

ANSI/AWS A5.25/A5.25M-97 (R2009)
An American National Standard



**Specification for
Carbon and
Low-Alloy Steel
Electrodes and
Fluxes for
Electroslag Welding**



American Welding Society



Key Words—Filler metal specifications, low-alloy steel electrodes, carbon steel electrodes, arc welding electrodes, metal cored electrodes, electroslag welding

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Specification for Carbon and Low-Alloy Steel Electrodes and Fluxes for Electroslag Welding

Supersedes ANSI/AWS A5.25-91

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

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

Classification requirements are specified for fluxes and solid and composite metal cored electrodes for electroslag welding. The requirements for electrodes include chemical composition of the electrode for solid electrodes and of weld metal for metal cored electrodes. Requirements for fluxes include the mechanical properties and soundness of weld metal taken from a groove weld made with a particular electrode using a prescribed welding procedure. Standard electrode sizes, marking, and packaging requirements are included.

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.



American Welding Society

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Foreword

This foreword is not part of ANSI/AWS A5.25/A5.25M-97 (R2009), *Specification for Carbon and Low-Alloy Steel Electrodes and Fluxes for Electroslag Welding*, but is included for informational purposes only.

This document is the first of the A5.25 specifications to use 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. In selecting rational metric units, the ANSI/AWS A1.1, *Metric Practice Guide for the Welding Industry*, and ISO 544, *Welding consumables — Technical delivery conditions for welding filler materials — Type of product, dimensions, tolerances and markings*, are used as guides. Tables and figures make use of both U.S. Customary and SI Units, which with the application of the specified tolerances provide for interchangeability of products in both U.S. Customary and SI Units.

Added Annex B (Informative), Guidelines for Preparation of Technical Inquiries.

The current document is the second revision of this specification, as shown below:

Document Development

AWS A5.25-78	<i>Specification for Consumables Used for Electroslag Welding of Carbon and High Strength Low Alloy Steels</i>
ANSI/AWS A5.25-91	<i>Specification for Carbon and Low Alloy Steel Electrodes and Fluxes for Electroslag Welding</i>
ANSI/AWS A5.25-97R	<i>Specification for Carbon and Low-Alloy Steel Electrodes and Fluxes for Electroslag Welding</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, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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Specification for Carbon and Low-Alloy Steel Electrodes and Fluxes for Electroslag Welding

1. Scope

This specification prescribes requirements for the classification of electrodes (both solid and composite metal cored) and fluxes for electroslag welding of carbon and low-alloy steels.

Part A *General Requirements*

2. Classification

2.1 The solid electrodes covered by this specification are classified according to the chemical composition of the electrode, as specified in Table 1.

2.2 The composite metal cored electrodes covered by this specification are classified according to the chemical composition of the weld metal produced by use with a specific flux of a particular manufacturer and trade designation as specified in Table 2.

2.3 Fluxes covered by this specification are classified according to the mechanical properties of the weld metal as specified in Tables 3 and 4, when using an electrode of a particular classification.

2.4 Electrodes classified under one classification shall not be classified under any other classification in this specification. Fluxes may be classified under any number of classifications using a different electrode for each. Fluxes classified as FESX2-XXX may also be classified as FESX0-XXX and FESXZ-XXX, as specifically permitted by Note (a) to Table 4.

2.5 The electrodes and fluxes classified under this specification are intended for electroslag welding, but that is not to prohibit their use with any other process for which they are found suitable.

3. Acceptance

Acceptance¹ of the electrodes and fluxes shall be in accordance with the provisions of ANSI/AWS A5.01, *Filler Metal Procurement Guidelines*.²

4. Certification

By affixing the AWS Specification and Classification designations to the packaging, or the classification to the product, the manufacturer certifies that the product meets the requirements of this specification.³

5. Units of Measure and Rounding-Off Procedure

5.1 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

¹ See Section A3 (in Annex A), Acceptance, for further information concerning acceptance, testing of the material shipped, and the ANSI/AWS A5.01, *Filler Metal Procurement Guidelines*.

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

³ See Section A4 (in Annex A), Certification, for further information concerning certification and the testing called for to meet this requirement.