IN-LB	Inch-Pound Units
SI	International System of Units

Service Life Evaluation—Design Specification

Reported by ACI Committee 365

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Service Life Evaluation—Design Specification

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An ACI Standard

Reported by ACI Committee 365

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This Design Specification provides minimum requirements for performing a service life evaluation as part of the design process for new structures and implementing the results of the evaluation into the construction phase. This Design Specification can be used as part of a design-bid-build project, a design-build project, or other project delivery options. The Design Specification is independent of the specific model or technique used to perform the service life evaluation. Although service life modeling is commonly used to evaluate chloride transport causing corrosion deterioration, the approach outlined in this Design Specification can be used for any deterioration mechanism that is capable of being modeled. The service life engineer performing the evaluation can either be the prime consultant or a subconsultant. A service life report is produced as part of this specification, documenting the service life evaluation, followed by a service life record report documenting the implementation into the new construction.

Keywords: degradation mechanisms; deterministic modeling; durability; performance design; probabilistic modeling; quality control/quality assurance; service life prediction.

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CODE

CHAPTER 1—GENERAL

1.1—Scope

1.1.1 This Design Specification provides the minimum requirements for performing, implementing, and documenting service life predictions of new concrete structures or portions thereof.

1.1.2 This Design Specification is intended to be adopted by contract for a specific project. The project scope documents shall define the structures or type and number of concrete members or systems for which service life predictions are applicable.

1.1.3 Modifications to this Design Specification can be adopted by contract, but they are not considered part of this Design Specification.

1.2—Purpose

1.2.1 The purpose of this Design Specification is to provide minimum requirements for performing a service life prediction for a new concrete structure.

COMMENTARY

CHAPTER R1—GENERAL

R1.1—Scope

R1.1.1 This Design Specification does not address existing structures. Although the principles for conducting a service life prediction are similar for new and existing structures, performing service life predictions on existing, repaired, or rehabilitated structures can be more challenging. The service life engineer must be aware of current conditions, typically through performing a condition assessment of the structure or members to be repaired before performing service life predictions. Guidance on conducting a condition assessment can be found in ACI 364.1.

R1.1.2 The procedures and requirements outlined in this Design Specification can also be used when not specifically adopted to demonstrate that a comprehensive service life prediction has been performed.

R1.1.3 The American Concrete Institute recommends that this Design Specification be adopted in its entirety. When modifications to the Design Specification are implemented, they become the responsibility of the entity implementing the changes.

R1.2—Purpose

R1.2.1 The procedure outlined in the document is shown in Fig. R.1.2.1.

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