AWS A5.9/A5.9M:2012
An American National Standard

Specification for Bare Stainless Steel Welding Electrodes and Rods

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Approved American National Standard
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Specification for Bare Stainless Steel Welding Electrodes and Rods

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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 classification of solid and composite stainless steel electrodes (both as wire and strip) for gas metal arc welding, submerged arc welding, and other fusion welding processes. It also includes wire and rods for use in gas tungsten arc welding. Classification is based on chemical composition of the 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 stainless steel filler metal.

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

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Foreword

This foreword is not part of AWS A5.9/5.9M:2012, *Specification for Bare Stainless Steel Welding Electrodes and Rods*, but is included for informational purposes only.

The first specification for bare stainless steel electrodes and rods was prepared in 1953 by a joint committee of the American Society for Testing and Materials and the American Welding Society. The joint committee also prepared the 1962 revision. The first revision prepared exclusively by the AWS A5 Committee on Filler Metal and Allied Materials was published in 1969. The current revision is the eighth revision of the original 1953 document as shown below:

ASTM A371-53T AWS A5.9-53T	*Tentative Specifications for Corrosion Resisting Chromium and Chromium-Nickel Steel Welding Rods and Bare Electrodes*
ASTM A371-62T AWS A5.9-62T	*Tentative Specifications for Corrosion Resisting Chromium and Chromium-Nickel Steel Welding Rods and Bare Electrodes*
AWS A5.9-69 ANSI W3.9-1973	*Specification for Corrosion-Resisting Chromium and Chromium-Nickel Steel Welding Rods and Bare Electrodes*
AWS A5.9-Add 1-75	*Addenda to Specification for Corrosion-Resisting Chromium and Chromium-Nickel Steel Welding Rods and Bare Electrodes*
AWS A5.9-77	*Specification for Corrosion Resisting Chromium and Chromium-Nickel Steel Bare and Composite Metal Cored and Stranded Arc Welding Electrodes and Welding Rods*
AWS A5.9-81	*Specification for Corrosion Resisting Chromium and Chromium-Nickel Steel Bare and Composite Metal Cored and Stranded Welding Electrodes and Welding Rods*
AWS A5.9-93	*Specification for Bare Stainless Steel Welding Electrodes and Rods*
AWS A5.9/A5.9M:2006	*Specification for Bare Stainless Steel Welding Electrodes and Rods*

Rounding-Off Procedure has been revised. New classification ER2307 has been added. These substantive changes are shown in Italic *font*. Description and Intended Use for ER2209 has been revised under subclause A8.49.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS A5 Committee on Filler Metals and Allied Materials, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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Specification for Bare Stainless Steel Welding Electrodes and Rods

1. Scope

1.1 This specification prescribes requirements for the classification of bare stainless steel wire, strip, composite metal cored, and stranded welding electrodes and rods for gas metal arc, gas tungsten arc, submerged arc, and other fusion welding processes. The chromium content of these filler metals is not less than 10.5 percent and the iron content exceeds that of any other element. For purposes of classification, the iron content shall be derived as the balance element when all other elements are considered to be at their minimum specified values.

1.2 Safety and health issues and concerns are beyond the scope of this standard and, therefore, are not fully addressed herein. Some safety and health information can be found in Informative Annex Clauses A6 and A11. Safety and health information is available from other sources, including, but not limited to, ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*,[1] and applicable federal and state regulations.

1.3 This specification makes use of both U.S. Customary Units and the International System of Units (SI). The measurements are not exact equivalents; therefore, each system must be used independently of the other without combining in any way. The specification designated A5.9 uses U.S. Customary Units and the specification designated A5.9M uses SI Units. The latter units are shown within brackets [ ] or in appropriate columns in tables and figures. Standard dimensions based on either system may be used for sizing of filler metal or packaging or both under A5.9 or A5.9M specification.

2. Normative References

2.1 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 agreement based on this AWS standard are encouraged to investigate the possibility of applying the most recent edition of the documents shown below. For undated references, the latest edition of the standard referred to applies.

2.2 The following AWS standard[2] is referenced in the normative sections of this document.

1. AWS A5.01M/A5.01 (ISO 14344:2002 MOD), *Procurement Guidelines for Consumables—Welding and Allied Processes—Flux and Gas Shielded Electrical Welding Processes*.

2.3 The following ANSI standard is referenced in the normative sections of this document.

1. ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*.

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[1] ANSI Z49.1 is published by the American Welding Society, 550 NW LeJeune Road, Miami, FL 33126.
[2] AWS standards are published by the American Welding Society, 550 NW LeJeune Road, Miami, FL 33126.