GILSON COMPANY, INC.

OPERATING MANUAL

Moisture Emission Test Kits
HM-674B & HM-674D

HM-674D

INTRODUCTION

These instructions are a guide for the general use of this apparatus. For specifications and complete test protocol, please refer to ASTM F 1869.

PREPARATION

Required Tests

3 kits are required to test areas up to 1,000ft^2 (93M^2). One additional test kit is required for each additional 1,000ft^2 (93M^2) of area.

Conditions Required

Ambient conditions must consist of temperatures between 65°—85°F (18 - 29°C) with 40—60% Relative humidity for at least 48 hours prior to testing. Temperature and relative humidity data should be recorded.

Surface Preparation

Moisture emission tests must be performed on concrete surfaces completely free of residual adhesives, curing compounds, sealers, paints, coatings, floor coverings, etc. It may be necessary to remove such residues by abrasion or grinding for proper testing.

WARNING!

Residue from resilient flooring, backing, lining felt, or asphaltic cut-back adhesives may contain asbestos fibers or crystalline silica. DO NOT disturb these materials without confirmation that they are free of asbestos, and do not remove any material without using the proper Personal Protection Equipment specified by the Occupational Safety and Health Administration (OSHA).

A minimum 20x20in (508x508mm) of surface area should be thoroughly cleaned for testing. Tests must remain undisturbed for 60—72 hours. Preparation of tests in area under direct sunlight is not recommended.

OPERATING INSTRUCTIONS

1. ***Weigh and Record Calcium Chloride Dish***
   Remove test dish from the silver package. Weigh and record the starting weight to the nearest 1/10g on chloride dish. Record location, time and date of testing.

2. ***Break Seal***
   Remove snap-fit cover of dish, exposing calcium chloride. Place cover under test dish to reuse after conclusion of testing. On the prepared concrete slab, place opened container.

3. ***Install Test Kit***
   Remove white paper from sealing adhesive and dispose. Avoid spilling the calcium chloride. Spillage will require a new dish to be opened, since a required amount of material is needed for valid testing. Promptly place the dome over the test dish. Firmly press along the edges of the sealing adhesive to ensure proper bonding of the unit to the floor. To ensure no air is able to exit from the enclosed area of test dome, lightly press the top of the dome with your hand.

4. ***Test Undisturbed for 60—72 Hours***
   Once the dome is installed, it must remain undisturbed with no exposure to direct sunlight. If dome damage occurs, but no air leaks are detected and calcium chloride material is intact, results may be valid. After 60—72 hours of testing, carefully remove dome and remove the open dish. Immediately replace the dish cover and reseal by pressing the snap-fit cover onto the dish, avoiding spillage of the calcium chloride.

5. ***Weigh the Dish***
   Weigh the sealed dish on the same gram scale used at the beginning of the test. Record final weight, time and date, and test location. Remove soft adhesive from concrete surface.

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PHONE: 800-444-1508
740-548-7298
P.O. Box 200, Lewis Center, Ohio 43035-0200
E-mail: customerservice@gilsonco.com **Product Web Page:** www.globalgilson.com
FAX: 800-255-5314
740-548-5314

CALCULATION

1. Use formula below to calculate vapor emission volume.
2. Results are measured in lbs per 1,000ft^2 over a period of 24 hours.

$$\text{MVER} = \frac{24 \times 1{,}000 \times \Delta M}{453.612 \times A \times T} = \frac{52.91 \times \Delta M}{A \times T}$$

Where:

MVER = Moisture Vapor Emission Rate, lb/1,000ft^2/24 hours

ΔM = Change in mass (weight gain) of anhydrous calcium chloride, in grams

A = Contact area of the flanged cover on concrete, ft^2, after deducting the area of the dish. (Nominal value for HM-674 is 0.4495ft^2)

T = Exposure (test) time, in hours

Example:

T (Test Time) = 72 hours
ΔM (Change in mass of dish) = 3.0g
A (Contact area of test minus area of dish) = 0.4495ft^2

52.91 x 3.0 = 158.73
0.4495 x 72 = 32.36
158.73 ÷ 32.36 = 4.91

MVER = 4.91

MOISTURE & ALKALINITY DATA CHART

Job Name: _____ ***Date:*** _____

Job Location: _____

Conducted By: _____ ***Phone:*** _____

Start Date: _____ ***End Date:*** _____

Room Temperature: _____ ***Room Temperature:*** _____

Humidity: _____ ***Humidity:*** _____

TEST #	LOCATION	START OF TEST WEIGHT	START OF TEST TIME	END OF TEST WEIGHT	END OF TEST TIME	WT. GAIN IN GRAMS (ΔM)	TOTAL HOURS (T)	VAPOR EMISSION (MVER)	PH READING