

DN to Inch Conversion Chart

DN6 to DN3000 | DN, NPS and outside diameter in millimetres and inches | Outside diameter per ASME B36.10M / B36.19M up to NPS 80 (DN 2000)

QUICK ANSWER - MOST SEARCHED DN TO INCH CONVERSIONS					
DN15	DN20	DN25	DN32	DN40	DN50
1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
DN80	DN100	DN150	DN200	DN300	DN600
3"	4"	6"	8"	12"	24"

DN to Inch / NPS Conversion Table (DN6 - DN3000)

Small & Medium Sizes				Large Sizes			
DN	Inch (NPS)	OD (mm)	OD (inch)	DN	Inch (NPS)	OD (mm)	OD (inch)
DN6	1/8	10.3	0.405	DN650	26	660.0	26.000
DN8	1/4	13.7	0.540	DN700	28	711.0	28.000
DN10	3/8	17.1	0.675	DN750	30	762.0	30.000
DN15	1/2	21.3	0.840	DN800	32	813.0	32.000
DN20	3/4	26.7	1.050	DN850	34	864.0	34.000
DN25	1	33.4	1.315	DN900	36	914.0	36.000
DN32	1-1/4	42.2	1.660	DN950	38	965.0	38.000
DN40	1-1/2	48.3	1.900	DN1000	40	1016.0	40.000
DN50	2	60.3	2.375	DN1050	42	1067.0	42.000
DN65	2-1/2	73.0	2.875	DN1100	44	1118.0	44.000
DN80	3	88.9	3.500	DN1150	46	1168.0	46.000
DN90	3-1/2	101.6	4.000	DN1200	48	1219.0	48.000
DN100	4	114.3	4.500	DN1300	52	1321.0	52.000
DN125	5	141.3	5.563	DN1400	56	1422.0	56.000
DN150	6	168.3	6.625	DN1500	60	1524.0	60.000
DN200	8	219.1	8.625	DN1600	64	1626.0	64.000
DN250	10	273.0	10.750	DN1800	72	1829.0	72.000
DN300	12	323.8	12.750	DN2000	80	2032.0	80.000
DN350	14	355.6	14.000	DN2200	88	2235.0	88.000
DN400	16	406.4	16.000	DN2400	96	2438.0	96.000
DN450	18	457.0	18.000	DN2600	104	2642.0	104.000
DN500	20	508.0	20.000	DN2800	112	2845.0	112.000
DN550	22	559.0	22.000	DN3000	120	3048.0	120.000
DN600	24	610.0	24.000				

How to read this table. DN is a nominal metric size designation (ISO 6708); NPS is the inch designation of the same nominal size. Up to NPS 12 the OD is larger than the nominal number (NPS 1 = 33.4 mm), from NPS 14 upward the OD equals the nominal inch size (NPS 14 = 355.6 mm). Outside diameters above follow ASME B36.10M / B36.19M, which cover NPS 1/8 to NPS 80 (DN 2000). Above NPS 80 the OD shown is the nominal inch size converted at 25.4 mm per inch - large diameter pipe is not scheduled in ASME B36.10M, so order it against the project specification (API 5L, AWWA C200 or EN 10220). European metric pipe to EN 10255 also uses different outside diameters for the same DN - DN65 is 76.1 mm OD to EN 10255 but 73.0 mm OD to ASME B36.10M. Confirm which size system your project specifies before ordering.

Pipe Wall Thickness by Schedule

Carbon & alloy steel per ASME B36.10M | Stainless steel per ASME B36.19M | All values in millimetres

1. Carbon & Alloy Steel Pipe - ASME B36.10M

NPS	DN	OD (mm)	SCH 40 (mm)	SCH 80 (mm)	SCH 160 (mm)
1/2	DN15	21.3	2.77	3.73	4.78
3/4	DN20	26.7	2.87	3.91	5.56
1	DN25	33.4	3.38	4.55	6.35
1-1/4	DN32	42.2	3.56	4.85	6.35
1-1/2	DN40	48.3	3.68	5.08	7.14
2	DN50	60.3	3.91	5.54	8.74
2-1/2	DN65	73.0	5.16	7.01	9.53
3	DN80	88.9	5.49	7.62	11.13
3-1/2	DN90	101.6	5.74	8.08	12.70
4	DN100	114.3	6.02	8.56	13.49
5	DN125	141.3	6.55	9.53	15.88
6	DN150	168.3	7.11	10.97	18.26
8	DN200	219.1	8.18	12.70	23.01
10	DN250	273.0	9.27	15.09	28.58
12	DN300	323.8	10.31	17.48	33.32
14	DN350	355.6	11.13	19.05	35.71
16	DN400	406.4	12.70	21.44	40.49
18	DN450	457.0	14.27	23.83	45.24
20	DN500	508.0	15.09	26.19	50.01
24	DN600	610.0	17.48	30.96	59.54

STD equals SCH 40 up to and including NPS 10 and XS equals SCH 80 up to and including NPS 8. Above those sizes STD and XS stay at 9.53 mm and 12.70 mm while SCH 40 and SCH 80 keep rising, so the two designations are no longer the same pipe. SCH 160 is a heavy wall for high pressure and high temperature service, normally limited to NPS 24 and below. Threaded connections normally need SCH 80 as a minimum wall.

2. Stainless Steel Pipe - ASME B36.19M (SCH 5S / 10S / 40S / 80S)

NPS 1/8 - NPS 3-1/2							NPS 4 - NPS 24						
NPS	DN	OD (mm)	5S	10S	40S	80S	NPS	DN	OD (mm)	5S	10S	40S	80S
1/8	DN6	10.3	—	1.24	1.73	2.41	4	DN100	114.3	2.11	3.05	6.02	8.56
1/4	DN8	13.7	—	1.65	2.24	3.02	5	DN125	141.3	2.77	3.40	6.55	9.53
3/8	DN10	17.1	—	1.65	2.31	3.20	6	DN150	168.3	2.77	3.40	7.11	10.97
1/2	DN15	21.3	1.65	2.11	2.77	3.73	8	DN200	219.1	2.77	3.76	8.18	12.70
3/4	DN20	26.7	1.65	2.11	2.87	3.91	10	DN250	273.0	3.40	4.19	9.27	12.70
1	DN25	33.4	1.65	2.77	3.38	4.55	12	DN300	323.8	3.96	4.57	9.53	12.70
1-1/4	DN32	42.2	1.65	2.77	3.56	4.85	14	DN350	355.6	3.96	4.78	9.53	12.70
1-1/2	DN40	48.3	1.65	2.77	3.68	5.08	16	DN400	406.4	4.19	4.78	9.53	12.70
2	DN50	60.3	1.65	2.77	3.91	5.54	18	DN450	457.0	4.19	4.78	9.53	12.70
2-1/2	DN65	73.0	2.11	3.05	5.16	7.01	20	DN500	508.0	4.78	5.54	9.53	12.70
3	DN80	88.9	2.11	3.05	5.49	7.62	22	DN550	559.0	4.78	5.54	—	—
3-1/2	DN90	101.6	2.11	3.05	5.74	8.08	24	DN600	610.0	5.54	6.35	9.53	12.70

ASME B36.19M defines SCH 5S and SCH 10S across the full range to NPS 30, but SCH 40S and SCH 80S only to NPS 24 - they are not specified at NPS 22 or NPS 30, hence the blank cells. The standard states that the walls of NPS 14-22 in SCH 10S, NPS 12 in SCH 40S and NPS 10-12 in SCH 80S differ from ASME B36.10M. In practice the carbon steel schedules keep rising with diameter while the S schedules stop above NPS 12, where SCH 40S is fixed at 9.53 mm and SCH 80S at 12.70 mm: at NPS 24, SCH 80 is 30.96 mm against 12.70 mm for SCH 80S - less than half the wall. SCH 5S and SCH 10S walls may not be threaded to ASME B1.20.1, so specify a heavier wall for threaded joints.

How to Convert DN to Inches

DN (Diameter Nominal) and NPS (Nominal Pipe Size) are two names for the same pipe size - not a direct millimetre-to-inch conversion.

The conversion rule

NPS is the inch designation used in ASME B36.10M and B36.19M. DN is the metric designation used in ISO and EN standards. The conversion works by rounding the DN number to a nominal inch value: 1 inch = 25.4 mm nominal, which is written as DN25; 8 inch is written as DN200.

The critical point: **DN is not the outside diameter and not the bore.** DN25 pipe has a 33.4 mm outside diameter, not 25 mm. To convert any DN value to inches, divide by 25 and round to the nearest standard NPS size, then read the actual outside diameter from the chart on page 1. For exact work, always use the OD column rather than the DN or NPS number.

Worked examples

Query	Answer	Outside diameter	Note
DN25 to inch	1 inch (NPS 1)	33.4 mm / 1.315 in	Most requested size for stainless pipe and fittings
DN20 to inch	3/4 inch (NPS 3/4)	26.7 mm / 1.050 in	EN 10255 metric pipe uses 26.9 mm OD instead
DN50 to inches	2 inch (NPS 2)	60.3 mm / 2.375 in	Common in process piping and water lines
DN15 to inch	1/2 inch (NPS 1/2)	21.3 mm / 0.840 in	Small bore, instrument and utility lines
DN100 to inches	4 inch (NPS 4)	114.3 mm / 4.500 in	Standard plant piping size
DN150 to inches	6 inch (NPS 6)	168.3 mm / 6.625 in	Common header and main line size

Three mistakes that cause wrong orders

- **Treating DN as the outside diameter.** A DN50 line does not use 50 mm pipe - it uses 60.3 mm OD. Ordering on the DN number alone is the single most common error.
- **Mixing EN and ASME size systems.** The same DN can have two different outside diameters: DN65 is 76.1 mm OD to EN 10255 but 73.0 mm OD to ASME B36.10M. Flanges and fittings must match the pipe OD, so state the standard on every enquiry.
- **Writing SCH 40 when you mean SCH 40S.** Stainless pipe follows ASME B36.19M, where several larger sizes have a thinner wall than the carbon steel schedule of the same number - at NPS 24 the difference is 9.53 mm against 17.48 mm.

Pipe and fittings we supply

HT PIPE supplies seamless and welded stainless steel pipe, duplex pipe and nickel alloy pipe from NPS 1/8 (DN6) to NPS 48 (DN1200), wall thickness to SCH 160 / XXH, together with butt-weld fittings from NPS 1/2 (DN15) and forged fittings to ASME B16.11. Stocked grades include 304/304L, 316/316L, 321, 347H, 904L, 254SMO, Duplex 2205, Super Duplex 2507, Inconel 625/718, Incoloy 800/825, Monel 400 and Hastelloy C276. Pipe is supplied to ASME B36.19M / ASTM A312, A790 and A928, with EN 10204 3.1 mill test certificates. Cutting, beveling and spool pre-fabrication to your drawings.

Send us your material list - DN or NPS sizes, grades and quantities

We confirm availability and price within 24 hours.

Email: market@htpipe.com | www.htsteelpipe.com

Zhengzhou Huitong Pipeline Equipment Co., Ltd. - Henan, China

Reference document - HT PIPE. Wall thicknesses and outside diameters are taken from ASME B36.10M and ASME B36.19M; outside diameters above NPS 80 are nominal inch conversions and are not covered by those standards. Given for general reference only - always confirm the applicable edition of the standard and the project specification before placing an order.