Specification for Stainless Steel Electrodes for Flux Cored Arc Welding and Stainless Steel Flux Cored Rods for Gas Tungsten Arc Welding
Specification for
Stainless Steel Electrodes
for Flux Cored Arc Welding and
Stainless Steel Flux Cored Rods
for Gas Tungsten Arc Welding

3rd Edition

Supersedes AWS A5.22-80

Prepared by the
AWS Committee on Filler Metal

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

Classification and other requirements are specified for more than 40 grades of flux cored stainless steel electrodes and rods. New classifications include duplex alloys not previously classified and flux cored rods for gas tungsten arc welding.

Designations indicate the chemical composition of the weld metal, the position of welding (newly introduced in this revision of the standard), and the external shielding medium required (for those classifications for which one is required). A special designation (K) is used to identify those classifications that are intended specifically for cryogenic service.

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

This foreword is not part of AWS A5.22-95 (R2005), Specification for Stainless Steel Electrodes for Flux Cored Arc Welding and Stainless Steel Flux Cored Rods for Gas Tungsten Arc Welding, but is included for informational purposes only.

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 Specification for Flux Cored Corrosion-Resisting Chromium and Chromium-Nickel Steel Electrodes

Comments and inquiries concerning this standard are welcome. They should be sent to the Managing Director, Technical Services Division, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

Erratum

The following Erratum has been identified and incorporated into the current reprint of this document.

Page 2, Table 1: Change content of “N” from “0.08–2.0” to “0.08–0.20” for AWS Classification “E2209T0-X.”
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Specification for Stainless Steel Electrodes for Flux Cored Arc Welding and Stainless Steel Flux Cored Rods for Gas Tungsten Arc Welding

1. Scope

1.1 This specification prescribes requirements for the classification of stainless steel electrodes for flux cored arc welding and flux cored rods for root pass welding with the gas tungsten arc process.\(^1\) It includes only those products whose cores contain nonmetallic ingredients comprising at least 5 wt.% of the electrode or rod.\(^2\)

1.2 The chromium content of undiluted weld metal from these electrodes and rods is not less than 10.5% \(^3\) 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.

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\(^1\) In ANSI/AWS A5.22-80, stainless steel classifications for 98% Argon – 2% Oxygen gas shielding existed (EXXXT-2). The combination of a slag covering and this shielding gas has been found to be inappropriate for flux cored arc welding and the EXXXT-2 Classifications have therefore been deleted from A5.22-95.

\(^2\) Stainless steel products with less than 5 wt.% non-metallic content are properly classified as metal cored electrodes or rods according to ANSI/AWS A5.9, Specification for Bare Stainless Steel Welding Electrodes and Rods.

\(^3\) This revision includes the E502T-X and E505T-X classifications. These electrodes (although they may have differing designators) will also be included in the next revision of ANSI/AWS A5.29, Specification for Low-Alloy Steel Electrodes for Flux Cored Arc Welding. They will be deleted from this specification (ANSI/AWS A5.22) in the first revision following their incorporation in ANSI/AWS A5.29.

2. Classification

2.1 The welding electrodes and rods covered by this specification are classified according to the chemical composition of the undiluted weld metal, as specified in Table 1, the position of welding, the shielding medium, and type of welding current with which they are used, as specified in Table 2.

2.2 Electrodes and rods classified under one classification may be classified under any other classification of this specification provided they meet all the requirements for those classifications. Table 3 lists a number of examples of such dual classification.

3. Acceptance

Acceptance\(^4\) of the material shall be in accordance with the provisions of ANSI/AWS A5.01, Filler Metal Procurement Guidelines.\(^5\)

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\(^4\) See Section A3, Acceptance (in the Annex), for further information concerning acceptance, testing of material shipped, and ANSI/AWS A5.01, Filler Metal Procurement Guidelines.

\(^5\) AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.