TUBING & PIPING

Specification	Allowable Outside Diameter			Allowable Wall		Exact Length		Testing
	Nominal Diameter	Over	Under	%Over	%Under	Over	Under	
ASTM-A213	Under 25.4	.1016	.1016	+20	-0	3.175	0	Flattening Test Tension Test Flare Test Hardness Test
Seamless Boiler Superheater and Heat Exchanger Tubes	25.4-38.1 incl	.1524	.1524	+22	-0	3.175	0	100% Hydrostatic test Refer to ASTM A-450
	38.1-50.8 excl	.2032	.2032	+22	-0	3.176	0	
	50.8-63.5 excl	.254	.254	+22	-0	4.46	0	
	63.5-76.2 excl	.3048	.3048	+22	-0	4.76	0	
	76.2-101.6 incl	.381	.381	+22	-0	4.76	0	
ASTM-A249	Under 25.4	.1016	.1016	+10	-10	3.175	0	Tension Test Flattening Test Flange Test Reverse Bend Test Hardness Test 100% Hydrostatic Test Refer to ASTM A-450
Welded Boiler Superheater, Heat Exchanger And Condenser Tubes	25.4-38.1 incl	.1524	.1524	+10	-10	3.175	0	
	38.1-50.8 Excl	.2032	.2032	+10	-10	3.175	0	
	50.0-63.5 excl	.254	.254	+10	-10	4.762	0	
	63.5-76.2 excl	.3848	.3048	+10	-10	4.762	0	
	76.2-101.6 incl	.381	.381	+10	-10	4.762	0	
				Minimum Wall tubes + 18% 0 available On request				
ASTM-A269	Untp 12.7	.13	.13	+15	-15	3.2	0	Flare Test (Seamless Only) Flange Test (Welded Only) Hardness Test Reverse Flattening Test (Welded only) 100% Hydrostatic Test Refer to ASTM-A269
Seamless & Welded Tubing for General Service	12.7-38.1 excl	.13	.13	+10	-10	3.2	0	
	38.1-88.9 excl	.25	.25	+10	-10	4.8	0	
	88.9-139.7 excl	.38	.38	+10	-10	4.8	0	
	139.7-203.2 excl	.76	.76	+10	-10	4.8	0	
ASTM-A270	25.4	.05	.20	+10.0	-10.0	3.2	0	Reverse flattening Test 100% Hydrostatic Test External' polish on all tubes Refer to ASTM A-270
Seamless & Welded Sanitary Tubing	38.1	.05	.20	+10.0	-10.0	3.2	0	
	50.8	.05	.28	+10.0	-10.0	3.2	0	
	60.5	.05	.28	+10.0	-10.0	3.2	0	
	76.2	.08	.30	+10.0	-10.0	3.2	0	
	101.6	.08	.38	+10.0	-10.0	4.8	0	

ASTM-A312 Seamless & Welded pipe	3.175-38.1 incl	.4	.79	Minimum Wall 12.5% under nominal wall Specified	6.4	0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-530
	38.1-1016 incl	.79	.79		6.4	0	
	101.6-203.2 incl	1.59	.79		6.4	0	
					(Normally Random Lengths ordered)		
ASTM A-358 Welded pipe	219.08-750mm	+0.5%		-0.3	6.0		Refer to ASTM A-530

What is stainless steel tube?

Stainless steel tubes are often used in applications that require rigid materials for potable water conveyance. People choose stainless steel because certain manmade materials have unwanted exposure effects while stainless steel has many desirable qualities for maintaining clean water. Steel tubes can also be used for structural support in buildings and vehicles. The terms “tube” and “pipe” are generally interchangeable, although technically, “tube” implies heightened engineering qualities. Tubes are generally manufactured based on standardized sizes. Stainless Steel Tubes (Welded/ ERW/ EFW/ Seamless) of 304 , 304L, 304H, 316, 316L, 904L, 310, 321, 347, 347h Grades available with Steel Tubes India.

Types of Stainless Steel Tubes: There are three main methods of manufacturing tubing that lend their names to tubing classifications.

- 1. Stainless Steel Seamless Tube:** Seamless steel tubes are produced through extrusion. Extruded tubes can be formed in a hot or cold process. Long sections of steel bar are forced through a die that blocks out the intended shape of the tube
- 2. Welded or electric resistant welded (ERW).** This method involves passing a rolled sheet of steel through two weld rollers. The weld rollers have a groove around their circumference, through which the steel roll passes. There is a contact at the roll seam that transmits electricity at a high enough current to weld the seam closed. The resulting weld is very small.
- 3. Drawn-over-mandrel (DOM).** A mandrel is a small piece of metal inserted into the tube to define a shape. It gives the tube extra support to prevent unwanted wrinkling during drawing. The tube is passed through a die that has a smaller diameter than the current tube size. As the tube is drawn, it shrinks to match the size of the die’s diameter. This process allows for tight tolerances and specifications.

316 STAINLESS STEEL TUBE/ PIPE:

316 Stainless Steel or 316L stainless steels are similar to 304 and 304L, but with the addition of molybdenum. The addition of molybdenum improves the alloys corrosion resistance, particularly with higher resistance to pitting and crevice

corrosion in chloride environments. The austenitic structure allows excellent toughness, even down to cryogenic temperatures. These grades have excellent weld-ability, with or without the addition of filler metal.

Standard stainless steel tube sizes:

Stainless Steel tube sizing include outside diameter, inside diameter, and wall thickness. Nominal sizes... Search by Specification

Outside Diameter / Size:

Less than 0.07 inch
0.07 to 0.28 inch
0.28 to 0.84 inch
0.84 to 3 inch
3 inch and up

Maximum Inside Diameter / Size:

Less than 0.09 inch
0.09 to 0.31 inch
0.31 to 0.65 inch
0.65 to 2 inch
2 inch and up

Difference between stainless steel pipe and tube: Pipes and tubes are not the same find how?

Stainless Steel Pipes:

The purpose with a pipe is the transport of a fluid like water, oil or similar, and the most import property is the capacity or **the inside diameter**. For a ASME/ANSI B 36.10 Welded and Seamless Steel Pipe the inside diameter - ID - of a NPS 2 inches pipe with

schedule 40 is 2.067"
schedule 80 is 1.939"

The inside diameters are close to 2" and the nominal diameter is related to the inside diameter. Outside diameter are 2.375" for both schedules. Since the outside diameter of a single nominal pipe size is kept constant the inside diameter of a pipe depends on the "schedule" - or the thickness - of the pipe. The schedule and actual thickness of a pipe varies with size of the pipe, It is common to identify pipes in inches by using NPS or "Nominal Pipe Size". The metric equivalent is called DN or "diametre nominel". The metric designations conform to International Standards Organization (ISO) usage and apply to all plumbing, natural gas, heating oil, and in addition to miscellaneous piping used in buildings, The tolerances are looser to pipes compared with tubes and pipes are often less expensive to produce than tubes.

Stainless Steel Tubes:

The nominal dimensions of tubes are based on the outside diameter.

The inside diameter of a tube depends on the thickness of the tube. The thickness is often specified as gauge.

Tolerances are commonly higher with tubes compared to pipes and tubes are often more expensive to produce than pipes.

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