

INTERPRETATIONS TO ASME B16.5

(a)

(These interpretations are not part of ASME B16.5-1996 and are included for information only. These interpretations apply to the 1988 and earlier editions and the requirements cited may be different in this Edition. Therefore, some replies may not be valid in regards to this Edition.)

INTRODUCTION

As a service to persons who use the B16 standards, the B16 Committee renders interpretations of the requirements upon request. The procedure for requesting an interpretation is described in the following paragraphs.

The interpretations include all replies which have been approved by the B16 Main Committee in response to inquiries concerning interpretation of this Standard.

An interpretation applies either to the Edition and Addenda in effect on the date of issuance of the interpretation or the Edition and Addenda stated in the interpretation. Subsequent revisions to this Standard may supersede the interpretation.

PROCEDURE FOR REQUESTING INTERPRETATIONS

On request, the B16 Committee will render an interpretation of any requirement of this Standard. Interpretations can only be rendered in response to a written request, which should be addressed to:

Secretary, B16 Main Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request using the following format:

(a) *Subject.* Cite the applicable paragraph number(s) and/or give a concise description of the subject.

(b) *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 which are necessary to explain the question; however, they should not contain proprietary names or information.

Requests which are not in this format may be rewritten in this format prior to being answered, which may inadvertently change the original intent of the request.

ASME procedures provide for reconsideration of an interpretation when or if additional information is available which the inquirer believes might affect the interpretation. 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.

INTERPRETATIONS NO. 3

Replies to Technical Inquiries Issued from January 1, 1996 Through December 31, 1997

Interpretation: 3-1

Subject: Class Designation and Surface Finish

Date Issued: March 5, 1997

File: B16-96-015

Question (1): According to ASME B16.5-1988, what is the correlation between the Class designation and the allowable working pressure at 100°F?

Reply (1): See Annex D.

Question (2): According to ASME B16.5-1988, does the resultant surface finish refer to the average finish over the raised face, or does it refer to the finish at the bottom of the grooves formed by the cutting tool?

Reply (2): It refers to the average finish.

Interpretation: 3-2

Subject: Tolerances

Date Issued: March 27, 1997

File: B16-96-014

Question: In B16.5-1988 or B16.5a-1992, is there a tolerance on the radius, r , for lap-joint flanges?

Reply: No.

Interpretation: 3-3

Subject: Hub Dimensions of Reducing Flanges

Date Issued: March 27, 1997

File: B16-96-011

Question (1): According to B16.5-1988, what are the minimum hub dimensions of a NPS 6 × 2½ Class 300 slip-on reducing flange?

Reply: The minimum dimensions are the same as those for NPS 2½ Class 300 slip-on flanges. See Note (1) of Table 7.

Interpretation: 3-4

Subject: Removal of Raised Face from a Flange

Date Issued: May 23, 1997

File: B16-97-003

Question: According to ASME B16.5-1988, is it acceptable to supply a flat faced flanged or flanged fitting made from a Class 150 or a Class 300 raised face flange or flanged fitting with the raised face removed, even if the resulting thickness is 0.06 in. less than the minimum shown in the Tables?

Reply: Yes. See para. 6.3.

Interpretation: 3-5

Subject: Machining of a Slip-On Flange

Date Issued: May 28, 1997

File: B16-97-010

Question: Does ASME B16.5-1996 permit the manufacturer of a Class 150 or 300 lapped flange by machining it from a slip-on flange?

Reply: Yes, provided the resulting flange meets the requirements for a lapped flange, including flange thickness, bore, and length through the hub dimensions shown in Tables 9 and 12. Since a lapped flange does not have a raised face, the raised face removal discussed in para. 6.1.3 does not apply.

Interpretation: 3-6

Subject: Use of O-Ring Seals

Date Issued: July 10, 1997

File: B16-96-004

Question : Is the use of O-ring seals with flanged joints prohibited by the rules of ASME B16.5-1988?

Reply: No. See para. E2 of Annex E.

INTERPRETATIONS TO ASME B16.5

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United Engineering Center
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New York, NY 10017

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INTERPRETATIONS NO. 2**Replies to Technical Inquiries Issued from January 1, 1987 Through December 31, 1995****Interpretation: 2-1**

Note: This interpretation was omitted from the 1988 Edition of B16.5 and applies to B16.5-1981.

Subject: B16.5-1981, Tolerances

Date Issued: March 8, 1985

File: B16-84-12

Question (1): For purposes of material acceptance inspection, is it the intent of tolerances listed in Section 7 of B16.5-1981, stated in hundredths of an inch, to be measured using precision equipment such as verniers, micrometers, or electric readout equipment?

Reply (1): No, the tolerances as stated are rounded decimal values of the previously listed fractional values.

Question (2): Is the tolerance on the 0.25 in. raised face of ± 0.02 in. correct and realistic?

Reply (2): Yes, because 0.25 in. raised faces can also be used as large male faces and must be compatible with large female flanges.

Interpretation: 2-2

Note: This interpretation was omitted from the 1988 Edition of B16.5 and applies to B16.5-1981.

Subject: B16.5-1981, Table 1B

Date Issued: July 16, 1985

File: B16-85-10

Question: In B16.5-1981, is Note (13) to Table 1B as applied to material conforming to ASTM B 164, B 166, and B 408 restricted to the cold drawn stress relieved, cold drawn stress equalized, and cold drawn conditions?

Reply: No. See also para. 5.3 of B16.5.

2-3, 2-4, 2-5

B16.5 Interpretations No. 2

Interpretation: 2-3

Note: See interpretation 2-40.

Subject: B16.5-1988, Dual Marking

Date Issued: January 31, 1989

File: B16-88-01

Question: Can a dual marked flange, such as F304/F304L or F316/F316L, meeting the dimensions of B16.5-1988 and the room temperature mechanical requirements and chemistry of ASTM A 182 for each grade or class, be used at the pressure ratings shown in Table 2 for the full range of temperatures given for the higher strength grade such as Type 304 or 316?

Reply: B16.5 only covers marking requirements for flanges of single grade materials.

Interpretation: 2-4

Subject: B16.5-1988, Stud Bolt Length

Date Issued: September 7, 1989

File: B16-89-08

Question: Does the stud bolt length specified in B16.5-1988 Tables 8, 11, 14, 17, 20, 23, and 26 allow for extension of two full threads beyond each nut when assembled?

Reply: No. Annex F gives the method for calculating bolt lengths and does not necessarily allow for two exposed threads.

Interpretation: 2-5

Subject: Thickness Less Than Tabulated Values

Date Issued: October 31, 1989

File: B16-89-07

Question: Are there any provisions in B16.5-1988 that permit local areas in the thickness of the flange to be less than the tabulated minimum values?

Reply: No.

B16.5 Interpretations No. 2

2-6, 2-7, 2-8

Interpretation: 2-6

Note: See interpretation 2-40.

Subject: Dual Marking

Date Issued: February 16, 1990

File: B16-89-13

Question (1): Does B16.5-1988 permit flanges to be dual marked when they are manufactured from material meeting the chemical composition, heat treatment, and mechanical properties of more than one material specification grade such as F304/F304L or F316/F316L?

Reply (1): No.

Question (2): Would dual marking of a flange, such as F304/F304L or F316/F316L, prohibit the use of the flange in Piping Code applications at the pressure ratings listed in B16.5-1988, Table 2, for the full range of temperatures given for the higher strength grade, such as F304 or F316, when the material is certified as having the chemical composition, heat treatment, and mechanical properties of both grades?

Reply (2): The B16 Committee cannot respond for what the Piping Code would allow. B16.5-1988 does not cover ratings of dual marked products.

Interpretation: 2-7

Subject: Bolt Hole Tolerances

Date Issued: June 18, 1990

File: B16-90-09

Question: Does B16.5-1988 have any requirements for tolerances on bolt hole diameters?

Reply: No.

Interpretation: 2-8

Subject: Tolerances

Date Issued: June 21, 1990

File: B16-90-10

Question: Do the tolerances in paras. 7.22 and 7.23 of B16.5-1988 apply to all NPSs?

Reply: Yes.

2-9, 2-10

B16.5 Interpretations No. 2

Interpretation: 2-9

Subject: Use of Bar Stock and Flanges With Radial Slots

Date Issued: June 22, 1990

File: B16-90-16

Question (1): May pipe flanges be manufactured from bar stock and still meet the requirements of B16.5-1988?

Reply (1): No.

Question (2): May a pipe flange be slotted with a radial slot from the bore to the flange outside diameter and still meet the requirements of B16.5-1988?

Reply (2): No.

Interpretation: 2-10

Subject: Outside Diameter Tolerances

Date Issued: July 3, 1990

File: B16-90-11

Question (1): Does B16.5-1988 have any requirements for tolerances on flange outside diameters?

Reply (1): No.

Question (2): Why not?

Reply (2): The ASME B16 Committee does not respond to questions about rationale for requirements.

B16.5 Interpretations No. 2

2-11, 2-12, 2-13

Interpretation: 2-11

Subject: Flange Facing Finish

Date Issued: September 6, 1990

File: B16-90-12

Question (1): Shall the flange facing be judged by visual comparison utilizing Ra standards as required by para. 6.4.4 of B16.5-1988?

Reply (1): Yes.

Question (2): Must the flange facings for raised face and large male and female flanges be manufactured using a cutting tool with an approximate 0.06 in. or larger radius providing 24 to 40 grooves/in. as required by para. 6.4.4.1 of B16.5-1988?

Reply (2): Yes, unless another finish is furnished by agreement between the user and manufacturer as permitted by para. 6.4.4.

Interpretation: 2-12

Subject: Flange Facing Finish

Date Issued: September 10, 1990

File: B16-90-18

Question: Does B16.5-1988 have any requirements for a "smooth finish" for flange facings?

Reply: No. However, para. 6.4.4 permits finishes other than those described by agreement between the user and manufacturer.

Interpretation: 2-13

Subject: Chamfer and Tolerances of Flange Outer Edges

Date Issued: December 12, 1990

File: B16-90-23

Question: Does B16.5-1988 have any requirements for chamfer and tolerances of flange outer edges other than those relating to the flange thickness?

Reply: No.

2-14, 2-15

B16.5 Interpretations No. 2

Interpretation: 2-14

Subject: Minimum Flange Thickness for Class 600 Flat Faced Flanges

Date Issued: November 12, 1990

File: B16-90-24

Question: What minimum flange thickness is required for Class 600 flat faced flanges according to B16.5-1988?

Reply: Dimension "C" as tabulated in column 3 of Table 18 (see para. 6.3.2).

Interpretation: 2-15

Subject: Eccentricity Tolerances

Date Issued: January 24, 1991

File: B16-90-25

Question (1): Does B16.5-1988 have a tolerance for eccentricity between the bolt circle diameter and the center opening in the flange?

Reply (1): No.

Question (2): Does B16.5-1988 have a tolerance for eccentricity between the bolt circle diameter and the O.D. of the flange?

Reply (2): No.

Interpretation: 2-16

Subject: Flange Facing Finish

Date Issued: December 13, 1990

File: B16-90-13

Question (1): Does the requirement for use of an approximate 0.06 in. or larger radius tool in para. 6.4.4.1 of B16.5-1988 allow an essentially nonserrated flange surface?

Reply (1): No. The first sentence in para. 6.4.4.1 requires the finish to be serrated.

Question (2): Does the word "approximate" applied to the cutting tool radius in para. 6.4.4.1 of B16.5-1988 allow virtually any resultant finish?

Reply (2): No. The resultant finish must also meet the 125 to 500 μ in. roughness requirement in para. 6.4.4.1.

Question (3): Can a flat face flange comply with B16.5-1988 if it has a smooth face even though para. 6.3.4 requires a serrated facing finish for flat face flanges?

Reply (3): No.

Interpretation: 2-17

Subject: Flange Dimensions and Threads

Date Issued: December 13, 1990

File: B16-90-17

Question (1): In B16.5-1988, Table 3, Note (3), does the minimum length of treads, dimension "T", correspond to the flange size designation or the threaded opening size dimension?

Reply (1): The threaded opening size designation.

Question (2): When a pipe is threaded into the flange, should the joint between the flange and the pipe form a lead free seal according to B16.5-1988?

Reply (2): Yes. See ASME B1.20.1.

Question (3): May the threaded opening of a reducing threaded flange be used for a relief valve?

Reply (3): B16.5-1988 does not include application requirements for reducing threaded flanges.

2-18, 2-19, 2-20

B16.5 Interpretations No. 2

Interpretation: 2-18

Subject: Materials
Date Issued: December 13, 1990
File: B16-90-22

Question: Does a flange made from two different materials joined by a threaded joint meet the requirements of B16.5-1988?

Reply: No.

Interpretation: 2-19

Note: See interpretation 2-40.

Subject: Dual Marking
Date Issued: January 16, 1991
File: B16-90-36

Question (1): According to B16.5-1988, may a flange produced having chemical and mechanical properties that meet the requirements of more than one material grade, e.g., F304/F304L, be marked with more than one material grade designation?

Reply (1): No.

Question (2): According to B16.5-1988, what stress values apply at temperatures above 800°F for flanges produced having chemical and mechanical properties that meets the requirements of more than one material grade where one of the grades does not list pressure-temperature ratings above 800°F, e.g., F304/F304L?

Reply (2): B16.5 does not address this question.

Interpretation: 2-20

Subject: Pressure-Temperature Ratings
Date Issued: January 23, 1991
File: B16-90-37

Question: According to B16.5-1988, what pressure-temperature ratings would apply if a NPS 1½ Class 150 flange were bolted to a NPS 1½ Class 600 flange of the same material?

Reply: The rating of the Class 150 flange would apply (see para. 2.2).

B16.5 Interpretations No. 2

2-21, 2-22, 2-23

Interpretation: 2-21

Subject: Large Tongue and Groove Facings

Date Issued: February 1, 1991

File: B16-90-35

Question: Does B16.5-1988 require that flanges with a pressure class of at least 300 be used for large tongue and groove facings?

Reply: Yes.

Interpretation: 2-22

Subject: Welding Neck Flange Tolerances

Date Issued: April 18, 1991

File: B16-90-33

Question: According to B16.5-1988, what tolerances apply to dimension "Y" for welding neck flanges?

Reply: Those shown in para. 7.5.

Interpretation: 2-23

Subject: Flange Facing Finish

Date Issued: April 18, 1991

File: B16-91-02

Question: May flange facing finishes be judged by methods other than visual comparison with Ra standards for the purpose of demonstrating conformance with para. 6.4.4 of B16.5-1988?

Reply: No.

2-24, 2-25

B16.5 Interpretations No. 2

Interpretation: 2-24

Subject: Welding Neck Flange Bores and Remachining

Date Issued: May 28, 1991

File: B16-90-32

Question (1): According to B16.5-1988, is it acceptable for welding neck flanges to have bores other than those listed in Table 6?

Reply (1): Yes, the bore is to be specified by the purchaser. In particular, see Note (14) in Table 9 and Note (13) in Table 12.

Question (2): According to B16.5-1988, are the ratings applicable when the flange is welded to a pipe of equal schedule and having an allowable stress equal to or less than that of the flange material?

Reply (2): B16.5 does not cover ratings of piping assemblies.

Question (3): Does B16.5-1988 prohibit the machining of a welding neck flange which was originally manufactured with a smaller bore to produce a flange with a larger bore?

Reply (3): No.

Question (4): According to B16.5-1988, when a flange is remachined by an organization other than the original manufacturer, is it necessary for the original markings to be replaced with new markings?

Reply (4): B16.5 does not address remachining or replacement marking of flanges.

Interpretation: 2-25

Subject: Raised Face Flanges

Date Issued: February 5, 1992

File: B16-91-15

Question (1): Can the raised faces of flanges of Class 150 and Class 300 flanges be removed, even if the resulting flange thickness, or "C" dimension, is 0.06 in. less than the minimum as shown in column 3 of Tables 9 and 12 in B16.5-1988?

Reply (1): Yes. See para. 6.3.1.

Question (2): If the raised face is removed from Class 150 and 300 flanges, will the pressure-temperature ratings remain unchanged?

Reply (2): Yes. See para. 6.3.

B16.5 Interpretations No. 2

2-26, 2-27, 2-28

Interpretation: 2-26

Subject: Use of Barstock

Date Issued: February 5, 1992

File: B16-92-01

Question: May barstock be used to manufacture a flange according to B16.5-1988?

Reply: No. See para. 5.1.

Interpretation: 2-27

Subject: Corrosion Allowances

Date Issued: June 24, 1992

File: B16-92-02

Question: Are flange pressure-temperature ratings applicable to both the uncorroded and corroded conditions according to B16.5-1988?

Reply: Flanges dimensions in B16.5-1988 are related to new construction. The applicability of pressure-temperature ratings for material that is corroded or otherwise deteriorated is the responsibility of the user. See para. 5.1.1.

Interpretation: 2-28

Subject: Eccentricity and Raised Face Dimensions

Date Issued: September 9, 1992

File: B16-91-06

Question (1): Is there a tolerance for the eccentricity between the bore and the outside diameter of the flange according to B16.5-1988?

Reply (1): No.

Question (2): Does the thickness, dimension "C," in B16.5-1988 for a Class 150 or Class 300, 0.006 in. raised face flange include the raised face height?

Reply (2): Yes. See Errata, page 2, issued October 1988.

Question (3): Does B16.5-1988 include a provision for flanges that have raised face dimensions other than those shown in Fig. 7?

Reply (3): No.

2-29, 2-30, 2-31

B16.5 Interpretations No. 2

Interpretation: 2-29

Subject: Flanges Marking

Date Issued: October 23, 1992

File: B16-92-22

Question: According to B16.5-1988, is it required that the designation "B16" or the designation "B16.5" be marked on the flange?

Reply: It is required that "B16" be marked on the flange. See para. 4.1.4.

Interpretation: 2-30

Subject: Raised Face Flanges

Date Issued: October 23, 1992

File: B16-92-24

Question: According to B16.5-1988, are Class 150 and 300 flanges, with the raised face removed, limited to bolting to cast iron flanges only?

Reply: No. See para. 6.3.

Interpretation: 2-31

Subject: Blind and Slip-on Flanges

Date Issued: November 30, 1992

File: B16-92-23

Question: Does a NPS 18 blind flange bored for use as a NPS 18 by NPS 3 slip-on flange meet the requirements of B16.5-1988?

Reply: No. See Note (1) of Table 7.

B16.5 Interpretations No. 2

2-32, 2-33, 2-34

Interpretation: 2-32

Subject: Grooves on Flange Edges

Date Issued: December 2, 1992

File: B16-92-25

Question: According to B16.5-1988, is it permissible to cut a $\frac{1}{8}$ in. by $\frac{1}{8}$ in. groove in the edge of a flange?

Reply: B16.5 does not cover this subject.

Interpretation: 2-33

Subject: Flanges Counterbores and Marking of Flanges

Date Issued: January 21, 1993

File: B16-92-34

Question (1): According to B16.5-1988, is it acceptable to produce Class 300 and higher threaded and threaded reducing flanges with no counterbore except for the 45 deg. chamfer?

Reply (1): No. See para. 6.9.2.

Question (2): According to B16.5-1988, if a flange did not meet one of its requirements, would the flange be able to carry the B16 designation?

Reply (2): No. See para. 4.1.4.

Interpretation: 2-34

Subject: Bolting a Raised Face Flange With a Flat Face Flange

Date Issued: February 18, 1993

File: B16-92-35

Question: Do B16.1-1989 and B16.5-1988 prohibit bolting a raised face flange with a standard flat face flange?

Reply: No.

2-35, 2-36

B16.5 Interpretations No. 2

Interpretation: 2-35

Subject: Definition of Nonshock

Date Issued: February 22, 1993

File: B16-92-26

Question: According to para. 2.1 of B16.5-1988, what is the meaning of "nonshock" in relation to pressure-temperature ratings?

Reply: B16.5-1988 does not define "nonshock". The absence of a definition denotes a term as being used syntactically and therefore devoid of special technical connotation.

Interpretation: 2-36

Subject: Flange Facing Finish

Date Issued: February 22, 1993

File: B16-92-33

Question: According to B16.5-1988, may tactile comparison with the roughness comparison be used to judge the surface finish of contact surfaces?

Reply: No. See para. 6.4.4.

Interpretation: 2-37

Subject: Machining of Flange Surfaces, Flange Faces, and Surface Imperfections

Date Issued: June 11, 1993

File: B16-92-27

Question (1): Does B16.5-1988 require that any surface of the flange be machined?

Reply (1): No.

Question (2): According to B16.5-1988, is it permissible to allow additional material on the face parallel to the flange centerline near the weld end of a welding neck flange?

Reply (2): Yes, with a taper up to 7 deg. See Figs. 8 and 9.

Question (3): According to B16.5-1988, may the face parallel to the flange centerline near the weld end of a welding neck flange be any length as long as the hub angle does not exceed 45 deg.?

Reply (3): It can be 0.25 in. or longer. See Figs. 8 and 9.

Question (4): Does B16.5-1988 place a limit on the depth of spot facing?

Reply (4): No, provided it does not infringe upon the minimum flange thickness.

Question (5): Does B16.5-1988 place limits on the removal of surface imperfections by blend grinding into adjacent surfaces?

Reply (5): Yes, but only to the extent that related dimensional requirements are maintained.

Interpretation: 2-38

Subject: Use of Earlier Editions of B16.5

Date Issued: June 11, 1993

File: B16-92-28

Question: According to B16.5-1988, can flanges manufactured in accordance with an earlier edition of B16.5 be rated at the higher pressure-temperature ratings in the current edition?

Reply: No. See para. 1.3.

2-39, 2-40, 2-41

B16.5 Interpretations No. 2

Interpretation: 2-39

Subject: Flange Facing Finish

Date Issued: October 28, 1993

File: B16-93-18

Question: According to B16.5-1988, what size scratch, length, and depth across the flange face is cause for rejection?

Reply: See Table 3.

Interpretation: 2-40

Subject: Dual Marking

Date Issued: February 18, 1994

File: B16-93-20

Question (1): According to B16.5a-1992, may products identified as dual certified 304/304L and 316/316L be considered as straight grades 304 and 316, respectively, in Table 1A and Table 2 for temperature less than or equal to 1000°F?

Reply (1): Yes. See para. 2.7.

Question (2): According to B16.5-1992, may products identified as dual certified 304/304L and 316/316L be considered as straight grades 304 and 316, respectively, in Table 1A and Table 2 for temperatures above 1000°F?

Reply (2): No. See Table 1A, Note (5).

Interpretation: 2-41

Subject: Flange Marking

Date Issued: February 18, 1994

File: B16-93-21

Question: According to B16.5-1988, may raised lettering be used for the marking required by para. 4?

Reply: Yes.

B16.5 Interpretations No. 2

2-42, 2-43, 2-44

Interpretation: 2-42

Subject: Flange Facing Finish

Date Issued: July 29, 1994

File: B16-93-17

Question: According to B16.5-1988, Table 3, is any visible surface discontinuity which is no deeper than the bottom of the serrations considered an imperfection?

Reply: Yes.

Interpretation: 2-43

Subject: Permissible Radial Projection

Date Issued: July 29, 1994

File: B16-93-22

Question: According to B16.5-1988, does "separated" used in Note (1) to Table 3 mean radial separation?

Reply: No. Imperfections must be separated by at least four times the Permissible Radial Projection in any direction. The Permissible Radial Projection is found in column 2 of Table 3.

Interpretation: 2-44

Subject: Definition of Imperfection

Date Issued: July 29, 1994

File: B16-94-06

Question: Does B16.5-1988 define the term "imperfection" which is used in Table 3?

Reply: No.

2-45, 2-46

B16.5 Interpretations No. 2

Interpretation: 2-45

Subject: Use of Flanges to More than One Pressure Rating

Date Issued: May 30, 1995

File: B16-95-05

Question (1): According to B16.5-1988, what shall be the center-to-contact surface dimensions "HH" for tees and crosses of different end flange sizes?

Reply (1): The same as those for straight size fittings of the largest opening. See para. 6.2.3.

Question (2): According to B16.5-1988, what shall be the center-to contact surface dimensions "HH" for tees and crosses of different end flange ratings?

Reply (2): The dimensions for such fittings are not addressed by B16.5.

Interpretation: 2-46

Subject: Spot Facing

Date Issued: July 7, 1995

File: B16-95-06

Question: Do flanges have to spot faced in order to meet the requirements of B16.5-1988?

Reply: No. See para. 6.6.

**AMERICAN NATIONAL STANDARDS FOR PIPING,
PIPE FLANGES, FITTINGS, AND VALVES**

Scheme for the Identification of Piping Systems	A13.1-1996
Pipe Threads, General Purpose (Inch)	B1.20.1-1983(R1992)
Dryseal Pipe Threads (Inch)	B1.20.3-1976(R1991)
Cast Iron Pipe Flanges and Flanged Fittings	B16.1-1989
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