Line Blanks
Line Blanks
The next edition of this Standard is scheduled for publication in 2020.

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 Web site under the Committee Pages at http://cstools.asme.org/ as they are issued.

Errata to codes and standards may be posted on the ASME Web site under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Committee Pages can be found at http://cstools.asme.org/. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.
CONTENTS

Foreword ................................................................. iv
Committee Roster ....................................................... v
Correspondence With the B16 Committee ....................... vi
Summary of Changes .................................................. vii

1 Scope ............................................................................. 1
2 General .......................................................................... 1
3 Pressure–Temperature Ratings ........................................ 2
4 Design ............................................................................ 2
5 Dimensions ........................................................................ 2
6 Materials .......................................................................... 3
7 Marking ........................................................................... 3
8 Paddle Blank and Spacer Identification .......................... 3
9 Testing ............................................................................ 3

Figure
1 Line Blanks ................................................................. 1

Tables
1 Dimensions of Class 150 Blanks for Use With Raised Face Flanges .......... 4
2 Dimensions of Class 300 Blanks for Use With Raised Face Flanges .......... 5
3 Dimensions of Class 600 Blanks for Use With Raised Face Flanges .......... 6
4 Dimensions of Class 900 Blanks for Use With Raised Face Flanges .......... 7
5 Dimensions of Class 1500 Blanks for Use With Raised Face Flanges ........ 8
6 Dimensions of Class 2500 Blanks for Use With Raised Face Flanges ........ 9
7 Dimensions of Class 150 Female Ring-Joint Facing Figure-8 Blanks .......... 10
8 Dimensions of Class 300 Female Ring-Joint Facing Figure-8 Blanks .......... 11
9 Dimensions of Class 600 Female Ring-Joint Facing Figure-8 Blanks .......... 12
10 Dimensions of Class 900 Female Ring-Joint Facing Figure-8 Blanks .......... 13
11 Dimensions of Class 1500 Female Ring-Joint Facing Figure-8 Blanks ........ 14
12 Dimensions of Class 2500 Female Ring-Joint Facing Figure-8 Blanks ........ 15
13 Dimensions of Class 150 Male Ring-Joint Facing Figure-8 Blanks .......... 16
14 Dimensions of Class 300 Male Ring-Joint Facing Figure-8 Blanks .......... 17
15 Dimensions of Class 600 Male Ring-Joint Facing Figure-8 Blanks .......... 18
16 Dimensions of Class 900 Male Ring-Joint Facing Figure-8 Blanks .......... 19
17 Dimensions of Class 1500 Male Ring-Joint Facing Figure-8 Blanks .......... 20
18 Dimensions of Class 2500 Male Ring-Joint Facing Figure-8 Blanks .......... 21

Mandatory Appendices
I Dimensional Data for Line Blanks in U.S. Customary Units ................. 23
II References .................................................................. 42

Nonmandatory Appendix
A Quality System Program .............................................. 43
FOREWORD

In July 1993, the ASME B16 Committee gave to its Subcommittee C the assignment to convert the API 590 Steel Line Blanks Standard into an ASME standard. The American Petroleum Institute no longer publishes the API 590 Standard.

These line blanks were designed in accordance with the rules of the ASME B31.3-2002 edition. Materials and relevant footnotes have been added following the ASME format.

Significant additions were made to the 2005 edition that included reference to the use of all materials listed in B16.5 Table 1A plus Metric units. The added materials of construction included additions to classes of alloy steels, stainless steels, and nickel alloys. The 2005 edition was also metricated over previous editions to include both U.S. Customary units (in parentheses) and Metric units in the text, Metric units in dimensional tables in the body, and U.S. Customary units in dimensional tables in Nonmandatory Appendix A.

Following the approval of the Standards Committee and ASME, approval for the 2005 edition was granted by the American National Standards Institute (ANSI) on September 19, 2005.

The 2010 edition included revisions to paragraph numbering and adjustments of appendices. In addition to renumbering of main text, updates were made to the Materials section and Marking Method. Illustrations for the figure-8 blanks for raised face flange joints were revised. Finally, the tables for male ring-joint facing figure-8 blanks were revised to support both oval and octagonal ring shapes.

The 2015 edition includes revisions to paragraph numbering, and updates have been made to the Materials and Thickness Tolerances sections. Tables for class 300 male oval ring-joint figure-8 blanks have been updated for thickness.

All requests for interpretations or suggestions for revisions should be sent to the Secretary, B16 Committee, The American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

The B16 Committee operates under procedures accredited by ANSI. Following approval by the Standards Committee and ASME, this revision to the 2010 edition was approved as an American National Standard by ANSI on September 18, 2015, with the designation ASME B16.48-2015.
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.)

STANDARDS COMMITTEE OFFICERS
W. B. Bedesem, Chair
G. A. Jolly, Vice Chair
C. E. O’Brien, Secretary

STANDARDS COMMITTEE PERSONNEL

A. Appleton, Alloy Stainless Products Co., Inc.
R. W. Barnes, Anric Enterprises, Inc.
W. B. Bedesem, Consultant
R. Bojarzuk, ExxonMobil Research & Engineering Co.
D. F. Buccicone, Consultant
A. M. Cheta, Royal Dutch Shell
M. A. Clark, NIBCO, Inc.
G. A. Cuccio, Capitol Manufacturing Co.
C. E. Davila, Crane Energy
D. R. Frikken, Becht Engineering Co.
R. P. Griffiths, Consultant

G. A. Jolly, Flowserve
M. Katcher, Haynes International
T. A. McMahon, Emerson Process Management
M. L. Nayyar, NICE
C. E. O’Brien, The American Society of Mechanical Engineers
W. H. Patrick, The Dow Chemical Co.
R. A. Schmidt, Canadoil
H. R. Sonderegger, Consultant
W. M. Stephan, Flexitallic LP
D. A. Williams, Southern Co. Generation

SUBCOMMITTEE C — STEEL FLANGES AND FLANGED FITTINGS

C. E. Davila, Chair, Crane Energy
J. P. Ellenberger, Vice Chair, Consultant
A. P. Maslowski, Secretary, The American Society of Mechanical Engineers
A. Appleton, Alloy Stainless Products Co., Inc.
W. B. Bedesem, Consultant
W. J. Birkholz, Flowline Division, Ezeflow USA, Inc.
A. M. Cheta, Royal Dutch Shell
B. Dennis, Kerkau Manufacturing
D. R. Frikken, Becht Engineering Co.
E. Gulgun, International Standard Valve, Inc.

J. R. Holstrom, Val-Matic Valve & Manufacturing Corp.
M. Katcher, Haynes International
M. L. Nayyar, NICE
W. H. Patrick, The Dow Chemical Co.
D. W. Rahoi, Consultant
T. V. Ramakrishnan, Forged Components, Inc.
R. A. Schmidt, Canadoil
D. E. Tezzo, Tyco Valves & Controls
J. P. Tucker, Flowserve
G. T. Walden, Wolseley
M. M. Zaidi, Jacobs Engineering
G. B. Haileyforgis, Contributing Member, Ameriforge Group, Inc.
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 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

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.

Proposing a Case. Cases may be issued for the purpose of providing 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.

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.
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 may be rewritten in the appropriate 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 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 B16.48-2015
SUMMARY OF CHANGES

Following approval by the ASME B16 Committee, and after public review, ASME B16.48-2015 was approved by the American National Standards Institute on September 18, 2015.

ASME B16.48-2015 contains editorial changes, revisions, and corrections identified by a margin note, (15), placed next to the affected area.

<table>
<thead>
<tr>
<th>Page</th>
<th>Location</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.4</td>
<td>Editorially revised</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>Editorially revised</td>
</tr>
<tr>
<td>2</td>
<td>5.2.2</td>
<td>Data reformatted</td>
</tr>
<tr>
<td>3</td>
<td>6.1</td>
<td>Revised</td>
</tr>
<tr>
<td>17</td>
<td>Table 14</td>
<td>Under “Thickness, t,” ninth entry revised</td>
</tr>
<tr>
<td>37</td>
<td>Table I-14</td>
<td>Under “Thickness, t,” ninth entry revised</td>
</tr>
</tbody>
</table>
INTENTIONALLY LEFT BLANK
1 SCOPE

This Standard covers pressure–temperature ratings, materials, dimensions, tolerances, marking, and testing for operating line blanks in sizes NPS $\frac{1}{2}$ through NPS 24 for installation between ASME B16.5 flanges in the 150, 300, 600, 900, 1500, and 2500 pressure classes.

2 GENERAL

2.1 Definitions

2.1.1 Figure-8 Blank. A figure-8 blank (also called a spectacle blank) is a pressure-retaining plate with one solid end and one open end connected with a web or tie bar (see Fig. 1).

2.1.2 Paddle Blank. A paddle blank is similar to the solid end of a figure-8 blank. It has a plain radial handle. It is generally used in conjunction with a paddle spacer in large sizes.

2.1.3 Paddle Spacer. A paddle spacer is similar to the open end of a figure-8 blank. It has a plain radial handle. It is generally used in conjunction with a paddle blank.

2.2 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.

2.3 Quality Systems

Nonmandatory requirements relating to the product manufacturer’s Quality System Program are described in Nonmandatory Appendix A.

2.4 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.

2.5 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.

2.6 Size

NPS, followed by a dimensionless number, is the designation for nominal blank size. NPS is related to the reference nominal diameter, DN, as defined in ISO 6708. The relationship is typically as follows:

<table>
<thead>
<tr>
<th>NPS</th>
<th>DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{1}{2}$</td>
<td>15</td>
</tr>
<tr>
<td>$\frac{3}{4}$</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>$1\frac{1}{4}$</td>
<td>32</td>
</tr>
<tr>
<td>$1\frac{1}{2}$</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>$2\frac{1}{2}$</td>
<td>65</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

GENERAL NOTE: For NPS $\geq 4$, the related DN = 25 multiplied by the NPS number.