SI International System of Units

An ACI Standard

Type ES (Epoxy Slurry) Polymer Overlay for Bridge and Parking Garage Decks—Specification

Reported by ACI Committee 548

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(SI Units)

Type ES (Epoxy Slurry) Polymer Overlay for Bridge and Parking Garage Decks—Specification

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This Specification covers epoxy slurry (ES) polymer overlay for bridge and parking garage decks. Type ES polymer overlay incorporates a low-modulus epoxy binder, fillers, and selected aggregate to produce a flexible, skid-resistant, and low-permeability overlay. The overlay may be used for both new construction and rehabilitation of existing structures. The overlay is placed by applying the mixed epoxy binder and filler to the surface and broadcasting aggregate. This Specification includes requirements for epoxy resin, fillers, aggregates, storage and handling, surface preparation, surface profile, mixing, placement, quality control, and quality assurance.

Keywords: bridge decks; epoxy; low permeability; parking garage decks; polymer overlay; slurry; surface preparation.

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ACI SPEC-548.9-21 (SI Units) supersedes ACI 548.9M-08 and was adopted and published in July 2022.

PART 1—GENERAL

1.1—Scope

1.1.1 This Specification covers materials and procedures for constructing a low-permeability epoxy polymer slurry (Type ES) overlay at locations designated in Contract Documents pertaining to new construction and rehabilitation of bridge and parking garage decks. Type ES polymer overlay incorporates a low-modulus epoxy binder, fillers, and selected aggregate to produce a flexible, skid-resistant, and low-permeability overlay. This Specification includes requirements for epoxy resin components, fillers, aggregates, storage and handling, surface preparation, surface profile, mixing, placement, and quality control.

1.1.2 This Specification is incorporated by Contract Documents and provides requirements for the Contractor.

1.1.3 This Specification governs for construction within its scope, except project-specific Contract Documents govern if there is a conflict.

1.1.4 This Specification governs if there is a conflict with referenced material and testing standards.

1.1.5 The Contractor is permitted to submit written alternatives to any provisions in this Specification for consideration.

1.1.6 Ignore provisions of the Specification that are not applicable to the Work.

1.1.7 Values in this Specification are stated in SI units. A companion specification in inch-pound units is also available.

1.1.8 The Notes to Specifier are not part of this Specification.

1.2—Interpretation

1.2.1 Unless otherwise explicitly stated, this Specification shall be interpreted using the following principles:

1.2.1.1 Interpret this Specification consistent with the plain meaning of the words and terms used.

1.2.1.2 Definitions provided in this Specification govern over the definitions of the same or similar words or terms found elsewhere.

1.2.1.3 Whenever possible, interpret this Specification so that its provisions are in harmony and do not conflict.

1.2.1.4 Headings are part of this Specification and are intended to identify the scope of the provision or sections that follow. If there is a difference in meaning or implication between the text of a provision and a heading, the meaning of the text governs.

1.2.1.5 Footnotes are part of this Specification. The meaning of the provision text governs in the event of a difference in meaning or implication between the provision text and a footnote to that provision.

1.2.1.6 Where a provision of this Specification involves two or more items, conditions, requirements, or events connected by the conjunctions "and" or "or," interpret the conjunction as follows:

"and" indicates that all the connected items, conditions, requirements, or events apply

"or" indicates that the connected items, conditions, requirements, or events apply singularly

1.2.1.7 The use of the verbs "may" or "will" indicates that the Specification provision is for information to the Contractor.

1.2.1.8 The phrase "as indicated in Contract Documents" means the specifier included the provision requirements in the Contract Documents.

1.2.1.9 The phrase "unless otherwise specified" means the specifier included an alternative to the default requirements in Contract Documents.

1.2.1.10 The phrase "if specified" means the specifier may have included a requirement in Contract Documents for which there is no default requirements in this Specification.

1.3—Definitions

The following definitions shall govern in this Specification.

accepted—determined by the Architect/Engineer to be in compliance with Contract Documents.

Architect/Engineer—architect, engineer, architectural firm, engineering firm developing Contract Documents or administering Work under Contract Documents, or both.

broadcast—to scatter over a wide area by hand or mechanical method.

Contract Documents—set of documents that form the basis of a contractual agreement between an Owner and Contractor or design-builder; documents are defined by the contractual agreement and can contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.

Contractor—person, firm, or entity under contract for construction of Work.

gel time—time interval after mixing that a liquid material exhibits an increase in viscosity as determined by a specific test method.

mechanical mixing—mixing of epoxy resin components and fillers with drills and mixing paddles or mortar mixing equipment.

submit—provide to Architect/Engineer for review.

submittal—document and material provided to Architect/Engineer for review or acceptance.

testing agency—organization responsible for performing material testing; not responsible for acceptance of test values.