

ASME B16.29-2017
(Revision of ASME B16.29-2012)

Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings — DWV

AN AMERICAN NATIONAL STANDARD



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Mechanical Engineers**

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FOREWORD

Standardization of cast and wrought solder-joint fittings was initiated in Subcommittee 11 of American Standards Association (ASA) Sectional Committee A40 on Plumbing Requirements and Equipment. Development work culminated in publication of ASA A40.3-1941.

In 1949, work on these fittings was transferred to Sectional Committee B16 of ASA, which established Subcommittee I (now Subcommittee J). The first standard developed was approved as ASA B16.18-1950, Cast Bronze Solder-Joint Fittings. A later joint effort of the Copper and Brass Research Association and the Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) culminated in a standard on wrought fittings, ultimately approved as B16.22-1951.

Concurrently, recognizing the need for drainage fitting standards, an MSS task group developed the standard later approved as ASA B16.23-1953, Cast Bronze Solder-Joint Drainage Fittings, and a standard for wrought fittings was initially published as MSS SP-64-1961. A revision of that standard was submitted to Subcommittee 9 of B16 and was eventually approved as ASA B16.29-1966.

A revision was published [after reorganization of ASA as the American National Standards Institute (ANSI)] as ANSI B16.29-1973. In this edition, shorter solder cups were specified in larger sizes, since strength to contain pressure is not a factor. In 1979, Subcommittee I (formerly 9, now J) added metric dimensional equivalents and made other minor improvements. That revision was approved by ANSI, after approval by the Committee and secretariat organizations, as ANSI B16.29-1980.

In 1982, American National Standards Committee B16 was reorganized as an ASME Committee operating under procedures accredited by ANSI. The 1986 edition of the standard removed metric equivalents (not functionally applicable in the plumbing industry), updated the referenced standards, and incorporated editorial and format revisions. The 1994 edition removed inspection tolerance requirements, established minimum laying lengths, added soil pipe adapters, and incorporated editorial revisions. Following approval by the Standards Committee and ASME, approval as an American National Standard was given by ANSI on October 10, 1994 with the designator ASME B16.29-1994.

The 2001 edition of this Standard was revised to include Nonmandatory Appendix B, Quality System Program. Editorial revisions were made for the purpose of clarification. Following approval by the B16 Main Committee and ASME Supervisory Board, the Standard was approved as an American National Standard by ANSI on October 11, 2001.

In the 2007 edition, metric units were used as a primary reference unit while maintaining U.S. Customary units in either parenthetical or separate forms. In addition, several editorial revisions were made for clarity.

In the 2012 edition, references to ASME standards were revised to no longer list specific edition years; the latest edition of ASME publications applied unless stated otherwise. Following approval by the B16 Standards Committee and the ASME Supervisory Board, and after public review, the Standard was approved as an American National Standard by ANSI on August 23, 2012.

In this 2017 edition, provisions have been made to update verbiage and readings. Following approval by the ASME B16 Standards Committee, approval as an American National Standard was given by ANSI on September 7, 2017, with the new designation ASME B16.29-2017.

ASME B16 COMMITTEE

Standardization of Valves, Flanges, Fittings, and Gaskets

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

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General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B16 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
<http://go.asme.org/Inquiry>

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Interpretations. Upon request, the B16 Standards Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the B16 Standards Committee.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at <http://go.asme.org/InterpretationRequest>. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may e-mail the request to the Secretary of the B16 Standards Committee at SecretaryB16@asme.org, or mail it to the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

- Subject: Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words.
- Edition: Cite the applicable edition of the Standard for which the interpretation is being requested.
- Question: Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. Please provide a condensed and precise question, composed in such a way that a “yes” or “no” reply is acceptable.
- Proposed Reply(ies): Provide a proposed reply(ies) in the form of “Yes” or “No,” with explanation as needed. If entering replies to more than one question, please number the questions and replies.
- Background Information: Provide the Committee with any background information that will assist the Committee in understanding the inquiry. The Inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not “approve,” “certify,” “rate,” or “endorse” any item, construction, proprietary device, or activity.

Attending Committee Meetings. The B16 Standards Committee regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the B16 Standards Committee.

ASME B16.29-2017

SUMMARY OF CHANGES

Following approval by the ASME B16 Committee and ASME, and after public review, ASME B16.29-2017 was approved by the American National Standards Institute on September 7, 2017.

ASME B16.29-2017 includes the following changes identified by a margin note, **(17)**. The Record Numbers listed below are explained in more detail in the “List of Changes in Record Number Order” following this Summary of Changes.

<i>Page</i>	<i>Location</i>	<i>Change (Record Number)</i>
7	Table 4	In the fourth column, second entry corrected by errata from “6” to “6” (17-1720)
25	Mandatory Appendix II	References revised (15-1636)

LIST OF CHANGES IN RECORD NUMBER ORDER

Record Number	Change
16-1636	References updated in Mandatory Appendix II.
17-1720	Table 4 value corrected by errata from "6" to "67."

Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings — DWV

1 SCOPE

This Standard for wrought copper and wrought copper alloy solder-joint drainage fittings, designed for use with copper drainage tube conforming to ASTM B306, covers the following:

- (a) description
- (b) pitch (slope)
- (c) abbreviations for end connections
- (d) sizes and method of designating openings for reducing fittings
- (e) marking
- (f) material
- (g) dimensions and tolerances

2 GENERAL

2.1 Convention

For determining conformance with this Standard, the convention for fixing significant digits where limits (maximum and minimum values) are specified shall be as defined in ASTM E29. This requires that an observed or calculated value be rounded off to the nearest unit in the last right-hand digit used for expressing the limit. Decimal values and tolerances do not imply a particular method of measurement.

2.2 Relevant Units

This Standard states values in both SI (metric) and U.S. Customary units. These systems of units are to be regarded separately as standard. Within the text, the U.S. Customary units are shown in parentheses or in separate tables that appear in [Mandatory Appendix I](#). The values stated in each system are not exact equivalents; therefore, it is required that each system of units be used independently of the other. Combining values from the two systems constitutes nonconformance with the Standard.

2.3 References

Codes, standards, and specifications, containing provisions to the extent referenced herein, constitute requirements of this Standard. These reference documents are listed in [Mandatory Appendix II](#).

2.4 Quality Systems

Guidelines relating to the product manufacturer's quality system programs are described in [Nonmandatory Appendix A](#).

3 DESCRIPTION

These fittings are designed for drainage and vent systems only, using the solder-joint method of connection. The fitting cups (C) are provided with stops so that the ends of the tube, when assembled, meet the stops. Sketches and designs of fittings are illustrative only. The dimensions specified herein shall govern in all cases.

4 PITCH (SLOPE)

All nominal 90-deg fittings shall be pitched to result in a slope of 0.20 mm/m (0.25 in./ft) (2%) of horizontal tube length with reference to a horizontal plane.

5 ABBREVIATIONS

The symbols shown below are used to designate the type of fitting end.

Symbols	Definitions
C	Solder-joint fitting end (internal) made to receive copper tube diameter
F	Internal American National Standard taper pipe thread, NPTI
FTG	Solder-joint fitting end (external) made to copper tube diameter
M	External American National Standard taper pipe thread, NPTE
NPSM	American National Standard free-fitting straight mechanical pipe thread
SJ	End of fitting formed to receive outside diameter tube size

6 COMPONENT SIZE

6.1 Nominal Size

As applied in this Standard, the use of the phrase "nominal size" followed by a dimensionless number is for the purpose of fitting end connection size identification.

6.1.1 Tube. The size designations for the fitting end configurations defined in [Table 1 \(Table I-1\)](#) correspond to drainage tube sizes defined in ASTM B306.