

CODE

- (j) Prior to placement of a new layer of shotcrete, rebound and overspray from adjacent placements shall be removed.
- (k) Cuttings and rebound shall not be incorporated into the Work.

- (l) Shotcrete surfaces intended to receive subsequent shotcrete placement shall be roughened to a full amplitude of approximately 6 mm before the shotcrete has reached final set.
- (m) Before placing additional material onto hardened shotcrete, laitance shall be removed, joints shall be cleaned, and the surface shall be dampened.
- (n) In-place fresh shotcrete that exhibits sags, sloughs, segregation, honeycombing, or sand pockets shall be removed and replaced.

- (o) A certified shotcrete nozzle operator shall place all shotcrete.

- (p) If a project-specific shotcrete mockup panel is required, each nozzle operator shall have demonstrated the ability to shoot an approved shotcrete mockup panel.

26.5.3 Curing**26.5.3.1 Design information:**

- (a) If supplementary tests of field-cured specimens are required to verify adequacy of curing and protection, the number and size of test specimens and the frequency of these supplementary tests.

26.5.3.2 Compliance requirements:

- (a) Concrete, other than high-early-strength, shall be maintained at a temperature of at least 10°C and in a moist condition for at least the first 7 days after placement, except if accelerated curing is used.
- (b) High-early-strength concrete shall be maintained at a temperature of at least 10°C and in a moist condition for at

COMMENTARY

R26.5.2.1(j and k) Rebound material is loose aggregate and cement paste that bounces off after colliding with formwork, reinforcement, or a hardened shotcrete surface.

Overspray is the paste-rich material that separates from the stream during shotcreting and adheres to nearby reinforcement and formwork. Adjacent surfaces are typically protected from overspray.

Cuttings refers to shotcrete that has been applied beyond the finish face and is cut off during trimming or rod finishing.

Rod finishing refers to the use of a hard-edged tool or rod to cut excess material by trimming, slicing, or scraping the exposed shotcrete to a true line and grade.

R26.5.2.1(n) If the shotcrete sags because of improper consistency, adjacent vibration, or improper finishing, those sections should also be removed and replaced. **ACI 506.4R** provides additional recommendations for repairing shotcrete.

R26.5.2.1(o) Nozzle operators become certified through testing and training programs that include written and performance examinations. Each shotcrete nozzle operator should be certified in accordance with the applicable ACI certification program for dry-mix or wet-mix shotcrete (both are covered by **CPP 660.1-15**).

R26.5.3 Curing

Detailed recommendations for curing concrete are given in **ACI 308R**. This guide presents basic principles of proper curing and describes the various methods, procedures, and materials for curing of concrete.