

**AWS A5.19-92 (S2023)**  
**An American National Standard**

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# **Specification for Magnesium Alloy Welding Electrodes and Rods**



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**An American National Standard**

**Approved by the**  
**American National Standards Institute**  
**April 21, 1992**  
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# **Specification for Magnesium Alloy Welding Electrodes and Rods**

**Revises AWS A5.19-90**

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 requirements for the classification of bare magnesium alloy welding electrodes and rods for use with the gas metal arc, gas tungsten arc, oxyfuel gas, and plasma arc welding processes. Classification is based upon chemical composition of the welding wire. Standard sizes, finish, winding requirements, package forms and weights, product information, and chemical composition limits are specified.



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While this standard is subject to revision at any time by the AWS A5 Committee on Filler Metals and Allied Materials, it has been approved for stabilized maintenance and therefore is not intended to be subject to review by AWS every five years. Requests for maintenance should be addressed to AWS Headquarters and must include detailed comments (recommendations, additions, or deletions) and any pertinent data that may be of use in improving this standard. Such comments will receive careful consideration by the AWS A5 Committee on Filler Metals and Allied Materials and the commenter will be informed of the Committee's assessment of 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.

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## Foreword

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

This document represents the sixth revision or reaffirmation of the specification initially issued in 1966 as a joint ASTM/AWS specification. Very soon after its publication, the ASTM agreed to accept the AWS as the sole society responsible for the development and publication of filler metals specifications.

In recent years, the AWS filler metal specifications have been recognized by the American National Standards Institute. The evolution of this specification is shown below:

ASTM B448-66T	<i>Tentative Specification for Magnesium-Alloy Welding Rods and Bare Electrodes</i>
AWS A5.19-66T	
AWS A5.19-69	<i>Specification for Magnesium-Alloy Welding Rods and Bare Electrodes</i>
ANSI W3.19-1973	
ANSI/AWS vA5.19-80	<i>Specification for Magnesium-Alloy Welding Rods and Bare Electrodes</i>
ANSI/AWS A5.19-90	<i>Specification for Magnesium-Alloy Welding Rods and Bare Electrodes</i>
Reaffirmation	
ANSI/AWS A5.19-92	<i>Specification for Magnesium Alloy Welding Electrodes and Rods</i>
ANSI/AWS A5.19-92 (R2006)	<i>Specification for Magnesium Alloy Welding Electrodes and Rods</i>
AWS A5.19-92 (R2015)	<i>Specification for Magnesium Alloy Welding Electrodes and Rods</i>

This standard has been approved for stabilized maintenance because it addresses mature technology or practices, and as a result, is not likely to require revision. A request for maintenance of this standard may be submitted at any time by following the maintenance request given in the *Statement on the Use of American Welding Society Standards* at the front of this document.

The A5 Committee on Filler Metals and Allied Materials made editorial corrections to the document during the review process and they are listed below:

Page x, last paragraph of the foreword, “loathe” changed to “for the”.

Page 1, in clause 3, the correct designation and title inserted to read “AWS A5.01M/A5.01, *Welding and Brazing Consumables—Procurement of Filler Metals and Fluxes*”.

Page 3, in Table 2, “Bend-on-Plale Test” was changed to “Bead-on-Plate Test”.

Page 3, in subclause 5.2, footnote 4 was changed to include the correct spelling of “West Conshohocken”.

Page 8, in Table 4, removed parenthesis/bracket in the last row in the tolerance column.

Page 12, in subclause 19.2, “Material Safety Data Sheets (MSDSs)” changed to “Safety Data Sheets (SDSs)”.

Page 14, in subclause A5.2, the correct designation and title inserted to read “ANSI Z49.1, *Safety in Welding, Cutting and Allied Processes*”.

Page 14, in subclause A6.2, removed space in “GTAW”.

Page 20, in subclause A9.4.4(9), changed “are cutting” to “arc cutting”.

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



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# Specification for Magnesium Alloy Welding Electrodes and Rods

## 1. Scope

This specification prescribes requirements for the classification of bare magnesium alloy welding electrodes and rods for use with the gas metal arc, gas tungsten arc, oxyfuel gas, and plasma arc welding processes.

## 2. Classification

**2.1** The electrodes and rods covered by this specification are classified according to the chemical composition of the filler metal as specified in Table 1, and their usability as specified in Section 8, Weld Test Assemblies, and Table 2.

**2.2** Electrode or rod classified under one classification shall not be classified under any other classification in this specification.

**2.3** The electrodes and rods classified under this specification are intended for gas metal arc, gas tungsten arc, oxyfuel gas, and plasma arc welding, but that is not to prohibit their use with any other process for which they are found suitable.

## 3. Acceptance

Acceptance<sup>1</sup> of the electrode or rod shall be in accordance with the provisions of AWS A5.01M/A5.01, *Welding and Brazing Consumables—Procurement of Filler Metals and Fluxes*.<sup>2</sup>

## 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.<sup>3</sup>

## 5. Units of Measure and Rounding Procedure

**5.1** U.S. customary units are the standard units of measure in this specification. The SI units are given as equivalent values to the U.S. customary units. The standard sizes and dimensions in the two systems are not identical, and for this reason, conversion from a standard size or dimension in one system will not always coincide with a standard size or dimension in the other. Suitable conversions, encompassing standard sizes of both, can be made, however, if appropriate tolerances are applied in each case.

<sup>1</sup> See Clause A3. Acceptance (in the Appendix) for further information concerning acceptance and testing of the material shipped.

<sup>2</sup> AWS standards are published by the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

<sup>3</sup> See Clause A4. Certification (in the Appendix) for further information concerning certification and the testing called for to meet this requirement.