

Quantitative Test Method for Determining Moisture Vapor Emission Rate ASTM F 1869



PURPOSE:

This Moisture Test Kit is designed to quantitatively measure the rate of moisture vapor emission.

CONTENTS:

Each test kit consists of one cylindrical container filled with anhydrous calcium chloride and one transparent plastic cover with pre-installed sealant around the perimeter.

REQUIRED TOOLS (Not Included)

Razor scraper, wire brush, surface grinder with vacuum mount, safety goggles, protective gloves, cloth rags, utility knife, scale capable of measuring to nearest 0.1 gram, duct tape.

APPLICABLE STANDARDS

A person using this test kit shall strictly follow the instructions given in the latest ASTM F 1869 published by American Society for Testing & Materials. The copies of ASTM documents can be obtained from American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428. Tel. (610) 832-9585, Fax: (610) 832-9555. The documents may also be purchased on the internet. Web address: www.astm.org

Please carefully read the product's Limited Warranty and Terms of Sale prior to use of this product. The use of the product implies that the Buyer and User agrees to Manufacturer's Limited Warrantee and Terms of Sale.

TEST PROCEDURE

Following test procedure is brief and is not meant to replace the most current ASTM standards. Therefore, the User must get acquainted with the applicable current ASTM standard and OSHA safety regulations prior to using this test kit.

1. Remove any foreign objects such as overspray, curing compound and sealers from the concrete surface using mechanical devices such as razor scraper, wire brush or grinder. Remove dust from the concrete surface to insure proper adhesion of the sealant. Strictly follow guidelines given by Occupational Safety & Health Administration (OSHA).
2. Carefully remove black vinyl tape from the plastic container that holds the calcium chloride crystals. Weigh the container including the calcium chloride crystals at the test location immediately prior to initiating the test (**W1**). Weigh it to the nearest 0.1 gram and note this initial weight on the top of the container label using felt tip pen or permanent marker. If the container is weighed with black vinyl tape, then make sure to save it for measurement after the test. On the container label, record the time and date the test was started (**T1**).
3. The container may have a screw-top lid. Carefully remove the lid of the container that holds anhydrous calcium chloride crystals and place the lid underneath the container at the center of the test area. Remove the paper backing from the black sealant that is around the plastic cover and install the cover over the open container on a prepared dust-free concrete surface. To test for an airtight seal, press firmly on the center of the cover. The cover should resist pressure, if properly sealed. Use duct tape (not included) around the outer edge of the plastic cover, if necessary, to insure airtight seal.
4. Allow the test kit to remain undisturbed for a period of 60 to 72 hours. Note the ambient temperature and humidity at the test area.
5. After 60 to 72 hours, remove the plastic cover and immediately place the lid back on the container. Record date and time (**T2**).
6. Immediately weigh the container with calcium chloride at the test site. Note the weight as final weight (**W2**). Do not spill any of the calcium chloride crystals from the container. If any crystals are spilled, the test must be rerun with a new test kit.

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CALCULATIONS

1. Determine the Exposure Time in hours. **Exposure time in hours; $T = T2 - T1$**
2. Determine the weight gain of calcium chloride. **Weight gain in grams; $\Delta W = W2 - W1$**

**Moisture Vapor Emission Rate
(pounds/1000 sq.ft/24 hours)**

$$\text{Moisture Vapor Emission Rate} = 120 \times \frac{\Delta W}{T}$$

BIAS & PRECISION OF THE TEST

Follow guidelines provided by the latest ASTM. **Our experience indicates that the test results may vary with environmental and seasonal changes. The test determines the rate of moisture vapor emission at the time of the test only.** It does not predict future moisture vapor emission rate or the performance of the flooring material. The test performed at the same location at different time may produce different results.

HEALTH AND SAFETY

The chemical product included in this kit contains Calcium Chloride Anhydrous (CaCl_2). A Material Safety Data Sheet for Calcium Chloride is enclosed with the test kits. Please read it carefully. Dispose of used product in accordance with local, state or federal regulations. Keep Children & pets away from the test kit and test area. Do not inhale or ingest this product. In case of emergency, contact nearest hospital and nearest Poison Control Center. National Poison Center's phone number is 1-800-222-1222.

LIMITED WARRANTY & TERMS OF SALE

Moisture TestKit Company's sole responsibility and liability under this warranty shall be to supply replacement test kit for any test kit items warranted hereunder shown to be defective in manufacturing. **Since the use of the test kit is beyond our control we can not accept damage in excess of the purchase price of this product.** Store the test kit in dry place and use it within 90 days from receiving. Moisture TestKit Company makes no other warranty, expressed or implied, with respect to its products. Defects in materials caused by misuse, mishandling, improper storage, improper application, improper combination with product of others, or any other failure to strictly follow Moisture TestKit Company's guidance and latest ASTM standards are not warranted under any circumstances. Moisture TestKit Company shall not be responsible for direct, indirect, incidental, punitive or consequential damages arising from the use of the test kit regardless of the cause. Buyer and User assume all liabilities for any loss, damage or injury to persons or property arising out of, connected with or resulting from the use of Moisture TestKit Company's products, either alone or in combinations with other products. By use of this product the Buyer and User accept the Limited Warranty and Terms of Sale. Any dispute against the Moisture Testkit Company or its Employees or agents or successor shall be resolved by a binding arbitration in accordance with the American Arbitration Association in Hayward, Alameda County, California, United States of America.



Moisture TestKit Company

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