

**SECTION 01450
CONCRETE MOISTURE VAPOR EMISSION AND PH TESTING**

PART 1 – GENERAL

1.1 Section Includes

- A. Provide concrete moisture vapor emission and pH testing to all concrete specified to be covered with floor coverings or resinous coatings. Includes concrete placed below, on and above grade.
- B. Testing shall take place after allowing concrete to dry for a minimum of 90 days. Testing to be scheduled no less than 1 or more than 3 weeks prior to scheduled floor installation.

1.2 Related Sections

- A. Section 09620 – Specialty Floorings
- B. Section 09640 – Wood Flooring
- C. Section 09650 – Resilient Flooring
- D. Section 09660 – Static Control Flooring
- E. Section 09670 – Fluid Applied Flooring
- F. Section 09680 – Carpet

1.3 References

- A. ASTM F-1869-04 – Standard Test Method for Measuring Vapor Emission Rate of Concrete subfloor using Anhydrous Calcium Chloride.
- B. ASTM F-710 – Standard Practice for preparing Concrete floors and other Monolithic floors to receive Resilient Flooring.

1.4 Submittals

- A. Report all test results in chart form listing test dates, start/stop time, start/stop weight, weight gain in grams, moisture vapor emission value and pH levels.
- B. List test locations on chart.
- C. Include pictures, plans/drawing of testing site locations.
- D. Deliver results in duplicate for distribution to Architect and General Contractor.

1.5 Quality Assurance

- A. Independent Testing Agency
 - 1. Certified by Test Kit Manufacturer for product use.
 - 2. Other agency with verifiable experience.
- B. Commercially produced Moisture Vapor Emission Test Kits
 - 1. Test dish including Calcium Chloride must be commercially packaged and delivered to site in sealed factory wrapping.
 - 2. Test dome from same manufacturer as dish.
 - 3. Test kit must comply with ASTM Standards of size and weight.

VaporGauge

- C. pH paper and distilled or de-ionized water.

PART 2 – PRODUCTS

2.01 – Manufacturers

- A. Calcium Chloride Test and pH Test Manufactured by VaporGauge (877) 777-6360
- B. Calcium Chloride Test and pH Test Manufactured by Taylor Tools (303) 371-7667
- C. Or Equal

PART 3 – EXECUTION

3.01 – Concrete Moisture Vapor Emission and pH Test

- A. The test site should be maintained at the same temperature and humidity conditions as those anticipated during normal occupancy. These temperature and humidity levels should be maintained for 48 hours prior and during test period. If meeting this criteria is not possible, then minimum conditions should be 75 ± 10 degrees F and 50 ± 10 percent relative humidity. When a building is not under HVAC control, a recording hygrometer or data logger shall be in place recording conditions during the test period. A transcript of this information must be included with the test report.
- B. The number of test sites is determined by the square footage of the facility. The minimum number of tests to be placed is equal to 3 for the first 1,000 Sq. Ft. and 1 for each additional 1,000 Sq. Ft.
- C. Remove foreign substances such as adhesives, curing compounds, sealers and floor covering materials. Prepare a 20"X20" test site by mechanical means and leave exposed a minimum of 24 hours prior to setting each test.
- D. Remove Calcium Chloride from packaging and weigh with a gram scale capable of measuring 0.1 gram. Record the start weight and time.
- E. Expose Calcium Chloride and set dish on concrete surface.
- F. Install test dome and allow test to proceed for 60-72 hours.
- G. Retrieve test dish by carefully cutting through dome. Close and reseal test dish.
- H. Weigh test dish on site recording end weight and time.
- I. Calculate and report results as "pounds of emission per 1,000 Sq. Ft. per in a 24 hour period".
- J. Perform one alkalinity test for every Calcium Chloride test. Place a quarter-size amount of solution on the test site. Let solution stand for sixty seconds. Place pH paper into solution and let stand for five seconds. Remove pH paper and immediately compare to color chart provided by the manufacturer.

End of Section