



Specification for Filler Metals for Brazing and Braze Welding



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Specification
for
Filler Metals for Brazing
and Braze Welding

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Prepared by the
American Welding Society (AWS) A5 Committee on Filler Metals and Allied Materials

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification prescribes the requirements for the classification of brazing filler metals for brazing and braze welding. The chemical composition, physical form, and packaging of more than 120 brazing filler metals are specified. The brazing filler metal groups described include aluminum, cobalt, copper, gold, magnesium, nickel, silver, titanium, and brazing filler metals for vacuum service. Information is provided concerning the liquidus, the solidus, the brazing temperature range, and general areas of application recommended for each brazing filler metal. Additional requirements are included for manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the brazing filler metals for brazing and braze welding.

This specification makes use of both the International System of Units (SI) and U.S. Customary Units. Since these are not equivalent, each must be used independently of the other.



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Specification for Filler Metals for Brazing and Braze Welding

1. General Requirements

1.1 Scope. This specification prescribes requirements for the classification of brazing filler metals for brazing and braze welding. It includes brazing filler metals for brazing with or without a flux and in all protective atmospheres for various applications, including those for vacuum service.¹ The prefix “RB” indicates that the brazing filler metal is suitable for use both as brazing rod for braze welding and as a brazing filler metal.

1.2 Units of Measurement. This specification makes use of both the International System of Units (SI) and U.S. Customary Units. The measurements are not exact equivalents; therefore, each system must be used independently of the other without combining in any way when referring to material properties. The specification with the designation A5.8M uses the International System of Units. The specification A5.8 uses U.S. Customary Units. The latter are shown within brackets ([]) or in appropriate columns in tables and figures. Standard dimensions based on either system may be used for the sizing or packaging of brazing filler metal, or both, under A5.8M or A5.8 specifications.

1.3 Safety. Safety issues and concerns are addressed in this standard, although health issues and concerns are beyond the scope of this standard. Some safety and health information can be found in nonmandatory Annex Clauses B5 and B10.

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 (see Annex Clause B10)
- (3) Other safety and health information on the AWS website

Material or Equipment Manufacturers:

- (1) Material Safety Data Sheets supplied by the 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 as well as to meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.

¹ Filler metals for vacuum service are for devices operating in vacuum service, regardless of the atmosphere used in making the joint.