

An ACI Standard

Specification for Bonding Fresh Concrete to Hardened Concrete with a Multi- Component Epoxy Adhesive

Reported by ACI Committee 548

ACI 548.13-14



American Concrete Institute
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Specification for Bonding Fresh Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive

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This specification describes the work of bonding fresh concrete to hardened concrete with a multi-component epoxy adhesive as defined for this purpose in ASTM C881/C881M. Included are controls for adhesive labeling, storage, handling, surface evaluation and preparation, mixing and application, inspection, safety, quality control, and testing.

Keywords: adhesive; bond; construction; epoxy resins; fresh concretes; quality control; repair; safety; surface.

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ACI 548.13-14 became effective September 5, 2014, and was adopted and published October 2014.

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PART 1—GENERAL

1.1—Scope

1.1.1 This specification covers the bonding of fresh concrete to hardened concrete with a multi-component epoxy adhesive as indicated in Contract Documents.

1.1.2 This specification governs for construction within its scope, except the Contract Documents govern if there is a conflict.

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

1.1.4 The Notes to Specifier are not part of this specification.

1.2—Interpretation

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

(a) Interpret this specification consistent with the plain meaning of the words and terms used.

(b) Definitions provided in this specification govern over the definitions of the same or similar words or terms found elsewhere.

(c) Whenever possible, interpret this specification so that its provisions are in harmony and do not conflict.

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

(e) 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 of the connected items, conditions, requirements, or events apply.

“or” indicates that the connected items, conditions, requirements, or events apply singularly.

(f) The use of the verbs “may” or “will” indicates that the specification provision is for information to the Contractor.

1.3—Definitions

The following definitions govern in this specification. For definitions not given, refer to “ACI Concrete Terminology,” <http://www.concrete.org/Tools/ConcreteTerminology.aspx>.

accepted—determined to be satisfactory by Architect/Engineer.

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

Contract Documents—a set of documents supplied by the Owner to the contractor as the basis for construction. These documents contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.

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

epoxy—a thermosetting polymer that is the reaction product of epoxy resin and a hardener.

fresh concrete—concrete that possesses enough of its original workability so that it can be placed and consolidated by the intended methods.

Owner—the corporation, association, partnership, individual, public body, or authority for whom Work is constructed.

Project Specification—written document that details requirements for the Work in accordance with service parameters and other specific criteria.

specifier—the person or entity preparing and organizing the project specification for a construction project.

submit—provide to Architect/Engineer for review.

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

Work—the entire construction or separately identifiable parts thereof required to be furnished under Contract Documents.

1.4—Referenced standards

Standards of ASTM International referred to in this standard are listed with serial designation, including year of adoption or revision.

1.4.1 ASTM International

ASTM C 42/C 42M-13—Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

ASTM C 881/C 881M-13—Standard Specification for Epoxy Resin-Base Bonding Systems for Concrete

ASTM C 1583/C 1583M-13—Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)

ASTM D 4580/D 4580M-12—Standard Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding

1.5—Submittals

1.5.1 Certifications—Submit manufacturer’s certification verifying conformance to material specifications.

1.5.2 Application control—Submit mixing and application procedures for acceptance prior to use.

1.5.3 Data—Submit manufacturer’s technical data sheets and material safety data sheets (MSDS).

1.6—Product delivery, storage, and handling

1.6.1 Delivery of materials—Deliver materials in sealed containers with labels legible and intact.

1.6.2 Labeling—Only use materials that are marked with the following information:

- Name of manufacturer
- Manufacturer’s product identification
- Manufacturer’s instructions for mixing
- Warning for handling and toxicity
- Expiration date and lot number