IN-LB Inch-Pound Units

An ACI Standard

Specifications for Concrete Construction (ACI 301-20)

Reported by ACI Committee 301

ACI 301-20

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First Printing
September 2020
ISBN: 978-1-64195-107-4

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This is a Reference Specification that the Architect/Engineer can apply to projects involving concrete construction by citing it in the Project Specification. A mandatory requirements checklist and an optional requirements checklist 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 five sections of this Specification cover general requirements for concrete construction. These sections cover materials and proportioning of concrete; reinforcement and prestressing steel; production, placing, finishing, and curing of concrete; formwork performance criteria and construction; treatment of joints; embedded items; repair of surface defects; and finishing of formed and unformed surfaces. Provisions governing testing, evaluation, and acceptance of concrete as well as acceptance of the structures are included. The remaining sections are devoted to architectural concrete, lightweight concrete, mass concrete, post-tensioned concrete, shrinkage-compensating concrete for interior slabs, industrial floor slabs, tilt-up construction, precast structural concrete, and precast architectural concrete.

The materials, processes, quality control measures, and inspections described in this document should be tested, monitored, or performed as applicable only by individuals holding the appropriate ACI Certification or equivalent.

Keywords: architectural concrete; cold weather; compressive strength; consolidation; curing; durability; finish; formwork; grouting; hot weather; industrial floors; inspection; joints; lightweight concrete; mass concrete; mixture proportions; placing; post-tensioned concrete; precast concrete; prestressing steel; repair; reshoring; shoring; shrinkage-compensating concrete; slabs-on-ground; steel reinforcement; testing; tilt-up; tolerance; welded wire reinforcement.

ACI 301-20 supersedes ACI 301-16, was adopted August 31, 2020, and published September 2020.

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SECTION 1—GENERAL REQUIREMENTS

1.1—Scope

1.1.1 This Specification covers construction of cast-in-place concrete, architectural concrete, lightweight concrete, mass concrete, post-tensioned concrete, shrinkage-compensating concrete for interior slabs, industrial floor slabs cast on ground, tilt-up construction, precast structural concrete, and precast architectural concrete.

1.1.2 Unless otherwise specified, Sections 1 through 5 apply to Work where this Specification is referenced. Work covered by Sections 6 through 14 apply only if that Work is designated in Contract Documents.

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

1.1.4 This Specification governs for construction within its scope. If there are differences between requirements of this Specification and project-specific Contract Documents, project-specific Contract Documents govern.

1.1.5 Use shotcrete as designated in Contract Documents.

1.1.6 *Work not specified*—The following Work is not in the scope of this Specification:

(a) Manufactured concrete products specified by ASTM standards
(b) Environmental concrete structures
(c) Heavyweight shielding concrete
(d) Paving concrete
(e) Terrazzo
(f) Insulating concrete
(g) Refractory concrete
(h) Nuclear containment structures
(i) Concrete piles; drilled piers; and caissons assigned to Seismic Design Categories A, B, and C
(j) Fire safety
(k) Slipformed concrete walls
(l) Residential post-tensioned slabs-on-ground

1.1.7 This Specification governs if there is a conflict with referenced materials and testing standards.

1.1.8 Contractor is permitted to submit written alternatives to any provision in this Specification for consideration.

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

1.1.10 *Units*—Values in this Specification are stated in inch-pound units. A companion specification in SI units is available.

1.1.11 Unless otherwise stated, the inch-pound system of units is applicable to ASTM combined standards referenced in this Specification.

1.1.12 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 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.

1.2.1.4 Notes to a table 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 note to a table.

1.2.1.5 If 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:

(a) "and" indicates that all the connected items, conditions, requirements, or events apply.
(b) "or" indicates that the connected items, conditions, requirements, or events apply singularly.

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

1.2.1.7 The phrases "as indicated in Contract Documents" and "as designated in Contract Documents" mean the specifier included provision requirements in Contract Documents.

1.2.1.8 The phrase "unless otherwise specified" means the specifier may have included an alternative to the default requirement in Contract Documents.

1.2.1.9 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.

1.3—Definitions

acceptable or **accepted**—determined to be satisfactory by Architect/Engineer based on requirements of Contract Documents.

acceptance—acknowledgment by Architect/Engineer that submittal or completed Work is acceptable.

ACI Concrete Field Testing Technician Grade I—a person who has demonstrated knowledge and ability to perform and record the results of ASTM standard tests on freshly mixed concrete and to make and cure test specimens; knowledge and ability shall be demonstrated by passing prescribed written and performance examinations and having credentials that are current with the American Concrete Institute.

Architect/Engineer—Architect, Engineer, architectural firm, design or engineering firm, or architectural and engineering firm issuing Contract Documents, or administering the Work under Contract Documents, or both.

backshores—shores placed snugly under a concrete slab or structural member after the original formwork and shores have been removed from a small area at a time, without allowing the slab or member to deflect, or support its own weight or existing construction loads.

cast-in-place concrete—concrete that is deposited and allowed to harden in the place where it is required to be in the completed structure.

check test—test performed to verify result of previous test result of freshly-mixed concrete.