

ACI Technical Committee Update

Historically, shotcrete provisions are contained in the International Building Code (IBC) and prior to that in the Uniform Building Code (UBC). IBC indicated that if ACI included shotcrete into 318, and the provisions were acceptable, that they would remove shotcrete from the IBC. ACI made a three year effort to work on this with assistance from Charles Hanskat, Executive Director of the America Shotcrete Association, Terry Holland, concrete consultant and Chair of 318A and myself. ACI 318-19 proposed shotcrete provisions and IBC made the decision in May 2019 to accept those provisions in ACI 318-19.

ACI handles code provisions differently than IBC in that ACI references ASTM standards. The ASTM standards shown below have been included in ACI 318-19.

- C 1140 Standard Practice for Preparing and Testing Specimens from Shotcrete Test Panels
- C 1141 Standard Specification for Admixtures for Shotcrete
- C 1385 Standard Practice for Sampling Materials for Shotcrete
- C 1436 Standard Specification for Materials for Shotcrete
- C 1480 Standard Specification for Packaged, Pre-Blended, Dry, Combined Materials for Use in Wet and Dry Shotcrete Application
- C1604 Standard Test Method for Obtaining and Testing Drilled Cores of Shotcrete

Chapter 26 of ACI 318-19 states that “Use of shotcrete for structural members not identified in the construction documents as required to be placed by shotcrete shall be permitted in accordance with the project contract

Table R4.2.1.1—Sections in Code with shotcrete provisions

Topic covered	Section
Freezing and thawing	19.3.3.3 through 19.3.3.6
Reinforcement	25.2.7 through 25.2.10, 25.5.1.6, and 25.5.1.7
Where shotcrete is required or permitted	26.3.1, 26.3.2
Materials	26.4.1.2, 26.4.1.4, and 26.4.1.6
Proportioning mixtures	26.4.3
Documentation of mixtures	26.4.4.1
Placement and consolidation	26.5.2.1
Curing	26.5.3
Joints	26.5.6
Evaluation and acceptance	26.12

documents.” 318 Commentary states that “If the contractor submits a request to use shotcrete for portions of the structure, the licensed design professional should make the contractor aware that the proposal must take into consideration provisions in governing shotcrete listed in R4.2.1.1” R4.2.1.1 states that “Shotcrete is considered to behave and have properties similar to concrete unless otherwise noted. Sections where use of shotcrete is specifically addressed in this Code are shown in Table 4.2.1.1. Additional information on shotcrete can be found in ACI 506R and 506.2.”

Shotcrete is another method of placing cast-in-place concrete. Contractors may want to take advantage of this option which can be cost effective where formwork is impractical, or where formwork can be reduced or eliminated. ACI 318-19 provides the contractor with the option to propose shotcrete as a placing method. ACI 318-19 PDF version is available

from ACI at <https://www.concrete.org/store/storeresults.aspx? Keyword=318-19>.