

This is small sample of the Specifications for the Application, Safety and Quality Assurance of Thermal Spray Coatings. Within most of the documents there are more specific details covering all of the aspects of preparing for and applying a Long Life Thermal Spray Coatings.

| Standards Title and Scope |
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| AWS C2.16/C2.16M:2002 Guide for Thermal-Spray Operator Qualification <p>This guide contains recommendations for thermal-spray operator qualification based on knowledge and skill testing. Twelve individual thermal-spray operator qualification tests (TSOQT) are included for engineering and corrosion control applications: one each for job knowledge, high velocity oxygen fuel (HVOF) spraying and flame spray-fusing, two for arc spraying, and three each for flame spraying and air-plasma spraying.</p> |
| ANSI/AWS C2.18-93R Guide for the Protection of Steel with Thermal Sprayed Coatings of Aluminum and Zinc and their Alloys and Composites <p>This guide presents an industrial process for the application of thermal spray coatings (TSC) on steel. It covers safety, job/contract description, background and requirements, selection of TSCs, TSC operator qualification, materials and equipment, application-process method with quality-control check points, Job Control Record, maintenance and repair of TSCs, records, debris containment and control, and warranty.</p> |
| AWS C2.20/C2.20M:2002 Specification for Thermal Spraying Zinc Anodes on Steel Reinforced Concrete <p>This AWS standard is a specification for thermal spraying zinc anodes on steel reinforced concrete. This standard is formatted as an industrial process instruction. The scope includes: job description, safety, pass/fail job reference standards, feedstock materials, equipment, a step-by-step process instruction for surface preparation, thermal spraying, and quality control. There are two annexes: job control record and portable adhesion testing.</p> |
| AWS C2.21M/C2.21:2003 Specification for Thermal Spray Equipment Acceptance Inspection <p>This document specifies the thermal spray equipment acceptance requirements for plasma, arc-wire, flame-powder, -wire, rod, and -cord, high velocity oxygen fuel (HVOF) equipment. Evidence of the equipment capabilities be provided by the equipment manufacturer. Inspection reports are provided in five mandatory annexes.</p> |

AWS C2.23M/C2.23:2003, NACE No. 12, SSPC-CS 23.00

Specification for the Application of Thermal Spray Coatings (Metallizing) of Aluminum, Zinc, and Their Alloys and Composites for the Corrosion Protection of Steel

This specification presents an industrial process for the application of thermal spray coating (TSC) on steel. It covers safety, job reference standards, equipment setup and preparation, surface preparation, aluminum and zinc application, and sealer and topcoat application.

AWS C2.25/C2.25M:2002

Specification for Thermal Spray feedstock—Solid and Composite Wire and Ceramic rods

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.

AWS-96 Thermal Spraying Manual

This well illustrated manual is the result of a National Shipbuilding Research Program conducted by Puget Sound Naval Shipyard. Introduces the practitioner to thermal spraying. Including fundamentals. Sequencing the job, applications, processes, coating selection, finishing, training, certification and safety. Excellent training manual

Thermal Spraying—Practice, Theory and Application

The thermal spraying processes are specialized, yet have a wide ranging utilization in both manufacturing and maintenance. The nature of the processes is truly synergistic. That is, there are many components and variables involved, which, when working together and properly applied, produce an effect far greater than indicated when they are considered individually. Yet each component and variable must be understood to permit the proper selection and operation of a particular process. With this background, the user is then in a position to tailor the process to a particular application.

ASTM B833

STANDARD SPECIFICATION FOR ZINC AND ZINC ALLOY WIRE FOR THERMAL SPRAYING (METALLIZING) FOR THE CORROSION PROTECTION OF STEEL

This specification covers zinc and zinc alloy wire used in depositing zinc and zinc alloy coatings by thermal spraying (metallizing). Zinc and zinc alloy wire provided under this specification is intended for use in oxy-fuel and electric arc thermal spraying for the corrosion protection of iron and steel.

BS 5493/ British Standard

Code of Practice for Protective Coating of Iron and Steel Structures against Corrosion

114 pages provide a guide on how to specify a chosen protective system, how to ensure its correct application and how to maintain it. Does not include specific recommendations for ships, vehicles, offshore platforms, specialized chemical equipment, cladding materials, plastic coatings, cement mortar linings or weathering steels.

ISO 14922-1

Thermal Spraying – Quality Requirements of Thermally Sprayed Structures – Part 1 Guidance for Selection and Use

Specifies guidelines to describe thermal spraying quality requirements suitable for application by manufacturers for coating new parts, repair and maintenance. Reference to European (EN) Standards.

ISO 14922-2

Thermal Spraying – Quality Requirements of Thermally Sprayed Structures –Part2: Comprehensive Quality Requirements

Provides general guidance and reference to European (EN) Standards.

ISO 14922-3

Thermal Spraying – Quality Requirements of Thermally Sprayed Structures – Part 3: Standard Quality Requirements

Provides general guidance and reference to European (EN) Standards.

ISO 14922-4

Thermal Spraying – Quality Requirements of Thermally Sprayed Structures – Part 4:Elementary Quality Requirements

Provides general guidance and reference to European (EN) Standards.

www.iso.org

MIL-STD-1687A(SH)

Thermal Spray Processes for Naval Ship Machinery Applications

Provides information for thermally spraying metal coatings onto machinery. Contains requirements for qualification of procedures and operators, use of thermal spray equipment and material, quality assurance requirements and qualification tests.

MIL-STD-2138A(SH)

Metal Sprayed Coatings for Corrosion Protection aboard Naval Ships (Metric)

Provides specifications for surface preparation, application and testing of thermally sprayed aluminum to ships. Note that zinc is not included because of health hazards.

SSPC CS-23.00

Guide for Thermal Spray Metallic Coating Systems

Provides guidance for surface preparation, application and testing of aluminum, zinc-aluminum and zinc thermal spray metal coatings.

IT IS TO BE REPLACED BY SSPC CS 23.00A-XX PRESENTLY IN PREPARATION.
SEE ALSO ASTM AND NACE DOCUMENTS.

www.sspc.org

EM 1110-2-3401

**US Army Corps of Engineers (USACE)
Engineering Manual**

Engineering and Design, Thermal Spraying: New Construction and Maintenance

Provides information on thermal spray metal coatings for coating selection, surface preparation, application, testing and quality assurance.

<http://www.usace.army.mil/inet/usace-docs/>

NACE NO. 12

Specification for the Application of Thermal Spray Coatings (Metallizing) of Aluminum, Zinc and their Alloys and Composites for the Corrosion Protection of Steel

This standard may be used by owners, and design, fabrication, and maintenance engineers to detail and contract for the application of TSCs for the preservation and maintenance of steel structures. This standard may also be used by TSC inspectors and TSC applicators to develop and maintain application procedures, equipment inventory, and an operator-training program. This standard presents the basic need-to-know information for the application of quality TSCs. Appendixes present amplifying information. The Table of Contents gives an overview of this standard and may be used to find specific information.

JIS H 8300/

Japanese Industrial Standard

Zinc Spray Coating on Iron or Steel

This Japanese Industrial Standard specifies zinc spray coating on iron or steel products with the object of prevention of corrosion. The standard discusses quality, testing and inspection.

**JIS H 8301/
Japanese Industrial Standard**

1971 Aluminum Spray Coatings on Iron or Steel

This Japanese Industrial Standard specifies aluminum spray coating on iron or steel products with the objects of prevention of corrosion and high temperature oxidation. The standard discusses quality, testing and inspection.

**SS-EN 1395/
Swedish Standard**

Thermal Spraying – Acceptance Inspection of Thermal Spraying Equipment

This European standard specifies requirements for the acceptance inspection of thermal spraying equipment including plasma, arc and flame spraying plants used to produce high-quality sprayed coatings. The purpose of acceptance inspection as part of a quality assurance system for spraying equipment serves to provide proof that the equipment is suitable for producing sprayed coatings of uniform quality in particular to satisfy the requirements of this standard.

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