

Specification for Application of Thermal Spray Coating Systems to Steel Bridges

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AASHTO/NSBA Steel Bridge Collaboration

PREFACE

This document is a standard developed by the AASHTO/NSBA Steel Bridge Collaboration and SSPC: The Society for Protective Coatings (SSPC). The primary goal of the Collaboration is to achieve steel bridge design and construction of the highest quality and value through standardization of the design, fabrication, and erection processes. Each document represents the consensus of a diverse group of professionals. The mission of SSPC is to inspire learning, advance knowledge, and elevate performance in the industry through training, certification, and education of the workforce, communication of advances in technology, and promotion of the use of protective coatings.

It is desired that Owners adopt and support Collaboration guidelines in their entirety to facilitate the achievement of standardization. It is understood, however, that local statutes or preferences may prevent full adoption of the guidelines recommended herein. In such cases, Owners may adopt these guidelines with the exceptions they feel are necessary.

DISCLAIMER

The information presented in this publication has been prepared in accordance with recognized engineering principles and is for general information only. While it is believed to be accurate, this information should not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability, and applicability by a licensed professional engineer, designer, or architect.

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In 2017 the AASHTO–NSBA Steel Bridge Collaboration celebrated 20 years of providing high-quality technical documents related to the design, fabrication, erection, and inspection of steel bridges. What started as a small group of individuals working to “fill the gaps” with information not provided in other documents has grown to include over 100 people working within 10 task groups. Documents are continually updated and new ones added to a growing library to support the Collaboration’s mission of improving quality and value of steel bridges through the standardization of design, fabrication, and erection.

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INTRODUCTION

SPECIFICATION

This specification represents a consensus on best practice for the application of metallic thermal sprayed coating (TSC), also known as metallizing, to steel bridges and other highway structures.

This document establishes and defines the functions, operations, requirements, and activities needed to achieve consistent quality in TSC application. It is based on a cooperative approach to achieving quality, where both the Owner's and Applicator's representatives work together with a clear understanding of their roles and responsibilities, resulting in metallizing of steel bridges and components completed in an efficient manner while meeting all contractual requirements. Its acceptance does not in any respect preclude anyone, whether adopting the standard or not, from manufacturing, marketing, purchasing, or using products or procedures not addressed in this standard.

Environmental, containment, and safety issues are outside the scope of this guide and should be addressed in other documents. Use of this document in no way relieves the Applicator of responsibilities to meet all federal, state, and local requirements.

COMMENTARY

The primary objective of this specification is to achieve quality and value in the application of metallic thermal sprayed coating (TSC) systems. The Collaboration's intent is for transportation authorities to adopt this specification by direct reference in their standard specifications. This will help standardize metallizing methods across the nation.

Historically, state Departments of Transportation (DOTs) have written their specifications based on industry standards, particularly SSPC-CS 23.00/AWS C2.23/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" (hereinafter referred to as the Joint Standard), and their own individual experiences. However, many agencies, Fabricators, and Applicators recognized that all would benefit from a common specification because:

- Variations among projects would be minimized because different practices, procedures, and operations would not be needed for each state, and minimizing variation improves quality and reduces errors.
- Economy in TSC would improve because Applicators would not have to change their methods and production variables from state to state.
- Expertise in TSC could be shared among states, resulting in a well-rounded, consistent application standard.
- Owners would be able to share their resources, minimizing the effort each would otherwise have to expend to maintain a TSC specification.

This specification was written by experienced representatives from a number of applicators and fabricators, state DOTs, consultants, and the Federal Highway Administration (FHWA). The work was based on existing state specifications, the Joint Standard, and other industry guides and documents.

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SECTION 1

GENERAL

1.1—GOVERNING SPECIFICATION

Application of TSC and all related activities (material selection, surface preparation, inspection, documentation, repairs, etc.) shall be in accordance with SSPC-CS 23.00/ AWS C2.23/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” (hereinafter referred to as the Joint Standard), except as modified by this document, and in accordance with approved procedures (see Article 5.3.2). Specific Joint Standard section numbers are based on the 2016 edition; subsequent editions may modify section numbers or content.

C1.1

This document addresses aspects of TSC not covered by the Joint Standard, either because these aspects were considered to be outside the scope of that standard, or because stakeholders in the bridge coating industry felt that more was required.

Because this is a supplement to the Joint Standard, there are sections that include commentary but not specification language, because in those sections no additions are made to the Joint Standard.