

Base Preparation for Slabs on Grade

Problems and Practice #2

Base preparation, including the subgrade and subbase, is an important consideration in the long-term performance of the decorative concrete slab. Poor base preparation can result in settlement, varying concrete slab thickness, and poor drainage, which can lead to cracking. Too often, decorative concrete contractors are asked to finish concrete that must be placed on an improperly prepared base. Unless the subcontractor has a specific item in his contract for base preparation, the general contractor or builder is responsible for providing a satisfactory base.

ACI 302.1R-04 “Guide for Floor and Slab Construction” provides recommendations for constructing a proper base. These recommendations and others include:

- In-place density of the subgrade, subbase and base should be at least the minimum required by specification, or not less than 90% Proctor.
- Backfill around walls or trenches should be placed in layers less than 8-in. thick and compacted to meet density specifications.
- Base should be dry at time of concrete placement and free of frost, standing water, and soft or muddy spots.
- Base material should be a compactible, easy to trim, granular fill (not sand) that will remain stable and support construction traffic.
- Base elevation tolerance should be within $\pm \frac{1}{2}$ in. of the required elevation.
- Proof-rolling with a loaded ready mix truck should not result in any surface depression greater than $\frac{1}{2}$ in.

Decorative concrete is often a part of residential construction, including remodel or owner work, and new construction where the home builder is the general contractor and is responsible for the subgrade, subbase, and base preparation. In commercial construction, an independent soils testing laboratory usually confirms the base preparations are adequate. To meet schedule requirements, however, a decorative concrete contractor may be asked to place concrete on a base that isn't properly prepared. Under these conditions, the decorative concrete contractor will notify the general contractor or owner of the lack of adequate base preparation and its consequences. If required to place concrete, the decorative concrete contractor will not be responsible for any performance issues related to the subgrade, subbase or base preparation.

Decorative concrete contractors will work with Owners and Architects in developing specifications for proper base preparation. If you have any questions, contact your ASCC/DCC concrete contractor or the ASCC Technical Hotline at (800) 331-0668.



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