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Specifications for Repair of Concrete in Buildings (ACI 563-18)

Reported by ACI Committee 563

ACI 563-18



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Specifications for Repair of Concrete in Buildings (ACI 563-18)

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Tony Murray was the first committee chair of ACI Committee 563 and a committee member of ACI 563 at the time of his death in 2016. The committee expresses its appreciation for his friendship and leadership.

Special acknowledgement to Matthew R. Hansen* for his contribution to this Specification.

This is a Reference Specification that the Architect/Engineer can apply to any construction repair and rehabilitation project involving structural concrete by citing it in the Project Specifications. Mandatory requirements and Optional requirements checklists are provided to assist the Architect/Engineer in supplementing the provisions of this Specification, as required or needed, by designating or specifying individual project requirements. The first section covers general construction requirements for all repair Work. The second section covers shoring and bracing of the structure or member to be repaired, and addresses sequencing of repair Work as the structure is unloaded and reloaded. The third section covers concrete removal and preparation of the concrete substrate for repair; and defines common equipment and methods. The next five sections cover materials and proportioning of concrete; proprietary cementitious and polymer repair materials; reinforcement; production, placing, finishing, and curing of repair materials; formwork performance criteria and construction; treatment of joints; embedded items; repair of surface defects; mockups; and finishing of formed and unformed surfaces. Provisions governing testing, evaluation, and acceptance of repair materials as well as acceptance of the repair Work are included. Sections 9 and 10 incorporate by reference two other specifications—ACI 503.7 and ACI 506.2—into this ACI Standard to cover crack repair by epoxy injection and shotcrete, respectively.

Keywords: bracing, cold weather; compressive strength; consolidation; curing; durability; epoxy injection; finish; formwork; grouting; hot weather; inspection; joints; mockups; placing; precast; repair; rehabilitation; reshoring; shoring; shotcrete; slab; steel reinforcement; surface preparation; testing; tolerance; welded wire.

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SECTION 1—GENERAL REQUIREMENTS

1.1—Scope

1.1.1 This Specification covers repair of concrete in existing structures.

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

1.1.3 This Specification governs for construction within its scope, except other 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 Contractor is permitted to submit written alternatives to any provision in this Specification for consideration.

1.1.6 Do not use this Specification in conjunction with ACI 301, ACI 350.5, or ACI 530.11 unless Contract Documents state that this Specification governs for Work covered by 1.1.1.

1.1.7 Ignore provisions of this Specification that are not applicable to Work.

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

1.1.9 The Notes to Specifiers 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 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 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 Contract Documents.

1.2.1.9 The phrase “unless otherwise specified” means the specifier may have included an alternative to the default requirement 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 requirement in this Specification.