# TECHNICAL INFO

TECHNCAL INFORMATION

## NB SIZE PIPES, STEEL PIPE DIMENSIONS

| NB | Size | OD | 40S | 5S | 10S | S10 | S20 | S40 | S60 | XS/80S | S80 | S100 | S120 | S140 | S160 | XXS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| | 1/8” | 10.29 | | | 1.2 | | | 1.73 | | | 2.41 | | | | | |
| | 1/4” | 13.72 | | | 1.7 | | | 2.24 | | | 3.02 | | | | | |
| | 3/8” | 17.15 | | | 1.7 | | | 2.31 | | | 3.2 | | | | | |
| 15 | 1/2” | 21.34 | 2.8 | 1.7 | 2.1 | | | 2.77 | | 3.73 | 3.73 | | | | 4.78 | 7.47 |
| 20 | 3/4” | 26.67 | 2.9 | 1.7 | 2.1 | | | 2.87 | | 3.91 | 3.91 | | | | 5.56 | 7.82 |
| 25 | 1” | 33.4 | 3.4 | 1.7 | 2.8 | | | 3.38 | | 4.55 | 4.55 | | | | 6.35 | 9.09 |
| 32 | 1 1/4” | 42.16 | 3.6 | 1.7 | 2.8 | | | 3.56 | | 4.85 | 4.85 | | | | 6.35 | 9.7 |
| 40 | 1 1/2” | 48.26 | 3.7 | 1.7 | 2.8 | | | 3.68 | | 5.08 | 5.08 | | | | 7.14 | 10.2 |
| 50 | 2” | 60.33 | 3.9 | 1.7 | 2.8 | | | 3.91 | | 5.54 | 5.54 | | | | 9.74 | 11.1 |
| 65 | 2 1/2” | 73.03 | 5.2 | 2.1 | 3.1 | | | 5.16 | | 7.01 | 7.01 | | | | 9.53 | 14 |
| 80 | 3” | 88.9 | 5.5 | 2.1 | 3.1 | | | 5.49 | | 7.62 | 7.62 | | | | 11.1 | 15.2 |
| 90 | 3 1/2” | 101.6 | 5.7 | 2.1 | 3.1 | | | 5.74 | | 8.08 | 8.08 | | | | | |
| 100 | 4” | 114.3 | 6 | 2.1 | 3.1 | | | 6.02 | | 8.56 | 8.56 | | 11.1 | | 13.5 | 17.1 |
| 125 | 5” | 141.3 | 6.6 | 2.8 | 3.4 | | | 6.55 | | 9.53 | 9.53 | | 12.7 | | 15.9 | 19.1 |
| 150 | 6” | 168.3 | 7.1 | 2.8 | 3.4 | | | 7.11 | | 10.97 | 11 | | 14.3 | | 18.3 | 22 |
| 200 | 8” | 219.1 | 8.2 | 2.8 | 3.8 | | 6.4 | 8.18 | 10.3 | 12.7 | 12.7 | 15.1 | 19.3 | 20.6 | 23 | 22.2 |
| 250 | 10” | 273.1 | 9.3 | 3.4 | 4.2 | | 6.4 | 9.27 | 12.7 | 12.7 | 15.1 | 19.3 | 21.4 | 25.4 | 28.6 | 25.4 |
| 300 | 12” | 323.9 | 9.5 | 4 | 4.6 | | 6.4 | 10.3 | 14.3 | 12.7 | 17.5 | 21.4 | 25.4 | 28.6 | 33.3 | 25.4 |
| 350 | 14” | 355.6 | 9.5 | 4 | 4.8 | 6.4 | 7.9 | 11.1 | 15.1 | 12.7 | 19.1 | 23.8 | 27.8 | 31.8 | 35.7 | |
| 400 | 16” | 406.4 | 9.5 | 4.2 | 4.8 | 6.4 | 7.9 | 12.7 | 16.7 | 12.7 | 21.4 | 26.2 | 31 | 36.5 | 40.5 | |
| 450 | 18” | 457.2 | 9.5 | 4.2 | 4.8 | 6.4 | 7.9 | 14.3 | 19.1 | 12.7 | 23.8 | 29.4 | 34.9 | 39.7 | 45.2 | |
| 500 | 20” | 508 | 9.5 | 4.8 | 5.5 | 6.4 | 9.5 | 15.1 | 20.6 | 12.7 | 26.2 | 32.5 | 38.1 | 44.5 | 50 | |
| 550 | 22” | 558.8 | 9.5 | 4.8 | 5.5 | 6.4 | 9.5 | | 22.2 | 12.7 | 28.6 | 34.9 | 41.3 | 47.6 | 54 | |
| 600 | 24” | 609.6 | 9.5 | 5.5 | 6.4 | 6.4 | 9.5 | 17.5 | 24.6 | 12.7 | 31 | 38.9 | 46 | 52.4 | 59.5 | |
| 650 | 26” | 660.4 | 9.5 | | | 7.9 | 13 | | | 12.7 | | | | | | |
| 700 | 28” | 711.2 | 9.5 | | | 7.9 | 13 | | | 12.7 | | | | | | |
| 750 | 30” | 762 | 9.5 | 6.4 | 7.9 | 7.9 | 13 | | | 12.7 | | | | | | |
| 800 | 32” | 812.8 | 9.5 | | | 7.9 | 13 | 17.5 | | 12.7 | | | | | | |
| 850 | 34” | 863.6 | 9.5 | | | 7.9 | 13 | 17.5 | | 12.7 | | | | | | |

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| 900 | 36” | 914.4 | 9.5 | | | 7.9 | 13 | 19.1 | | 12.7 | | | | | | |

# NOMINAL PIPE SIZE

Nominal Pipe Size (NPS) is a North American set of standard sizes for pipes and fittings used for high or low pressures and temperatures. Pipe size is specified with two non-dimensional numbers: a nominal pipe size (NPS) for diameter based on inches, and a schedule (Sched. or Sch.) for wall thickness.

The name NPS is based on the earlier Iron Pipe Size (IPS) system. That IPS system was established to designate the pipe size. The size represented the approximate inside diameter of the pipe in inches. An IPS 6" pipe is one whose inside diameter is approximately 6 inches. Users started to call the pipe as 2inch, 4inch, 6inch pipe and so on. To begin, each pipe size was produced to have one thickness, which later was termed as standard (STD) or standard weight (STD.WT.). The outside diameter of the pipe was standardized.

As the industrial requirements handling higher pressure fluids, pipes were manufactured with thicker walls, which has become known as an extra strong (XS) or extra heavy (XH). The higher pressure requirements increased further, with thicker wall pipes. Accordingly, pipes were made with double extra strong (XXS) or double extra heavy (XXH) walls, while the standardized outside diameters are unchanged. Note that on this website only terms XS and XXS are used.

# NOMINAL BORE

Nominal Bore (NB) is the European designation equivalent to NPS is DN (diamètre nominal/nominal diameter/Durchmesser nach Norm), in which sizes are measured in millimeters. NB is also frequently used interchangeably with NPS.

# OUTSIDE DIAMETER

Outside diameter (OD) is the outside diameter of the pipe and is fixed for a given size. The pipes are always specified by outside diameter, never by inside diameter.

# WALL THICKNESS

The pipe schedule sets the pipe Wall Thickness (WT). Obviously increasing the wall thickness of the pipe increases the mechanical strength of the pipe, allowing it to handle higher design press. As the schedule is increased, so does the wall thickness.

Nominal pipe size NPS is a dimensionless designator of pipe size. It indicates standard pipe size when followed by the specific size designation number without an inch symbol.

For example, NPS 6 indicates a pipe whose outside diameter is 168.3 mm. The NPS is very loosely related to the inside diameter in inches, and NPS 12 and smaller pipe has outside diameter greater than the size designator. For NPS 14 and larger, the NPS is equal to 14inch. For a given NPS, the outside diameter stays constant and the wall thickness increases with larger schedule number. The inside diameter will depend upon the pipe wall thickness specified by the schedule number.

schedules are specific to stainless steels and schedules without the “s” are intended for carbon steels.