IN-LB Inch-Pound Units

An ACI Standard

External Curing of Cast-in-Place Concrete—Specification

Reported by ACI Committee 308

ACI SPEC-308.1-23

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This Reference Specification provides requirements for curing concrete that the Architect/Engineer can apply to any construction project by citing it in the Project Specification. Checklists are provided to assist the Architect/Engineer in supplementing the provisions of this Reference Specification as needed by designating or specifying customized project requirements.

This Specification provides requirements for various methods for the external curing of concrete. These methods are not necessarily equal in effectiveness, cost, effect on project schedule, or impact on other aspects of the project. Provisions governing initial, final, and termination of curing are included.

This Specification addresses external curing methods applied after placement of cast-in-place concrete. While internal curing (use of saturated lightweight aggregate or other materials to provide supplemental water) and accelerated curing (heat curing) shall also use external curing methods, not all aspects of internal and accelerated curing are included.

Keywords: cold weather concreting; concrete construction; curing; curing films and sheets; hot weather concreting; insulation; membrane curing compounds; moist curing; moisture retention; sealers; water curing; water retention.

CONTENTS

ACI SPEC-308.1-23 supersedes ACI 308.1-11 and was approved by the ACI Standards Board for publication March 2023 and published June 2023.

PART 1—GENERAL

1.1—Scope

1.1.1 This Specification covers requirements for curing cast-in-place concrete elements as indicated in Contract Documents.

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

1.1.3 This Specification includes requirements for initiating curing, protection from damage, curing for unformed and formed surfaces, and curing duration.

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

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

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

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

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

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

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

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

"or" indicates that 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 information to the Contractor.

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

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

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

1.3—Definitions

The following definitions shall govern in this Specification.

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

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

cold weather—when air temperature has fallen to, or is expected to fall below, 40°F during the protection period, protection period is defined as the time recommended to prevent concrete from being adversely affected by exposure to cold weather during construction.

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

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

curing period—duration during which continuous curing procedures are employed, which includes the initial and final curing stages.

dike—an embankment, ridge, berm, or other dam used to contain water.

drawings—graphic presentations that detail requirements for Work and may include written notes.

final curing—deliberate action taken between final finishing and termination of curing to reduce the loss of water from the surface of the concrete and control the temperature of the concrete.

final finishing—final treatment of fresh or recently placed concrete to produce specified surface.

hot weather—one or a combination of the following conditions that tends to impair the quality of freshly mixed or hardened concrete by accelerating the rate of moisture loss and rate of cement hydration, or otherwise causing detrimental results: high ambient temperature; high concrete temperature; low relative humidity; or high wind speed.

initial curing—deliberate action taken between placement and final finishing of concrete to reduce the loss of water from the surface of the concrete.