AWS B5.31:2026
An American National Standard

Specification for the Qualification of B31 Owner's Inspectors



American Welding Society®



AWS B5.31:2026
An American National Standard

Approved by the
American National Standards Institute
July 16, 2026

Specification for the Qualification of B31 Owner's Inspectors

1st Edition

Prepared by the
American Welding Society (AWS) Qualification and Certification Committee

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This standard describes the requirements for qualification as an Owner's Inspector as described in the ASME B31 codes. The requirements include education, experience, and written examinations. This standard also covers the job functions a qualified Owner's Inspector should be able to perform.

American Welding Society®

ISBN Print: 978-1-64322-440-4
ISBN PDF: 978-1-64322-441-1
© 2026 by American Welding Society
All rights reserved
Printed in the United States of America

Photocopy Rights. No portion of this standard may be reproduced, stored in a retrieval system, or transmitted in any form, including mechanical, photocopying, recording, or otherwise, without the prior written permission of the copyright owner.

Authorization to photocopy items for internal, personal, or educational classroom use only or the internal, personal, or educational classroom use only of specific clients is granted by the American Welding Society provided that the appropriate fee is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, tel: (978) 750-8400; Internet: www.copyright.com.

Statement on the Use of American Welding Society Standards

All standards (codes, specifications, recommended practices, methods, classifications, and guides) of the American Welding Society (AWS) are voluntary consensus standards that have been developed in accordance with the rules of the American National Standards Institute (ANSI). When AWS American National Standards are either incorporated in, or made part of, documents that are included in federal or state laws and regulations, or the regulations of other governmental bodies, their provisions carry the full legal authority of the statute. In such cases, any changes in those AWS standards must be approved by the governmental body having statutory jurisdiction before they can become a part of those laws and regulations. In all cases, these standards carry the full legal authority of the contract or other document that invokes the AWS standards. Where this contractual relationship exists, changes in or deviations from requirements of an AWS standard must be by agreement between the contracting parties.

AWS American National Standards are developed through a consensus standards development process that brings together volunteers representing varied viewpoints and interests to achieve consensus. While AWS administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in its standards.

AWS disclaims liability for any injury to persons or to property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this standard. AWS also makes no guarantee or warranty as to the accuracy or completeness of any information published herein.

In issuing and making this standard available, AWS is neither undertaking to render professional or other services for or on behalf of any person or entity, nor is AWS undertaking to perform any duty owed by any person or entity to someone else. Anyone using these documents should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. It is assumed that the use of this standard and its provisions is entrusted to appropriately qualified and competent personnel.

This standard may be revised, corrected through publication of amendments or errata, or supplemented by publication of addenda. Information on the latest editions of AWS standards including amendments, errata, and addenda is posted on the AWS web page (www.aws.org). Users should ensure that they have the latest edition, amendments, errata, and addenda.

Publication of this standard does not authorize infringement of any patent or trade name. Users of this standard accept any and all liabilities for infringement of any patent or trade name items. AWS disclaims liability for the infringement of any patent or product trade name resulting from the use of this standard.

AWS does not monitor, police, or enforce compliance with this standard, nor does it have the power to do so.

Official interpretations of any of the technical requirements of this standard may only be obtained by sending a request, in writing, to the appropriate technical committee. Such requests should be addressed to the American Welding Society, Attention: Director, Standards Committee Operations, 8669 NW 36 St, # 130, Miami, FL 33166 (see Annex C). With regard to technical inquiries made concerning AWS standards, oral opinions on AWS standards may be rendered. These opinions are offered solely as a convenience to users of this standard, and they do not constitute professional advice. Such opinions represent only the personal opinions of the particular individuals giving them. These individuals do not speak on behalf of AWS, nor do these oral opinions constitute official or unofficial opinions or interpretations of AWS. In addition, oral opinions are informal and should not be used as a substitute for an official interpretation.

This standard is subject to revision at any time by the AWS Qualification and Certification Committee. It must be reviewed every five years, and if not revised, it must be either reaffirmed or withdrawn. Comments (recommendations, additions, or deletions) and any pertinent data that may be of use in improving this standard are requested and should be addressed to AWS Headquarters. Such comments will receive careful consideration by the AWS Qualification and Certification Committee and the author of the comments will be informed of the Committee's response to the comments. Guests are invited to attend all meetings of the AWS Qualification and Certification Committee to express their comments verbally. Procedures for appeal of an adverse decision concerning all such comments are provided in the Rules of Operation of the Qualification and Certification Committee. A copy of these Rules can be obtained from the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

Personnel

AWS Qualification and Certification Committee

R. E. Dines, Chair	*United Technical, Incorporated*
H. B. Craft, 1st Vice Chair	*Consultant*
M. T. Harris, 2nd Vice Chair	*International Training Institute*
D. Smith, Secretary	*American Welding Society*
E. A. Abbott	*Ironworkers International Union (Retired)*
W. A. Afflick	*Airgas*
T. J. Baber	*Santa Clarita Community College District*
S. Barrett	*Clover Field Services LLC*
J. S. Corder	*Ironworkers International Union*
I. A. Cross	*Valiant TMS*
R. D. Derby	*United Association International Training Fund*
C. H. Eskridge	*Becht Engineering*
K. M. Gilgenbach	*MATHESON*
J. I. Johnson	*North Dakota State College of Science*
J. Leary	*PipeX*
T. E. Logan	*Atema*
M. J. Mauris	*DOT Quality Services*
A. L. Petroski	*Atema*
S. J. Solomon	*Brink Advanced NDT*
T. H. Sumerix	*Muskegon Community College*
R. J. Tessier	*Consultant*
N. A. Virbitsky	*Borusan Berg Pipe*
C. Zanfir	*CWB Group*

AWS Subcommittee on B31 Owner's Inspector

C. H. Eskridge, Chair	*Becht Engineering*
J. P. Swezy, 1st Vice Chair	*Becht Engineering*
J. J. Sekely, 2nd Vice Chair	*Welding Services Incorporated*
B. L. Boddiger, Secretary	*American Welding Society*
B. M. Boseo	*Burns & McDonnell*
S. J. Findlan	*Westinghouse Electric Company, LLC*
S. E. Gingrich	*Amentum*
B. S. Gordon	*Summit Industrial Construction, LLC*
R. T. Hand	*S4 Engineering & Management*
D. L. Ianiro	*Mainthia Technologies, Incorporated*
S. K. Le	*NASA*
R. A. Meeks	*M3 NDT & Code Consulting*
J. Mielcarek	*Mielcarek Technologies, LLC*
L. G. Richardson	*XCEL NDT, LLC*
P. A. Wasserman	*Eastman Chemical Company*

Advisors to the AWS Subcommittee on B31 Owner's Inspector

W. J. Sperko	*Sperko Engineering Services, Incorporated*
R. K. Reamey	*Turner Industries Group, LLC*

Foreword

This foreword is not part of this standard but is included for informational purposes only.

The Owner's Inspector (OI) is responsible for ensuring that all inspections required by the code are performed, as well as any additional inspections deemed necessary to verify contractual compliance. Owners of facilities that utilize American Society of Mechanical Engineers (ASME) piping systems have a code obligation to ensure that all fabrication, examination, testing, and repairs of the facilities meet the requirements of ASME B31 and Section IX. The B31 codes specify that this obligation is met through the services of an OI. However, the exact tasks, duties, and qualifications of OIs are not prescriptively defined. Several ASME B31 Code sections (B31.1, B31.3, B31.5, B31.9, B31.12, and others) have responsibilities for an OI. Many Owners are uninformed of this responsibility and turn this function over to the fabricator, which isn't permitted per ASME codes. The OI must be employed by, or represent, the Owner and not have any direct employment or direct contractual ties to the fabricator, erector, assembler, or material supplier(s). Fabricators of these piping systems are required to maintain a Quality Control (QC) Program, and B31 puts the Quality Assurance (QA) oversight of that QC function onto the OI.

The OI shall make all specifically required inspections, plus any additional inspections deemed necessary to verify compliance. This includes shop and field activities, and inspection of unlisted/nonstandard components, but does not include inspections of listed/standard manufactured components. Listed/standard and unlisted/nonstandard components are defined in ASME B31 codes.

The ASME B31 Code sections have prescribed requirements to maintain an acceptable level of safety over an intended service life. However, misapplying engineering applications to control corrosion is often why piping systems fail. Therefore, this program includes the OI's purview of coating applications and proper insulation installation.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS Qualification and Certification Committee, American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

Table of Contents

Page No.

Personnel v
Foreword vii

1. General Requirements 1
1.1 Scope 1
1.2 Units of Measurement 1
1.3 Safety 1
1.4 Qualification 1
1.5 Responsibility 1
1.6 Mandatory and Nonmandatory Provisions 2

2. Normative References 2

3. Terms and Definitions 2

4. Level of Qualification 3

5. Duties and Tasks 3
5.1 Design Review 3
5.2 Review of Fabricator's Controls 3
5.3 Materials and Components Procurement 4
5.4 Fabrication and Welding 4
5.5 Examinations 5
5.6 Assembly 6
5.7 Erection 6
5.8 Nonmetallics 6
5.9 Other Requirements 6
5.10 Recordkeeping 7

6. Experience Requirements 7

7. Examination Requirements 8
7.1 Fundamentals of Piping Systems Examination 8
7.2 ASME B31.1 and B31.3 Codes Examination 8

8. Qualification Maintenance 9

Annex A (Informative)—Suggested Technical References for Self-Study 11
Annex B (Informative)—List of AWS Documents on Qualification and Certification 13
Annex C (Informative)—Requesting an Official Interpretation on an AWS Standard 15

List of Tables

Table		Page No.
6.1	Minimum Experience and Credential Requirements for Examination Eligibility	8
7.1	Fundamentals of Piping Systems Examination	8
7.2	ASME B31.1 and B31.3 Codes Examination	9

Specification for the Qualification of B31 Owner's Inspectors

1. General Requirements

1.1 Scope. This standard establishes requirements for the qualification of Owner's Inspectors (OIs) acting in accordance with the requirements of the American Society of Mechanical Engineers (ASME) B31 piping codes. It describes how personnel are qualified, and the practice by which qualification may be maintained.

1.2 Units of Measurement. This standard does not require units of measure. Therefore, no equivalents or conversions are contained except when they are cited in examples.

1.3 Safety. Safety and health issues and concerns are beyond the scope of this standard and, therefore, are not addressed herein.

Safety and health information is available from the following sources:

American Welding Society:

(1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*

(2) AWS Safety and Health Fact Sheets

(3) Other safety and health information on the AWS website

Material or Equipment Manufacturers:

(1) Safety Data Sheets supplied by materials manufacturers

(2) Operating Manuals supplied by equipment manufacturers

Applicable Regulatory Agencies

Work performed in accordance with this standard may involve the use of materials that have been deemed hazardous and may involve operations or equipment that may cause injury or death. This standard does not purport to address all safety and health risks that may be encountered. The user of this standard should establish an appropriate safety program to address such risks and meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.

1.4 Qualification. The candidate shall successfully complete an examination designed to demonstrate general knowledge of piping systems and the ability to fabricate, assemble, and erect piping systems in accordance with customer requirements, engineering specifications, and the requirements of the relevant ASME B31 Code section. An additional examination shall be taken to demonstrate the candidate's piping-related qualifications and knowledge of the requirements for the general application of standards and codes. The Owner shall maintain all qualification records.

1.5 Responsibility. This standard is intended to supplement the requirements of an Owner or operator of a piping system and shall not be construed as preemption of an Owner's responsibility for all work performed. Hence, it is the responsibility of the Owner to determine an OI's qualifications other than those stated in 1.4 above and confirm the capability to perform the duties required. This standard is not intended to supersede or contradict local, state, or national regulations.

1.6 Mandatory and Nonmandatory Provisions. As used in this standard, the word ***shall*** denotes a requirement; the word ***should*** denotes a suggestion; and the word ***may*** denotes a choice.

2. Normative References

The documents listed below are referenced within this publication and are mandatory to the extent specified herein. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments or revisions of the publications may not apply since the relevant requirements may have changed.

American Welding Association (AWS) documents:

AWS A3.0M/A3.0, *Standard Welding Terms and Definitions, Including Terms for Additive Manufacturing, Adhesive Bonding, Brazing, Soldering, Thermal Cutting, Thermal Spraying, and Nondestructive Examination*

ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*

The American Society of Mechanical Engineers (ASME) documents:

ASME B16.5, *Pipe Flanges and Flanged Fittings*

ASME B31.1, *Power Piping*

ASME B31.3, *Process Piping*

ASME Boiler and Pressure Vessel Code—Section V, *Nondestructive Examination*

ASME Boiler and Pressure Vessel Code—Section IX, *Welding, Brazing & Fusing Qualifications*

ASME PCC-1, *Pressure Boundary Bolted Flange Joint Assembly*

3. Terms and Definitions

AWS A3.0M/A3.0, *Standard Welding Terms and Definitions*, provides the basis for terms and definitions used herein. However, the following terms and definitions are included below to accommodate usage specific to this document.

acceptance criteria. Specified limits placed on characteristics of an item, process, or service as defined in codes, other standards, or other documents.

candidate. The person attempting to qualify to this standard.

contact hour. One contact hour is equivalent to one classroom hour (either in-person or remote). Ten (10) contact hours are equivalent to one (1) continuing education unit (CEU).

examination. The performance of a task or measurement to verify whether an item or activity conforms to specified requirements.

examiner. A person who performs quality control examinations.

fabricator. The entity that constructs the piping system, including both shop and field erection.

inspection. An activity that ensures that all fabrication practices and examinations are conducted in accordance with the engineering, customer, and code requirements.

inspector. A person who performs inspection activities.

joining. Shall be construed to include welding, brazing, and fusing.

mechanical joining. Assembly by mechanical methods.

Owner. The entity that owns or operates an industrial piping system that is being constructed to ASME B31 requirements.

qualification. The characteristics or abilities gained through education, training, and/or experience, as measured against established requirements, such as standards or tests that qualify a person to perform a required function.