



Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding



American Welding Society®



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An American National Standard**

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American National Standards Institute
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Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc 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 classification of low-alloy steel covered electrodes used for shielded metal arc welding. The requirements include chemical composition and mechanical properties of weld metal, weld metal soundness, usability tests of electrodes, and moisture tests of the low-hydrogen electrode covering. Requirements for standard sizes and lengths, marking, manufacturing, and packaging are also included.

Optional supplemental requirements include tests for absorbed moisture in the electrode covering and for diffusible hydrogen in the weld 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 A5.5 /A5.5M: 2014, *Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding*, but is included for informational purposes only.

This document is the second revision of the A5.5/A5.5M specification 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 International Standard ISO 544, *Welding consumables — Technical delivery conditions for welding filler materials — 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 U.S. Customary and SI Units.

This edition includes new filler metal classifications E8015-B2 (reinstated), E9018-B6, E90XX-B23, E90XX-B24, E90XX-B92; E9018-NM2; revised “Rounding Procedure;” references to AWS A5.02/A5.02M:2007 for covered electrode standard sizes, packaging, and physical attributes; the change of E90XX-B9 classifications to E90XX-B91; and changes in procedures for requests for filler metal classifications. Such significant changes are shown in italic font.

Document Development of A5.5/A5.5M

| | |
|-------------------------------|---|
| ASTM A316–48T AWS A5.5–48T | <i>Tentative Specifications for Low-Alloy Steel Arc-Welding Electrodes</i> |
| ASTM A316–54T AWS A5.5–54T | <i>Tentative Specifications for High Tensile and Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| AWS A5.5–58T ASTM A316–58T | <i>Tentative Specification for Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| AWS A5.5–64T ASTM A316–64T | <i>Tentative Specification for Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| AWS A5.5–69 ANSI W3.5–1973 | <i>Specification for Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| AWS A5.5–69 Add. 1–77 | <i>1977 Addenda to Specification for Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| ANSI/AWS A5.5–81 | <i>Specification for Low-Alloy Steel Covered Arc-Welding Electrodes</i> |
| ANSI/AWS A5.5–96 | <i>Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding</i> |
| AWS A5.5/A5.5M:2006 | <i>Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding</i> |

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, A5 Committee on Filler Metals and Allied Materials, American Welding Society, 8669 NW 36th St, # 130, Miami, FL 33166.

Table of Contents

| | Page No. |
|---|-----------------|
| <i>Personnel</i> | iv |
| <i>Foreword</i> | vi |
| <i>List of Tables</i> | viii |
| <i>List of Figures</i> | viii |
| 1. Scope | 1 |
| 2. Normative References | 1 |
| 3. Classification | 3 |
| 4. Acceptance | 6 |
| 5. Certification | 6 |
| 6. Rounding Procedure | 6 |
| 7. Summary of Tests | 13 |
| 8. Retest | 17 |
| 9. Weld Test Assemblies | 17 |
| 10. Chemical Analysis | 20 |
| 11. Radiographic Test | 23 |
| 12. Tension Test | 23 |
| 13. Impact Test | 32 |
| 14. Fillet Weld Test | 32 |
| 15. Moisture Test | 32 |
| 16. Absorbed Moisture Test | 34 |
| 17. Diffusible Hydrogen Test | 35 |
| 18. Method of Manufacture | 36 |
| 19. Standard Sizes and Lengths | 36 |
| 20. Core Wire and Covering | 36 |
| 21. Exposed Core | 36 |
| 22. Electrode Identification | 37 |
| 23. Packaging | 37 |
| 24. Marking of Packages | 37 |
| <i>Annex A (Informative) — Guide to AWS Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding</i> | 39 |
| <i>Annex B (Informative) — Guidelines for Preparation of Technical Inquiries for AWS Technical Committees</i> | 55 |
| <i>AWS Filler Metal Specifications by Material and Welding Process</i> | 57 |
| <i>AWS Filler Metal Specifications and Related Documents</i> | 59 |

List of Tables

| Table | Page No. |
|-------|--|
| 1 | Electrode Classification 5 |
| 2 | Chemical Composition Requirements for Undiluted Weld Metal 7 |
| 3 | Tension Test Requirements 12 |
| 4 | Charpy V-Notch Impact Requirements 14 |
| 5 | Required Tests 15 |
| 6 | Base Metal for Weld Test Assemblies 24 |
| 7 | Preheat, Interpass, and Postweld Heat Treatment Temperatures 25 |
| 8 | Requirements for Preparation of Fillet Weld Test Assemblies 28 |
| 9 | Radiographic Soundness Requirements 29 |
| 10 | Dimensional Requirements for Fillet Weld Usability Test Specimens 33 |
| 11 | Moisture Content Limits for Low-Hydrogen Electrode Coverings 34 |
| 12 | Diffusible Hydrogen Requirements for Weld Metal and Optional Supplemental Designators 36 |
| 13 | Standard Sizes and Lengths 37 |
| A1 | Comparison of Classifications 42 |
| A2 | Typical Storage and Drying Conditions for Covered Arc Welding Electrodes 46 |
| A3 | Typical Amperage Ranges for Covered Arc Welding Electrodes 48 |
| A4 | Discontinued Electrode Classifications 53 |

List of Figures

| Figure | Page No. |
|--------|---|
| 1 | Order of Electrode Mandatory and Optional Supplemental Designators 4 |
| 2 | Pad for Chemical Analysis of Undiluted Weld Metal 18 |
| 3 | Groove Weld Test Assembly for Mechanical Properties and Soundness of Weld Metal Produced by Using All Electrode Classifications Except E(X)XX18M(1) 19 |
| 4 | Fillet Weld Test Assembly 21 |
| 5 | Groove Weld Test Assembly for Mechanical Properties and Soundness of Weld Metal Produced by Using E(X)XX18M(1) 22 |
| 6 | Welding Positions for Fillet Weld Test Assemblies 29 |
| 7A | Radiographic Acceptance Standards for Rounded Indications (Grade 1) 30 |
| 7B | Radiographic Acceptance Standards for Rounded Indications (Grade 2) 31 |
| 8 | Dimensions of Fillet Welds 33 |
| 9 | Alternate Methods for Facilitating Fracture of the Fillet Weld 34 |