

**AWS D9.1M/D9.1:2006**  
**An American National Standard**



# **Sheet Metal Welding Code**



**American Welding Society**



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An American National Standard**

**Approved by the  
American National Standards Institute  
July 25, 2006**

# **Sheet Metal Welding Code**

**5th Edition**

**Supersedes AWS D9.1M/D9.1:2000**

Prepared by the  
American Welding Society (AWS) D9 Committee on Welding, Brazing, and Soldering of Sheet Metal

Under the Direction of the  
AWS Technical Activities Committee

Approved by the  
AWS Board of Directors

## **Abstract**

This code covers the arc and braze welding requirements for nonstructural sheet metal fabrications using the commonly welded metals available in sheet form. Requirements and limitations governing procedure and performance qualification are presented, and workmanship and inspection standards are supplied. The informative annexes provide useful information on materials and processes.



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# Sheet Metal Welding Code

## 1. Scope, Purpose, and Applications

**1.1 Scope.** This code provides qualification, workmanship, and inspection requirements for both arc welding (Part A) and braze welding (Part B), as they apply to the fabrication, manufacture, and erection of nonstructural sheet metal components and systems.

**1.2 Purpose.** This code was developed to provide standardized requirements for the qualification, production, and acceptance of welding or braze welding of nonstructural sheet metal components.

**1.3 Applications.** General applications of this code are in the following industrial areas:

1. Heating, ventilating, and air conditioning systems
2. Food processing equipment
3. Architectural sheet metal and similar applications
4. Other nonstructural sheet metal applications

This code covers sheet metal up to and including 6.4 mm [0.250 in]. Also covered are the attachment of accessories and components of the system, and joining or attachment of any member, regardless of thickness, whose sole purpose is stiffening, supporting, or reinforcing the sheet metal.

Where negative pressure or positive pressure exceeds 30 kPa [5 psi] which is approximately 3 meters [120 in] of standing water or where structural requirements are concerned, other codes or standards shall be used.

**1.4 Required Information.** This code requires values to be specified by the Engineer for paragraphs 8.2, 8.3, 13.1, and 13.3.

**1.5 Symbols.** Symbols used in this code shall be in accordance with the latest edition of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

**1.6 Standard Units of Measurement.** This standard makes use of both the International System of Units (SI) and U.S. Customary Units. The latter are shown within brackets [ ] or in appropriate columns in tables and figures. The measurements are not exact equivalents; there-

fore, each system must be used independently of the other without combining in any way.

**1.7 Safety and Health.** Safety and health issues and concerns are beyond the scope of this standard and therefore are not fully addressed herein. Safety and health information is available from other sources, including, but not limited to, ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes* and applicable federal, state, and local regulations.

Additional information may be found in the *Safety and Health Fact Sheets*, a document of the AWS Safety and Health Committee.<sup>1</sup> The equipment manufacturer's operating manual and safety instructions should always be carefully studied and complied with when operating welding or related equipment. Material Safety Data Sheets (MSDSs) for materials used in these processes are available from the material supplier.

## 2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this AWS standard. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*;<sup>2</sup> and

AWS documents:<sup>3</sup>

1. AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*; and
2. AWS A3.0, *Standard Welding Terms and Definitions Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying*.

<sup>1</sup> Safety and Health Fact Sheets are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

<sup>2</sup> ANSI Z49.1 is published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

<sup>3</sup> AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.