

A5.2/A5.2M:2018
An American National Standard

Specification for Carbon and Low-Alloy Steel Rods for Oxyfuel Gas Welding



AWS A5.2/A5.2M:2018
An American National Standard

Approved by the
American National Standards Institute
January 10, 2018

Specification for **Carbon and Low-Alloy Steel Rods** **for Oxyfuel Gas Welding**

9th Edition

Supersedes AWS A5.2/A5.2M:2007

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 carbon and low-alloy steel rods for oxyfuel gas welding. The classification requirements include the mechanical properties of the weld metal. Additional requirements are included for chemical composition of the rod and for manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the rods.

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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This standard is subject to revision at any time by the AWS A5 Committee on Filler Metals and Allied Materials. It must be reviewed every five years, and if not revised, it must be either reaffirmed or withdrawn. Comments (recommendations, additions, or deletions) and any pertinent data that may be of use in improving this standard are requested and should be addressed to AWS Headquarters. Such comments will receive careful consideration by the AWS A5 Committee on Filler Metals and Allied Materials and the author of the comments will be informed of the Committee's response to the comments. Guests are invited to attend all meetings of the AWS A5 Committee on Filler Metals and Allied Materials to express their comments verbally. Procedures for appeal of an adverse decision concerning all such comments are provided in the Rules of Operation of the Technical Activities Committee. A copy of these Rules can be obtained from the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

Foreword

This Foreword is not part of this standard, but is included for informational purposes only.

This document is the second revision of the A5.2 specifications that 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.

The current document is the eighth revision of the initial joint ASTM/AWS document issued in 1942. As such, it is the second oldest document produced by the AWS A5 Committee on Filler Metals and Allied Materials. The first two revisions of the 1942 document were developed by the joint committee of the American Welding Society and the American Society for Testing and Materials. The 1969 revision was the first edition developed by the AWS A5 Committee on Filler Metals and Allied Materials. It was subsequently approved by the American National Standards Institute in 1973.

There are no substantive changes in this revision. The procedure for rounding and the procedure for requesting a new filler metal classification have been updated.

The evolution took place as follows:

ASTM A251-42T AWS A5.2-42T	<i>Tentative Specifications for Iron and Steel Gas Welding Rods</i>
ASTM A251-46T AWS A5.2-46T	<i>Tentative Specifications for Iron and Steel Gas Welding Rods</i>
ASTM A251-66T AWS A5.2-66T	<i>Tentative Specification for Iron and Steel Gas Welding Rods</i>
AWS A5.2-69 ANSI W.3.2-1973	<i>Specification for Iron and Steel Gas Welding Rods</i>
ANSI/AWS A5.2-80	<i>Specification for Iron and Steel Oxyfuel Gas Welding Rods</i>
ANSI/AWS A5.2-88	<i>Specification for Carbon and Low Alloy Steel Rods for Oxyfuel Gas Welding</i>
ANSI/AWS A5.2-92	<i>Specification for Carbon and Low Alloy Steel Rods for Oxyfuel Gas Welding</i>
AWS A5.2/A5.2M:2007	<i>Specification for Carbon and Low-Alloy Steel Rods for Oxyfuel Gas Welding</i>

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

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	2
4. Acceptance	2
5. Certification	3
6. Rounding Procedure	3
7. Summary of Tests	3
8. Retest	4
9. Weld Test Assembly	4
10. Chemical Analysis	5
11. Tension Test	5
12. Method of Manufacture	5
13. Standard Sizes and Lengths	6
14. Finish and Uniformity	6
15. Filler Metal Identification	6
16. Packaging	6
17. Marking of Packages	7
Annex A (Informative): Guide to AWS Specification for Carbon and Low-Alloy Steel Rods for Oxyfuel Gas Welding	9
Annex B (Informative): Requesting an Official Interpretation on an AWS Standard	15
AWS Filler Metal Specifications by Material and Welding Process	17
AWS Filler Metal Specifications and Related Documents	19

List of Tables

Table		Page No.
1	Tension Test Requirements	3
2	Required Tests	3
3	Base Metal Required for Test Assemblies	5
4	Chemical Composition Requirements for Welding Rods and Rod Stock	6
5	Standard Filler Metal Sizes	7
A.1	Discontinued Classifications	13

List of Figures

Figure		Page No.
1	Groove Weld Test Assembly for Mechanical Properties	4

Specification for Carbon and Low-Alloy Steel Rods for Oxyfuel Gas Welding

1. Scope

1.1 This specification prescribes requirements for the classification of carbon and low-alloy steel rods for oxyfuel gas welding.

1.2 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 when referring to material properties. The specification designated A5.2 uses U.S. Customary Units. The specification designated A5.2M 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 A5.2 and A5.2M specifications.

1.3 *Safety and health issues and concerns are beyond the scope of this standard; some safety and health information is provided, but such issues 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 the following sources:

American Welding Society:

- (1) ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes*
- (2) AWS Safety and Health Fact Sheets*
- (3) Other safety and health information on AWS website*

Material or Equipment Manufacturers:

- (1) Safety Data Sheets supplied by materials manufacturers*
- (2) Operating Manuals supplied by equipment manufacturers*

Applicable federal and state regulations.

Work performed in accordance with this standard may involve the use of materials that have been deemed hazardous, and may involve operations or equipment that may cause injury or death. This standard does not purport to address all safety and health risks that may be encountered. The user of this standard should establish an appropriate safety program to address such risks as well as to meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.

2. Normative References

2.1 The documents listed below are referenced within this publication and are mandatory to the extent specified herein. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.