ASME B16.39-2014
(Revision of ASME B16.39-2009)

Malleable Iron Threaded Pipe Unions

Classes 150, 250, and 300

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers
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. Interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org/ as they are issued.

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The American Society of Mechanical Engineers
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FOREWORD

In 1921, the American Engineering Standards Committee, later the American Standards Association (ASA), now the American National Standards Institute (ANSI), authorized the organization of a Sectional Committee on the Standardization of Pipe Flanges and Flanged Fittings, with the following organizations as joint sponsors: Heating, Piping, and Air Conditioning Contractors National Association, later the Mechanical Contractors Association of America (MCAA); Manufacturers Standardization Society of the Valve and Fittings Industry (MSS); and the American Society of Mechanical Engineers (ASME).

Threaded fittings were added to the scope of the B16 Committee, and Subcommittee No. 2 (now Subcommittee B) was made responsible for threaded fittings other than steel. Standards for cast and malleable iron fittings were approved by ASA as early as 1927.

For many years, the need for standardization of threaded malleable iron unions was met by Federal Specifications (published by the General Services Administration) and other documents published by the Association of American Railroads (AAR) and the Underwriters Laboratories (UL). As these standards continued to diverge, however, manufacturers concluded that a common practice would be desirable. Accordingly, beginning in 1967, MSS developed a standard practice embodying features of the existing standards and published it as MSS SP-76-1970.

During the next few years, ANSI recognition of the AAR and UL standards was withdrawn in favor of SP-76, and in 1975 MSS submitted its standards to Subcommittee B of American National Standards Committee B16 for consideration as an American National Standard. After several modifications and the addition of metric equivalents, the Standard was approved by the Committee, co-secretariat organizations, and ANSI. It was then published with the designation ANSI B16.39-1977.

In 1982 American National Standards Committee B16 was reorganized as an ASME Committee operating under procedures accredited by ANSI. The 1986 edition of B16.39 updated the referenced standards and specifications, established U.S. Customary units as the standard, and provided for electrodeposition as an alternative to hot dipping for any application of zinc coating. Following approval by the Standards Committee and ASME, approval as an American National Standard was given by ANSI on December 31, 1986, with the new designation ASME/ANSI B16.39-1986.

In the 1998 edition of ASME B16.39, reference standards were updated, a quality system program annex was added, and several editorial revisions were made. Following approval by ASME B16 Subcommittee B and the B16 Standards Committee, ANSI approved this American National Standard on November 20, 1998.

In the 2009 edition, metric units became the primary units in the body text and tables, with U.S. Customary units shown in parentheses or in separate tables or in an Appendix. The *D* min. values in Table 3 were replaced with the L2 values (external thread length) from ASME B1.20.2M-2006, *Pipe Threads, 60 deg, General Purpose*, and the *D* min. values in Table I-3 have been replaced with the L2 values from ASME B1.20.1-1983, *Pipe Threads, General Purpose (Inch)*.

In this 2014 edition, section 8.2 has been revised to standardize the verbiage for internal threads and safety, and to harmonize language with other B16 Standards as it relates to defining thread lengths and gage points.

Following approval by the ASME B16 Standards Committee, approval as an American National Standard was given by ANSI on June 24, 2014, with the new designation ASME B16.39-2014.

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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CORRESPONDENCE WITH THE B16 COMMITTEE

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, 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

As an alternative, inquiries may be submitted via e-mail to SecretaryB16@asme.org.

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 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.

The request for 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.
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. 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 this format will be rewritten in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

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 that are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B16 Standards Committee.

ASME B16.39-2014
SUMMARY OF CHANGES

Following approval by the B16 Committee and ASME, and after public review, ASME B16.39-2014 was approved by the American National Standards Institute on June 24, 2014.

ASME B16.39-2014 includes editorial changes, revisions, and corrections, which are identified by a margin designator, **(14)**, placed next to the affected area.

Page	*Location*	*Change*
2, 3	8.2	Revised
4	Table 3	Revised
	Table 4	Revised
5	Table 5	Revised
8	Table I-3	Revised
	Table I-4	Revised
9	Table I-5	Revised

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MALLEABLE IRON THREADED PIPE UNIONS

Classes 150, 250, and 300

1 SCOPE

1.1 General

This Standard covers threaded malleable iron unions, Classes 150, 250, and 300. It also contains provisions for using steel for NPS $\frac{1}{8}$ unions. This Standard includes

(a) design
(b) pressure–temperature ratings
(c) size
(d) marking
(e) materials
(f) joints and seats
(g) threads
(h) hydrostatic strength
(i) tensile strength
(j) air pressure test
(k) sampling
(l) coatings
(m) dimensions

Mandatory Appendix I provides tables in U.S. Customary units.

1.2 References

Standards and specifications adopted by reference in this Standard are shown in Mandatory Appendix II, which is part of this Standard. It is not considered practical to identify the specific edition of each referenced standard and specification in the text, when referenced. Instead, the specific editions of the referenced standards and specifications are listed in Mandatory Appendix II.

1.3 Quality Systems

Nonmandatory requirements relating to the fitting manufacturer's quality system programs are described in Nonmandatory Appendix A.

1.4 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.

1.5 Service Conditions

Criteria for selection of materials suitable for particular fluid service are not within the scope of this Standard.

1.6 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.

1.7 Denotation

1.7.1 Pressure Rating Designation. Class, followed by a dimensionless number, is the designation for pressure–temperature ratings as follows:

Class	150	250	300

1.7.2 Size. NPS, followed by a dimensionless number, is the designation for nominal fitting size. NPS is related to the reference nominal diameter, DN, used in international standards. The relationship is, typically, as follows:

NPS	DN
$\frac{1}{4}$	8
$\frac{1}{2}$	15
1	25
$1\frac{1}{4}$	32
$1\frac{1}{2}$	40
2	50
$2\frac{1}{2}$	65
3	80
4	100

2 DESIGN

The complete union shall consist of a tail or male part, a head or female part, and a union nut. The type of joint may be ball-to-cone, ball-to-ball, or ball-and-socket with metal-to-metal seating surfaces of iron, copper, or copper alloy. The threaded ends shall be male or female