



Designation: A733 – 16

Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples¹

This standard is issued under the fixed designation A733; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers the requirements for welded and seamless carbon steel pipe nipples, black and zinc-coated (hot-dip galvanized), and welded and seamless austenitic stainless steel pipe nipples in standard steel pipe sizes from 1/8 to 12 in. inclusive, in standard or special lengths.

1.1.1 *Welded Carbon Steel*—Pipe nipples ordered under these requirements are intended for general uses, as described by Specification [A53/A53M](#) or for low-temperature service as described by Specification [A333/A333M](#).

1.1.2 *Seamless Carbon Steel*—Pipe nipples ordered under these requirements are intended for general and special uses, as described by the applicable Specifications [A53/A53M](#) and [A106/A106M](#) or for low temperature service as described by Specification [A333/A333M](#) (see [4.1.1](#)).

1.1.3 *Austenitic Stainless Steel*—Pipe nipples ordered under these requirements are intended for high-temperature and general corrosion service, as described by Specification [A312/A312M](#) (see [4.1.2](#)).

1.1.4 The text for this specification contains notes or footnotes, or both, that provide explanatory material. Such notes and footnotes, excluding those in tables, do not contain any mandatory language.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

[A53/A53M](#) Specification for Pipe, Steel, Black and Hot-

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.09 on Carbon Steel Tubular Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[Dipped, Zinc-Coated, Welded and Seamless A106/A106M Specification for Seamless Carbon Steel Pipe for High-Temperature Service](#)

[A312/A312M Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes](#)

[A333/A333M Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness](#)

2.2 *American National Standards Institute Standards*:³

[B1.20.1 Pipe Threads, General Purpose](#)

[B36.10 Standard for Welded and Seamless Wrought Steel Pipe](#)

[B36.19 Standard for Stainless Steel Pipe](#)

3. Ordering Information

3.1 Information items to be considered, if appropriate, for inclusion in purchase orders are as follows:

3.1.1 Quantity (pieces),

3.1.2 Name of material (carbon steel or austenitic stainless steel pipe nipples) (see [4.1.1](#) and [4.1.2](#)),

3.1.2.1 Carbon steel applications should identify low-temperature or high-temperature service, if applicable.

3.1.3 Method of pipe manufacture (continuous-welded, electric-resistance welded, or seamless) (see [4.1.1](#)),

3.1.4 Type and grade (if stainless steel),

3.1.5 Finish (carbon steel, black or galvanized),

3.1.6 Size (nominal and weight class or schedule number as shown in [Table 1](#), or outside diameter and nominal wall),

3.1.7 Length (standard or special, see [4.3](#)),

3.1.8 Specification number,

3.1.9 Certification of compliance, if required, and

3.1.10 Special requirements or exceptions to this specification.

3.2 In addition, when material is purchased for agencies of the U.S. Government, it shall conform to the Supplementary Requirements as defined herein when specified in the contract or purchase order.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

TABLE 1 Pipe Nipple Sizes According to Weight of Nominal Pipe Sizes^{AB}

Weight	NPS Designator						
	1/8	1/4	3/8	1/2 to 6	8	10	12
Standard (Schedule 40)	X	X	X	X	X	X	^C
Extra strong (Schedule 80)	X	X	X	X	X	^D	^C
Schedule 160	...	...	...	X	X	X	X
Double extra strong	...	...	...	X	X	X	X

^A A comprehensive listing of standardized pipe dimensions is contained in ANSI B36.10 and B36.19.

^B Continuous-welded pipe is not made in sizes larger than NPS 4 (standard and extra strong) and larger than NPS 2 1/2 (Schedule 160 and double extra strong).

^C NPS 12 standard and extra strong weight pipe do not have designated schedule numbers.

^D NPS 10 extra strong pipe is Schedule 60, not Schedule 80.

4. Requirements

4.1 *Material and Weight*—Pipe nipples covered by this specification shall be made from new, hydrostatic-tested or NDE-tested pipe conforming to the requirements specified in 4.1.1 and 4.1.2.

4.1.1 *Carbon Steel*—Carbon steel pipe nipples shall be in accordance with the following:

Method of Pipe Manufacture
Welded

Seamless

Specification
A53/A53M
A333/A333M
A53/A53M
A106/A106M
A333/A333M

4.1.2 *Austenitic Stainless Steel*—Austenitic stainless steel pipe nipples shall be in accordance with Specification A312/A312M.

4.2 *Threads*—Pipe nipples shall be threaded on both ends with NPT taper pipe threads conforming to the requirements of ANSI B 1.20.1, except for “close” nipples where L 4 and V are shorter, due to fewer imperfect threads. It is standard manufacturing practice on all other nipple lengths to vary L 4 plus or minus two threads. All other dimensions, tolerances, and gaging practices remain the same as ANSI B 1.20.1, plus 5.3 of this specification.

4.2.1 Threads shall be right-hand on both ends, except when otherwise specified.

4.3 *Lengths*:

4.3.1 The standard lengths and sizes of nipples generally available are shown in Table 2. The availability of such nipples according to pipe size and weight is shown in Table 1.

TABLE 2 Pipe Nipples by Length and Nominal Pipe Size

Type of Nipple	NPS Designator																	
	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12
	Pipe Nipple Lengths, in. ^{AB}																	
Close (cl)	3/4	7/8	1	1 1/8	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/2	2 5/8	2 3/4	2 7/8	3	3 1/8	3 1/2	3 3/8	4 1/2
1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2													
2	2	2	2	2	2	2	2	2										
2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2									
3	3	3	3	3	3	3	3	3	3	3								
3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2							
4	4	4	4	4	4	4	4	4	4	4	4	4	4					
4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2			
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Right and left	...	...	4	4	4	4	4	4	4	4	4	4	...	...	...	...	...	...

^A Nipples shorter than close are not recommended for pressure application.

^B 1 in. = 25.4 mm.