

Appearance Requirements for Concrete Slabs

ASCC Position Statement #11

When a concrete slab has special surface appearance requirements, ACI 303.1-97, “Standard Specification for Cast-in-Place Architectural Concrete,” is often cited in the project specification. To comply with this specification, the project must:

- Construct field mock-up and obtain acceptance;
- Maintain and protect field mock-up until final acceptance of all concrete;
- Provide semimonthly review of concrete placements for acceptance;
- Repair areas, when necessary, to match the field mock-up and adjacent surfaces; and
- Protect accepted architectural concrete until project completion.

When there are no special surface appearance requirements for a concrete slab, ACI 301-99, “Specifications for Structural Concrete,” is often cited in the project specifications. This specification requires that a trowel finish surface be smooth and free of trowel marks (see “Trowel Marks on Concrete Floors,” ASCC Position Statement #4, *Concrete International*, April 2003). ACI 301-99 requires no field mock-up, no periodic acceptance, and no repair criteria.

ASCC concrete contractors have experienced some difficulty in meeting Owner and Architect expectations for slab surface appearance when constructing the slab in accordance with ACI 301. The surface appearance expectations are often not being conveyed in the specifications, not discussed at a prebid or prepour meeting, and not reviewed after placing the first slab. The expectations are conveyed at the end of the project during a final walk-through. It’s difficult to meet the expectations after all the concrete has been placed.

The surface appearance of hard-troweled concrete is never uniform. The surface can be smooth

and free of trowel marks but have color variations. Also, a light broom finish on a hard-troweled surface will not have the same final and initial appearance because of surface wear during construction. When surface appearance is important, that should be conveyed in the specifications so contractors can appropriately price that requirement.

ASCC contractors also recommend a prepour discussion of surface appearance expectations. Then, if necessary, we recommend constructing a field mock-up and periodically reviewing the concrete surface, including the first placement, for acceptance. If surface expectations discussed at the prepour meeting are more demanding than those described in the specifications, ASCC contractors will change their tools and techniques, and submit a change order so they can meet the Owner’s and Architect’s surface appearance expectations at a fair price.

If you have any questions, contact your ASCC concrete contractor or the ASCC Technical Hotline at (800) 331-0668.

Update: ACI 301-10 no longer requires that a floor be free of trowel marks and still requires no field mock-up, no periodic acceptance, and includes no repair criteria. For more information on appearance, see Ross Martin’s *Guide for Surface Finish of Concrete Slabs on Ground*, published in 2006 by ASCC and available for purchase at www.asconline.org.

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