Ford Motor Company

FORD LABORATORY TEST METHOD BI 120-01

PREPARATION OF ELECTROCOATED TEST PANELS

Application

This procedure describes the approved method of preparing electrocoated panels for laboratory tests of the applied coatings.

Apparatus Required

Power Source

Having a capability of 0 to 1000 volts D.C. and 0 to 20 amperes.

Note 1: The maximum peak to peak for the primary AC ripple must not exceed 10 % of the indicated coating voltage.

Note 2: Equipment having a lower voltage range may be used providing voltages higher than the maximum required by the material are available.

Oven

Capable of maintaining temperatures up to 200 +/- 2 °C, or specified by the applicable Engineering Materials Specification, or the paint supplier.

Coating Tank

Having a capacity of approximately 19 liters. Dimensions approximately 280 mm I.D. and 330 mm high - made of non-conductive, acid-resistant material or coated with an insulating material.

Laboratory Stirrer

Having a capacity of 0 to 700 rpm, using a 450 mm long stirrer shaft with 50 mm diameter square end single blade propeller.

Electrode Holders

To support two (2) test panels facing each other 50 mm apart.

Electrode

Stainless steel panel, 100 x 300 x 0.89 mm, to be used at the opposite polarity to the coating polarity of the test panels below.

Date	Action	Revisions
2001 03 19	Revised	Editorial – no technical change A. Cockman
1989 08 07		

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Steel Test Panels

Panels required for test are to be special phosphate coated steel panels conforming to Manufacturing Specification UMA 18003, unless otherwise specified in the applicable Engineering Materials Specification. Panels which have not been newly phosphated should be dried at 120 +/- 2 °C for six (6) minutes, prior to electrocoating, to remove absorbed moisture.

Thermostat

Capable of controlling the bath temperature to +/- 1 °C.

Low Conductivity Water

Conductivity must be no greater than 10 micromhos/cm at 25 °C (ASTM D 1125).

Procedure

1. A paint sample is stirred with a spatula, allowing the tip to contact the bottom of the can. Mixing is adequate if no evidence of settling is indicated when the spatula is withdrawn and examined.

2. A suitable quantity of material is made up using the specified formulation. The solids, pH and conductivity should be measured and, if necessary, adjusted to the supplier's recommendation.

   Note: Production tank samples are used as received without additions. Suitable stirring time after sampling and transportation is required immediately on arrival at the appropriate laboratory.

3. Position the stirrer in the tank so that the propeller is at least 50 mm from the bottom.

   Note: Stirring speed must not exceed 700 rpm, so that in this and subsequent operations, air will not be incorporated.

4. Heat the bath to operating temperature recommended by the manufacturer.

5. Stir the bath at the recommended temperature for 16 h minimum.

6. Place the test panel and electrode panel of equal size in the electrode holders so that the two (2) panels are parallel to each other and 50 mm apart. 150 mm of length of the panels must be immersed. The lower edges of the panels must be at least 50 mm from the bottom of the tank.

7. The voltage is raised from zero to the coating voltage within 15 seconds. Maintain the voltage for 120 seconds and then reduce to zero in 2 seconds.

   Note 1: During the coating process the current must not exceed 1 Amp./dm^2

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