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An American National Standard

Specification for Thermal Spray Feedstock—Solid and Composite Wire and Ceramic Rods

American Welding Society

Approved American National Standard
ANSI

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Prepared by
AWS C2 Committee on Thermal Spray

Under the Direction of
AWS Technical Activities Committee

Approved by
AWS Board of Directors

Abstract

This specification provides the as-manufactured chemical composition classification requirements for solid and composite wires and ceramic rods for thermal spraying. Requirements for standard sizes, marking, manufacturing, and packaging are included.

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Table of Contents

List of Tables

List of Figures

Specification for Thermal Spray Feedstock—Solid and Composite Wire and Ceramic Rods

1. Scope

This specification prescribes requirements for the classification of ferrous and nonferrous solid and composite wires and ceramic rods as manufactured, for thermal spraying.

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 is available from other sources, including, but not limited to, ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*, and applicable federal and state regulations.

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 thermal-spray feedstock and the deposited coating. The specification with the designation C2.25 uses U.S. Customary Units. The specification C2.25 M uses SI Units. The latter are shown within brackets [ ] or in appropriate columns in tables and figures.

2. Reference Documents

The following ASTM[1] standards are referenced in the mandatory sections of this document:

(1) ASTM E 29, *Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications*

(2) ASTM E 34, *Test Method for Chemical Analysis of Aluminum and Aluminum Alloys (referee)*

(3) ASTM E 227, *Standard Method for Optical Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Point-to-Plane Technique*

(4) ASTM E 354, *Test Method for Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys*

(5) ASTM E 363, *Methods for Chemical Analysis of Chromium and Ferrochromium*

(6) ASTM E 536, *Test Method for Chemical Analysis of Zinc and Zinc Alloys*

(7) ASTM E 926, *Test Method for Preparing Refuse-Derived Fuel (RDF) Samples for Analysis of Metals*

(8) ASTM STP 747, *New Analytical Techniques for Trace Constituents of Metallic and Metal Bearing Ores*

(9) ASTM STP 944, *Chemical Analysis of Metals*

(10) ASTM DS-56/SAE HS-1086, *Metals and Alloys in the Unified Numbering System*

The following AWS[2] standard is referenced in the mandatory sections of this document:

(1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*

The following ISO[3] standard is referenced in the mandatory sections of this document:

(1) ISO 544, *Filler Materials for Welding—Size Requirements*

3. Significance and Use

This specification defines the as-manufactured chemical composition classification requirements for solid and composite wires and ceramic rods for thermal spraying. Requirements for standard sizes, marking, manufacturing, and packaging are included.

1. ASTM standards can be obtained from American Society of Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

2. AWS standards can be obtained from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112-5776, Telephone (800) 854-7179, (303) 397-7956, Fax (303) 307-2740, Internet www.global.his.com.

3. ISO standards can be obtained from American National Standards Institute, 11 West 42nd Street, New York, NY 10036-8002.