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## Nominal Pipe Size & Schedule

**Nominal Pipe Size (NPS)** is a North American set of standard sizes for pipes used for high or low pressures and temperatures. It is also known as **Nominal Bore (NB)**. Nominal pipe size refers to only the outside diameter (OD) of a pipe making it somewhat vague. For example, when we say pipe size is NPS 2, it refers to all the pipes having 2.375" (or 60.3mm) as outside diameter irrespective of wall thickness and thus the inside diameter. Specific pipe is identified by pipe diameter and another non-dimensional number for wall thickness referred to as the **Schedule (SCH)**. Pipe schedule sets the pipe wall thickness. Increasing the wall thickness of the pipe increases the mechanical strength of the pipe, allowing it to handle higher design pressures.

Standardization of wrought steel Pipe schedule and pipe sizes begin with the mass production era. At that time, pipes are available in only three sizes standard weight (STD), extra-strong (XS), and double extra-strong (XXS), based on the iron pipe size (IPS) system.

With the modernizing of various industries and the use of pipes in different pressure and temperature condition, three sizes are not sufficient to fit all applications. This will result in the concept of the schedule number that combines wall thickness and diameter of the pipe.

By adding schedule numbers to the IPS standards, today we know a range of wall thicknesses, namely:

Standards	Materials	Schedule
ASME B36.10	Carbon Steel & Wroought Iron Pipe	5, 10, 20, 30, 40, 60, 80, 100, 120, 140, 160, STD, XS, XXS
ASME B36.19	Stainless Steel Pipe	5S, 10S, 40S, 80S

Cost of stainless steel pipe is much higher than carbon steel pipe. Due to corrosion resistance properties of stainless steel, advancement of high alloy stainless steel and fusion welding less thickness pipe can be work satisfactorily without fear of early failure.

The International Standards Organization (ISO) also employs a system with a SI or Metric designator. **Diameter nominal (DN)** also a European equivalent of NPS. It indicates standard pipe size when followed by the specific size designation number without a millimeter symbol.

For example, DN 80 is the equivalent designation of NPS 3. Below a table with equivalents for NPS and DN pipe sizes.

Nominal Pipe Size	Diameter Nominal	Nominal Pipe Size	Diameter Nominal
NPS (inches)	DN (mm)	NPS (inches)	DN (mm)
1/8	6	20	500
1/4	8	22	550
3/8	10	24	600
1/2	15	26	650
3/4	20	28	700
1	25	30	750
1 ¼	32	32	800
1 ½	40	36	900
2	50	40	1000
2 ½	65	42	1050
3	80	44	1100
3 ½	90	48	1200
4	100	52	1300
5	125	56	1400
6	150	60	1500
8	200	64	1600
10	250	68	1700
12	300	72	1800
14	350	76	1900
16	400	80	2000
18	450	Based on ASME B36.10	

Note:

- From this table, you can see that initially pipe size increase by ¼ than ½ and then by 1". From 6" to 42", it increases by 2" step and after that in 4".
- For NPS ≥ 4, the related DN = 25 multiplied by the NPS number.



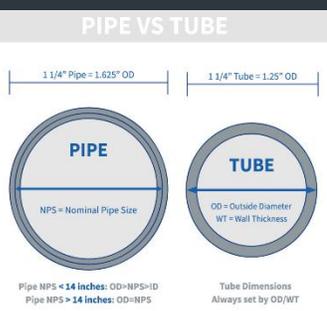
## What are the differences between Tube and Pipe?

**Tube** is generally used for pressure equipment, for mechanical applications and for instrumentation systems. Tube size is specified by OD and wall thickness and the measured OD which expressed in inches or mm and stated the true dimensional value of the hollow section within very close tolerance. Tubes can be cylindrical, square, rectangular and of any shapes. It is usually more expensive than pipe due to tighter manufacturing tolerances.

The wall thickness of a steel tube is expressed in inches or mm. For tubing, the wall thickness is measured with a gage nomenclature.



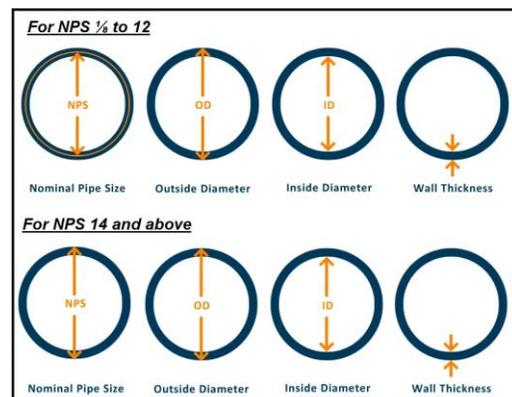
**Pipes** are round in shape with tolerances are set but rather loose. It is categorized as tubular vessels used in pipeline and piping systems and commonly transport gases or fluids. They are specified by NPS and Schedule. NPS is a size standard established by ANSI and should not be confused with various thread standards such as NPT and NPS.



### Facts you need to know:

- Schedule number =  $P/S$ 
  - P is the service pressure in psi
  - S is the allowable stress in psi
- Schedule 40 pipe mean it can withstand a certain amount of pressure.
- Schedule 80 pipe is thicker than Schedule 40. Look at the above formula of schedule number, allowable stress for material at a given temperature is fixed. That means with an increase in service pressure schedule number will increase which is a pipe wall thickness designator.
- Schedule Standard (STD) is identical to SCH 40S and 40 for NPS 1/8 to NPS 10, inclusive.
- Schedule Extra Strong (XS) is identical to SCH 80S and 80 for NPS 1/8 to NPS 8, inclusive.
- Schedule Double Extra Strong (XXS) wall is thicker than schedule 160 from NPS 1/8 to NPS 6 inclusive, and schedule 160 is thicker than XXS wall for NPS 8 and larger.

However the Nominal Pipe Size (NPS) and Outside Diameter (OD) values are not always equal, which can create confusion.



- For NPS 1/4 to 12** – The NPS and OD values are different. For example, the OD of a NPS 12 pipe is actually 12.75" (323.9mm). To find the actual OD for each NPS value, refer to the reference tables which are based on ASME standards B36.10M and B36.19M.
- For NPS 14 and above** – The NPS and OD values are equal. In other words, a NPS 14 pipe is actually 14"

- For a given NPS, the OD stays fixed and the wall thickness increases with increase in schedule number.
- For a given schedule number, the OD increases with NPS while the wall thickness either stays constant or increases.
- Using equations and rules in ASME B31.3 Process Piping, it can be shown that pressure rating decreases with increasing NPS and constant schedule.

### Calculation of Pipe Internal Diameter (ID):

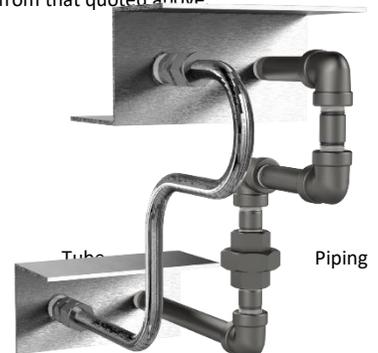
For process engineers, the most important information is the pipe Internal Diameter (ID), as this is used in line sizing calculations. As discussed above, for a given Nominal Pipe Size (NPS), the pipe Outside Diameter (OD) remains constant. As the pipe schedule changes, the ID of the pipe changes.

The ID of the pipe can be easily calculated, as long as the pipe NPS and schedule are known. The pipe ID is given by the pipe NPS minus double the pipe wall thickness (which can be obtained from the pipe schedule).

For example, for a NPS 12 (DN 300) pipe, schedule 40, the OD and wall thickness are respectively 12.75" (324 mm) and 0.406" (10.4 mm). Thus:

- Pipe ID (inch) =  $12.75 - (2 \times 0.406) = 11.938"$  or
- Pipe ID (mm) =  $323.8 - (2 \times 10.31) = 303.18$  mm.

It is worth bearing in mind that wall thicknesses come within a specified tolerance, depending on the engineering standard used. A typical wall thickness tolerance is **12.5%**. This means that the actual internal pipe diameter may vary slightly from that quoted above.





## Pipe Dimensions and Weights

Pipe Size	O.D. Inches	5s	5	10s	10	20	30	40s & STD	40	60	80s & E.H.	80	100	120	140	160	DBLE. E.H.	
1/8	0.405		0.035 0.1383	0.049 0.1863	0.049 0.1863			0.068 0.2447	0.068 0.2447		0.095 0.3145	0.095 0.3145						
1/4	0.540		0.049 0.2570	0.065 0.3297	0.065 0.3297			0.088 0.4248	0.088 0.4248		0.119 0.5351	0.119 0.5351						
3/8	0.675		0.049 0.3276	0.065 0.4235	0.065 0.4235			0.091 0.5676	0.091 0.5676		0.126 0.7338	0.126 0.7338						
1/2	0.840	0.065 0.5383	0.065 0.5383	0.083 0.6710	0.083 0.6710			0.109 0.8510	0.109 0.8510		0.147 1.088	0.147 1.088					0.187 1.304	0.294 1.714
3/4	1.050	0.065 0.6838	0.065 0.6838	0.083 0.8572	0.083 0.8572			0.113 1.131	0.113 1.131		0.154 1.474	0.154 1.474					0.218 1.937	0.308 2.441
1	1.315	0.065 0.8678	0.065 0.8678	0.109 1.404	0.109 1.404			0.133 1.679	0.133 1.679		0.179 2.172	0.179 2.172					0.250 2.844	0.358 3.659
1 1/4	1.660	0.065 1.107	0.065 1.107	0.109 1.806	0.109 1.806			0.140 2.273	0.140 2.273		0.191 2.997	0.191 2.997					0.250 3.765	0.382 5.214
1 1/2	1.900	0.065 1.274	0.065 1.274	0.109 2.085	0.109 2.085			0.145 2.718	0.145 2.718		0.200 3.631	0.200 3.631					0.281 4.859	0.400 6.408
2	2.375	0.065 1.604	0.065 1.604	0.109 2.638	0.109 2.638			0.154 3.653	0.154 3.653		0.218 5.022	0.218 5.022					0.343 7.444	0.436 9.029
2 1/2	2.875	0.083 2.475	0.083 2.475	0.120 3.531	0.120 3.531			0.203 5.793	0.203 5.793		0.276 7.661	0.276 7.661					0.375 10.01	0.552 13.70
3	3.500	0.083 3.029	0.083 3.029	0.120 4.332	0.120 4.332			0.216 7.576	0.216 7.576		0.300 10.25	0.300 10.25					0.437 14.32	0.600 18.58
3 1/2	4.000	0.083 3.472	0.083 3.472	0.120 4.973	0.120 4.973			0.226 9.109	0.226 9.109		0.318 12.51	0.318 12.51						0.636 22.85
4	4.500	0.083 3.915	0.083 3.915	0.120 5.613	0.120 5.613			0.237 10.79	0.237 10.79	0.281 12.66	0.337 14.98	0.337 14.98		0.437 19.01			0.531 22.51	0.674 27.54
4 1/2	5.000							0.247 12.53			0.355 17.61							0.710 32.53
5	5.563	0.109 6.349	0.109 6.349	0.134 7.770	0.134 7.770			0.258 14.62	0.258 14.62		0.375 20.78	0.375 20.78		0.500 27.04			0.625 32.96	0.750 38.55
6	6.625	0.109 7.585	0.109 7.585	0.134 9.290	0.134 9.290			0.280 18.97	0.280 18.97		0.432 28.57	0.432 28.57		0.562 36.39			0.718 45.3	0.864 53.16
7	7.625							0.301 23.57			0.500 38.05							0.875 63.08
8	8.625	0.109 9.914	0.109 9.914	0.148 13.40	0.148 13.40	0.250 22.36	0.277 24.70	0.322 28.55	0.322 28.55	0.406 35.64	0.500 43.39	0.500 43.39	0.593 50.87	0.718 60.93	0.812 67.76	0.906 74.69	0.906 74.69	0.875 72.42
9	9.625							0.342 33.9			0.500 48.72							
10	10.750	0.134 15.19	0.134 15.19	0.165 18.65	0.165 18.65	0.250 28.04	0.307 34.24	0.365 40.48	0.365 40.48	0.500 54.74	0.500 54.74	0.593 64.33	0.718 76.93	0.843 89.20	1.000 104.1	1.125 115.7	1.125 115.7	
11	11.750							0.375 45.55			0.500 60.07							
12	12.750	0.156 21.07	0.165 22.18	0.180 24.17	0.180 24.17	0.250 33.38	0.330 43.77	0.375 49.56	0.406 53.53	0.562 73.16	0.500 65.42	0.687 88.51	0.843 107.2	1.000 125.5	1.125 139.7	1.312 160.3	1.312 160.3	
14	14.000	0.156 23.07		0.188 27.73	0.250 36.71	0.312 45.38	0.375 54.57	0.375 54.57	0.437 63.37	0.593 84.91	0.500 72.09	0.750 106.1	0.937 130.7	1.093 150.7	1.250 170.2	1.406 189.1	1.406 189.1	
16	16.000	0.165 27.90		0.188 31.75	0.250 42.05	0.312 52.36	0.375 62.58	0.375 62.58	0.500 82.77	0.656 107.5	0.500 82.77	0.843 136.5	1.031 164.8	1.218 192.3	1.427 223.5	1.593 245.1	1.593 245.1	
18	18.000	0.165 31.43		0.188 35.76	0.250 47.39	0.312 59.03	0.437 82.06	0.375 70.59	0.562 104.2	0.750 138.2	0.500 93.45	0.937 170.8	1.156 208.0	1.375 244.1	1.562 274.2	1.781 308.5	1.781 308.5	
20	20.000	0.188 39.78		0.218 46.05	0.250 52.73	0.375 78.6	0.500 104.1	0.375 78.6	0.593 122.9	0.812 166.4	0.500 104.1	1.031 208.9	1.280 256.1	1.500 296.4	1.750 341.1	1.968 379.0	1.968 379.0	
22	22.000	0.188 43.8		0.218 50.71	0.250 58.07	0.375 86.61	0.500 114.81	0.375 86.61		0.875 197.41	0.500 114.81	1.125 250.81	1.375 302.88	1.625 353.61	1.875 403.0	2.125 451.06	2.125 451.06	
24	24.000	0.218 55.37		0.250 63.41	0.250 63.41	0.375 94.62	0.500 140.8	0.375 94.62	0.687 171.2	0.968 238.1	0.500 125.5	1.218 296.4	1.531 367.4	1.812 429.4	2.062 483.1	2.344 542.13	2.344 542.13	
26	26.000					0.312 85.60	0.500 136.17	0.375 102.63			0.500 136.17							
28	28.000					0.312 92.26	0.500 146.85	0.375 110.64										
30	30.000	0.250 79.43		0.312 98.93	0.312 98.93	0.500 157.53	0.625 196.08	0.375 118.65			0.500 157.53							
32	32.000					0.312 105.59	0.500 168.21	0.375 209.43	0.688 126.66	0.888 230.08	0.500 168.21							
34	34.000					0.312 112.25	0.500 178.89	0.375 222.78	0.688 134.67	0.888 244.77								
36	36.000					0.312 118.92	0.500 236.13	0.375 142.68	0.750 262.35		0.500 189.57							

Black: Wall Thickness in inches  
Red: Steel Weight in lbs. per foot



## Nominal Tube Dimensions / Wall Thickness Chart

Tube O.D.	Tube Gauge																									
	00	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Wall Thickness (Inches)																									
	.380	.340	.300	.284	.259	.238	.220	.203	.180	.165	.148	.134	.120	.109	.095	.083	.072	.065	.058	.049	.042	.035	.032	.028	.025	.022
Tube I.D.																										
1/4"												.101	.032	.060	.084	.106	.120	.134	.152	.166	.180	.186	.194	.200	.206	
3/8"								.015	.045	.079	.107	.135	.157	.185	.209	.231	.245	.259	.277	.291	.305	.311	.319	.325	.331	
1/2"				.024	.060	.094	.140	.170	.204	.232	.260	.282	.310	.334	.356	.370	.384	.402	.416	.430	.436	.444	.450	.456		
5/8"		.025	.057	.107	.149	.185	.219	.265	.295	.329	.357	.385	.407	.435	.459	.481	.495	.509	.527	.541	.555	.561	.569	.575	.581	
3/4"	.070	.150	.182	.232	.274	.310	.344	.390	.420	.454	.482	.510	.532	.560	.584	.606	.620	.634	.652	.666	.680	.686	.694	.700	.706	
7/8"	.115	.195	.275	.307	.357	.399	.435	.469	.515	.545	.579	.607	.635	.657	.685	.709	.731	.745	.759	.777	.791	.805	.811	.819	.825	.831
1"	.240	.320	.400	.432	.482	.524	.560	.594	.640	.670	.704	.732	.760	.782	.810	.834	.856	.870	.884	.902	.916	.930	.936	.944	.950	.956
1 1/8"	.365	.445	.525	.557	.607	.649	.685	.719	.765	.795	.829	.857	.885	.907	.935	.959	.981	.995	1.009	1.027	1.041	1.055	1.061	1.069	1.075	1.081
1 1/4"	.490	.570	.650	.682	.732	.774	.810	.844	.890	.920	.954	.982	1.010	1.032	1.060	1.084	1.106	1.120	1.134	1.152	1.166	1.180	1.186	1.194	1.200	1.206
1 1/2"	.740	.820	.900	.932	.982	1.024	1.060	1.094	1.140	1.170	1.204	1.232	1.260	1.282	1.310	1.334	1.356	1.370	1.384	1.402	1.416	1.430	1.436	1.444	1.450	1.456
1 3/4"	.990	1.070	1.150	1.182	1.232	1.274	1.310	1.344	1.390	1.420	1.454	1.482	1.510	1.532	1.560	1.584	1.606	1.620	1.634	1.652	1.666	1.680	1.686	1.694	1.700	1.706
2"	1.240	1.320	1.400	1.432	1.482	1.524	1.560	1.594	1.640	1.670	1.704	1.732	1.760	1.782	1.810	1.834	1.856	1.870	1.884	1.902	1.916	1.930	1.936	1.944	1.950	1.956
2 1/4"	1.490	1.570	1.650	1.682	1.732	1.774	1.810	1.844	1.890	1.920	1.954	1.982	2.010	2.032	2.060	2.084	2.106	2.120	2.134	2.152	2.166	2.180	2.186	2.194	2.200	2.206
2 1/2"	1.740	1.820	1.900	1.932	1.982	2.024	2.060	2.094	2.140	2.170	2.204	2.232	2.260	2.282	2.310	2.334	2.356	2.370	2.384	2.402	2.416	2.430	2.436	2.444	2.450	2.456
2 3/4"	1.990	2.070	2.150	2.182	2.232	2.274	2.310	2.344	2.390	2.420	2.454	2.482	2.510	2.532	2.560	2.584	2.606	2.620	2.634	2.652	2.666	2.680	2.686	2.694	2.700	2.706
3"	2.240	2.320	2.400	2.432	2.482	2.524	2.560	2.594	2.640	2.670	2.704	2.732	2.760	2.782	2.810	2.834	2.856	2.870	2.884	2.902	2.916	2.930	2.936	2.944	2.950	2.956
3 1/4"	2.490	2.570	2.650	2.682	2.732	2.774	2.810	2.844	2.890	2.920	2.954	2.982	3.010	3.032	3.060	3.084	3.106	3.120	3.134	3.152	3.166	3.180	3.186	3.194	3.200	3.206
3 1/2"	2.740	2.820	2.900	2.932	2.982	3.024	3.060	3.094	3.140	3.170	3.204	3.232	3.260	3.282	3.310	3.334	3.356	3.370	3.384	3.402	3.416	3.430	3.436	3.444	3.450	3.456
3 3/4"	2.990	3.070	3.150	3.182	3.232	3.274	3.310	3.344	3.390	3.420	3.454	3.482	3.510	3.532	3.560	3.584	3.606	3.620	3.634	3.652	3.666	3.680	3.686	3.694	3.700	3.706
4"	3.240	3.320	3.400	3.432	3.482	3.524	3.560	3.594	3.640	3.670	3.704	3.732	3.760	3.782	3.810	3.834	3.856	3.870	3.884	3.902	3.916	3.930	3.936	3.944	3.950	3.956
4 1/4"	3.490	3.570	3.650	3.682	3.732	3.774	3.810	3.844	3.890	3.920	3.954	3.982	4.010	4.032	4.060	4.084	4.106	4.120	4.134	4.152	4.166	4.180	4.186	4.194	4.200	4.206
4 1/2"	3.740	3.820	3.900	3.932	3.982	4.024	4.060	4.094	4.140	4.170	4.204	4.232	4.260	4.282	4.310	4.334	4.356	4.370	4.384	4.402	4.416	4.430	4.436	4.444	4.450	4.456
4 3/4"	3.990	4.070	4.150	4.182	4.232	4.274	4.310	4.344	4.390	4.420	4.454	4.482	4.510	4.532	4.560	4.584	4.606	4.620	4.634	4.652	4.666	4.680	4.686	4.694	4.700	4.706
5"	4.240	4.320	4.400	4.432	4.482	4.524	4.560	4.594	4.640	4.670	4.704	4.732	4.760	4.782	4.810	4.834	4.856	4.870	4.884	4.902	4.916	4.930	4.936	4.944	4.950	4.956
5 1/4"	4.490	4.570	4.650	4.682	4.732	4.774	4.810	4.844	4.890	4.920	4.954	4.982	5.010	5.032	5.060	5.084	5.106	5.120	5.134	5.152	5.166	5.180	5.186	5.194	5.200	5.206

# Thickness (Fraction & Decimal)

	Decimal	mm
$\frac{1}{64}$	0.0156	0.396
$\frac{1}{32}$	0.0312	0.793
$\frac{3}{64}$	0.0468	1.190
$\frac{1}{16}$	0.0625	1.587
$\frac{5}{64}$	0.0781	1.984
$\frac{3}{32}$	0.0937	2.381
$\frac{7}{64}$	0.1093	2.778
$\frac{1}{8}$	0.125	3.175
$\frac{9}{64}$	0.1406	3.571
$\frac{5}{32}$	0.1562	3.968
$\frac{11}{64}$	0.1718	4.365
$\frac{3}{16}$	0.1875	4.762
$\frac{13}{64}$	0.2031	5.159
$\frac{7}{32}$	0.2187	5.556
$\frac{15}{64}$	0.2343	5.953
$\frac{1}{4}$	0.250	6.350
$\frac{17}{64}$	0.2656	6.746
$\frac{9}{32}$	0.2812	7.143
$\frac{19}{64}$	0.2968	7.540
$\frac{5}{16}$	0.3125	7.937
$\frac{21}{64}$	0.3281	8.334
$\frac{11}{32}$	0.3437	8.731
$\frac{23}{64}$	0.3593	9.128
$\frac{3}{8}$	0.375	9.525
$\frac{25}{64}$	0.3906	9.921
$\frac{13}{32}$	0.4062	10.318
$\frac{27}{64}$	0.4218	10.715
$\frac{7}{16}$	0.4375	11.112
$\frac{29}{64}$	0.4531	11.509
$\frac{15}{32}$	0.4687	11.906
$\frac{31}{64}$	0.4843	12.303
$\frac{1}{2}$	0.500	12.700

	Decimal	mm
$\frac{33}{64}$	0.5156	13.096
$\frac{17}{32}$	0.5312	13.493
$\frac{35}{64}$	0.5468	13.890
$\frac{9}{16}$	0.5625	14.287
$\frac{37}{64}$	0.5781	14.684
$\frac{19}{32}$	0.5937	15.081
$\frac{39}{64}$	0.6093	15.478
$\frac{5}{8}$	0.625	15.875
$\frac{41}{64}$	0.6406	16.271
$\frac{21}{32}$	0.6562	16.668
$\frac{43}{64}$	0.6718	17.065
$\frac{11}{16}$	0.6875	17.462
$\frac{45}{64}$	0.7031	17.859
$\frac{23}{32}$	0.7187	18.256
$\frac{47}{64}$	0.7343	18.653
$\frac{3}{4}$	0.750	19.050
$\frac{49}{64}$	0.7656	19.446
$\frac{25}{32}$	0.7812	19.843
$\frac{51}{64}$	0.7968	20.240
$\frac{13}{16}$	0.8125	20.637
$\frac{53}{64}$	0.8281	21.034
$\frac{27}{32}$	0.8437	21.431
$\frac{55}{64}$	0.8593	21.828
$\frac{7}{8}$	0.875	22.225
$\frac{57}{64}$	0.8906	22.621
$\frac{29}{32}$	0.9062	23.018
$\frac{59}{64}$	0.9218	23.415
$\frac{15}{16}$	0.9375	23.812
$\frac{61}{64}$	0.9531	24.209
$\frac{31}{32}$	0.9687	24.606
$\frac{63}{64}$	0.9843	25.003
$1$	1.000	25.400



## Dimension Tolerance for Carbon Steel & Stainless Steel Pipe

Common dimension tolerances are listed in ASTM A530. However, each product has its own requirements and when given in that specification that will govern over A530.

Description	Size	Over	Under
Weight	NPS 12 (DN300) and under	10.0%	3.5%
	NPS 14 (DN350) and above (Note 1)	10.0%	5.0%
<b>Wall Thickness</b>			
Seamless & Welded Pipe	1/8 to 2-1/2, inclusive all t/D ratios (Note 2)	20.0%	12.5%
	3 to 18, t/D up to 5% inclusive	22.5%	12.5%
	3 to 18 include, t/D ratios	15.0%	12.5%
	20 and larger, welded, all t/D ratios (Note 3)	17.5%	12.5%
	20 and larger, seamless, t/D up to 5% inclusive	22.5%	12.5%
	20 and larger, seamless, t/D > 5%	15.0%	12.5%
Forged and Bored Pipe		1/8" (3.2mm)	NIL
Cast Pipe		1/16" (1.6mm)	NIL
Inside Diameter for Cast Pipe		NIL	1/16" (1.6mm)
<b>Outside Diameter (Note 4)</b>			
Outside Diameter	1/8 to 1-1/2, inclusive	1/64" (0.4mm)	1/32" (0.8mm)
	Over 1-1/2 to 4, inclusive	1/32" (0.8mm)	1/32" (0.8mm)
	Over 4 to 8, inclusive	1/16" (1.6mm)	1/32" (0.8mm)
	Over 8 to 18, inclusive	3/32" (2.4mm)	1/32" (0.8mm)
	Over 18 to 26, inclusive	1/8" (3.2mm)	1/32" (0.8mm)
	Over 26 to 34, inclusive	5/32" (4.0mm)	1/32" (0.8mm)
	Over 34	3/16" (4.8mm)	1/32" (0.8mm)
As per ASTM A530/A530M-12 and ASTM A999/A999M-15			

### Note:

- Pipe of NPS 4 (DN100) and smaller may be weighed in lots; pipe in sizes larger than NPS 4 (DN100) shall be weighed separately.
- T = Nominal wall thickness.  
D = Outside Diameter.
- For welded pipe, the weld area shall not be limited by the over tolerance.
- For thin wall pipe, the ovality in any one cross section shall not exceed 1.5% of the specified outside diameter.