

Table of Contents

	Page No.
<i>Personnel</i>	v
<i>Foreword</i>	vii
<i>List of Tables</i>	x
<i>List of Figures</i>	x
1. Scope	1
2. Normative References	1
3. Classification	3
4. Acceptance	3
5. Certification	3
6. Rounding-Off Procedure	3
7. Summary of Tests	5
8. Retest	5
9. Chemical Analysis	5
10. Method of Manufacture	5
11. Standard Sizes and Shapes	5
12. Finish and Uniformity	5
13. Standard Package Forms	7
14. Winding Requirements	7
15. Filler Metal Identification	9
16. Packaging	9
17. Marking of Packages	9
Annex A (Informative)—Guide to AWS Specification for Bare Stainless Steel Welding Electrodes and Rods	11
Annex B (Informative)—Guidelines for the Preparation of Technical Inquiries	29
AWS Filler Metal Specifications by Material and Welding Process	31
AWS Filler Metal Specifications and Related Documents	35

List of Tables

Table	Page No.
1	Chemical Composition Requirements 3
2	Standard Wire Sizes of Electrodes and Rods 6
3	Standard Sizes of Strip Electrodes 6
4	Standard Package Dimensions and Weights 7
A.1	Comparison of Classifications in ISO 14343 12
A.2	Variations of Alloying Elements for Submerged Arc Welding 16
A.3	All-Weld-Metal Mechanical Property Requirements from AWS A5.4/A5.4M:2006 26
A.4	Discontinued Classifications 27

List of Figures

Figure	Page No.
1	Dimensions of 4, 8, 12, and 14 in [100, 200, 300, and 350 mm] Standard Spools 8
A.1	WRC-1992 Diagram for Stainless Steel Weld Metal 17

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 standard² 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*.

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.