

HUMIDITY CHAMBER ANALYSIS OF TRAFFIC PAINTS

1. SCOPE:

- 1.1 This method details the use of a humidity chamber in the drying time analysis of waterborne traffic paints.

2. APPARATUS AND MATERIALS:

- 2.1. Humidity chamber
- 2.2. Hygrometer/Thermometer unit (See Note 5.1)
- 2.3. Cheese cloth
- 2.4. Glass panels (4" x 10" x 1/8")
- 2.5. Micrometer adjustable film applicator (6" path width)
- 2.6 Eccentric wet film thickness wheel
- 2.7. Drying time wheel and ramp

3. PROCEDURE:

- 3.1. Prepare the humidity chamber by closing all vents and lining the bottom of the chamber with cheese cloth.
- 3.2 Add a sufficient amount of distilled water to saturate and cover the cheese cloth.
- 3.3 Place the hygrometer/thermometer unit in the center and against the back wall of the chamber.
- 3.4 Close the door and allow the chamber to equilibrate.
- 3.5 Adjust room temperature so that the temperature in the chamber is held at $73^{\circ} \pm 3^{\circ} \text{ F}$. Adjust the chamber vents so that the relative humidity in the chamber is $92 \pm 2\%$. Monitor the temperature and relative humidity conditions within the chamber throughout the duration of testing. Make appropriate adjustments to maintain acceptable conditions during each analysis.

- 3.6. Obtain a clean, dry glass panel for each analysis. The panels should be approximately 4 inches wide by 10 inches long by and 1/8 inch thick so as to accommodate a 3 inch wide stripe of the paint to be tested. The paint should be applied with a film applicator that will reproducibly apply a 15 ± 0.5 mil wet film.
- 3.7. Immediately after applying the paint stripe, place the panel horizontally in the preconditioned humidity chamber.
- 3.8. Evaluate the drying time of the paint in accordance with ASTM D 711-89, Standard Test Method for No-Pick-Up Time of Traffic Paint.

4. REPORT:

- 4.1 Report the elapsed time between application of the film and the point at which no paint is picked up by the wheel. This time interval should be reported to the nearest minute, not to exceed 85 minutes.

5. NOTES:

- 5.1 The hygrometer/thermometer unit should comply with or exceed the following specifications; thermometer range of 32° to 122°F with an accuracy of $\pm 1^\circ\text{F}$, hygrometer range of 25 to 95 % relative humidity with an accuracy of 2% relative humidity. The hygrometer/thermometer unit should be calibrated and certified to meet these specifications annually.
- 5.2 Do not place more than two specimens in the chamber at any given time. Failing specimens should be verified individually

APPROVED

DIRECTOR
DIVISION OF MATERIALS

DATE

03/07/08

Kentucky Method 64-251-08
Revised 03/07/08
Supersedes 64-251-02
Dated 12/27/02

Km25108.doc

KM 64-251-08