#625

Moisture/Alkali Test Kit

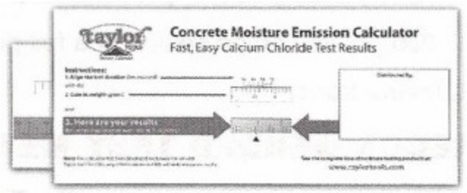
Calcium Chloride Test Kit and pH Test Kit

DELMHORST INSTRUMENT CO. MOISTURE METERS

Relative Humidity Meters

Get Fast, Easy Test Results

#625.CALC
Concrete Moisture Emission Calculator
or use on-line calculator at:
www.taylortools.com/calculator.html



Taylor TOOLS
Denver, Colorado

PURPOSE:

The **Calcium Chloride Moisture Test Kit** measures the quantity of moisture passing through, on and below grade concrete floors (lbs. of moisture over a 1,000 sq. ft. area during a 24 hour period).

The **pH Test Kit** measures the alkalinity of the concrete. The Carpet and Rug Institute, the Resilient Floor Covering Institute and the Canadian Carpet Institute agree that concrete flooring with a surface alkali content of pH 9 or higher must be corrected.

Contents:

A. Protective cover with lid holder

B. Temperature indicator.

C. A pre-weighed plastic jar with airtight snap lid containing anhydrous calcium chloride.

D. A transparent plastic cover with pre-applied adhesive to secure the plastic cover to the floor in an airtight fashion.

E. A zip-lock reusable foil pouch and a self-addressed mailer to use to return the sample to us if you would like us to do the analysis or confirm your analysis.

F. A one ounce bottle of pH Balanced Testing Fluid.

G. Two pH test strips sealed in a foil pouch.

H. Instructions

RECOMMENDED TEST METHODS:

We recommend that when using the Taylor Moisture Test Kit, you weigh beginning and ending weights at the job site with the #626 Taylor Gram Scale, purchased separately.

1. Confirm your pre-weight. This will ensure that nothing has changed since packaging the pre-weighed Calcium Chloride
2. Weigh the Calcium Chloride after exposure with the lid reattached.
3. Do the calculations
4. Send the sample back to Taylor for the free confirmation documentation and archival service of our test.

By using the preferred Taylor test methods, you have the immediate results and a third party confirmation of your test along with our archival service of your results.

IF YOU DO NOT HAVE A GRAM SCALE, THE TAYLOR CALCIUM CHLORIDE IS PREWEIGHED AND CAN BE RETURNED BY MAIL FOR FREE ANALYSIS BY TAYLOR TOOLS OR TAKE IT TO A PHARMACY FOR WEIGHING. IN EITHER CASE, THE FREE TAYLOR TOOLS ANALYSIS IS RECOMMENDED TO CONFIRM YOUR RESULTS BY A THIRD PARTY.

EQUIPMENT REQUIRED:

1. Gram Scale (not provided in test kit)
2. Temperature Indicator (on #625 kits)
3. Hygrometer (not provided in test kit)
4. 3 (three) kits per the first 1,000 sq. ft.
5. 1 (one) kit per every additional 1,000 sq. ft.

TEST PROCEDURE:

Conditioning:

1. The test site should be at the same temperature and humidity expected during normal use. If this is not possible, then the test conditions should be 75 ± 10°F (23.9 ± 5.5°C) and 50 ± 10% relative humidity. Maintain these conditions 48 hrs. prior to, and during testing.

2. Prior to placement of the tests, the actual test area should be clean and free of all foreign substances. All residual adhesives, curing compounds, sealers, paints, floor coverings, etc. should be removed by using approved OSHA work practices.

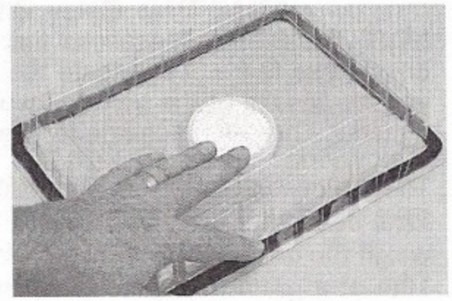
Testing:

1. Expose a minimum area of 20 by 20 in. (50.8 by 50.8 cm) to conditions specified above for a minimum period of 24 hrs. prior to starting each test. Weigh the container of calcium chloride, including the container lid and the label which should be affixed to the lid. Record the weight to the nearest 0.1 g on the container label along with the starting time to the nearest ± 1/4 hr. Also note the prevailing temperature and humidity.

2. Remove the lid from the plastic jar containing the calcium chloride and, being careful not to spill any of the calcium chloride, place the jar on the floor. (Note: If any of the calcium chloride is spilled, the test kit must be discarded and the test must be performed with a new kit.)

Place the lid on the lid caddy to save for resealing and weighing. Avoid mixing with jars from other kits. Note: Do not place the lid inside the plastic dome!

4. Remove the release paper from the sealant on the plastic cover and immediately place the plastic cover over the calcium chloride jar and press firmly to the floor making certain that the sealant gives an airtight seal around the plastic cover. DO NOT use any additional tape to seal the plastic lid to the floor.



5. Unfold and set up the test kit box according to the printed instructions and place over the test plastic dome and stabilize by taping to the floor (do not tape entire edge of box).

6. Leave the test undisturbed for a minimum of 60 hours (do not exceed 72 hrs.). Be sure to note the date and the exact time (to the nearest 1/4 hr.) the test was started on the dish label.

7. After 60 hrs. and before 72 hrs., remove the cover and replace the snap lid. Make sure that none of the calcium chloride is spilled. Record the date and exact time the test was concluded on the label. (NOTE: Results will not be confirmed by Taylor Tools if test duration does not comply to 60-72 hour parameters).

MOISTURE MEASUREMENT: QUANTITATIVE EVALUATION

The jar containing the calcium chloride has been pre-weighed, and the weight is indicated on the label. The weight (in grams) of this dish includes the jar, the lid, and the calcium chloride.

If you would like Taylor Tools to do the moisture analysis, be sure to indicate on the label the dates and times the test was started and completed. Fill out the self-addressed label and place the sealed jar containing the calcium chloride in the foil pouch, seal, and then place in the return mailer and mail it to the address on the return label.

NOTE: It is absolutely essential that you do not spill any of the calcium chloride as that will invalidate the test results. We will mail and Fax you the results of the test one working day after receipt of the test material. There is no charge for the test results.

The Taylor #626 Moisture Test Kit Gram Scale, available from your local distributor, will allow you to conduct the test yourself. Simply weigh the dish (including the lid, and calcium chloride) to the nearest 10th of a gram and then determine the moisture content using the following formula. (Note: If you do not have a gram scale, ask your local pharmacist to weigh the sample for you.)
Note: Whether you conduct the test yourself or not, the FREE confirmation from Taylor Tools is highly recommended for 3rd party confirmation documentation as well as FREE archival service for a permanent, easily accessible record of your test results.

MOISTURE FORMULA:

$$\frac{\text{Gain in weight (grams)} \times 2.057 \times 24 \times 1000}{\text{Hrs. exposed} \times 454} =$$

Example: Preweighed jar weighed 32.5 grams. It was placed on the floor on 4/3/95 at 4:00 pm and removed on 4/6/95 at 8:00 am (64 hrs.). After resealing the lid to the jar, the sample was weighed and showed a weight of 35.4 grams or a net gain of 2.9 grams.

Scan for on-line calculator

$$\frac{2.9 \text{ grams} \times 2.057 \times 24 \times 1000}{64 \times 454} =$$

$$\frac{143{,}167.2}{29{,}056} = 4.93 \text{ lbs.}$$

Or, in other words, the moisture emission is 4.93 lbs. over a 1000 sq. ft. area in a 24 hour period.

In the above example, if the flooring material to be used is rubber, solid vinyl or wood, the manufacturer would not likely recommend the installation since their upper limit is usually 3.0 lbs. On the other hand, if this were a vinyl composition tile installation, it would probably be acceptable, since vinyl composition tiles can generally be safely installed when the moisture level is 5 lbs. or less. However, you should always consult the manufacturer for specific moisture level limits for any particular product to be installed.

NUMBER OF TESTS TO USE:

In areas of 1000 sq. ft. or less you should conduct three tests and add one more for each additional 1000 sq. ft. These tests should be conducted simultaneously and should be placed apart to cover representative areas of the floor (usually one test in the center and others around the perimeter of the room but not closer than five feet from the edge or exterior wall).

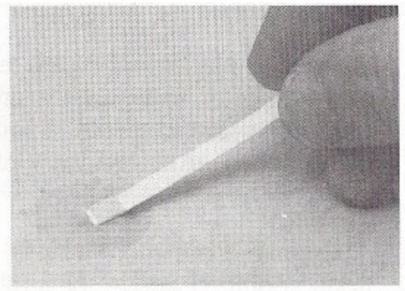
LIGHTWEIGHT CONCRETE AND GYPSUM

Do not use the #625 Moisture Test Kit for lightweight concrete and/or gypsum floors. Refer to ASTM F2471 ("Standard Practice for Installation of Thick Poured Lightweight Cellular Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring") for testing information regarding the use of a surface moisture meter. Consult the manufacturer of the concrete and materials being installed for specific methods and values required for installation.

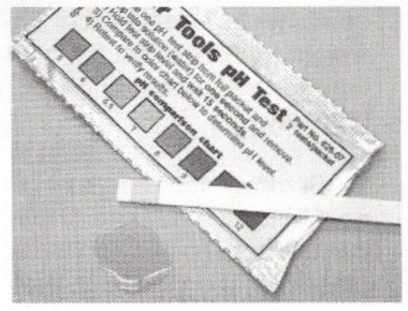
pH TEST PROCEDURE

1. Clean floor to remove all oil, dirt, dust and any floor coating or sealer. If the surface has a primer, sealer or old adhesive that might affect the test procedure, it must be removed by lightly grinding, sanding or bead blasting. Do not remove more than 1/16" of concrete. Remember, since alkali is present in cement, removal of more than 1/16" may give a high pH reading. This test is designed to test the surface that will come in contact with the adhesive.

2. Pour a small amount of pH Balanced Testing Fluid (approx. 1 1/2" diameter) on flooring surface.



3. After allowing fluid to sit for approx. 30 seconds, place a Taylor Tools narrow range pH strip into the fluid for 1 second. Remove and match with best color after 15 but before 25 seconds.



Refer to ASTM F-710, ("Standard Practice for Preparing Concrete Floor to Receive Resilient Flooring") for further information.

Note: For a copy of ASTM F-710, F-2471 or F-1869
visit: www.astm.org