AWS D1.1/D1.1M:2025
An American National Standard

Structural Welding Code—Steel

American Welding Society®

AWS D1.1/D1.1M:2025
An American National Standard

Approved by the
American National Standards Institute
March 19, 2025

Structural Welding Code—Steel

25th Edition

Revision of AWS D1.1/D1.1M:2020

Prepared by the
American Welding Society (AWS) D1 Committee on Structural Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This code covers the welding requirements for any type of welded structure made from the commonly used carbon and low-alloy constructional steels. Clauses 1 through 11 constitute a body of rules for the regulation of welding in steel construction. There are eight normative and eleven informative annexes in this code. A Commentary of the code is included with the document.

American Welding Society®

ISBN Print: 978-1-64322-372-8
ISBN PDF: 978-1-64322-373-5

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 superseded by new editions. This standard may also be 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 Development, 8669 NW 36 St, # 130, Miami, FL 33166 (see Annex T). 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 D1 Committee on Structural Welding. 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 D1 Committee on Structural Welding 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 D1 Committee on Structural Welding 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 Technical Activities Committee. A copy of these Rules can be obtained from the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

This page is intentionally blank.

Personnel

AWS D1 Committee on Structural Welding

T. L. Niemann, Chair	*Fickett Structural Solutions*
R. D. Medlock, 1st Vice Chair	*High Steel Structures, LLC*
N. S. Lindell, 2nd Vice Chair	*Project & Quality Solutions*
J. A. Molin, Secretary	*American Welding Society*
J. M. Rosario, Secretary	*American Welding Society*
U. W. Aschemeier	*Subsea Global Solutions*
E. L. Bickford	*Reaves Welding Industries, LLC*
L. M. Bower	*Cornerstone Building Brands*
T. W. Burns	*Thom Burns Consulting, LLC*
H. H. Campbell	*Pazuzu Engineering*
R. D. Campbell	*Bechtel*
N. M. Choy	*California Department of Transportation*
B. M. Connelly	*Eustis Engineering, LLC*
R. B. Corbit	*Consultant*
M. E. Gase	*Midwest Steel, Incorporated*
H. E. Gilmer	*Pennoni Associates, Incorporated*
T. P. Green	*Wiss, Janney, Elstner Associates, Incorporated*
I. W. Houston	*Stanley Black & Decker–Nelson Stud Welding*
M. G. Iverson	*OTC Daihen*
M. D. Kerr	*CWB*
J. H. Kiefer	*JH Kiefer and Associates*
P. G. Kinney	*Sandia National Laboratories*
B. R. Krueger	*Los Alamos National Laboratory*
V. Kuzmina	*Lexicon, Incorporated*
J. Lawmon	*American Engineering and Manufacturing, Incorporated*
D. J. Luciani	*CWB Group*
D. L. McQuaid	*D. L. McQuaid & Associates, Incorporated*
J. K. Merrill	*TRC Companies*
D. K. Miller	*The Lincoln Electric Company*
D. D. Rager	*Rager Consulting, Incorporated*
T. J. Schlafly	*American Institute of Steel Construction*
R. E. Shaw	*Steel Structures Technology Center, Incorporated*

Advisors to the D1 Committee on Structural Welding

N. J. Altebrando	*STV, Incorporated*
S. E. Anderson	*Anderson Inspections*
R. V. Clarke	*Consultant*
C. L. Decker	*The Lincoln Electric Company*
G. L. Fox	*Consultant*
M. A. Grieco	*Massachusetts Department of Transportation*
W. S. Houston	*Houston Labs – Consultant*
P. W. Marshall	*Moonshine Hill Proprietary Systems Engineering*
G. S. Martin	*TRC Companies*
M. J. Mayes	*Terracon Consultants*
A. W. Sindel	*TRC Companies*

R. E. Stachel	*HRV Conformance Verification Associates, Incorporated*
M. M. Tayarani	*Pennoni Associates, Incorporated*
B. D. Wright	*Advantage Aviation Technologies*

AWS D1Q Subcommittee on Steel

T. P. Green, Chair	*Wiss, Janney, Elstner Associates, Incorporated*
J. A. Molin, Secretary	*American Welding Society*
J. M. Rosario, Secretary	*American Welding Society*
U. W. Aschemeier	*Subsea Global Solutions*
E. L. Bickford	*Reaves Welding Industries, LLC*
L. M. Bower	*Cornerstone Building Brands*
H. H. Campbell	*Pazuzu Engineering*
R. V. Clarke	*Consultant*
S. J. Findlan	*Westinghouse Electric Company, LLC*
M. E. Gase	*Midwest Steel, Incorporated*
H. E. Gilmer	*Pennoni Associates, Incorporated*
R. L. Holdren	*ARC Specialties, Incorporated*
I. W. Houston	*Stanley Black & Decker–Nelson Stud Welding*
W. S. Houston	*Houston Labs – Consultant*
M. D. Kerr	*CB&I*
J. H. Kiefer	*JH Kiefer and Associates*
P. G. Kinney	*Sandia National Laboratories*
V. Kuruvilla	*Lexicon, Incorporated*
D. R. Luciani	*CWB Group*
R. P. Marslender	*Kiewit Offshore Services, Ltd.*
G. S. Martin	*TRC Companies*
J. K. Merrill	*TRC Companies*
J. I. Miller	*Consultant*
S. P. Moran	*General Dynamics - Electric Boat*
D. D. Rager	*Rager Consulting, Incorporated*
T. J. Schlafly	*American Institute of Steel Construction*
R. E. Shaw	*Steel Structures Technology Center, Incorporated*
J. L. Warren	*CB&I*
C. Zanfir	*CWB Group*

Advisors to the AWS D1Q Subcommittee on Steel

W. P. Capers	*Walt Disney World Company*
N. S. Lindell	*Project & Quality Solutions*
P. W. Marshall	*Moonshine Hill Proprietary Systems Engineering*
M. J. Mayes	*Terracon Consultants*
R. D. Medlock	*High Steel Structures, LLC*
D. K. Miller	*The Lincoln Electric Company*
T. L. Niemann	*Fickett Structural Solutions*
J. A. Packer	*University of Toronto*
D. A. Wright	*Wright Welding Tech.*

AWS D1Q Subcommittee Task Group on Design

D. K. Miller, Co-Chair	*The Lincoln Electric Company*
T. J. Schlafly, Co-Chair	*American Institute of Steel Construction*
T. P. Green, Vice Chair	*Wiss, Janney, Elstner Associates, Incorporated*
C. P. Ahlskog	*Modjeski and Masters, Incorporated*

C. L. Decker	*The Lincoln Electric Company*
D. Ferrell	*Ferrell Engineering, Incorporated (deceased)*
J. J. Fonzi	*WSP*
C. Hanson Carbonneau	*Cimolai | HY*
D. A. Koch	*Pacific Northwest National Laboratory*
L. A. Malm	*Wiss, Janney, Elstner Associates, Incorporated*
J. A. Packer	*University of Toronto*
G. A. Rassati	*University of Cincinnati*

Advisors to the AWS D1Q Subcommittee Task Group on Design

W. P. Capers	*Walt Disney World Company*
T. L. Niemann	*Fickett Structural Solutions*
J. M. Ocel	*Federal Highway Administration*
J. Ross	*U.S. Army Corps of Engineers (retired)*

AWS D1Q Subcommittee Task Group on Prequalification

C. Zanfir, Chair	*CWB Group*
L. M. Bower, Vice Chair	*Cornerstone Building Brands*
W. J. Bell	*Atlantic Testing Laboratories*
H. H. Campbell	*Pazuzu Engineering*
M. R. Cates	*Jesse Co.*
D. R. Luciani	*CWB Group*
D. K. Miller	*The Lincoln Electric Company*
J. I. Miller	*Consultant*
S. P. Moran	*General Dynamics - Electric Boat*
D. D. Rager	*Rager Consulting, Incorporated*

Advisors to the AWS D1Q Subcommittee Task Group on Prequalification

P. W. Marshall	*Moonshine Hill Proprietary Systems Engineering*
T. L. Niemann	*Fickett Structural Solutions*

AWS D1Q Subcommittee Task Group on Qualification

S. J. Fadlan, Chair	*Westinghouse Electric Company, LLC*
K. Welch, Vice Chair	*Miller Electric Manufacturing Company*
E. L. Bickford	*Reaves Welding Industries, LLC*
T. R. Blissett	*Accurate Weldment Testing, LLC*
V. Burke	*Westinghouse Electric Company, LLC*
C. A. Einspahr	*Kawasaki Motors Manufacturing Corporation USA*
J. F. Hernandez	*Kansas Department of Transportation*
R. L. Holdren	*ARC Specialties, Incorporated*
J. H. Kiefer	*JH Kiefer and Associates*
B. D. Kirby	*Fullerton College*
R. P. Marslender	*Kiewit Offshore Services, Ltd.*
J. D. Niemann	*Kawasaki Motors Manufacturing Corporation USA*
D. D. Rager	*Rager Consulting, Incorporated*
Z. E. Sanders	*Caterpillar, Incorporated*
D. A. Stickel	*Caterpillar, Incorporated*
P. L. Sturgill	*Sturgill Welding & Code Consulting*
J. Topham	*Wood PLC*
B. M. Toth	*Westinghouse Electric Company, LLC*
D. G. Viar	*Moraine Valley Community College/Techno-Weld Consultants*

Advisors to the AWS D1Q Subcommittee Task Group on Qualification

M. Bernasek	*C-Spec*
N. S. Lindell	*Project & Quality Solutions*
G. S. Martin	*TRC Companies*
T. L. Niemann	*Fickett Structural Solutions*

AWS D1Q Subcommittee Task Group on Fabrication

M. E. Gase, Chair	*Midwest Steel, Incorporated*
M. D. Kerr, Vice Chair	*CB&I*
S. E. Anderson	*Anderson Inspections*
S. Barrett	*Haberle Steel, Incorporated*
L. M. Bower	*Cornerstone Building Brands*
H. H. Campbell	*Pazuzu Engineering*
N. M. Choy	*California Department of Transportation*
R. V. Clarke	*Consultant*
G. W. Ehler	*Texas NDT Academy/Exo Group*
H. E. Gilmer	*Pennoni Associates, Incorporated*
J. K. Hilton Jr.	*KTA-Tator, Incorporated*
P. G. Kinney	*Sandia National Laboratories*
V. Kuruvilla	*Lexicon, Incorporated*
A. J. Lye	*Schuff Steel Company*
G. S. Martin	*TRC Companies*
E. S. Mattfield	*City of New York*
R. D. Medlock	*High Steel Structures, LLC*
J. E. Mellinger	*Pennoni Associates, Incorporated*
J. I. Miller	*Consultant*
R. E. Monson	*Pennoni Associates, Incorporated*
T. E. Rogers Jr	*Modjeski & Masters, Incorporated*

Advisors to the AWS D1Q Subcommittee Task Group on Fabrication

B. R. Anderson	*Molex, Incorporated*
C. L. Fox	*Consultant*
R. T. Holdren	*ARC Specialties, Incorporated*
C. W. Holmes	*Modjeski & Masters, Incorporated (retired)*
D. L. McQuaid	*D. L. McQuaid & Associates, Incorporated*
T. J. Schlafly	*American Institute of Steel Construction*

AWS D1 Committee Standing Task Group on Inspection

M. E. Gase, Chair	*Midwest Steel, Incorporated*
S. E. Anderson	*Anderson Inspections*
U. W. Aschemeier	*Subsea Global Solutions*
S. Barrett	*Clover Field Services, LLC*
R. V. Clarke	*Consultant*
J. A. Cochran	*Kiewit Offshore Services, Ltd.*
G. W. Ehler	*Texas NDT Academy/Exo Group*
P. A. Furr	*Loenbro Inspection*
H. E. Gilmer	*Pennoni Associates, Incorporated*
J. H. Gravley Jr	*KTA-Tator, Incorporated*
C. W. Hayes	*Consultant*
J. K. Hilton Jr.	*KTA-Tator, Incorporated*
P. G. Kinney	*Sandia National Laboratories*
N. S. Lindell	*Project & Quality Solutions*

A. J. Lye	*Schuff Steel Company*
G. S. Martin	*TRC Companies*
J. E. Mellinger	*Pennoni Associates, Incorporated*
J. K. Merrill	*TRC Companies*
C. E. Pennington	*NOVA Engineering & Environmental LLC*
G. K. Sowa	*Skanska USA Civil*
R. E. Stachel	*HRV Conformance Verification Associates, Incorporated*

Advisors to the AWS D1 Committee Standing Task Group on Inspection

J. J. Edwards	*DOT Quality Services*
R. K. Holbert	*Alstom Power*
E. S. Mattfield	*City of New York*
D. L. McQuaid	*D. L. McQuaid & Associates, Incorporated*
R. E. Monson	*Pennoni Associates, Incorporated*
K. J. Steinhagen	*Examiner NDT Services, LLC*

AWS D1 Committee Standing Task Group on Stud Welding

I. W. Houston, Chair	*Stanley Black & Decker–Nelson Stud Welding*
S. P. Moran, Vice Chair	*General Dynamics Electric Boat*
U. W. Aschemeier	*Subsea Global Solutions*
R. D. Campbell	*Bechtel*
B. C. Hobson	*Image Industries Incorporated*
W. S. Houston	*Houston Laws – Consultant*
J. E. Koski	*Stud Welding Products, Incorporated*
C. W. Makar	*Cox Stud Welding*
S. J. Wirtz	*Savannah River Nuclear Solutions*
P. A. Workman	*Nu-Weld Stud Welding*

Advisors to the AWS D1 Committee Standing Task Group on Stud Welding

A. D. D'Amico	*Montana Precision Products*
D. R. Luciani	*CWB Group*
K. D. Reddock	*High Steel Structures, LLC*
M. M. Tayarani	*Pennoni Associates, Incorporated*

AWS D1 Committee Standing Task Group on Tubulars

N. S. Lindell, Chair	*Project & Quality Solutions*
S. J. Bajcer, Vice Chair	*The Lincoln Electric Company*
E. L. Bickford	*Reaves Welding Industries, LLC*
N. M. Choy	*California Department of Transportation*
R. V. Clarke	*Consultant*
P. A. Huckabee	*Gill Engineering Associates, Incorporated*
C. L. Long	*Southwest Research Institute*
R. P. Marslender	*Kiewit Offshore Services, Ltd.*
J. P. McCormick	*University of Michigan*
R. E. Monson	*Pennoni Associates, Incorporated*
K. T. Olson	*Nucor*
J. A. Packer	*University of Toronto*
S. Roy	*Federal Highway Administration*
R. Sause	*ATLSS Center Lehigh University*

Advisors to the AWS D1 Committee Standing Task Group on Tubulars

J. J. Edwards	*DOT Quality Services*
V. Kuruvilla	*Lexicon, Incorporated*
P. W. Marshall	*Moonshine Hill Proprietary Systems Engineering*
M. J. Mayes	*Terracon Consultants*
R. D. Medlock	*High Steel Structures, LLC*
T. L. Niemann	*Fickett Structural Solutions*
D. D. Rager	*Rager Consulting, Incorporated*
T. J. Schlafly	*American Institute of Steel Construction*

AWS D1 Committee Standing Task Group on New Materials

M. S. Vernon, Chair	*Nucor—Yamato Steel*
J. K. Trosen, Vice Chair	*Pantex Plant*
M. D. Kerr	*CB&I*
D. A. Koch	*Pacific Northwest National Laboratory*
V. Kuruvilla	*Lexicon, Incorporated*
R. D. Medlock	*High Steel Structures, LLC*
T. M. Nelson	*Hatch*
P. R. Niewiarowski	*Sargent & Lundy*
D. D. Rager	*Rager Consulting, Incorporated*
T. J. Schlafly	*American Institute of Steel Construction*
C. Urtz	*ArcelorMittal*
J. L. Warren	*CB&I*

Advisors to the AWS D1 Committee Standing Task Group on New Materials

W. P. Capers	*Walt Disney World Company*
M. L. Hoitomt	*Consultant*
D. Rees-Evans	*New Millennium*

Foreword

This foreword is not part of AWS D1.1/D1.1M:2025, *Structural Welding Code—Steel*, but is included for informational purposes only.

The first edition of the *Code for Fusion Welding and Gas Cutting in Building Construction* was published by the American Welding Society in 1928 and called Code 1 Part A. It was revised in 1930 and 1937 under the same title. It was revised again in 1941 and given the designation D1.0. D1.0 was revised again in 1946, 1963, 1966, and 1969. The 1963 edition published an amended version in 1965, and the 1966 edition published an amended version in 1967. The code was combined with D2.0, *Specifications for Welding Highway and Railway Bridges*, in 1972, given the designation D1.1, and retitled AWS *Structural Welding Code*. D1.1 was revised again in 1975, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2015, and 2020. A second printing of AWS D1.1/D1.1M:2010, 2015, and 2020 were published in 2011, 2016, and 2022, respectively. From 1972 to 1988, the D1.1 code covered the welding of both buildings and bridges.

In 1988, AWS published its first edition of AASHTO/AWS D1.5M/D1.5, *Bridge Welding Code*; coincident with this, the D1.1 code changed references of buildings and bridges to statically loaded and dynamically loaded structures, respectively, in order to make the document applicable to a broader range of structural applications. After the publishing of the 2010 edition, it was decided that the AWS *Structural Welding Code—Steel* would be published on a five year revision cycle instead of a two year revision cycle. This was done in order to sync the publication cycle of AWS Structural Welding Code-Steel with the publication cycles of the ANSI/AISC 360, *Specification for Structural Steel Buildings* and the *International Building Code*. This 2025 edition is the 25th edition of D1.1.

Changes in Code Requirements, underlined text in the clauses, subclauses, tables, figures, or forms indicates a change from the 2020 edition. A vertical line in the margin of a table or figure also indicates a change from the 2015 edition.

The following is a summary of the most significant technical changes contained in AWS D1.1/D1.1M:2025:

Summary of Changes

Clause/Table/Figure/Annex	Modification
General	AWS A5.36 filler metal classifications and properties have been removed throughout the standard.
Clause 2—Normative References	The normative references were amended.
Clause 3—Terms and Definitions	New terms and definitions were added.
Clause 4—Design of Welded Connections	Clarified base metal and filler metal strength requirements, added provisions for matching filler metals, added provisions for toughness, added a new subclause 4.7 on Load and Resistance Factor Design (LRFD), added a new Table 4.3 for available strength of welded joints, and added a new Figure 4.7, clarifying the maximum specified fillet weld size along edges.
Clause 5—Prequalification of WPSs	Revised subclause 5.6.1 on matching and undermatching filler metal strength, converted Table 5.1 on prequalified WPS requirements from the previous edition into 4 separate tables, added Group V metals to Table 5.7 on filler metals for matching strengths, and replaced the joint details in Figures 5.1 and 5.2 with new drawings.
Clause 6—Qualification	Qualification for preheat and interpass temperatures were revised, acceptance criteria for macroetch testing was updated, and the WPS qualification tables were changed.
Clause 7—Fabrication	Text was introduced, clarifying production welding requirements and preheat and interpass temperatures, and new weld tab exemptions were listed.

(Continued)

Summary of Changes (Continued)

Clause/Table/Figure/Annex	Modification
Clause 8—Inspection	Additional provisions for Magnetic Particle Testing (MT) and Penetrant Testing (PT) were added, language was included to clarify the certification of personnel performing nondestructive testing (NDT), and the acceptance criteria for visual inspection was updated.
Clause 9—Stud Welding	New provisions for type D studs were added.
Clause 10—Tubular Structures	Revised the requirements for tubular connections and clarified the requirements for T-, Y-, and K- connection procedures.
Annex M	It was presented as Annex N in the previous edition.
Annex N	It was presented as Annex O in the previous edition.
Annex O	It was presented as Annex P in the previous edition.
Annex P	It was presented as Annex Q in the previous edition.
Annex R	It was presented as Annex S in the previous edition and new reference documents were listed.
Annex Q	It was presented as Annex R in the previous edition.
Annex S	New annex that addresses the addition of base materials to AWS D1.1/D1.1M.

Commentary. The Commentary is nonmandatory and is intended only to provide insightful information into provision rationale.

Normative Annexes. These annexes address specific subjects in the code and their requirements are mandatory requirements that supplement the code provisions.

Informative Annexes. These annexes are not code requirements but are provided to clarify code provisions by showing examples, providing information, or suggesting alternative good practices.

Index. As in previous codes, the entries in the Index are referred to by subclause number rather than by page number. This should enable the user of the Index to locate a particular item of interest in minimum time.

Errata. It is the Structural Welding Committee's Policy that all errata should be made available to users of the code. Therefore, any significant errata will be published in the Society News Section of the *Welding Journal* and posted on the AWS web site at: http://www.aws.org/standards/page/errata.

Suggestions. Your comments for improving AWS D1.1/D1.1M:2025, *Structural Welding Code—Steel* are welcome. Submit comments to the Secretary of the D1Q Subcommittee, American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

Table of Contents

Page No.

List of Tables

List of Figures

Figure **Page No.**

Dedication

The D1 Committee on Structural Welding dedicates this 25th edition of AWS D1.1/D1.1M, Structural Welding Code—Steel, in honor of Philip "Phil" Torchio, III. The D1Q Subcommittee is eternally grateful for Phil's leadership, mentorship, and more importantly his friendship as a member and Chairman of the D1Q Subcommittee. The members of D1 and D1Q are forever thankful for his devotion to improving the AWS D1 Codes.

This page is intentionally blank.

Structural Welding Code—Steel

1. General Requirements

1.1 Scope

This code contains the requirements for fabricating and erecting welded steel structures. When this code is stipulated in contract documents, conformance with all provisions of the code shall be required, except for those provisions that the Engineer (see 1.5.1) or contract documents specifically modifies or exempts.

The following is a summary of the code clauses:

1. General Requirements. This clause contains basic information on the scope and limitations of the code, key definitions, and the major responsibilities of the parties involved with steel fabrication.

2. Normative References. This clause contains a list of reference documents that assist the user in implementation of this code or are required for implementation.

3. Terms and Definitions. This clause contains terms and definitions as they relate to this code.

4. Design of Welded Connections. This clause contains requirements for the design of welded connections composed of tubular, or nontubular, product form members.

5. Prequalification of WPSs. This clause contains the requirements for exempting a Welding Procedure Specification (WPS) from the WPS qualification requirements of this code.

6. Qualification. This clause contains the requirements for WPS qualification and the performance qualification tests required to be passed by all welding personnel (welders, welding operators, and tack welders).

7. Fabrication. This clause contains general fabrication and erection requirements applicable to welded steel structures governed by this code, including the requirements for base metals, welding consumables, welding technique, welded details, material preparation and assembly, workmanship, weld repair, and other requirements.

8. Inspection. This clause contains criteria for the qualifications and responsibilities of inspectors, acceptance criteria for production welds, and standard procedures for performing visual inspection and nondestructive testing (NDT).

9. Stud Welding. This clause contains the requirements for the welding of studs to structural steel.

10. Tubular Structures. This clause contains exclusive tubular requirements. Additionally, the requirements of all other clauses apply to tubulars, unless specifically noted otherwise.

11. Strengthening and Repair of Existing Structures. This clause contains basic information pertinent to the welded modification or repair of existing steel structures.

1.2 Standard Units of Measurement

This standard makes use of both U.S. Customary Units and the International System of Units (SI). The latter are shown within brackets ([ ]) or in appropriate columns in tables and figures. The measurements may not be exact equivalents; therefore, each system must be used independently.