

# ASTM F2170 Checklist

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This checklist has been provided as a tool to aid in the compliance of relative humidity testing per ASTM F2170.

**It is highly recommended that you obtain your own copy of ASTM F2170 at**  
<http://www.astm.org/Standards/F2170.htm>

- Step 1.  Verify relative humidity measuring instrument conforms to section 6 of ASTM F2170.
- Verify Conformity to figure #1 and figure #2 found in Section 6 of F2170
  - Verify NIST-traceable calibration certificate is on file.
- Step 2.  Check calibration of measuring instrument per section 8 of ASTM F2170.
- For new unused probes, proceed to next step.
  - For re-useable probes: (Not required for RapidRH)
    - A calibration check within 30 days before use is required. Note date on report.
- Step 3.  Verify 48 hour service conditioning of concrete floor slab and the occupied air space above the floor slab per section 9 of ASTM F2170.
- Concrete floor slab shall be at service temperature and the occupied air space above the floor slab shall be at service temperature and service relative humidity for at least 48 hours.
- Step 4.  Determine number and location of test holes per section 10.1 of ASTM F2170.
- Three test holes for the first 1000 ft<sup>2</sup> (100 m<sup>2</sup>) and at least one additional test for each additional 1000 ft<sup>2</sup> (100 m<sup>2</sup>).
  - Record total area of concrete slab and number of test holes required on report.
- Step 5.  Determine depth of test holes per section 10.2 of ASTM F2170.
- 40% of slab thickness if slab is drying from top only.
  - 20% of slab thickness if slab is drying from top and bottom.
  - Record concrete slab thickness and depth of test holes on report.
- Step 6.  Drill and prepare test holes per section 10.3 of ASTM F2170.
- Note location of test holes on site map.
  - For RapidRH, place serial number decal of sensor with corresponding test hole on report.
- Step 7.  Verify 24-hour moisture equilibrium period for each test hole per section 10.3.4 of ASTM F2170.
- Step 8.  Perform relative humidity measurements per section 10.5 of ASTM F2170.
- Verify that meter reading does not drift more than 1% relative humidity over a 5 minute period.
  - A RapidRH reader can be read immediately after insertion in to each test hole since the sensor has already been equilibrated for at least 24 hours.
  - Re-usable probes should equilibrate at least one (1) hour in each test hole to help ensure an accurate measurement.
- Step 9.  Record and report the results per section 11 of ASTM F2170.

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**Report of Relative Humidity in Concrete  
Per ASTM F2170**

Name of Structure: \_\_\_\_\_

Address of Structure: \_\_\_\_\_

Floor Identification (if more than one floor): \_\_\_\_\_

Step 1.) Make and model of measuring instrument(s) used: \_\_\_\_\_  
a. Verify NIST-traceable calibration certificate for each probe is on file.

Step 2.) Last calibration date of measuring instrument(s) used: MM/DD/YY \_\_\_\_\_  
a. NOTE: for used probes, calibration or verification date must be within 30 days from current usage.

Step 3.) 48 hour service conditioning verified? Yes or No

Step 4.) Concrete slab area: ft<sup>2</sup> or m<sup>2</sup> \_\_\_\_\_ Number of test holes: \_\_\_\_\_

Step 5.) Concrete slab thickness: in. or mm \_\_\_\_\_ Depth of test holes: in. or mm \_\_\_\_\_

Step 6.) Test holes prepped in accordance to sections 10.3.1 to 10.3.3 of ASTM F2170? Yes or No

Step 7.) 24 hour moisture equilibrium period verified for each test hole? Yes or No

**Tests Performed By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

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## Report of Relative Humidity in Concrete Per ASTM F2170

Steps 8 & 9) Measurements and data record (Print as many of these sheets as necessary to complete report.)

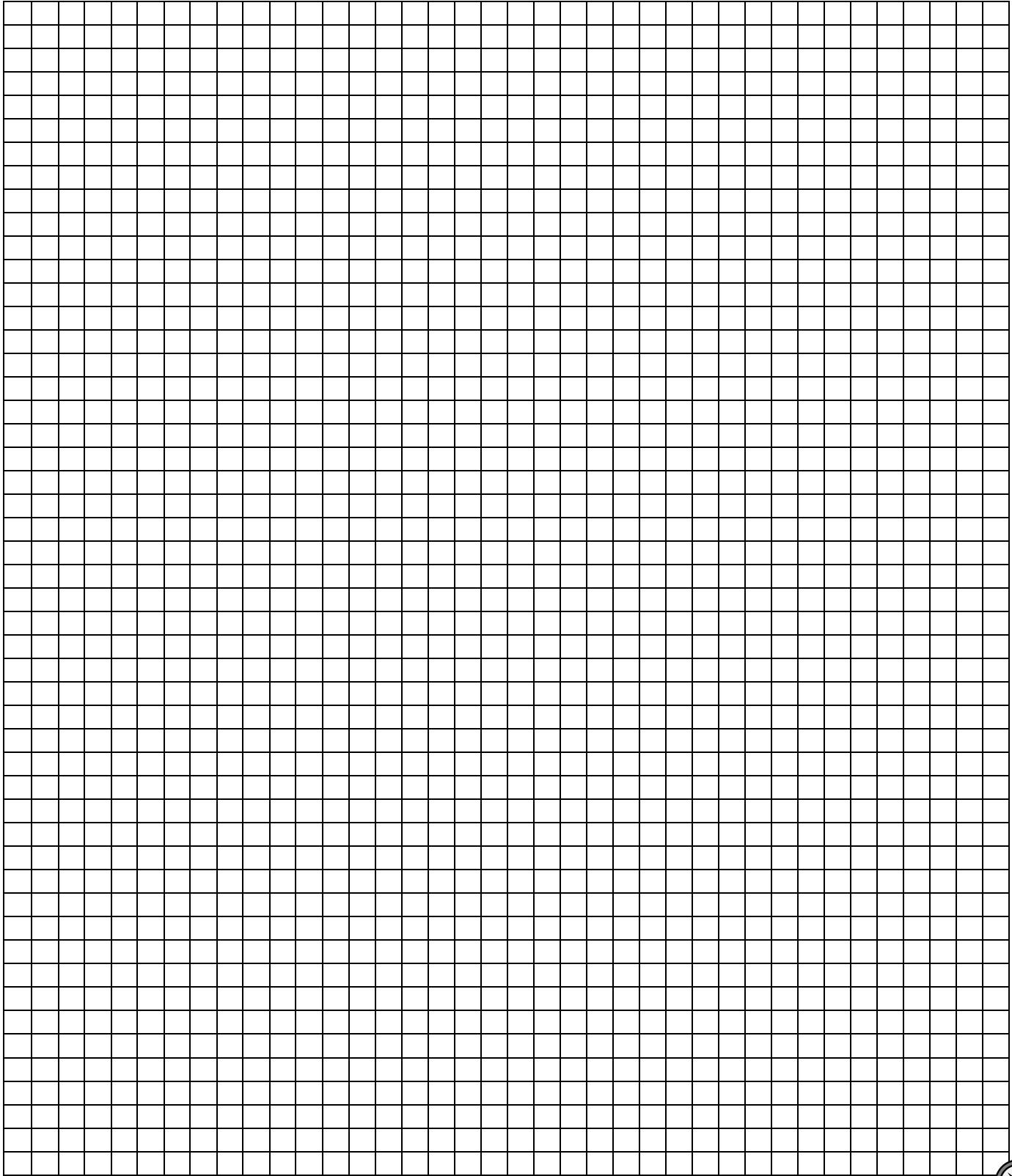
|   |  |  |  |  |  |
|---|--|--|--|--|--|
| Test Hole #                                   |  |  |  |  |  |
| Test Probe or Sensor Serial #                 |  |  |  |  |  |
| Date  |  |  |  |  |  |
| Time  |  |  |  |  |  |
| Equilibrate time of probe in test hole (H:MM) |  |  |  |  |  |
| CONCRETE Relative Humidity (%)                |  |  |  |  |  |
| CONCRETE Temperature (°F)                     |  |  |  |  |  |
| AIR Relative Humidity (%)                     |  |  |  |  |  |
| AIR Temperature (°F)                          |  |  |  |  |  |
| Notes   |  |  |  |  |  |

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## Location Map for Relative Humidity Test Holes

Instructions: Indicate sensor locations with symbol ⊕ and number of test hole. Show doors, rooms, columns or other location indicators. Example: ⊕ #1



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