

Kentucky Method 64-256-082
Revised ~~12/27/02~~04/18/08
Supersedes 64-256-020
Dated ~~1/13/00~~12/27/02

RESISTANCE TESTING OF ~~URETHANE BRIDGE~~STRUCTURAL STEEL COATINGS TO METHYL ETHYL KETONE

1. SCOPE:

- 1.1 This method outlines the use of methyl ethyl ketone (MEK) for chemical resistance evaluations of ~~urethane bridge~~structural steel coatings. This method follows the procedure used in ASTM D 4752-95 "Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub".

2. APPARATUS AND MATERIALS:

- 2.1. Test Panels (4 ~~inches~~" x 8 ~~inches~~", cold rolled steel)
- 2.2. Micrometer adjustable film applicator (6" path width)
- 2.3. Wet film thickness notch gage
- 2.~~52~~. MEK (Methyl Ethyl Ketone)
- 2.~~36~~. Cheese Cloth
- 2.~~47~~. Squeeze Bottle
- 2.~~58~~. Solvent Resistant Gloves

3. PROCEDURE:

- 3.1. ~~Laboratory testing will be performed on a sample prepared by pulling a draw down of the primer (2-4 mil wft) and allowing it to air dry for 24 hours. A draw down of the urethane top coat (2-4 mils wft) will be placed over the primer after the 24 hour air cure. This coat will be air dried for 24 hours then oven dried at 110 °C for 24 hours. After the oven curing period, chemical resistance testing will be performed as follows.~~ Apply properly mixed coating, of an appropriate wet film thickness, to a test panel using a micrometer adjustable film applicator. (See Note 5.1)
- 3.2. Verify the wet film thickness of the applied coating.
- 3.3. Dry the specimen at $72^{\circ} \pm 5^{\circ}$ F and $50 \pm 10\%$ relative humidity for 24 hours.
- 3.4. Cure the dried specimen in an oven at $110^{\circ} \pm 5^{\circ}$ C for 24 hours.

- 3.25. ~~Select an area of the coated surface to be tested. Clean the area with tap water and a dry cloth. Measure the dry film thickness of the coating in the area to be tested. Mark a section of the cleaned area prepared specimen, measuring six (6) inches by one (1) inch with a solvent resistant marker, in which to perform the MEK double rubs.~~
- 3.36. Fold a twelve (12) inch square piece of cheese cloth so that the thickness is doubled and saturate ~~it~~ until dripping wet with MEK. (See Note 5.2)
- 3.7. ~~Don solvent resistant gloves and Place~~ place an index finger in the center of the cheese cloth and gather the remaining cloth.
- 3.8. With the index finger at a 45 degree angle to the surface, rub with moderate pressure over the marked area. Complete 150 double rubs. (See Note 5.3) ~~Do not allow more than ten (10) seconds to elapse between wetting the cloth and beginning to rub the coating. Wet the cloth as often as needed without lifting it from the surface. One forward and backward motion constitutes one double rub. A control test should be done adjacent to the MEK test area. The control test uses only a dry clean cloth rubbed in the same manner as the original test to establish the effects of the cloth on the coating.~~

4. REPORT:

- 4.1. Document the applied wet film thickness.
- 4.2. ~~The r~~Report ~~should reflect~~ the performance rating assigned ~~to of~~ the coating based on the table below.

Scale for Resistance Rating

<u>Resistance Rating</u>	<u>Description</u>
5	No effect on surface; no urethane-coating on cloth after 150 double rubs
4	Burnished appearance in rubbed area; slight amount of urethane-coating on cloth after 150 double rubs.
3	Some marring and apparent depression of the film after 150 double rubs.
2	Heavy marring; obvious depression in the film after 150 double rubs.
1	Heavy depression in the film but no actual penetration to the substrate after 150 double rubs.

4.23. Acceptable coatings will not have any heavy marring or penetration of the coating. All coatings receiving a rating of 3, ~~4, or 5~~ or greater will be accepted for project use.

5. NOTES:

—5.1 Consult the coating manufacturers product data sheet for proper mixing procedures and application thickness.

5.2 Do not allow more than ten (10) seconds to elapse between wetting the cloth and beginning to rub the coating.

5.3 Wet the cloth as often as needed without lifting it from the surface. One forward and backward motion constitutes one double rub.

APPROVED

DIRECTOR
DIVISION OF MATERIALS

DATE 04/18/08

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