

Welded and Seamless Wrought Steel Pipe

AN AMERICAN NATIONAL STANDARD



**The American Society of
Mechanical Engineers**



A N A M E R I C A N N A T I O N A L S T A N D A R D

WELDED AND SEAMLESS WROUGHT STEEL PIPE

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FOREWORD

In March 1927, the American Standards Association authorized the organization of a Sectional Committee on Standardization of Dimensions and Material of Wrought Steel and Wrought Iron Pipe and Tubing for the purpose of unifying the standards of these commodities in force in this country. The American Society for Testing and Materials and The American Society of Mechanical Engineers were designated as sponsors, and the first meeting of the Sectional Committee was held in Pittsburgh, Pennsylvania, on May 18, 1928.

The dimensions of commercial pipe in general use in the United States at the time conformed rather generally to those recommended by the ASME Committee on Standard Pipe and Pipe Threads published in 1886 (ASME Transactions, Vol. VIII, p. 29). On these standards an enormous industry has been built and the satisfactory use of this product proves the soundness of the original design and specification.

Increasingly severe service demands at the time of the Committee's organization had been met by using the nearest available pipe or tubing for heavier sections such as casing, mechanical tubing, etc., with resulting uneconomical multiplicity of wall thicknesses.

Subsequently, the Committee, with the cooperation of the industry, made a survey of existing practice as the logical starting point for the development of an American Standard. From this survey, a table was designed to provide a selection of wall thicknesses of pipe to cover the power piping requirements of industry where strength to resist internal pressure governs selection and was later expanded to include pipe diameters and thicknesses used in other industries.

The original intent of the Committee was to establish a system of Schedule Numbers for pipe size/wall thickness combinations which would have an approximately uniform relationship equal to 1000 times the P/S expression contained in the modified Barlow formula for pipe wall thickness as defined in the Appendix to this standard. The resulting Numbers departed so far from existing wall thicknesses in common use that the original intent could not be accomplished. The Schedule Numbers were then adopted strictly as a convenient designation system for use in ordering.

In all cases, the designer must base his selection on the rules and allowable stresses set by the code which governs his particular construction. The table is dimensionally complete for all sizes and wall thicknesses within its scope, but some of the larger, heavier wall sections are beyond the capability of seamless mill production and must be obtained from forged and bored billets or other sources.

The first issue of this standard was given with the designation American Standard "tentative" by the American Standards Association in November 1935. Subsequent slight revisions to Table 1 and the footnotes of the dimensional tables were approved and the ASA changed the designation to American Standard; the date of ASA approval was April 28, 1939.

Further revisions were made by the Sectional Committee. The list of specifications in Table 1 was revised where necessary and slight revisions in wall thicknesses of some of the large sizes of the heavy schedules were made where P/S values were out of line.

It was the hope in 1939 that the designation of pipe used commercially by all industry as Standard weight, Extra-Strong, and Double Extra-Strong would gradually be replaced by Schedule Number designation. However, owing to customs of over 50 years' standing, demand and production of pipe to these traditional dimensions is undiminished. Consequently, in response to a demand from users, accepted practice for dimensions and weights of commercial wrought steel and welded wrought iron pipe were added. These changes were designated an American Standard on February 23, 1950.

Subcommittee No. 1 was reorganized in 1957. In addition to necessary editorial changes, a simplified format was selected for the tables of weights and dimensions so as to include and identify the sizes and weights of API Standards 5L and 5LX. These changes to the standard were approved and it was designated an American Standard on December 21, 1959.

The standard was revised in 1969. A uniform method to calculate the plain end weight of steel pipe was included, and minor adjustments were made in the tabulated weights of steel pipe in

Table 2 to conform to this new method. Additional sizes and thicknesses of steel pipe that had come into common use were also added to Table 2. Inasmuch as API Standard 5L no longer included wrought iron pipe, reference to this API Standard was deleted from Table 3. These changes to the standard were approved and it was designated an American National Standard on February 3, 1970.

Further revisions were made to the standard in 1975. Additional sizes and thicknesses of steel pipe that had been added to API specifications were added to Table 2. Table 3, Dimensions and Weights of Welded Wrought Iron Pipe, was deleted in its entirety, since wrought iron pipe is no longer produced. These changes in the standard were approved and it was designated an American National Standard on June 5, 1975.

The standard was revised in 1978 to include SI metric dimensions. The outside diameter and wall thicknesses were converted to millimeters by multiplying the inch dimensions by 25.4. Outside diameters larger than 16 in. were rounded to the nearest millimeter, and outside diameters 16 in. and smaller were rounded to the nearest 0.1 mm. Wall thicknesses were rounded to the nearest 0.01 mm. These converted and rounded SI metric dimensions were added to Table 2. A formula to calculate the SI metric plain end mass, in kilograms per meter, using SI metric diameters and thicknesses was added to section 5. The SI metric plain end mass was calculated and was added to Table 2. These changes in the standard were approved and it was designated an American National Standard on July 18, 1979.

Further revisions were made in 1984. The ANSI designations, which are no longer in use, were deleted from Table 1, and the list of specifications was revised to agree with current ASTM and API specifications. Additional sizes and thicknesses which had been added to API specifications were added to Table 2. That edition was approved as an American National Standard on August 19, 1985.

The next edition included additional wall thicknesses and was approved by the American National Standards Institute on August 24, 1995.

The 1996 edition contained revisions to Table 2, adding pipe sizes, changing some plain end weights and masses, identifying metric pipe by the dimensionless designator DN, and eliminating the API Specification column. The 1996 edition was approved as an American National Standard on September 23, 1996.

The 2000 edition contained revisions to Table 2 to include the revised density for steel incorporated into Section 5 previously. Table 1 was deleted and other editorial changes to Sections 1, 2, 3, 5, 8, and 9 were made. The 2000 edition was approved as an American National Standard on December 1, 2000.

The current edition contains revisions to Section 5 and Table 1. It corrects the equation for nominal plain end weight. It adds the missing DN schedule numbers in Table 1. This edition was approved as an American National Standard on June 23, 2004.

ASME B32 COMMITTEE Metal and Metal Alloy Wrought Mill Product Nominal Sizes

(The following is the roster of the Committee at the time of approval of this Standard.)

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WELDED AND SEAMLESS WROUGHT STEEL PIPE

1 SCOPE

This Standard covers the standardization of dimensions of welded and seamless wrought steel pipe for high or low temperatures and pressures.

The word *pipe* is used, as distinguished from *tube*, to apply to tubular products of dimensions commonly used for pipeline and piping systems. Pipe NPS 12 (DN 300) and smaller have outside diameters numerically larger than their corresponding sizes. In contrast, the outside diameters of tubes are numerically identical to the size number for all sizes.

2 SIZE

The size of all pipe is identified by the nominal pipe size.

The manufacture of pipe NPS $\frac{1}{8}$ (DN 6) to NPS 12 (DN 300), inclusive, is based on a standardized outside diameter (OD). This OD was originally selected so that pipe with a standard OD and having a wall thickness that was typical of the period would have an inside diameter (ID) approximately equal to the nominal size. Although there is no such relation between the existing standard thickness — OD and nominal size — these nominal sizes and standard ODs continue in use as “standard.”

The manufacture of pipe NPS 14 (DN 350) and larger proceeds on the basis of an OD corresponding to the nominal size.

3 MATERIALS

The dimensional standards for pipe described here are for products covered in ASTM specifications.

4 WALL THICKNESS

The nominal wall thicknesses are given in Table 1.

5 WEIGHTS

The nominal weights of steel pipe are calculated values and are tabulated in Table 1.

The nominal plain end weight, in pounds per foot, is calculated using the following formula:

$$W_{pe} = 10.69(D - t)t$$

where

D = outside diameter to the nearest 0.001 in. (the symbol D is to be used for OD only in mathematical equations or formulas)

W_{pe} = nominal plain end mass, rounded to the nearest 0.01 lb/ft

t = specified wall thickness, rounded to the nearest 0.001 in.

The nominal plain end mass, in kilograms per meter, is calculated using the following formula:

$$W_{pe} = 0.0246615(D - t)t$$

where

D = outside diameter to the nearest 0.1 mm for outside diameters that are 16 in. (406.4 mm) and smaller and to the nearest 1.0 mm for outside diameters larger than 16 in. (406.4 mm) (the symbol D is to be used for OD only in mathematical equations or formulas)

W_{pe} = nominal plain end mass, rounded to the nearest 0.01 kg/m

t = specified wall thickness, rounded to the nearest 0.01 mm

6 PERMISSIBLE VARIATIONS

Variations in dimensions differ depending upon the method of manufacture employed in making the pipe to the various specifications available. Permissible variations for dimensions are indicated in each specification.

7 PIPE THREADS

Unless otherwise specified, the threads of threaded pipe shall conform to ANSI/ASME B1.20.1, Pipe Threads, General Purpose (Inch).

Schedules 5 and 10 wall thicknesses do not permit threading in accordance with ANSI/ASME B1.20.1.

8 WALL THICKNESS DESIGNATIONS

The wall thickness designations Standard, Extra-Strong, and Double Extra-Strong have been commercially used designations for many years. As explained in the Foreword, the Schedule Numbers were subsequently added as a convenient designation for use in ordering pipe. Standard and Schedule 40 are identical for up to NPS 10 (DN 250), inclusive. All larger sizes of Standard

have $\frac{3}{8}$ in. (9.53 mm) wall thicknesses. Extra-Strong and Schedule 80 are identical for up to NPS 8 (DN 200), inclusive. All larger sizes of Extra-Strong have $\frac{1}{2}$ in. (12.70 mm) wall thicknesses.

Pipe of sizes and wall thicknesses other than those of Standard, Extra-Strong, and Double Extra-Strong, and Schedule Number were adopted from API Specification 5L. It was not considered practical to establish Schedule Numbers or new designations for them.

9 WALL THICKNESS SELECTION

When the selection of wall thickness depends primarily upon capacity to resist internal pressure under given

conditions, the designer shall compute the exact value of wall thickness suitable for conditions for which the pipe is required, as prescribed in detail in the ASME Boiler and Pressure Vessel Code, ASME B31 Code for Pressure Piping, or other similar codes, whichever governs the construction. A thickness shall be selected from Table 1 to suit the value computed to fulfill the conditions for which the pipe is desired.

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
1/8	0.405	0.049	0.19	...	10	6 (3)	10.3	1.24	0.28
1/8	0.405	0.057	0.21	...	30	6 (3)	10.3	1.45	0.32
1/8	0.405	0.068	0.24	STD	40	6 (3)	10.3	1.73	0.37
1/8	0.405	0.095	0.31	XS	80	6 (3)	10.3	2.41	0.47
1/4	0.540	0.065	0.33	...	10	8 (3)	13.7	1.65	0.49
1/4	0.540	0.073	0.36	...	30	8 (3)	13.7	1.85	0.54
1/4	0.540	0.088	0.43	STD	40	8 (3)	13.7	2.24	0.63
1/4	0.540	0.119	0.54	XS	80	8 (3)	13.7	3.02	0.80
3/8	0.675	0.065	0.42	...	10	10	17.1	1.65	0.63
3/8	0.675	0.073	0.47	...	30	10	17.1	1.85	0.70
3/8	0.675	0.091	0.57	STD	40	10	17.1	2.31	0.84
3/8	0.675	0.126	0.74	XS	80	10	17.1	3.20	1.10
1/2	0.840	0.065	0.54	...	5	15	21.3	1.65	0.80
1/2	0.840	0.083	0.67	...	10	15	21.3	2.11	1.00
1/2	0.840	0.095	0.76	...	30	15	21.3	2.41	1.12
1/2	0.840	0.109	0.85	STD	40	15	21.3	2.77	1.27
1/2	0.840	0.147	1.09	XS	80	15	21.3	3.73	1.62
1/2	0.840	0.188	1.31	...	160	15	21.3	4.78	1.95
1/2	0.840	0.294	1.72	XXS	...	15	21.3	7.47	2.55
3/4	1.050	0.065	0.69	...	5	20	26.7	1.65	1.03
3/4	1.050	0.083	0.86	...	10	20	26.7	2.11	1.28
3/4	1.050	0.095	0.97	...	30	20	26.7	2.41	1.44
3/4	1.050	0.113	1.13	STD	40	20	26.7	2.87	1.69
3/4	1.050	0.154	1.48	XS	80	20	26.7	3.91	2.20
3/4	1.050	0.219	1.95	...	160	20	26.7	5.56	2.90
3/4	1.050	0.308	2.44	XXS	...	20	26.7	7.82	3.64
1	1.315	0.065	0.87	...	5	25	33.4	1.65	1.29
1	1.315	0.109	1.41	...	10	25	33.4	2.77	2.09
1	1.315	0.114	1.46	...	30	25	33.4	2.90	2.18
1	1.315	0.133	1.68	STD	40	25	33.4	3.38	2.50
1	1.315	0.179	2.17	XS	80	25	33.4	4.55	3.24
1	1.315	0.250	2.85	...	160	25	33.4	6.35	4.24
1	1.315	0.358	3.66	XXS	...	25	33.4	9.09	5.45
1 1/4	1.660	0.065	1.11	...	5	32	42.2	1.65	1.65
1 1/4	1.660	0.109	1.81	...	10	32	42.2	2.77	2.69
1 1/4	1.660	0.117	1.93	...	30	32	42.2	2.97	2.87
1 1/4	1.660	0.140	2.27	STD	40	32	42.2	3.56	3.39
1 1/4	1.660	0.191	3.00	XS	80	32	42.2	4.85	4.47
1 1/4	1.660	0.250	3.77	...	160	32	42.2	6.35	5.61
1 1/4	1.660	0.382	5.22	XXS	...	32	42.2	9.70	7.77
1 1/2	1.900	0.065	1.28	...	5	40	48.3	1.65	1.90
1 1/2	1.900	0.109	2.09	...	10	40	48.3	2.77	3.11
1 1/2	1.900	0.125	2.37	...	30	40	48.3	3.18	3.53
1 1/2	1.900	0.145	2.72	STD	40	40	48.3	3.68	4.05
1 1/2	1.900	0.200	3.63	XS	80	40	48.3	5.08	5.41
1 1/2	1.900	0.281	4.86	...	160	40	48.3	7.14	7.25
1 1/2	1.900	0.400	6.41	XXS	...	40	48.3	10.15	9.55

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
2	2.375	0.065	1.61	...	5	50	60.3	1.65	2.39
2	2.375	0.083	2.03	...	...	50	60.3	2.11	3.03
2	2.375	0.109	2.64	...	10	50	60.3	2.77	3.93
2	2.375	0.125	3.01	...	30	50	60.3	3.18	4.48
2	2.375	0.141	3.37	...	...	50	60.3	3.58	5.01
2	2.375	0.154	3.66	STD	40	50	60.3	3.91	5.44
2	2.375	0.172	4.05	...	...	50	60.3	4.37	6.03
2	2.375	0.188	4.40	...	...	50	60.3	4.78	6.54
2	2.375	0.218	5.03	XS	80	50	60.3	5.54	7.48
2	2.375	0.250	5.68	...	...	50	60.3	6.35	8.45
2	2.375	0.281	6.29	...	...	50	60.3	7.14	9.36
2	2.375	0.344	7.47	...	160	50	60.3	8.74	11.11
2	2.375	0.436	9.04	XXS	...	50	60.3	11.07	13.44
2½	2.875	0.083	2.48	...	5	65	73.0	2.11	3.69
2½	2.875	0.109	3.22	...	...	65	73.0	2.77	4.80
2½	2.875	0.120	3.53	...	10	65	73.0	3.05	5.26
2½	2.875	0.125	3.67	...	...	65	73.0	3.18	5.48
2½	2.875	0.141	4.12	...	...	65	73.0	3.58	6.13
2½	2.875	0.156	4.53	...	...	65	73.0	3.96	6.74
2½	2.875	0.172	4.97	...	...	65	73.0	4.37	7.40
2½	2.875	0.188	5.40	...	30	65	73.0	4.78	8.04
2½	2.875	0.203	5.80	STD	40	65	73.0	5.16	8.63
2½	2.875	0.216	6.14	...	...	65	73.0	5.49	9.14
2½	2.875	0.250	7.02	...	...	65	73.0	6.35	10.44
2½	2.875	0.276	7.67	XS	80	65	73.0	7.01	11.41
2½	2.875	0.375	10.02	...	160	65	73.0	9.53	14.92
2½	2.875	0.552	13.71	XXS	...	65	73.0	14.02	20.39
3	3.500	0.083	3.03	...	5	80	88.9	2.11	4.52
3	3.500	0.109	3.95	...	...	80	88.9	2.77	5.88
3	3.500	0.120	4.34	...	10	80	88.9	3.05	6.46
3	3.500	0.125	4.51	...	...	80	88.9	3.18	6.72
3	3.500	0.141	5.06	...	...	80	88.9	3.58	7.53
3	3.500	0.156	5.58	...	...	80	88.9	3.96	8.30
3	3.500	0.172	6.12	...	...	80	88.9	4.37	9.11
3	3.500	0.188	6.66	...	30	80	88.9	4.78	9.92
3	3.500	0.216	7.58	STD	40	80	88.9	5.49	11.29
3	3.500	0.250	8.69	...	...	80	88.9	6.35	12.93
3	3.500	0.281	9.67	...	...	80	88.9	7.14	14.40
3	3.500	0.300	10.26	XS	80	80	88.9	7.62	15.27
3	3.500	0.438	14.34	...	160	80	88.9	11.13	21.35
3	3.500	0.600	18.60	XXS	...	80	88.9	15.24	27.68
3½	4.000	0.083	3.48	...	5	90	101.6	2.11	5.18
3½	4.000	0.109	4.53	...	...	90	101.6	2.77	6.75
3½	4.000	0.120	4.98	...	10	90	101.6	3.05	7.41
3½	4.000	0.125	5.18	...	...	90	101.6	3.18	7.72
3½	4.000	0.141	5.82	...	...	90	101.6	3.58	8.65
3½	4.000	0.156	6.41	...	...	90	101.6	3.96	9.54
3½	4.000	0.172	7.04	...	...	90	101.6	4.37	10.48
3½	4.000	0.188	7.66	...	30	90	101.6	4.78	11.41

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
3½	4.000	0.226	9.12	STD	40	90	101.6	5.74	13.57
3½	4.000	0.250	10.02	...	...	90	101.6	6.35	14.92
3½	4.000	0.281	11.17	...	...	90	101.6	7.14	16.63
3½	4.000	0.318	12.52	XS	80	90	101.6	8.08	18.64
4	4.500	0.083	3.92	...	5	100	114.3	2.11	5.84
4	4.500	0.109	5.12	...	...	100	114.3	2.77	7.62
4	4.500	0.120	5.62	...	10	100	114.3	3.05	8.37
4	4.500	0.125	5.85	...	...	100	114.3	3.18	8.71
4	4.500	0.141	6.57	...	...	100	114.3	3.58	9.78
4	4.500	0.156	7.24	...	...	100	114.3	3.96	10.78
4	4.500	0.172	7.96	...	...	100	114.3	4.37	11.85
4	4.500	0.188	8.67	...	30	100	114.3	4.78	12.91
4	4.500	0.203	9.32	...	...	100	114.3	5.16	13.89
4	4.500	0.219	10.02	...	...	100	114.3	5.56	14.91
4	4.500	0.237	10.80	STD	40	100	114.3	6.02	16.08
4	4.500	0.250	11.36	...	...	100	114.3	6.35	16.91
4	4.500	0.281	12.67	...	...	100	114.3	7.14	18.87
4	4.500	0.312	13.97	...	...	100	114.3	7.92	20.78
4	4.500	0.337	15.00	XS	80	100	114.3	8.56	22.32
4	4.500	0.438	19.02	...	120	100	114.3	11.13	28.32
4	4.500	0.531	22.53	...	160	100	114.3	13.49	33.54
4	4.500	0.674	27.57	XXS	...	100	114.3	17.12	41.03
5	5.563	0.083	4.86	...	...	125	141.3	2.11	7.24
5	5.563	0.109	6.36	...	5	125	141.3	2.77	9.46
5	5.563	0.125	7.27	...	...	125	141.3	3.18	10.83
5	5.563	0.134	7.78	...	10	125	141.3	3.40	11.56
5	5.563	0.156	9.02	...	...	125	141.3	3.96	13.41
5	5.563	0.188	10.80	...	...	125	141.3	4.78	16.09
5	5.563	0.219	12.51	...	...	125	141.3	5.56	18.61
5	5.563	0.258	14.63	STD	40	125	141.3	6.55	21.77
5	5.563	0.281	15.87	...	...	125	141.3	7.14	23.62
5	5.563	0.312	17.51	...	...	125	141.3	7.92	26.05
5	5.563	0.344	19.19	...	...	125	141.3	8.74	28.57
5	5.563	0.375	20.80	XS	80	125	141.3	9.53	30.97
5	5.563	0.500	27.06	...	120	125	141.3	12.70	40.28
5	5.563	0.625	32.99	...	160	125	141.3	15.88	49.12
5	5.563	0.750	38.59	XXS	...	125	141.3	19.05	57.43
6	6.625	0.083	5.80	...	...	150	168.3	2.11	8.65
6	6.625	0.109	7.59	...	5	150	168.3	2.77	11.31
6	6.625	0.125	8.69	...	...	150	168.3	3.18	12.95
6	6.625	0.134	9.30	...	10	150	168.3	3.40	13.83
6	6.625	0.141	9.77	...	...	150	168.3	3.58	14.54
6	6.625	0.156	10.79	...	...	150	168.3	3.96	16.05
6	6.625	0.172	11.87	...	...	150	168.3	4.37	17.67
6	6.625	0.188	12.94	...	...	150	168.3	4.78	19.28
6	6.625	0.203	13.94	...	...	150	168.3	5.16	20.76
6	6.625	0.219	15.00	...	...	150	168.3	5.56	22.31
6	6.625	0.250	17.04	...	...	150	168.3	6.35	25.36
6	6.625	0.280	18.99	STD	40	150	168.3	7.11	28.26

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
6	6.625	0.312	21.06	...	...	150	168.3	7.92	31.33
6	6.625	0.344	23.10	...	...	150	168.3	8.74	34.39
6	6.625	0.375	25.05	...	...	150	168.3	9.53	37.31
6	6.625	0.432	28.60	XS	80	150	168.3	10.97	42.56
6	6.625	0.500	32.74	...	...	150	168.3	12.70	48.73
6	6.625	0.562	36.43	...	120	150	168.3	14.27	54.21
6	6.625	0.625	40.09	...	...	150	168.3	15.88	59.69
6	6.625	0.719	45.39	...	160	150	168.3	18.26	67.57
6	6.625	0.750	47.10	...	...	150	168.3	19.05	70.12
6	6.625	0.864	53.21	XXS	...	150	168.3	21.95	79.22
6	6.625	0.875	53.78	...	...	150	168.3	22.23	80.08
8	8.625	0.109	9.92	...	5	200	219.1	2.77	14.78
8	8.625	0.125	11.36	...	...	200	219.1	3.18	16.93
8	8.625	0.148	13.41	...	10	200	219.1	3.76	19.97
8	8.625	0.156	14.12	...	...	200	219.1	3.96	21.01
8	8.625	0.188	16.96	...	...	200	219.1	4.78	25.26
8	8.625	0.203	18.28	...	...	200	219.1	5.16	27.22
8	8.625	0.219	19.68	...	...	200	219.1	5.56	29.28
8	8.625	0.250	22.38	...	20	200	219.1	6.35	33.32
8	8.625	0.277	24.72	...	30	200	219.1	7.04	36.82
8	8.625	0.312	27.73	...	...	200	219.1	7.92	41.25
8	8.625	0.322	28.58	STD	40	200	219.1	8.18	42.55
8	8.625	0.344	30.45	...	...	200	219.1	8.74	45.34
8	8.625	0.375	33.07	...	...	200	219.1	9.53	49.25
8	8.625	0.406	35.67	...	60	200	219.1	10.31	53.09
8	8.625	0.438	38.33	...	...	200	219.1	11.13	57.08
8	8.625	0.500	43.43	XS	80	200	219.1	12.70	64.64
8	8.625	0.562	48.44	...	...	200	219.1	14.27	72.08
8	8.625	0.594	51.00	...	100	200	219.1	15.09	75.92
8	8.625	0.625	53.45	...	...	200	219.1	15.88	79.59
8	8.625	0.719	60.77	...	120	200	219.1	18.26	90.44
8	8.625	0.750	63.14	...	...	200	219.1	19.05	93.98
8	8.625	0.812	67.82	...	140	200	219.1	20.62	100.93
8	8.625	0.875	72.49	XXS	...	200	219.1	22.23	107.93
8	8.625	0.906	74.76	...	160	200	219.1	23.01	111.27
8	8.625	1.000	81.51	...	...	200	219.1	25.40	121.33
10	10.750	0.134	15.21	...	5	250	273.0	3.40	22.61
10	10.750	0.156	17.67	...	...	250	273.0	3.96	26.27
10	10.750	0.165	18.67	...	10	250	273.0	4.19	27.78
10	10.750	0.188	21.23	...	...	250	273.0	4.78	31.62
10	10.750	0.203	22.89	...	...	250	273.0	5.16	34.08
10	10.750	0.219	24.65	...	...	250	273.0	5.56	36.67
10	10.750	0.250	28.06	...	20	250	273.0	6.35	41.76
10	10.750	0.279	31.23	...	...	250	273.0	7.09	46.49
10	10.750	0.307	34.27	...	30	250	273.0	7.80	51.01
10	10.750	0.344	38.27	...	...	250	273.0	8.74	56.96
10	10.750	0.365	40.52	STD	40	250	273.0	9.27	60.29
10	10.750	0.438	48.28	...	...	250	273.0	11.13	71.88

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
10	10.750	0.500	54.79	XS	60	250	273.0	12.70	81.53
10	10.750	0.562	61.21	...	...	250	273.0	14.27	91.05
10	10.750	0.594	64.49	...	80	250	273.0	15.09	95.98
10	10.750	0.625	67.65	...	...	250	273.0	15.88	100.69
10	10.750	0.719	77.10	...	100	250	273.0	18.26	114.71
10	10.750	0.812	86.26	...	...	250	273.0	20.62	128.34
10	10.750	0.844	89.38	...	120	250	273.0	21.44	133.01
10	10.750	0.875	92.37	...	...	250	273.0	22.23	137.48
10	10.750	0.938	98.39	...	...	250	273.0	23.83	146.43
10	10.750	1.000	104.23	XXS	140	250	273.0	25.40	155.10
10	10.750	1.125	115.75	...	160	250	273.0	28.58	172.27
10	10.750	1.250	126.94	...	...	250	273.0	31.75	188.90
12	12.750	0.156	21.00	...	5	300	323.8	3.96	31.24
12	12.750	0.172	23.13	...	...	300	323.8	4.37	34.43
12	12.750	0.180	24.19	...	10	300	323.8	4.57	35.98
12	12.750	0.188	25.25	...	...	300	323.8	4.78	37.61
12	12.750	0.203	27.23	...	...	300	323.8	5.16	40.55
12	12.750	0.219	29.34	...	...	300	323.8	5.56	43.64
12	12.750	0.250	33.41	...	20	300	323.8	6.35	49.71
12	12.750	0.281	37.46	...	...	300	323.8	7.14	55.76
12	12.750	0.312	41.48	...	...	300	323.8	7.92	61.70
12	12.750	0.330	43.81	...	30	300	323.8	8.38	65.19
12	12.750	0.344	45.62	...	...	300	323.8	8.74	67.91
12	12.750	0.375	49.61	STD	...	300	323.8	9.53	73.86
12	12.750	0.406	53.57	...	40	300	323.8	10.31	79.71
12	12.750	0.438	57.65	...	...	300	323.8	11.13	85.82
12	12.750	0.500	65.48	XS	...	300	323.8	12.70	97.44
12	12.750	0.562	73.22	...	60	300	323.8	14.27	108.93
12	12.750	0.625	81.01	...	...	300	323.8	15.88	120.59
12	12.750	0.688	88.71	...	80	300	323.8	17.48	132.05
12	12.750	0.750	96.21	...	...	300	323.8	19.05	143.17
12	12.750	0.812	103.63	...	...	300	323.8	20.62	154.17
12	12.750	0.844	107.42	...	100	300	323.8	21.44	159.87
12	12.750	0.875	111.08	...	...	300	323.8	22.23	165.33
12	12.750	0.938	118.44	...	...	300	323.8	23.83	176.29
12	12.750	1.000	125.61	XXS	120	300	323.8	25.40	186.92
12	12.750	1.062	132.69	...	...	300	323.8	26.97	197.43
12	12.750	1.125	139.81	...	140	300	323.8	28.58	208.08
12	12.750	1.250	153.67	...	...	300	323.8	31.75	228.68
12	12.750	1.312	160.42	...	160	300	323.8	33.32	238.69
14	14.000	0.156	23.09	...	5	350	355.6	3.96	34.34
14	14.000	0.188	27.76	...	...	350	355.6	4.78	41.36
14	14.000	0.203	29.94	...	...	350	355.6	5.16	44.59
14	14.000	0.210	30.96	...	...	350	355.6	5.33	46.04
14	14.000	0.219	32.26	...	...	350	355.6	5.56	48.00
14	14.000	0.250	36.75	...	10	350	355.6	6.35	54.69
14	14.000	0.281	41.21	...	...	350	355.6	7.14	61.36
14	14.000	0.312	45.65	...	20	350	355.6	7.92	67.91

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
14	14.000	0.344	50.22	...	...	350	355.6	8.74	74.76
14	14.000	0.375	54.62	STD	30	350	355.6	9.53	81.33
14	14.000	0.406	59.00	...	...	350	355.6	10.31	87.79
14	14.000	0.438	63.50	...	40	350	355.6	11.13	94.55
14	14.000	0.469	67.84	...	...	350	355.6	11.91	100.95
14	14.000	0.500	72.16	XS	...	350	355.6	12.70	107.40
14	14.000	0.562	80.73	...	...	350	355.6	14.27	120.12
14	14.000	0.594	85.13	...	60	350	355.6	15.09	126.72
14	14.000	0.625	89.36	...	...	350	355.6	15.88	133.04
14	14.000	0.688	97.91	...	...	350	355.6	17.48	145.76
14	14.000	0.750	106.23	...	80	350	355.6	19.05	158.11
14	14.000	0.812	114.48	...	...	350	355.6	20.62	170.34
14	14.000	0.875	122.77	...	...	350	355.6	22.23	182.76
14	14.000	0.938	130.98	...	100	350	355.6	23.83	194.98
14	14.000	1.000	138.97	...	...	350	355.6	25.40	206.84
14	14.000	1.062	146.88	...	...	350	355.6	26.97	218.58
14	14.000	1.094	150.93	...	120	350	355.6	27.79	224.66
14	14.000	1.125	154.84	...	...	350	355.6	28.58	230.49
14	14.000	1.250	170.37	...	140	350	355.6	31.75	253.58
14	14.000	1.406	189.29	...	160	350	355.6	35.71	281.72
14	14.000	2.000	256.56	...	...	350	355.6	50.80	381.85
14	14.000	2.125	269.76	...	...	350	355.6	53.98	401.52
14	14.000	2.200	277.51	...	...	350	355.6	55.88	413.04
14	14.000	2.500	307.34	...	...	350	355.6	63.50	457.43
16	16.000	0.165	27.93	...	5	400	406.4	4.19	41.56
16	16.000	0.188	31.78	...	...	400	406.4	4.78	47.34
16	16.000	0.203	34.28	...	...	400	406.4	5.16	51.06
16	16.000	0.219	36.95	...	...	400	406.4	5.56	54.96
16	16.000	0.250	42.09	...	10	400	406.4	6.35	62.65
16	16.000	0.281	47.22	...	...	400	406.4	7.14	70.30
16	16.000	0.312	52.32	...	20	400	406.4	7.92	77.83
16	16.000	0.344	57.57	...	...	400	406.4	8.74	85.71
16	16.000	0.375	62.64	STD	30	400	406.4	9.53	93.27
16	16.000	0.406	67.68	...	...	400	406.4	10.31	100.71
16	16.000	0.438	72.86	...	...	400	406.4	11.13	108.49
16	16.000	0.469	77.87	...	...	400	406.4	11.91	115.87
16	16.000	0.500	82.85	XS	40	400	406.4	12.70	123.31
16	16.000	0.562	92.75	...	...	400	406.4	14.27	138.00
16	16.000	0.625	102.72	...	...	400	406.4	15.88	152.94
16	16.000	0.656	107.60	...	60	400	406.4	16.66	160.13
16	16.000	0.688	112.62	...	...	400	406.4	17.48	167.66
16	16.000	0.750	122.27	...	...	400	406.4	19.05	181.98
16	16.000	0.812	131.84	...	...	400	406.4	20.62	196.18
16	16.000	0.844	136.74	...	80	400	406.4	21.44	203.54
16	16.000	0.875	141.48	...	...	400	406.4	22.23	210.61
16	16.000	0.938	151.03	...	...	400	406.4	23.83	224.83
16	16.000	1.000	160.35	...	...	400	406.4	25.40	238.66
16	16.000	1.031	164.98	...	100	400	406.4	26.19	245.57

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
16	16.000	1.062	169.59	...	...	400	406.4	26.97	252.37
16	16.000	1.125	178.89	...	...	400	406.4	28.58	266.30
16	16.000	1.188	188.11	...	...	400	406.4	30.18	280.01
16	16.000	1.219	192.61	...	120	400	406.4	30.96	286.66
16	16.000	1.250	197.10	...	...	400	406.4	31.75	293.35
16	16.000	1.438	223.85	...	140	400	406.4	36.53	333.21
16	16.000	1.594	245.48	...	160	400	406.4	40.49	365.38
18	18.000	0.165	31.46	...	5	450	457	4.19	46.79
18	18.000	0.188	35.80	...	...	450	457	4.78	53.31
18	18.000	0.219	41.63	...	...	450	457	5.56	61.90
18	18.000	0.250	47.44	...	10	450	457	6.35	70.57
18	18.000	0.281	53.23	...	...	450	457	7.14	79.21
18	18.000	0.312	58.99	...	20	450	457	7.92	87.71
18	18.000	0.344	64.93	...	...	450	457	8.74	96.62
18	18.000	0.375	70.65	STD	...	450	457	9.53	105.17
18	18.000	0.406	76.36	...	...	450	457	10.31	113.58
18	18.000	0.438	82.23	...	30	450	457	11.13	122.38
18	18.000	0.469	87.89	...	...	450	457	11.91	130.73
18	18.000	0.500	93.54	XS	...	450	457	12.70	139.16
18	18.000	0.562	104.76	...	40	450	457	14.27	155.81
18	18.000	0.625	116.09	...	...	450	457	15.88	172.75
18	18.000	0.688	127.32	...	...	450	457	17.48	189.47
18	18.000	0.750	138.30	...	60	450	457	19.05	205.75
18	18.000	0.812	149.20	...	...	450	457	20.62	221.91
18	18.000	0.875	160.18	...	...	450	457	22.23	238.35
18	18.000	0.938	171.08	...	80	450	457	23.83	254.57
18	18.000	1.000	181.73	...	...	450	457	25.40	270.36
18	18.000	1.062	192.29	...	...	450	457	26.97	286.02
18	18.000	1.125	202.94	...	...	450	457	28.58	301.96
18	18.000	1.156	208.15	...	100	450	457	29.36	309.64
18	18.000	1.188	213.51	...	...	450	457	30.18	317.68
18	18.000	1.250	223.82	...	...	450	457	31.75	332.97
18	18.000	1.375	244.37	...	120	450	457	34.93	363.58
18	18.000	1.562	274.48	...	140	450	457	39.67	408.28
18	18.000	1.781	308.79	...	160	450	457	45.24	459.39
20	20.000	0.188	39.82	...	5	500	508	4.78	59.32
20	20.000	0.219	46.31	...	...	500	508	5.56	68.89
20	20.000	0.250	52.78	...	10	500	508	6.35	78.56
20	20.000	0.281	59.23	...	...	500	508	7.14	88.19
20	20.000	0.312	65.66	...	...	500	508	7.92	97.68
20	20.000	0.344	72.28	...	...	500	508	8.74	107.61
20	20.000	0.375	78.67	STD	20	500	508	9.53	117.15
20	20.000	0.406	85.04	...	...	500	508	10.31	126.54
20	20.000	0.438	91.59	...	...	500	508	11.13	136.38
20	20.000	0.469	97.92	...	...	500	508	11.91	145.71
20	20.000	0.500	104.23	XS	30	500	508	12.70	155.13
20	20.000	0.562	116.78	...	...	500	508	14.27	173.75

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
20	20.000	0.594	123.23	...	40	500	508	15.09	183.43
20	20.000	0.625	129.45	...	...	500	508	15.88	192.73
20	20.000	0.688	142.03	...	...	500	508	17.48	211.45
20	20.000	0.750	154.34	...	...	500	508	19.05	229.71
20	20.000	0.812	166.56	...	60	500	508	20.62	247.84
20	20.000	0.875	178.89	...	...	500	508	22.23	266.31
20	20.000	0.938	191.14	...	...	500	508	23.83	284.54
20	20.000	1.000	203.11	...	...	500	508	25.40	302.30
20	20.000	1.031	209.06	...	80	500	508	26.19	311.19
20	20.000	1.062	215.00	...	...	500	508	26.97	319.94
20	20.000	1.125	227.00	...	...	500	508	28.58	337.91
20	20.000	1.188	238.91	...	...	500	508	30.18	355.63
20	20.000	1.250	250.55	...	...	500	508	31.75	372.91
20	20.000	1.281	256.34	...	100	500	508	32.54	381.55
20	20.000	1.312	262.10	...	...	500	508	33.32	390.05
20	20.000	1.375	273.76	...	...	500	508	34.93	407.51
20	20.000	1.500	296.65	...	120	500	508	38.10	441.52
20	20.000	1.750	341.41	...	140	500	508	44.45	508.15
20	20.000	1.969	379.53	...	160	500	508	50.01	564.85
22	22.000	0.188	43.84	...	5	550	559	4.78	65.33
22	22.000	0.219	50.99	...	...	550	559	5.56	75.89
22	22.000	0.250	58.13	...	10	550	559	6.35	86.55
22	22.000	0.281	65.24	...	...	550	559	7.14	97.17
22	22.000	0.312	72.34	...	...	550	559	7.92	107.64
22	22.000	0.344	79.64	...	...	550	559	8.74	118.60
22	22.000	0.375	86.69	STD	20	550	559	9.53	129.14
22	22.000	0.406	93.72	...	...	550	559	10.31	139.51
22	22.000	0.438	100.96	...	...	550	559	11.13	150.38
22	22.000	0.469	107.95	...	...	550	559	11.91	160.69
22	22.000	0.500	114.92	XS	30	550	559	12.70	171.10
22	22.000	0.562	128.79	...	...	550	559	14.27	191.70
22	22.000	0.625	142.81	...	...	550	559	15.88	212.70
22	22.000	0.688	156.74	...	...	550	559	17.48	233.44
22	22.000	0.750	170.37	...	...	550	559	19.05	253.67
22	22.000	0.812	183.92	...	...	550	559	20.62	273.78
22	22.000	0.875	197.60	...	60	550	559	22.23	294.27
22	22.000	0.938	211.19	...	...	550	559	23.83	314.51
22	22.000	1.000	224.49	...	...	550	559	25.40	334.25
22	22.000	1.062	237.70	...	...	550	559	26.97	353.86
22	22.000	1.125	251.05	...	80	550	559	28.58	373.85
22	22.000	1.188	264.31	...	...	550	559	30.18	393.59
22	22.000	1.250	277.27	...	...	550	559	31.75	412.84
22	22.000	1.312	290.15	...	...	550	559	33.32	431.96
22	22.000	1.375	303.16	...	100	550	559	34.93	451.45
22	22.000	1.438	316.08	...	...	550	559	36.53	470.69
22	22.000	1.500	328.72	...	...	550	559	38.10	489.44
22	22.000	1.625	353.94	...	120	550	559	41.28	527.05
22	22.000	1.875	403.38	...	140	550	559	47.63	600.67
22	22.000	2.125	451.49	...	160	550	559	53.98	672.30

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
24	24.000	0.218	55.42	...	5	600	610	5.54	82.58
24	24.000	0.250	63.47	...	10	600	610	6.35	94.53
24	24.000	0.281	71.25	...	...	600	610	7.14	106.15
24	24.000	0.312	79.01	...	...	600	610	7.92	117.60
24	24.000	0.344	86.99	...	...	600	610	8.74	129.60
24	24.000	0.375	94.71	STD	20	600	610	9.53	141.12
24	24.000	0.406	102.40	...	...	600	610	10.31	152.48
24	24.000	0.438	110.32	...	...	600	610	11.13	164.38
24	24.000	0.469	117.98	...	...	600	610	11.91	175.67
24	24.000	0.500	125.61	XS	...	600	610	12.70	187.07
24	24.000	0.562	140.81	...	30	600	610	14.27	209.65
24	24.000	0.625	156.17	...	...	600	610	15.88	232.67
24	24.000	0.688	171.45	...	40	600	610	17.48	255.43
24	24.000	0.750	186.41	...	...	600	610	19.05	277.63
24	24.000	0.812	201.28	...	...	600	610	20.62	299.71
24	24.000	0.875	216.31	...	...	600	610	22.23	322.23
24	24.000	0.938	231.25	...	...	600	610	23.83	344.48
24	24.000	0.969	238.57	...	60	600	610	24.61	355.28
24	24.000	1.000	245.87	...	...	600	610	25.40	366.19
24	24.000	1.062	260.41	...	...	600	610	26.97	387.79
24	24.000	1.125	275.10	...	...	600	610	28.58	409.80
24	24.000	1.188	289.71	...	...	600	610	30.18	431.55
24	24.000	1.219	296.86	...	80	600	610	30.96	442.11
24	24.000	1.250	304.00	...	...	600	610	31.75	452.77
24	24.000	1.312	318.21	...	...	600	610	33.32	473.87
24	24.000	1.375	332.56	...	...	600	610	34.93	495.38
24	24.000	1.438	346.83	...	...	600	610	36.53	516.63
24	24.000	1.500	360.79	...	...	600	610	38.10	537.36
24	24.000	1.531	367.74	...	100	600	610	38.89	547.74
24	24.000	1.562	374.66	...	...	600	610	39.67	557.97
24	24.000	1.812	429.79	...	120	600	610	46.02	640.07
24	24.000	2.062	483.57	...	140	600	610	52.37	720.19
24	24.000	2.344	542.64	...	160	600	610	59.54	808.27
26	26.000	0.250	68.82	...	...	650	660	6.35	102.36
26	26.000	0.281	77.26	...	...	650	660	7.14	114.96
26	26.000	0.312	85.68	...	10	650	660	7.92	127.36
26	26.000	0.344	94.35	...	...	650	660	8.74	140.37
26	26.000	0.375	102.72	STD	...	650	660	9.53	152.88
26	26.000	0.406	111.08	...	...	650	660	10.31	165.19
26	26.000	0.438	119.69	...	...	650	660	11.13	178.10
26	26.000	0.469	128.00	...	...	650	660	11.91	190.36
26	26.000	0.500	136.30	XS	20	650	660	12.70	202.74
26	26.000	0.562	152.83	...	...	650	660	14.27	227.25
26	26.000	0.625	169.54	...	...	650	660	15.88	252.25
26	26.000	0.688	186.16	...	...	650	660	17.48	276.98
26	26.000	0.750	202.44	...	...	650	660	19.05	301.12
26	26.000	0.812	218.64	...	...	650	660	20.62	325.14
26	26.000	0.875	235.01	...	...	650	660	22.23	349.64
26	26.000	0.938	251.30	...	...	650	660	23.83	373.87
26	26.000	1.000	267.25	...	...	650	660	25.40	397.51

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
28	28.000	0.250	74.16	...	...	700	711	6.35	110.35
28	28.000	0.281	83.26	...	...	700	711	7.14	123.94
28	28.000	0.312	92.35	...	10	700	711	7.92	137.32
28	28.000	0.344	101.70	...	...	700	711	8.74	151.37
28	28.000	0.375	110.74	STD	...	700	711	9.53	164.86
28	28.000	0.406	119.76	...	...	700	711	10.31	178.16
28	28.000	0.438	129.05	...	...	700	711	11.13	192.10
28	28.000	0.469	138.03	...	...	700	711	11.91	205.34
28	28.000	0.500	146.99	XS	20	700	711	12.70	218.71
28	28.000	0.562	164.84	...	...	700	711	14.27	245.19
28	28.000	0.625	182.90	...	30	700	711	15.88	272.23
28	28.000	0.688	200.87	...	...	700	711	17.48	298.96
28	28.000	0.750	218.48	...	...	700	711	19.05	325.08
28	28.000	0.812	236.00	...	...	700	711	20.62	351.07
28	28.000	0.875	253.72	...	...	700	711	22.23	377.60
28	28.000	0.938	271.36	...	...	700	711	23.83	403.84
28	28.000	1.000	288.63	...	...	700	711	25.40	429.46
30	30.000	0.250	79.51	...	5	750	762	6.35	118.34
30	30.000	0.281	89.27	...	...	750	762	7.14	132.92
30	30.000	0.312	99.02	...	10	750	762	7.92	147.29
30	30.000	0.344	109.06	...	...	750	762	8.74	162.36
30	30.000	0.375	118.76	STD	...	750	762	9.53	176.85
30	30.000	0.406	128.44	...	...	750	762	10.31	191.12
30	30.000	0.438	138.42	...	...	750	762	11.13	206.10
30	30.000	0.469	148.06	...	...	750	762	11.91	220.32
30	30.000	0.500	157.68	XS	20	750	762	12.70	234.68
30	30.000	0.562	176.86	...	...	750	762	14.27	263.14
30	30.000	0.625	196.26	...	30	750	762	15.88	292.20
30	30.000	0.688	215.58	...	...	750	762	17.48	320.95
30	30.000	0.750	234.51	...	...	750	762	19.05	349.04
30	30.000	0.812	253.36	...	...	750	762	20.62	377.01
30	30.000	0.875	272.43	...	...	750	762	22.23	405.56
30	30.000	0.938	291.41	...	...	750	762	23.83	433.81
30	30.000	1.000	310.01	...	...	750	762	25.40	461.41
30	30.000	1.062	328.53	...	...	750	762	26.97	488.88
30	30.000	1.125	347.26	...	...	750	762	28.58	516.93
30	30.000	1.188	365.90	...	...	750	762	30.18	544.68
30	30.000	1.250	384.17	...	...	750	762	31.75	571.79
32	32.000	0.250	84.85	...	...	800	813	6.35	126.32
32	32.000	0.281	95.28	...	...	800	813	7.14	141.90
32	32.000	0.312	105.69	...	10	800	813	7.92	157.25
32	32.000	0.344	116.41	...	...	800	813	8.74	173.35
32	32.000	0.375	126.78	STD	...	800	813	9.53	188.83
32	32.000	0.406	137.12	...	...	800	813	10.31	204.09
32	32.000	0.438	147.78	...	...	800	813	11.13	220.10
32	32.000	0.469	158.08	...	...	800	813	11.91	235.29
32	32.000	0.500	168.37	XS	20	800	813	12.70	250.65
32	32.000	0.562	188.87	...	...	800	813	14.27	281.09
32	32.000	0.625	209.62	...	30	800	813	15.88	312.17
32	32.000	0.688	230.29	...	40	800	813	17.48	342.94

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
32	32.000	0.750	250.55	...	...	800	813	19.05	373.00
32	32.000	0.812	270.72	...	...	800	813	20.62	402.94
32	32.000	0.875	291.14	...	...	800	813	22.23	433.52
32	32.000	0.938	311.47	...	...	800	813	23.83	463.78
32	32.000	1.000	331.39	...	...	800	813	25.40	493.35
32	32.000	1.062	351.23	...	...	800	813	26.97	522.80
32	32.000	1.125	371.31	...	...	800	813	28.58	552.88
32	32.000	1.188	391.30	...	...	800	813	30.18	582.64
32	32.000	1.250	410.90	...	...	800	813	31.75	611.72
34	34.000	0.250	90.20	...	...	850	864	6.35	134.31
34	34.000	0.281	101.29	...	...	850	864	7.14	150.88
34	34.000	0.312	112.36	...	10	850	864	7.92	167.21
34	34.000	0.344	123.77	...	...	850	864	8.74	184.34
34	34.000	0.375	134.79	STD	...	850	864	9.53	200.82
34	34.000	0.406	145.80	...	...	850	864	10.31	217.06
34	34.000	0.438	157.14	...	...	850	864	11.13	234.10
34	34.000	0.469	168.11	...	...	850	864	11.91	250.27
34	34.000	0.500	179.06	XS	20	850	864	12.70	266.63
34	34.000	0.562	200.89	...	...	850	864	14.27	299.04
34	34.000	0.625	222.99	...	30	850	864	15.88	332.14
34	34.000	0.688	245.00	...	40	850	864	17.48	364.92
34	34.000	0.750	266.58	...	...	850	864	19.05	396.96
34	34.000	0.812	288.08	...	...	850	864	20.62	428.88
34	34.000	0.875	309.84	...	...	850	864	22.23	461.48
34	34.000	0.938	331.52	...	...	850	864	23.83	493.75
34	34.000	1.000	352.77	...	...	850	864	25.40	525.30
34	34.000	1.062	373.94	...	...	850	864	26.97	556.73
34	34.000	1.125	395.36	...	...	850	864	28.58	588.83
34	34.000	1.188	416.70	...	...	850	864	30.18	620.60
34	34.000	1.250	437.62	...	...	850	864	31.75	651.65
36	36.000	0.250	95.54	...	...	900	914	6.35	142.14
36	36.000	0.281	107.30	...	...	900	914	7.14	159.68
36	36.000	0.312	119.03	...	10	900	914	7.92	176.97
36	36.000	0.344	131.12	...	...	900	914	8.74	195.12
36	36.000	0.375	142.81	STD	...	900	914	9.53	212.57
36	36.000	0.406	154.48	...	...	900	914	10.31	229.77
36	36.000	0.438	166.51	...	...	900	914	11.13	247.82
36	36.000	0.469	178.14	...	...	900	914	11.91	264.96
36	36.000	0.500	189.75	XS	20	900	914	12.70	282.29
36	36.000	0.562	212.90	...	...	900	914	14.27	316.63
36	36.000	0.625	236.35	...	30	900	914	15.88	351.73
36	36.000	0.688	259.71	...	...	900	914	17.48	386.47
36	36.000	0.750	282.62	...	40	900	914	19.05	420.45
36	36.000	0.812	305.44	...	...	900	914	20.62	454.30
36	36.000	0.875	328.55	...	...	900	914	22.23	488.89
36	36.000	0.938	351.57	...	...	900	914	23.83	523.14

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
36	36.000	1.000	374.15	...	...	900	914	25.40	556.62
36	36.000	1.062	396.64	...	...	900	914	26.97	589.98
36	36.000	1.125	419.42	...	...	900	914	28.58	624.07
36	36.000	1.188	442.10	...	...	900	914	30.18	657.81
36	36.000	1.250	464.35	...	...	900	914	31.75	690.80
38	38.000	0.312	125.70	...	...	950	965	7.92	186.94
38	38.000	0.344	138.47	...	...	950	965	8.74	206.11
38	38.000	0.375	150.83	STD	...	950	965	9.53	224.56
38	38.000	0.406	163.16	...	...	950	965	10.31	242.74
38	38.000	0.438	175.87	...	...	950	965	11.13	261.82
38	38.000	0.469	188.17	...	...	950	965	11.91	279.94
38	38.000	0.500	200.44	XS	...	950	965	12.70	298.26
38	38.000	0.562	224.92	...	...	950	965	14.27	334.58
38	38.000	0.625	249.71	...	...	950	965	15.88	371.70
38	38.000	0.688	274.42	...	...	950	965	17.48	408.46
38	38.000	0.750	298.65	...	...	950	965	19.05	444.41
38	38.000	0.812	322.80	...	...	950	965	20.62	480.24
38	38.000	0.875	347.26	...	...	950	965	22.23	516.85
38	38.000	0.938	371.63	...	...	950	965	23.83	553.11
38	38.000	1.000	395.53	...	...	950	965	25.40	588.57
38	38.000	1.062	419.35	...	...	950	965	26.97	623.90
38	38.000	1.125	443.47	...	...	950	965	28.58	660.01
38	38.000	1.188	467.50	...	...	950	965	30.18	695.77
38	38.000	1.250	491.07	...	...	950	965	31.75	730.74
40	40.000	0.312	132.37	...	...	1 000	1 016	7.92	196.90
40	40.000	0.344	145.83	...	...	1 000	1 016	8.74	217.11
40	40.000	0.375	158.85	STD	...	1 000	1 016	9.53	236.54
40	40.000	0.406	171.84	...	...	1 000	1 016	10.31	255.71
40	40.000	0.438	185.24	...	...	1 000	1 016	11.13	275.82
40	40.000	0.469	198.19	...	...	1 000	1 016	11.91	294.92
40	40.000	0.500	211.13	XS	...	1 000	1 016	12.70	314.23
40	40.000	0.562	236.93	...	...	1 000	1 016	14.27	352.53
40	40.000	0.625	263.07	...	...	1 000	1 016	15.88	391.67
40	40.000	0.688	289.13	...	...	1 000	1 016	17.48	430.45
40	40.000	0.750	314.69	...	...	1 000	1 016	19.05	468.37
40	40.000	0.812	340.16	...	...	1 000	1 016	20.62	506.17
40	40.000	0.875	365.97	...	...	1 000	1 016	22.23	544.81
40	40.000	0.938	391.68	...	...	1 000	1 016	23.83	583.08
40	40.000	1.000	416.91	...	...	1 000	1 016	25.40	620.51
40	40.000	1.062	442.05	...	...	1 000	1 016	26.97	657.82
40	40.000	1.125	467.52	...	...	1 000	1 016	28.58	695.96
40	40.000	1.188	492.90	...	...	1 000	1 016	30.18	733.73
40	40.000	1.250	517.80	...	...	1 000	1 016	31.75	770.67
42	42.000	0.344	153.18	...	...	1 050	1 067	8.74	228.10
42	42.000	0.375	166.86	STD	...	1 050	1 067	9.53	248.53
42	42.000	0.406	180.52	...	...	1 050	1 067	10.31	268.67
42	42.000	0.438	194.60	...	...	1 050	1 067	11.13	289.82

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
42	42.000	0.469	208.22	...	...	1 050	1 067	11.91	309.90
42	42.000	0.500	221.82	XS	...	1 050	1 067	12.70	330.21
42	42.000	0.562	248.95	...	...	1 050	1 067	14.27	370.48
42	42.000	0.625	276.44	...	...	1 050	1 067	15.88	411.64
42	42.000	0.688	303.84	...	...	1 050	1 067	17.48	452.43
42	42.000	0.750	330.72	...	...	1 050	1 067	19.05	492.33
42	42.000	0.812	357.52	...	...	1 050	1 067	20.62	532.11
42	42.000	0.875	384.67	...	...	1 050	1 067	22.23	572.77
42	42.000	0.938	411.74	...	...	1 050	1 067	23.83	613.05
42	42.000	1.000	438.29	...	...	1 050	1 067	25.40	652.46
42	42.000	1.062	464.76	...	...	1 050	1 067	26.97	691.75
42	42.000	1.125	491.57	...	...	1 050	1 067	28.58	731.91
42	42.000	1.188	518.30	...	...	1 050	1 067	30.18	771.69
42	42.000	1.250	544.52	...	...	1 050	1 067	31.75	810.60
44	44.000	0.344	160.54	...	...	1 100	1 118	8.74	239.09
44	44.000	0.375	174.88	STD	...	1 100	1 118	9.53	260.52
44	44.000	0.406	189.20	...	...	1 100	1 118	10.31	281.64
44	44.000	0.438	203.97	...	...	1 100	1 118	11.13	303.82
44	44.000	0.469	218.25	...	...	1 100	1 118	11.91	324.88
44	44.000	0.500	232.51	XS	...	1 100	1 118	12.70	346.18
44	44.000	0.562	260.97	...	...	1 100	1 118	14.27	388.42
44	44.000	0.625	289.80	...	...	1 100	1 118	15.88	431.62
44	44.000	0.688	318.55	...	...	1 100	1 118	17.48	474.42
44	44.000	0.750	346.76	...	...	1 100	1 118	19.05	516.29
44	44.000	0.812	374.88	...	...	1 100	1 118	20.62	558.04
44	44.000	0.875	403.38	...	...	1 100	1 118	22.23	600.73
44	44.000	0.938	431.79	...	...	1 100	1 118	23.83	643.03
44	44.000	1.000	459.67	...	...	1 100	1 118	25.40	684.41
44	44.000	1.062	487.47	...	...	1 100	1 118	26.97	725.67
44	44.000	1.125	515.63	...	...	1 100	1 118	28.58	767.85
44	44.000	1.188	543.70	...	...	1 100	1 118	30.18	809.65
44	44.000	1.250	571.25	...	...	1 100	1 118	31.75	850.54
46	46.000	0.344	167.89	...	...	1 150	1 168	8.74	249.87
46	46.000	0.375	182.90	STD	...	1 150	1 168	9.53	272.27
46	46.000	0.406	197.88	...	...	1 150	1 168	10.31	294.35
46	46.000	0.438	213.33	...	...	1 150	1 168	11.13	317.54
46	46.000	0.469	228.27	...	...	1 150	1 168	11.91	339.56
46	46.000	0.500	243.20	XS	...	1 150	1 168	12.70	361.84
46	46.000	0.562	272.98	...	...	1 150	1 168	14.27	406.02
46	46.000	0.625	303.16	...	...	1 150	1 168	15.88	451.20
46	46.000	0.688	333.26	...	...	1 150	1 168	17.48	495.97
46	46.000	0.750	362.79	...	...	1 150	1 168	19.05	539.78
46	46.000	0.812	392.24	...	...	1 150	1 168	20.62	583.47
46	46.000	0.875	422.09	...	...	1 150	1 168	22.23	628.14
46	46.000	0.938	451.85	...	...	1 150	1 168	23.83	672.41
46	46.000	1.000	481.05	...	...	1 150	1 168	25.40	715.73
46	46.000	1.062	510.17	...	...	1 150	1 168	26.97	758.92
46	46.000	1.125	539.68	...	...	1 150	1 168	28.58	803.09
46	46.000	1.188	569.10	...	...	1 150	1 168	30.18	846.86
46	46.000	1.250	597.97	...	...	1 150	1 168	31.75	889.69

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
48	48.000	0.344	175.25	...	...	1 200	1 219	8.74	260.86
48	48.000	0.375	190.92	STD	...	1 200	1 219	9.53	284.25
48	48.000	0.406	206.56	...	...	1 200	1 219	10.31	307.32
48	48.000	0.438	222.70	...	...	1 200	1 219	11.13	331.54
48	48.000	0.469	238.30	...	...	1 200	1 219	11.91	354.54
48	48.000	0.500	253.89	XS	...	1 200	1 219	12.70	377.81
48	48.000	0.562	285.00	...	...	1 200	1 219	14.27	423.97
48	48.000	0.625	316.52	...	...	1 200	1 219	15.88	471.17
48	48.000	0.688	347.97	...	...	1 200	1 219	17.48	517.95
48	48.000	0.750	378.83	...	...	1 200	1 219	19.05	563.74
48	48.000	0.812	409.61	...	...	1 200	1 219	20.62	609.40
48	48.000	0.875	440.80	...	...	1 200	1 219	22.23	656.10
48	48.000	0.938	471.90	...	...	1 200	1 219	23.83	702.38
48	48.000	1.000	502.43	...	...	1 200	1 219	25.40	747.67
48	48.000	1.062	532.88	...	...	1 200	1 219	26.97	792.84
48	48.000	1.125	563.73	...	...	1 200	1 219	28.58	839.04
48	48.000	1.188	594.50	...	...	1 200	1 219	30.18	884.82
48	48.000	1.250	624.70	...	...	1 200	1 219	31.75	929.62
52	52.000	0.375	206.95	...	...	1 300	1 321	9.53	308.23
52	52.000	0.406	223.93	...	...	1 300	1 321	10.31	333.26
52	52.000	0.438	241.42	...	...	1 300	1 321	11.13	359.54
52	52.000	0.469	258.36	...	...	1 300	1 321	11.91	384.50
52	52.000	0.500	275.27	...	...	1 300	1 321	12.70	409.76
52	52.000	0.562	309.03	...	...	1 300	1 321	14.27	459.86
52	52.000	0.625	343.25	...	...	1 300	1 321	15.88	511.12
52	52.000	0.688	377.39	...	...	1 300	1 321	17.48	561.93
52	52.000	0.750	410.90	...	...	1 300	1 321	19.05	611.66
52	52.000	0.812	444.33	...	...	1 300	1 321	20.62	661.27
52	52.000	0.875	478.21	...	...	1 300	1 321	22.23	712.02
52	52.000	0.938	512.01	...	...	1 300	1 321	23.83	762.33
52	52.000	1.000	545.19	...	...	1 300	1 321	25.40	811.57
52	52.000	1.062	578.29	...	...	1 300	1 321	26.97	860.69
52	52.000	1.125	611.84	...	...	1 300	1 321	28.58	910.93
52	52.000	1.188	645.30	...	...	1 300	1 321	30.18	960.74
52	52.000	1.250	678.15	...	...	1 300	1 321	31.75	1 009.49
56	56.000	0.375	222.99	...	...	1 400	1 422	9.53	331.96
56	56.000	0.406	241.29	...	...	1 400	1 422	10.31	358.94
56	56.000	0.438	260.15	...	...	1 400	1 422	11.13	387.26
56	56.000	0.469	278.41	...	...	1 400	1 422	11.91	414.17
56	56.000	0.500	296.65	...	...	1 400	1 422	12.70	441.39
56	56.000	0.562	333.06	...	...	1 400	1 422	14.27	495.41
56	56.000	0.625	369.97	...	...	1 400	1 422	15.88	550.67
56	56.000	0.688	406.80	...	...	1 400	1 422	17.48	605.46
56	56.000	0.750	442.97	...	...	1 400	1 422	19.05	659.11
56	56.000	0.812	479.05	...	...	1 400	1 422	20.62	712.63
56	56.000	0.875	515.63	...	...	1 400	1 422	22.23	767.39
56	56.000	0.938	552.12	...	...	1 400	1 422	23.83	821.68

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
56	56.000	1.000	587.95	...	...	1 400	1 422	25.40	874.83
56	56.000	1.062	623.70	...	...	1 400	1 422	26.97	927.86
56	56.000	1.125	659.94	...	...	1 400	1 422	28.58	982.12
56	56.000	1.188	696.10	...	...	1 400	1 422	30.18	1 035.91
56	56.000	1.250	731.60	...	...	1 400	1 422	31.75	1 088.57
60	60.000	0.375	239.02	...	...	1 500	1 524	9.53	355.94
60	60.000	0.406	258.65	...	...	1 500	1 524	10.31	384.87
60	60.000	0.438	278.88	...	...	1 500	1 524	11.13	415.26
60	60.000	0.469	298.47	...	...	1 500	1 524	11.91	444.13
60	60.000	0.500	318.03	...	...	1 500	1 524	12.70	473.34
60	60.000	0.562	357.09	...	...	1 500	1 524	14.27	531.30
60	60.000	0.625	396.70	...	...	1 500	1 524	15.88	590.62
60	60.000	0.688	436.22	...	...	1 500	1 524	17.48	649.44
60	60.000	0.750	475.04	...	...	1 500	1 524	19.05	707.03
60	60.000	0.812	513.77	...	...	1 500	1 524	20.62	764.50
60	60.000	0.875	553.04	...	...	1 500	1 524	22.23	823.31
60	60.000	0.938	592.23	...	...	1 500	1 524	23.83	881.63
60	60.000	1.000	630.71	...	...	1 500	1 524	25.40	938.73
60	60.000	1.062	669.11	...	...	1 500	1 524	26.97	995.71
60	60.000	1.125	708.05	...	...	1 500	1 524	28.58	1 054.01
60	60.000	1.188	746.90	...	...	1 500	1 524	30.18	1 111.83
60	60.000	1.250	785.05	...	...	1 500	1 524	31.75	1 168.44
64	64.000	0.375	255.06	...	...	1 600	1 626	9.53	379.91
64	64.000	0.406	276.01	...	...	1 600	1 626	10.31	410.81
64	64.000	0.438	297.61	...	...	1 600	1 626	11.13	443.25
64	64.000	0.469	318.52	...	...	1 600	1 626	11.91	474.09
64	64.000	0.500	339.41	...	...	1 600	1 626	12.70	505.29
64	64.000	0.562	381.12	...	...	1 600	1 626	14.27	567.20
64	64.000	0.625	423.42	...	...	1 600	1 626	15.88	630.56
64	64.000	0.688	465.64	...	...	1 600	1 626	17.48	693.41
64	64.000	0.750	507.11	...	...	1 600	1 626	19.05	754.95
64	64.000	0.812	548.49	...	...	1 600	1 626	20.62	816.37
64	64.000	0.875	590.46	...	...	1 600	1 626	22.23	879.23
64	64.000	0.938	632.34	...	...	1 600	1 626	23.83	941.57
64	64.000	1.000	673.47	...	...	1 600	1 626	25.40	1 002.62
64	64.000	1.062	714.52	...	...	1 600	1 626	26.97	1 063.55
64	64.000	1.125	756.15	...	...	1 600	1 626	28.58	1 125.90
64	64.000	1.188	797.69	...	...	1 600	1 626	30.18	1 187.74
64	64.000	1.250	838.50	...	...	1 600	1 626	31.75	1 248.30
68	68.000	0.469	338.57	...	...	1 700	1 727	11.91	503.75
68	68.000	0.500	360.79	...	...	1 700	1 727	12.70	536.92
68	68.000	0.562	405.15	...	...	1 700	1 727	14.27	602.74
68	68.000	0.625	450.15	...	...	1 700	1 727	15.88	670.12
68	68.000	0.688	495.06	...	...	1 700	1 727	17.48	736.95
68	68.000	0.750	539.18	...	...	1 700	1 727	19.05	802.40
68	68.000	0.812	583.21	...	...	1 700	1 727	20.62	867.73
68	68.000	0.875	627.87	...	...	1 700	1 727	22.23	934.60
68	68.000	0.938	672.45	...	...	1 700	1 727	23.83	1 000.92

Table 1 Dimensions and Weights of Welded and Seamless Wrought Steel Pipe (Cont'd)

NPS [Note (1)]	Customary Units			Identification [Standard (STD), Extra-Strong (XS), or Double Extra Strong (XXS)]	Schedule No.	DN [Note (2)]	SI Units		
	Outside Diameter, in.	Wall Thickness, in.	Plain End Weight, lb/ft				Outside Diameter, mm	Wall Thickness, mm	Plain End Mass, kg/m
68	68.000	1.000	716.23	...	...	1 700	1 727	25.40	1 065.89
68	68.000	1.062	759.93	...	...	1 700	1 727	26.97	1 130.73
68	68.000	1.125	804.26	...	...	1 700	1 727	28.58	1 197.09
68	68.000	1.188	848.49	...	...	1 700	1 727	30.18	1 262.92
68	68.000	1.250	891.95	...	...	1 700	1 727	31.75	1 327.39
72	72.000	0.500	382.17	...	...	1 800	1 829	12.70	568.87
72	72.000	0.562	429.18	...	...	1 800	1 829	14.27	638.64
72	72.000	0.625	476.87	...	...	1 800	1 829	15.88	710.06
72	72.000	0.688	524.48	...	...	1 800	1 829	17.48	780.92
72	72.000	0.750	571.25	...	...	1 800	1 829	19.05	850.32
72	72.000	0.812	617.93	...	...	1 800	1 829	20.62	919.60
72	72.000	0.875	665.29	...	...	1 800	1 829	22.23	990.52
72	72.000	0.938	712.55	...	...	1 800	1 829	23.83	1 060.87
72	72.000	1.000	758.99	...	...	1 800	1 829	25.40	1 129.78
72	72.000	1.062	805.34	...	...	1 800	1 829	26.97	1 198.57
72	72.000	1.125	852.36	...	...	1 800	1 829	28.58	1 268.98
72	72.000	1.188	899.29	...	...	1 800	1 829	30.18	1 338.83
72	72.000	1.250	945.40	...	...	1 800	1 829	31.75	1 407.25
76	76.000	0.500	403.55	...	...	1 900	1 930	12.70	600.50
76	76.000	0.562	453.21	...	...	1 900	1 930	14.27	674.18
76	76.000	0.625	503.60	...	...	1 900	1 930	15.88	749.62
76	76.000	0.688	553.90	...	...	1 900	1 930	17.48	824.45
76	76.000	0.750	603.32	...	...	1 900	1 930	19.05	897.77
76	76.000	0.812	652.65	...	...	1 900	1 930	20.62	970.96
76	76.000	0.875	702.70	...	...	1 900	1 930	22.23	1 045.89
76	76.000	0.938	752.66	...	...	1 900	1 930	23.83	1 120.22
76	76.000	1.000	801.75	...	...	1 900	1 930	25.40	1 193.05
76	76.000	1.062	850.75	...	...	1 900	1 930	26.97	1 265.74
76	76.000	1.125	900.47	...	...	1 900	1 930	28.58	1 340.17
76	76.000	1.188	950.09	...	...	1 900	1 930	30.18	1 414.01
76	76.000	1.250	998.85	...	...	1 900	1 930	31.75	1 486.33
80	80.000	0.562	477.25	...	...	2 000	2 032	14.27	710.08
80	80.000	0.625	530.32	...	...	2 000	2 032	15.88	789.56
80	80.000	0.688	583.32	...	...	2 000	2 032	17.48	868.43
80	80.000	0.750	635.39	...	...	2 000	2 032	19.05	945.69
80	80.000	0.812	687.37	...	...	2 000	2 032	20.62	1 022.83
80	80.000	0.875	740.12	...	...	2 000	2 032	22.23	1 101.81
80	80.000	0.938	792.77	...	...	2 000	2 032	23.83	1 180.17
80	80.000	1.000	844.51	...	...	2 000	2 032	25.40	1 256.94
80	80.000	1.062	896.17	...	...	2 000	2 032	26.97	1 333.59
80	80.000	1.125	948.57	...	...	2 000	2 032	28.58	1 412.06
80	80.000	1.188	1,000.89	...	...	2 000	2 032	30.18	1 489.92
80	80.000	1.250	1,052.30	...	...	2 000	2 032	31.75	1 566.20

NOTES:

- (1) NPS (Nominal Pipe Size) is a dimensionless designator that has been substituted in the customary units section for the previous term *Inch Nominal Size*.
- (2) DN (Nominal Diameter) is a dimensionless designator used in the SI (metric) system to describe pipe size.
- (3) See ASME B16.11-2001, para. 3.1.

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