


**AWS A2.4:2007**  
**An American National Standard**



# **Standard Symbols for Welding, Brazing, and Nondestructive Examination**



**American Welding Society**



**AWS A2.4:2007**  
**An American National Standard**

**Approved by the**  
**American National Standards Institute**  
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# **Standard Symbols for Welding, Brazing, and Nondestructive Examination**

**6th Edition**

**Supersedes ANSI/AWS A2.4-98**

Prepared by the  
American Welding Society (AWS) A2 Committee on Definitions and Symbols

Under the Direction of the  
AWS Technical Activities Committee

Approved by the  
AWS Board of Directors

## **Abstract**

This standard establishes a method for specifying certain welding, brazing, and nondestructive examination information by means of symbols. Detailed information and examples are provided for the construction and interpretation of these symbols. This system provides a means of specifying welding or brazing operations as well as nondestructive examination, including the examination method, frequency, and extent.



**American Welding Society**

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## Dedications

**This revision of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*, is dedicated to the memory of A2 Chair and past A2C Chair Richard McGuire, who passed away shortly after its completion. Richard was an active member of several technical committees of the American Welding Society and contributed generously to the development of both national and international welding standards.**

**The committee will be forever grateful for his years of devoted service and guidance, and will miss his great sense of humor.**

**This revision of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*, is also dedicated to the memory of William Lee “Bill” Green, who served as the A2 and A2C Committee Chair for many years.**

**The Committee sadly misses his leadership, wisdom, and friendship. His commitment to the advancement of symbols for welding, brazing, and nondestructive examination lives on in this new revision.**

**Godspeed, Bill Green.**

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## Foreword

This foreword is not part of AWS A2.4:2007, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*, but is included for informational purposes only.

Joining processes and examination methods cannot take their proper place as fabricating tools unless means are provided for conveying information from the designer to joining and inspection personnel. The symbols in this publication are intended to be used to facilitate communication among the designer, fabrication, and inspection personnel. Statements such as “to be welded throughout” or “to be completely welded,” in effect, transfer the design responsibility from the designer to production personnel, who cannot be expected to know design requirements.

The symbols presented in this standard provide the means for placing welding, brazing, and nondestructive examination information on drawings. In practice, many users will need only a few of the symbols, and, if they desire, can select only the parts of the system that fit their needs.

The publication AWS A2.4 came into existence in 1976 as a result of combining and superseding two earlier documents, A2.0, *Standard Welding Symbols*, and A2.2, *Nondestructive Testing Symbols*. Both of these early documents had their origins in work done jointly by the American Welding Society and the American Standards Association (ASA) Sectional Committee Y32. AWS A2.0 was first published in 1947 and was revised in 1958 and 1968. AWS A2.2 first appeared in 1958 and was revised in 1969.

AWS A2.4-76, *Symbols for Welding and Nondestructive Testing*, was the first revision of the combined documents and was prepared by the AWS Committee on Definitions and Symbols. It was revised in 1979 as A2.4-79, *Symbols for Welding and Nondestructive Testing, Including Brazing*, and again in 1986 with the title *Standard Symbols for Welding, Brazing, and Nondestructive Examination*. AWS A2.4:1998 was the second revision of the 1986 document and had the same title. AWS A2.4:2007 is the third revision of the 1986 document and has the same title, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

This edition has undergone extensive formatting modifications which have introduced new features including a scope, normative and informative references, and figures located closer to the referencing clauses. The user will also find paragraphs on SI dimensions for application to symbols and many examples of metric dimensions in the figures. One normative annex, titled Annex A Tables, has also been added to the current edition in order to facilitate locating table references with the addition of Table A.6 Examination Method Letter Designation. Six informative annexes follow the text and figures that comprise AWS A2.4:2007. Among the informative annexes the user will find Annex E Welding Symbol Chart in its updated form, including a section for contour symbols, and Annex F Guidelines for the Preparation of Inquiries for AWS Technical Committees.

The seventh edition of A2.4 also incorporates some revised technical content primarily in the Brazing Symbols area which currently details information on special application of symbols as well as braze fillet. Clause 3. Basic Welding Symbols briefly defines the basis of reference in a new subclause and is also revised to clarify Figures 1 through 3. Several of the sketches throughout the standard have been corrected and modified, such as those found in 5.12.2, 6.2.1, 10.6.2, and 11.7.2. Figures 30, 33, 41, and 49 were also altered in order to better portray the application of the plug weld symbol.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS A2 Committee on Definitions and Symbols, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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# Standard Symbols for Welding, Brazing, and Nondestructive Examination

## 1. Scope

This standard presents a system for indicating welding, brazing, and nondestructive examination requirements. The system includes provisions for the graphical representation of welds, brazes, and nondestructive examination methods with conventions for specifying, at a minimum, the location and extent of their application. Optional elements and supplementary symbols provide a means for specifying additional requirements.

The figures included with the text are intended to show how the correct format and applications of symbols may be used to convey welding, brazing, and nondestructive examination information. They are not intended to represent recommended welding, brazing, nondestructive examination, or design practice.

The section addressing brazing uses the same symbols that are used for welding. The section on nondestructive examination symbols establishes the symbols to be used on drawings to specify nondestructive examination for determining the suitability of components. The nondestructive examination symbols included in this standard represent nondestructive examination methods as discussed in the latest edition of the AWS publication AWS B1.10, *Guide for the Nondestructive Examination of Welds*. Definitions and the details for the use of the various nondestructive examination methods are found in AWS B1.10.

For illustrative purposes, this standard makes use of both U.S. Customary and the International System of Units (SI). Examples featuring each system appear throughout the document.

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 and state regulations.

The limitations included in specifications and codes are also beyond the scope of this standard.

## 2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this AWS standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this AWS standard are encouraged to investigate the possibility of applying the most recent editions of the documents shown below. For undated references, the latest edition of the standard referred to applies.

The following American Welding Society<sup>1</sup> standards are used in the mandatory sections of this document:

(1) AWS A3.0:2001, *Standard Welding Terms and Definitions*;

(2) AWS A5.30/A5.30M, *Specification for Consumable Inserts*; and

(3) AWS B1.10, *Guide for the Nondestructive Examination of Welds*.

## 3. Basic Welding Symbols

**3.1 Distinction between Weld Symbol and Welding Symbol.** This standard makes a distinction between the terms *weld symbol* and *welding symbol*. The weld symbol indicates the type of weld and, when used, is a part of the welding symbol.

**3.2 Basis of Reference.** In the present system, the joint is the basis of reference. The *arrow side* is the side of the joint to which the arrow of the symbol points. The *other side* is the side of the joint opposite the arrow side.

**3.3 Weld Symbols.** Weld symbols shall be as shown in Figure 1. The symbols shall be drawn in contact with the reference line.

<sup>1</sup> AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.