AWS A2.4:2020
An American National Standard

Standard Symbols for Welding, Brazing, and Nondestructive Examination

American Welding Society®

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

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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, including the examination method, frequency, and extent. Detailed information and examples are provided for the construction and interpretation of these symbols.

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M. E. Mohn	*Monroe Environmental Corporation*
P. M. Newhouse	*British Columbia Hydro and Power Authority*
J. R. Workman	*Focus: HOPE*

Advisors to the AWS A2C Subcommittee on Symbols

L. J. Barley	*OTC Daihen*
D. M. Beneteau	*Centerline (Windsor) Limited*
B. Galliers	*General Electric Aviation*
J. J. Gullotti	*Consultant*
R. L. Holdren	*ARC Specialties/Welding Consultants, LLC*
L. J. Siy	*Consultant*
J. L. Warren	*CB&I Storage Solutions*
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Foreword

This foreword is not part of this standard 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 from the designer to fabrication and inspection personnel. Statements such as "to be welded throughout" or "to be completely welded," on a drawing have the effect of transferring the design responsibility from the designer to production personnel, who cannot be expected to know design requirements. In the interest of safety, using a general statement is dangerous as the welder is not expected to know the requirements of the weld.

This standard does not dictate welding tolerances, dimensions or design requirements. Information presented herein is to show how to convey this information.

The symbols presented in this standard were developed to provide the means for placing welding, brazing, and nondestructive examination information on two-dimensional 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. Applicability to three dimensional digital models is being researched and will be covered more extensively in future editions.

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.

The evolution of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Testing*, is shown below:

ANSI/AWS A2.4-76	*Symbols for Welding and Nondestructive Testing*;
ANSI/AWS A2.4-79	*Symbols for Welding and Nondestructive Testing, Including Brazing*;
ANSI/AWS A2.4-86	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*;
ANSI/AWS A2.4-93	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*;
ANSI/AWS A2.4-98	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*;
AWS A2.4:2007	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*;
AWS A2.4:2012	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*;
AWS A2.4:2020	*Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

This eighth edition of AWS A2.4 includes the following revised content:

- Detailed usage for flare groove welds.
- Diameter symbol, Ø, is now no longer a part of the plug weld symbol as it was in the previous edition. However, it is still needed when designating the plug dimension on the welding symbol.
- The use of the contour symbol without a designated mechanical postweld finishing method previously meant that the contour of the weld had to be obtained by welding only. This requirement no longer applies and now allows the contour of the weld to be achieved by any method (e.g., welding or mechanical) as seen fit at the work site. The flat contour symbol is now limited to fillet welds, while the flush symbol is used for other welds, such as groove, plug, and slot.

- Combination groove weld symbol designating two different edge shapes. This is a major change in which one groove weld symbol may be drawn backward (e.g., flare bevel and bevel) to demonstrate actual configuration of the weld joint.
- The use of multiple subreference lines to designate a groove weld extending around a joint where there is no clear point where the joint transitions from one joint type to another.
- Spot and seam welds—the ability to designate size or strength by placing a value to the left of the weld symbol has been modified. The dimension to the left of the weld symbol will only designate the size of the weld. If strength is needed, this information will be required to be specified as a note in the tail of the welding symbol.
- Flash and upset welding symbols are no longer supported; therefore, the welding symbol if needed is recommended to be a reference line and arrow with either "FW" or "UW" designated in the tail of the welding symbol.
- Figures now have new number designations to reflect the clause in which they are referenced.
- The clause for the symbol for nondestructive examination has been rewritten and expanded.

Revisions to the 2020 edition are identified by underlines as well as vertical lines in the margin next to the figures.

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, 8669 NW 36 St, # 130, Miami, FL 33166.

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