

CODE

shall be submitted to demonstrate that the modified mixture complies with the concrete mixture requirements in the construction documents.

(d) Documentation of shotcrete mixture characteristics shall be submitted for review by the licensed design professional before the mixture is used and before making changes to mixtures already approved. Evidence of the ability of the proposed shotcrete mixture to comply with the shotcrete mixture requirements in the construction documents shall be included in the documentation.

26.5—Concrete production and construction**26.5.1 Concrete production****26.5.1.1 Compliance requirements:**

- (a) Cementitious materials and aggregates shall be stored to prevent deterioration or contamination.
- (b) Material that has deteriorated or has been contaminated shall not be used in concrete.
- (c) Equipment for mixing and transporting concrete shall conform to **ASTM C94** or **ASTM C685**.
- (d) Ready-mixed and site-mixed concrete shall be batched, mixed, and delivered in accordance with ASTM C94 or ASTM C685.

26.5.2 Concrete placement and consolidation**26.5.2.1 Compliance requirements:**

- (a) Debris and ice shall be removed from spaces to be occupied by concrete before placement.
- (b) Standing water shall be removed from place of deposit before concrete is placed unless a tremie is to be used or unless otherwise permitted by both the licensed design professional and the building official.

COMMENTARY

changes in concrete materials, seasonal temperature fluctuations, or changes in conveying and placing methods. Additionally, an adjustment to a concrete mixture may be required or appropriate if strength tests are lower or higher than required.

R26.5—Concrete production and construction

Detailed recommendations for mixing, handling, transporting, and placing concrete are given in **ACI 304R**.

R26.5.1 Concrete production

R26.5.1.1(c) **ASTM C94** and **ASTM C685** address operational requirements for equipment used to produce concrete.

R26.5.1.1(d) ASTM C94 is a specification for ready mixed concrete whereby materials are primarily measured by mass (weight) and production is by batches. This is the more common method of concrete production, and it is also used in precast concrete plants. ASTM C685 is a specification for concrete where materials are measured by volume and the production is by continuous mixing. These specifications include provisions for capacity of mixers, accuracy of measuring devices, batching accuracy, mixing and delivery, and tests for evaluating the uniformity of mixed concrete.

R26.5.2 Concrete placement and consolidation

R26.5.2.1(a) Forms need to be cleaned before beginning to place concrete. In particular, sawdust, nails, wood pieces, and other debris that may collect inside forms need to be removed.

R26.5.2.1(b) The tremie referred to in this provision is not a short tube or “elephant trunk.” It is a full-depth pipe used in accordance with accepted procedures for placing concrete under water. Information regarding placing concrete using a tremie is given in ACI 304R.