

ASME-B16.21

ADOPTION NOTICE

ASME-B16.21, "Gaskets, Flat, Nonmetallic, for Pipe Flanges," was adopted on October 3, 1994, for use by the Department of Defense (DoD). Proposed changes by DoD activities must be submitted to the DoD Adopting Activity: Commander, Defense Industrial Supply Center, Attn: DISC-E, Philadelphia, PA 19111-5096. DoD activities may obtain copies of this standard from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. The private sector and other Government agencies may purchase copies from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.

Custodians:
Army - MR
Navy - YD
Air Force - 99

Adopting Activity
DLA - IS

FSC 5330

DISTRIBUTION STATEMENT A. Approved for public release;
distribution is unlimited.

ASME B16.21-1992

(REVISION OF ANSI B16.21-1978)

Nonmetallic Flat Gaskets for Pipe Flanges

AN AMERICAN NATIONAL STANDARD



The American Society of
Mechanical Engineers

AN AMERICAN NATIONAL STANDARD

Nonmetallic Flat Gaskets for Pipe Flanges

ASME B16.21-1992

(REVISION OF ANSI B16.21-1978)



The American Society of
Mechanical Engineers

345 East 47th Street, New York, N.Y. 10017



Documents

Document Sharing Hub

Date of Issuance: September 30, 1992

The 1992 edition of this Standard is being issued with an automatic addenda subscription service. The use of an addenda allows revisions made in response to public review comments or committee actions to be published as necessary; revisions published in addenda will become effective 6 months after the Date of Issuance of the addenda. The next edition of this Standard is scheduled for publication in 1997.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. The interpretations will be included with the above addenda service. Interpretations are not part of the addenda to the Standard.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Consensus Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment which provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable Letters Patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations issued in accordance with governing ASME procedures and policies which preclude the issuance of interpretations by individual volunteers.

No part of this document may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.

Copyright © 1992 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All Rights Reserved
Printed in the U.S.A.

FOREWORD

(This Foreword is not part of ASME B16.21-1992.)

Several years ago the Standards and Specifications Committee of the Mechanical Packing Association started work on a standard for nonmetallic or cut gaskets for bronze, iron, and steel pipe flanges. Up to that time the individual sizes of gaskets were made to many different sets of dimensions, based on different concepts of adaption and functional use on the part of consumers as well as manufacturers. In some cases dimensions were shown in American Standards.

Dimensions of gaskets being used were collected, and a basic design philosophy for sizing was formulated by the committee. This was the result of extensive field research experience and accepted standard user requirements. The procedure followed was to dimension the gasket for each type and size of flange so as to prevent the gasket from projecting into the line of flow. Dimensional tolerances of standard pipe flanges and fittings as to ID, OD, and bolting were all considered.

Suggested dimensional standards were tabulated and distributed for industry comment. After several revisions a final draft, dated September 15, 1948, was approved by the Mechanical Packing Association for submission as an American Standard.

Sectional Committee (B16) on the Standardization of Pipe Flanges and Fittings was organized in 1921 under the procedure of the American Standards Association, with the Heating, Piping, and Air Conditioning Contractors' National Association, Manufacturers' Standardization Society of the Valve and Fittings Industry, and The American Society of Mechanical Engineers as joint sponsors.

Sectional Committee B16 received the proposal on May 9, 1949, and assigned it to a joint group of Subcommittees 1 and 3. The Manufacturers' Standardization Society was also consulted as the proposal included gaskets for bronze flanges made to their Standard Practice SP-2. This joint group offered a revision of the original design concept for sizing which was acceptable to the Mechanical Packing Association's Committee (now the Fluid Sealing Association). The standard was approved as an American Standard on December 5, 1951, with the designation ASA B16.21-1951.

In 1961, the standard was reviewed by the members of Subcommittee No. 7 on Gaskets and proposals for revision and updating the standard were agreed upon. The American Standards Association granted approval of the revision on March 20, 1962 following sectional committee and sponsor approval.

In the mid-1960's work was begun on a revision. The revision became a complete rewrite and included gaskets for API Std 605, MSS SP-44 and SP-51 as well as complete metric equivalents for all dimensions. Following its approval by the B16 Standards Committee and Co-Secretariat organizations, this Standard was approved as an American National Standard by ANSI on May 2, 1978.

In 1982, American National Standards Committee B16 was reorganized as an ASME Committee operating under procedures accredited by ANSI.

In 1989, general revisions were begun to reflect the current size ranges covered by the corresponding flange standards. Gasket dimensions for tongue and groove, male and

female and Rating Classes above 900 were deleted because a survey indicated these non-metallic gaskets were almost never used for these joints. Tolerances to the dimensions were added.

Following approval by the Standards Committee and ASME, approval as an American National Standard was given by ANSI on March 16, 1992, with the new designation ASME B16.21-1992.

All requests for interpretations or suggestions for revisions should be sent to the Administrative Secretary B16, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, N.Y. 10017.

ASME B16.21 12 0737670 0328733 467

ASME B16 COMMITTEE

Standardization of Valves, Flanges, Fittings, Gaskets, and Valve Actuators

(The following is the roster of the Committee at the time of approval of this Standard.)

OFFICERS

W. N. McLean, *Chairman*
R. A. Schmidt, *Vice Chairman*
J. Yarmush, *Secretary*

COMMITTEE PERSONNEL

W. L. Ballis, Columbia Gas Distribution Co., Columbus, Ohio
J. E. Batey, Union Carbide Corp., South Charleston, West Virginia
K. M. Bell, Underwriters Laboratories Inc., Northbrook, Illinois
M. L. Blair, US Coast Guard, Washington, D.C.
R. R. Brodin, Fisher Controls International Inc., Marshalltown, Iowa
W. G. Canham, Jr., Brentwood, Missouri
A. Cohen, Copper Development Association, Greenwich, Connecticut
W. C. Farrell, Jr., Stockham Valves and Fittings Inc., Birmingham, Alabama
D. R. Frikken, Monsanto Co., St. Louis, Missouri
M. W. Garland, Frick Co., Waynesboro, Pennsylvania
J. C. Inch, Mueller Brass Co., Hartsville, Tennessee
J. S. John, J Square Engineering Co., Houston, Texas
G. A. Jolly, Henry Vogt Machine Co., Louisville, Kentucky
W. G. Knecht, Anchor/Darling Valve Co., Williamsport, Pennsylvania
R. Koester, The William Powell Co., Cincinnati, Ohio
J. H. Longacre, Nibco Inc., Elkhart, Indiana
J. H. McCauley, Jr., McCauley Mechanical, Chicago, Illinois
W. N. McLean, *Chairman*, Newco Valves, Palos Park, Illinois
A. F. Rhodes, Arnco Technology Trust, Houston, Texas
R. A. Schmidt, *Vice Chairman*, Ladish Co., Russellville, Arkansas
W. M. Stephan, Flexitallic Inc., Pennsauken, New Jersey
T. F. Stroud, Ductile Iron Pipe Research Association, Birmingham, Alabama
R. E. White, Repairs Inc., South Bend, Indiana
D. A. Williams, Southern Company Services, Birmingham, Alabama
D. Wilson, Mobile Pipeline Co., Dallas, Texas

PERSONNEL OF SUBCOMMITTEE G — GASKETS FOR FLANGED JOINTS

W. M. Stephan, *Chairman*, Flexitallic Inc., Pennsauken, New Jersey
J. Yarmush, *Secretary*, ASME, New York, New York
K. A. Benton, Furon Metallic Gasket Div., Houston, Texas
L. P. Burgess, Standco Industries, Houston, Texas
D. Coomber, Richard Klinger Inc., Sidney, Ohio