ASME B16.52-2024
(Revision of ASME B16.52-2018)

Forged Nonferrous Fittings, Socket-Welding and Threaded

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

AN AMERICAN NATIONAL STANDARD

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Two Park Avenue • New York, NY • 10016 USA

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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 the American National Standards Institute (ANSI) on March 29, 2018.

In the 2024 edition, Mandatory Appendix I has been updated. Following approval by the ASME B16 Committee, ASME B16.52-2024 was approved by ANSI as an American National Standard on June 10, 2024.

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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Revisions and Errata. The committee processes revisions to this Standard on a continuous basis 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 in the next edition of the Standard.

In addition, the committee may post errata on the committee web page. Errata become effective on the date posted. Users can register on the committee web page to receive e-mail notifications of posted errata.

This Standard is always open for comment, and the committee welcomes proposals for revisions. Such proposals should be as specific as possible, citing the paragraph number, the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent background information and supporting documentation.

Cases

(a) The most common applications for cases are

(1) to permit early implementation of a revision based on an urgent need

(2) to provide alternative requirements

(3) to allow users to gain experience with alternative or potential additional requirements prior to incorporation directly into the Standard

(4) to permit the use of a new material or process

(b) Users are cautioned that not all jurisdictions or owners automatically accept cases. Cases are not to be considered as approving, recommending, certifying, or endorsing any proprietary or specific design, or as limiting in any way the freedom of manufacturers, constructors, or owners to choose any method of design or any form of construction that conforms to the Standard.

(c) A proposed case shall be written as a question and reply in the same format as existing cases. The proposal shall also include the following information:

(1) a statement of need and background information

(2) the urgency of the case (e.g., the case concerns a project that is underway or imminent)

(3) the Standard and the paragraph, figure, or table number

(4) the editions of the Standard to which the proposed case applies

(d) A case is effective for use when the public review process has been completed and it is approved by the cognizant supervisory board. Approved cases are posted on the committee web page.

Interpretations. Upon request, the committee will issue an interpretation of any requirement of this Standard. An interpretation can be issued only in response to a request submitted through the online Inquiry Submittal Form at https://go.asme.org/InterpretationRequest. Upon submitting the form, the inquirer will receive an automatic e-mail confirming receipt.

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 information submitted, it is the opinion of the committee that the inquirer should seek assistance, the request will be returned with the recommendation that such assistance be obtained. Inquirers can track the status of their requests at https://go.asme.org/Interpretations.

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.

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Committee Meetings. The B16 Standards Committee regularly holds meetings that are open to the public. Persons wishing to attend any meeting should contact the secretary of the committee. Information on future committee meetings can be found on the committee web page at https://go.asme.org/B16committee.

ASME B16.52-2024
SUMMARY OF CHANGES

Following approval by the ASME B16 Standards Committee and ASME, and after public review, ASME B16.52-2024 was approved by the American National Standards Institute on June 10, 2024.

ASME B16.52-2024 includes the following change identified by a margin note, **(24)**. The Record Number listed below is explained in more detail in the "List of Changes in Record Number Order" following this Summary of Changes.

Page	*Location*	*Change (Record Number)*
17	Mandatory Appendix I	Updated (23-592)

LIST OF CHANGES IN RECORD NUMBER ORDER

Record Number	Change
23–592	Updated references in Mandatory Appendix I.

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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 this 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