

ASTM F 1869-03 Calcium Chloride Testing

Before you test, make sure you have test kits, kneepads, grinder, vacuum, pen and paper to record your data. Make sure you have a quality gram scale (measures in tenths of a gram) and a proper supply of test kits. **Ensure the building climate has been at a normal service temperature and humidity for 48 hours prior to testing.**

American Moisture Test

Professional Vapor Emission Testing Systems

- The slab surface must be clean and free of debris and adhesive residue. Shot blasting is best, but grinding and wire brushing will provide a clean surface. Remove all dust from the test area thoroughly. Do not use chemicals of any kind. Avoid test locations near cracks or joints, or in direct sunlight. Prepare 3 test sites for the first 1,000-sq. ft. Add 1 test for each additional 1,000 sq. Ft area. (Preparation as of ASTM F1869-04). This will insure no bias when testing for pH as well.
- Read the warning label on the protective package and then remove the calcium chloride desiccant container. Set the entire tape-sealed dish on the gram scale and record its weight on the dish lid and on the back of the test kit booklet or worksheet. Record the starting day and time as well. Ensure the same scale is available for re-weighing or the accuracy of this test will be compromised.
- Remove the blue vinyl tape from the dish. Be careful not to loose the tape, as you will need to reseal the dish later. Invert the lid under the dish and then stick the tape along the side of the plastic dome to keep it safe. Some people prefer to tape the dish's lid to the inside of the dome where it can be read through the top. Do not spill any of the calcium chloride.
- Place the open dish on the slab making sure the calcium chloride inside is fairly level. Do not set the kit directly over a control joint or crack. Peel off the white paper on the dome, and place the dome over the dish. The only moisture absorbed by the calcium chloride will be from the 70 square inch area of the dome that is emitted from the concrete slab.
- Using the handle of your wire brush or other tool, firmly squash the gasket under the flanges of the dome. The ideal installation will seat the outer flange of the dome to the slab. Then the gasket material will squash to the inside edge of the dome. Place your hand over the dome and gently apply pressure. There should be no leaks in the gasket.
- Place the safety cone near or over the dome and let the test remain undisturbed for 60 to 72 hours. Traditionally, manufacturers of floor covering products recommend at least one kit per 1,000 square feet. The new ASTM standard cites at least one kit per 1,000 square feet. Remember that the test is taking a small sample size of the concrete, which often has a very wide range of moisture distribution. 30 feet center to center is a good benchmark.
- After 60 to 72 hours, cut open the dome and carefully retrieve the dish. Replace the lid and seal it back up with the blue tape. Weigh the dish again on the same gram scale. Record the ending weight, date and time on the dish lid as well as on the test kit booklet or worksheet. Follow the instructions in this booklet to compute the moisture vapor emission rate.
- Apply a small puddle of distilled water about the size of a half-dollar coin. Let sit for about 30 seconds. Place a litmus range paper strip with a range of 1-14 onto the surface in the water for about 15-20 seconds. Record the corresponding color value pH range with the corresponding test site number.

On Track Technologies

6622 Greenvale Lane, Houston, Texas 77066

Tel 800.419.3698

Fax 281.754.4896

ontrac@sbcglobal.net