

Responsibility for Moisture Testing Concrete Floors

Problems and Practice #7

With the growing need to resurface existing concrete floors for commercial and retail environments, the moisture condition of these floors is becoming an important issue for concrete overlay installers. Often times these floors will receive an acid stain treatment or a smooth or textured overlay. Care must be taken when choosing the proper sealer or protective coating, as certain types of coatings result in moisture sensitivity similar to that of some resilient floor coverings. Typical acceptable moisture conditions for those types of applications are 3-5 lbs. per 1000 sq. ft. MVER (moisture vapor emissions rate, ASTM F1869) or less than 75% relative humidity (ASTM F2170). When moisture testing is overlooked, problems may result and expensive repairs may become necessary.

Excessive floor moisture can cause problems with decorative concrete that include the following:

- Increased efflorescence and discoloration on the surface
- Debonding or delaminating of overlays or coatings
- Whiting or blushing of sealers
- Formation of bubbles or blisters in coatings or coverings

Moisture testing should be discussed during a pre-conference meeting to include the following points:

- Slab history, construction and curing, sub-slab vapor barrier installation
- Responsibility for moisture testing

- Appropriate moisture test method (ASTM F1869 calcium chloride test, F2170 relative humidity test, or other method recommended by manufacturer)
- Acceptable moisture conditions for material application
- Surface preparation method and its effect on floor moisture
- HVAC operations, ambient air relative humidity and temperature

No matter who is responsible for the testing, the subcontractor or the owner, the subcontractor should have input into the test method, the frequency of testing and acceptable moisture levels, prior to the bidding process. To ensure a quality project, all parties must work together to facilitate proper testing and preparation.

Decorative concrete contractors will work with owners and architects in developing specifications and providing mock-ups or samples (depending on the scope of the project) to address appearance requirements. If you have any questions, contact your ASCC/DCC concrete contractor or the ASCC Technical Hotline at (800) 331-0668.



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