

# #625

# Moisture/Alkali Test Kit

## Calcium Chloride Test Kit and pH Test Kit

### PURPOSE:

The **Calcium Chloride Moisture Test Kit** measures the quantity of moisture passing through the slab, 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. Most adhesive manufacturers agree that concrete flooring with a high surface alkali content needs to be corrected. Check with the manufacturer for allowable pH levels and remedy.

### Contents:

- 3 pre-weighed plastic jars with airtight snap lid containing anhydrous calcium chloride.
- 3 transparent plastic covers with pre-applied adhesive to secure the plastic cover to the floor in an airtight fashion.
- 3 zip-lock reusable foil pouches and a self-addressed mailer to use to return the samples to us if you would like us to do the analysis or confirm your analysis.
- A one ounce bottle of pH Balanced Testing Fluid.
- Two pH test strips sealed in a foil pouch.
- 3 warning labels
- Instructions



### RECOMMENDED TEST METHODS:

1. When opening the dish, make sure not to spill any of the contents, as this will affect the beginning weight.
2. Send the container back to Taylor Tools for your test results. Put the container with the lid attached back into the foil pouch and re-seal it. Use the pre-addressed mailing pouch to send them back to Taylor Tools. This is a free service. Just pay the postage and Taylor Tools will send you the results via email or fax. Make sure to include your response contact information.
3. You can obtain the results yourself by taking it to a pharmacy to have it weighed to the nearest .1 gram. Do the calculations (or use the handy on-line calculator at <http://www.taylorstools.com/calculator.html>)



Scan for on-line calculator

### EQUIPMENT REQUIRED:

1. This kit contains 3 tests, enough to test for up to 1,000 square feet. You will need to purchase additional kits for larger areas.
2. 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  $75 \pm 10^\circ\text{F}$  ( $23.9 \pm 5.5^\circ\text{C}$ ) and  $50 \pm 10\%$  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. Sand or grind all residual adhesives, curing compounds, sealers, paints, floor coverings, etc. 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. If you do not have a scale, use the beginning weight on the label. Record the weight to the nearest 0.1 g on the container label along with the starting time to the nearest  $\pm 1/4$  hr. Also note the prevailing temperature and humidity.

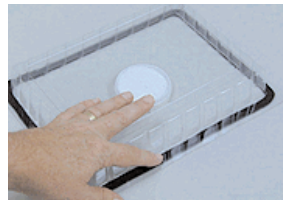
2. Remove the lid from the plastic dish containing the calcium chloride and, being careful not to spill any of the calcium chloride, place the dish on the floor. (Note: If any of the calcium chloride is spilled, the test kit must be discarded and the test must be performed with a new kit.)



3. Place the lid under the open dish. Avoid mixing lids with dishes from other kits.



4. Remove the release paper from the sealant on the plastic cover and immediately place the plastic cover over the calcium chloride dish 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. Leave the test undisturbed for a minimum of 60 hours (do not exceed 72 hrs.). Be sure to note the date and the time (to the nearest 1/4 hr.) the test was started on the dish label.

6. 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 time the test was concluded on the label. (NOTE: Results will not be confirmed by Taylor Tools if test duration is outside the 60-72 hours).



## 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 4/3/12 at 4:00 pm and removed on 4/6/12 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.

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

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

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

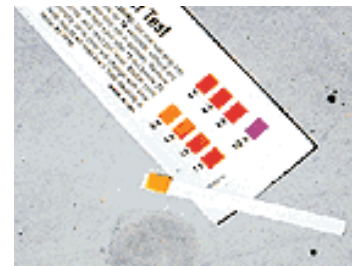
In the above example, if the flooring material to be used is rubber, solid vinyl or wood, the manufacturer would not likely recommend the installation since their upper limit is usually 3.0 lbs. On the other hand, if this were a vinyl composition tile installation, it would probably be acceptable, since 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.

## 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 or sanding. 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](http://www.astm.org)



[www.taylortools.com](http://www.taylortools.com)