

# Common Moisture Solutions

## 100% SOLIDS EPOXY - 100% RH

### Pros:

- 100% Mitigation- every time
- One time application
- Stays in place through flooring replacement

### Cons:

- 2-Part
- 8-12 Hr Dry Time
- Must bead blast for profile
- Cost



Example: Uzin PE-460

## MOISTURE MEMBRANE - 100% RH

### Pros:

- 100% Mitigation
- Fast Installation
- Works with multiple flooring products

### Cons:

- One time use
- Remove when flooring is replaced



Example: Traxxshield-100

## TROWEL ON LIQUID - 100% RH

### Pros:

- 100% Mitigation
- No testing required
- Easy application

### Cons:

- 8 Hr Dry Time



Example: WF Taylor Sahara

## ROLL ON LIQUID APPLIED - 95-97% RH

### Pros:

- Easy application
- Fast Drying

### Cons:

- Limited moisture remediation (95-97%)
- Must Moisture Test



Example: WF Taylor Zephyr 95% (2 coats)



# SOLUTIONS

new ideas for old problems

## Flooring Moisture 101

**INSPECT** to know what to **EXPECT**

Note: This document is intended for discussion purpose only. Always refer to complete manufacturer installation information.

### WHY TEST?

Excessive moisture brings with it major problems for the floor covering industry. If not addressed it can lead to catastrophic failure. The only way to know if there is excessive moisture is to test. There are several different and recognized testing methods available. With today's "Fast Track" building waiting for concrete to cure is difficult and construction shortcuts can result in compromised substrates. Excessive moisture can result in:

- Adhesive failure
- Flooring cupping and buckling
- Flooring delamination
- Mold & mildew

### TESTING STANDARDS

The ASTM (American Society for Testing Materials) is the industry standard.

- ASTM F1869-10 covers standards for calcium chloride testing
- ASTM F2170-09 covers standards for probe (In-Situ) testing

### MOISTURE BARRIER UNDER SLAB

A concrete vapor barrier is simply a sheet of polyethylene plastic placed directly on top of the sub-grade before the concrete floor or slab is poured to help keep moisture from the soil from passing up through the concrete. Many moisture problems associated with interior concrete floors and slabs on grade can be minimized or eliminated by installing a vapor barrier under the concrete.

- A proper moisture barrier under the slab is the most important deterrent to moisture related flooring failures.

# Moisture & PH



## RELATIVE HUMIDITY (RH)

Relative humidity in concrete slabs is an indication of the moisture content in the concrete slab. The most common reason for high moisture levels in a concrete slab is fast track building. There is not enough time allowed for the moisture to dissipate from the slab. It can take months to come down to an acceptable level.



## VAPOR EMISSION (MVER)

The anhydrous calcium chloride test was developed as a qualitative evaluation of floor moisture condition and became the industry standard in the 1960's, since then thousands of MVER tests are run each year in the U.S. In the past decade more and more skepticism concerning the accuracy of this test has been called into question.



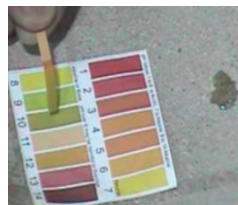
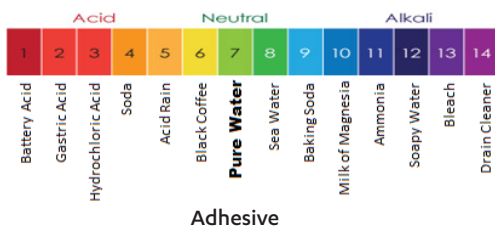
## HYDROSTATIC PRESSURE

Hydrostatic pressure is the result of the water table being higher than the substrate surface. Water is forced up through any cracks.



## HIGH PH

Moisture traveling through the substrate can, and often does, bring Alkali with it. Alkali has high PH. High PH can degrade adhesive resulting in flooring failure. Most adhesives have a tolerance to PH between 6 and 9, most concrete when poured has a PH of 13.



# Common Moisture Testing

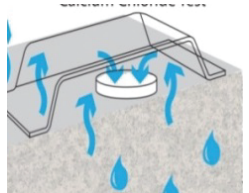
## RH PROBES IN-SITU (ASTM F2170-09)

In-Situ Probes measure Relative Humidity. Relative Humidity is the actual amount of moisture in the air compared to the amount of moisture that the air could hold if saturated, expressed as percent. In concrete, you measure the relative humidity of a small volume of air at the bottom of a hole drilled into the concrete.



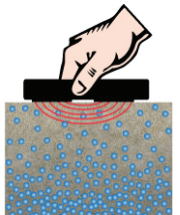
## CALCIUM CHLORIDE (ASTM F1869-10)

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).



## ELECTRONIC METERS

The meter is placed on the sub floor surface, the reading in one area is compared to a reading in another area, low readings are an indication of low moisture content. Electronic meters read the top layer of the substrate.



## PIN METERS

Pin meters are generally used to test moisture content in wood. Use for wood flooring and wood substrates. Pin meters are generally either an indicator (light or buzzer) or digital read out.



## MAT TEST

Tape an 2' x 2' plastic sheet to the cleaned concrete substrate. Leave in place for 24 hours. Dark concrete or visible moisture droplets is an indication of a moisture problem.

