


**AWS A5.22/A5.22M:2012**  
**An American National Standard**



# **Specification for Stainless Steel Flux Cored and Metal Cored Welding Electrodes and Rods**



**American Welding Society®**



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An American National Standard**

**Approved by the  
American National Standards Institute  
January 17, 2012**

# **Specification for Stainless Steel Flux Cored and Metal Cored Welding Electrodes and Rods**

**5th Edition**

**Supersedes AWS A5.22/A5.22M:2010**

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**

Classification and other requirements are specified for numerous grades of flux cored and metal cored stainless steel electrodes and rods.

Designations for the flux cored electrodes and rods indicate the chemical composition of the weld metal, the position of welding, and the external shielding gas required (for those classifications for which one is required). Designations for the metal cored electrodes indicate the chemical composition of the weld metal only.

The requirements include general requirements, testing and packaging. Annex A provides general application guidelines for individual alloys and other useful information about welding electrodes.



**American Welding Society®**

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## Foreword

This foreword is not part of AWS A5.22/A5.22M: 2012, *Specification for Stainless Steel Flux Cored and Metal Cored Welding Electrodes and Rods*, but is included for informational purposes only.

This document is the second of the A5.22 specifications which 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 values in any way. In selecting rational metric units, AWS A1.1, *Metric Practice Guide for the Welding Industry*, and ISO 544: *Welding consumables — Technical delivery conditions for welding filler metals — Type of product, dimensions, tolerances and markings*, are used where suitable. Tables and figures make use of both U.S. Customary and SI Units, which, with the application of the specified tolerances, provides for interchangeability of products in both the U.S. Customary and SI Units.

*New filler metal classification E2307TX-X has been added in this edition. In this edition, analysis for bismuth (Bi) is required to be reported if intentionally added, or if it is known to be present at levels greater than 0.002%.*

The first AWS specification for stainless steel electrodes for flux cored arc welding was issued in 1974 and approved by the American National Standards Institute a year later. The revision history is shown below:

AWS A5.22-74	<i>Specification for Flux Cored Corrosion-Resisting Chromium and Chromium-Nickel Steel Electrodes</i>
ANSI W3.22-1975	
AWS A5.22-80	<i>Specification for Flux Cored Corrosion-Resisting Chromium and Chromium-Nickel Steel Electrodes</i>
ANSI/AWS A5.22-95	<i>Specification for Stainless Steel Electrodes for Flux Cored Arc Welding and Stainless Steel Flux Cored Rods for Gas Tungsten Arc Welding</i>
AWS A5.22/A5.22M:2010	<i>Specification for Stainless Steel Flux Cored and Metal Cored Electrodes and Rods</i>

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 Stainless Steel Flux Cored and Metal Cored Welding Electrodes and Rods

## 1. Scope

This specification prescribes requirements for the classification of flux cored stainless steel electrodes for flux cored arc welding, flux cored stainless steel rods for root pass welding with the gas tungsten arc process, and metal cored stainless steel electrodes for gas metal arc welding, gas tungsten arc welding, plasma arc welding, submerged arc welding, and any other process to which they may be applied.<sup>1</sup>

The chromium content of undiluted weld metal from these electrodes and rods is not less than 10.5% nominal 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 set at their specified minimum values.

Safety and health issues are beyond the scope of this standard and, therefore, are not fully addressed herein. Some safety and health information can be found in Annex Clauses A5 and A10. 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 state and federal regulations.

This specification uses 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 when referring to material properties. The specification with the designation A5.22 uses U.S. Customary Units. The specification A5.22M uses SI Units. The latter are shown within brackets ([ ]) or in appropriate columns in tables. Standard dimensions based on either system may be used for sizing of filler metals or packaging or both under A5.22 or A5.22M specifications.

## 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 agreement 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.

**2.1** The following AWS standards<sup>2</sup> are referenced in the mandatory sections of this document:

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

AWS A5.02/A5.02M:2007, *Specification for Filler Metal Standard Sizes, Packaging, and Physical Attributes*

AWS A5.32/A5.32M (ISO 14175:2008 MOD), *Welding Consumables—Gases and Gas Mixtures for Fusion Welding and Allied Processes*

<sup>1</sup> Metal cored electrodes, currently also classified in A5.9/A5.9M, will be deleted from the next revision of that specification.

<sup>2</sup> AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.