ASME B16.52-2018

Forged Nonferrous Fittings, Socket-Welding and Threaded

(Titanium, Titanium Alloys, Aluminum, and Aluminum Alloys)

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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Two Park Avenue • New York, NY • 10016 USA

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ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Periodically certain actions of the ASME B16 Committee may be published as Cases. Cases and interpretations are published on the ASME website under the Committee Pages at http://cstools.asme.org/ as they are issued.

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FOREWORD

During 2013, the B16 Subcommittee F began discussions on the addition of more nonferrous materials to ASME B16.11. After much deliberation, it was decided that a better approach was to develop a new standard that linked the nonferrous fitting design to a nonferrous pipe wall thickness of equivalent material, pipe schedule, and size as the fitting instead of using Class designation. This project gained momentum in 2016 and a new document was developed and balloting commenced. Several differences between this Standard and ASME B16.11 are provided to incorporate designated pipe schedule wall thickness to fitting designs and material marking requirements.

Following approval by the ASME B16 Standards Committee, ASME B16.52-2018 was approved as an American National Standard by ANSI on March 29, 2018.

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.

Proposing a Case. Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

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.

FORGED NONFERROUS FITTINGS, SOCKET-WELDING AND THREADED (Titanium, Titanium Alloys, Aluminum, and Aluminum Alloys)

1 SCOPE AND GENERAL

1.1 Scope

1.1.1 Standard Fittings. This Standard covers ratings, dimensions, tolerances, marking, and material requirements for titanium, titanium alloy, aluminum, and aluminum alloy forged fittings, both socket-welding and threaded ends.

1.1.2 Special Fittings. Fittings with special dimensions, threads, or counterbores may be made by agreement between the manufacturer and purchaser. When such fittings meet all other requirements of this Standard, they shall be considered in compliance with this Standard.

1.2 General

1.2.1 Fitting Types/Configuration. Types of fittings covered by this Standard are shown in Table 1.2.1-1, by Designated Schedule Fitting by pipe schedule and size range. Fittings shown in Tables 1.2.1-2 through 1.2.1-6 may also be made with combinations of socket-welding and threaded ends.

1.2.2 Referenced Standards. Standards and specifications adopted by reference in this Standard are shown in Mandatory Appendix I. It is not considered practical to identify the specific edition of each standard and specification in the individual references. Instead, the specific edition reference is identified in Mandatory Appendix I. A fitting made in conformance and conforming to this Standard, in all other respects, will be considered to be in conformance to the Standard, even though the edition reference may be changed in a subsequent revision of the Standard.

1.2.3 Codes and Regulations. A fitting used under the jurisdiction of the ASME Boiler and Pressure Vessel Code, the ASME Code for Pressure Piping, or a governmental regulation is subject to any limitation of that code or regulation. This includes any maximum temperature limitation, rule governing the use of a material at low temperature, or provisions for operation at a pressure exceeding the ratings in this Standard.

1.2.4 Service Conditions. Criteria for selection of fitting types and materials suitable for particular fluid service are not within the scope of this Standard.

1.2.5 Quality Systems. Nonmandatory requirements relating to the product manufacturer's quality system program are described in Nonmandatory Appendix A.

1.2.6 Welding. Installation welding requirements are not within the scope of this Standard. Installation welding shall be in accordance with the applicable piping code or regulation covering the piping system into which the fittings are installed.

1.2.7 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. The values stated in each system are not exact equivalents; therefore, it is required that each system be used independently of the other. Combining values from the two systems constitutes nonconformance with the Standard.

2 PRESSURE RATINGS

2.1 General

Fittings under this Standard shall be Designated Schedule 40, 80, or 160 for threaded end and socket-weld end fittings.

2.1.1 Basis of Rating. The schedule of pipe corresponding to each Designated Schedule fitting for rating purposes is shown in Table 2.1.1-1. Design temperature and other service conditions shall be limited as provided by the applicable piping code or regulation for the material of construction of the fitting. Within these limits, the minimum wall thickness for pipe to be used with a Table 2.1.1-1 Designated Schedule fitting shall be computed based on appropriate size straight seamless pipe of equivalent material as the fitting (as shown by comparison of composition and mechanical properties in the respective material specifications). The minimum pipe wall thickness calculation shall include pressure design and all applicable additional allowances (e.g., erosion, corrosion, and thread depth for threaded pipe). The minimum wall thickness for selected pipe, considering manufacturing minus wall thickness tolerance (typically 12.5%), shall not be less than the minimum wall calculation. The fitting is suitable for the application if the wall thickness of the selected pipe equals or is less than the ASME B36.10M or ASME B36.19M Schedule No. pipe wall thickness