

ACI Information

The American Concrete Institute (ACI) has Standards and Specifications that provide unique guidance for designing and building with structural lightweight concrete. These documents are listed below:

ACI 213 Guide for Structural Lightweight-Aggregate Concrete

This guide summarizes the present state of technology, presents and interprets the data on lightweight aggregate concrete from many laboratory studies and the accumulated experience resulting from its successful use, and reviews performance of structural lightweight aggregate concrete in service.

ACI 301 Specifications for Structural Concrete for Buildings

This is a Reference Specification that the Architect/Engineer can apply to any construction project involving structural concrete by citing it in the Project Specifications. 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. Section 7 of this Specification covers requirements for lightweight concrete members.

ACI 304.2 Placing Concrete by Pumping Methods

This report describes pumps for transporting and placing concrete. Recommendations for proportioning pumpable concrete suggest optimum gradation of aggregates; outline water, cement, and admixture requirements; and emphasize the need for evaluation of trial mixes for pumpability. The importance of saturating lightweight aggregates is stressed. Suggestions are given for layout of lines; for maintaining uniform delivery rate, as well as uniform quality of concrete at the end of the line; and for cleaning out pipelines.

ACI 318 Building Code Requirements for Reinforced Concrete

The "Code" provides minimum requirements for the materials, design, and detailing of structural concrete buildings and, where applicable, non-building structures. This Code addresses structural systems, members, and connections, including cast-in-place, precast, plain, non-prestressed, prestressed, and composite construction. Among the subjects covered are: design and construction for strength, serviceability, and durability; load combinations, load factors, and strength reduction factors; structural analysis methods; deflection limits; mechanical and adhesive anchoring to concrete; development and splicing of reinforcement; construction document information; field inspection and testing; and methods to evaluate the strength of existing structures. 070918