

**Specification No: TWB 7900/PT**

**PROCESS SPECIFICATION FOR ELECTROPHORETIC PAINT ON STEEL**

**1. SCOPE**

This specification describes the requirements for Cathodic Electrophoretic Paint coatings on steel to meet 480 hours salt spray resistance.

*Note:* For lower performance requirements TWB 8100/HB should be specified

**2. DEFINITIONS**

**SIGNIFICANT SURFACES:**

The part of the article to be painted which is essential for serviceability and/or appearance

**REFERENCE AREA:**

The area or areas within which destructive tests may be made

**3. ESSENTIAL INFORMATION TO BE SUPPLIED BY THE CUSTOMER**

The customer (in consultation with TWBayston Limited where necessary) must provide the following:

- 3.1. The reference numbers of this specification
- 3.2. Drawing or marked specimen disclosing:
  - a) Jig witness mark location
  - b) Reference Area to perform destructive testing, or test pieces
  - c) Significant surfaces
- 3.3 Any special pre-treatment requirements
- 3.4 The condition of parts before processing including details of any lubricant or preservatives
- 3.5 The base material specification
- 3.6 Packing requirements
- 3.7 Acceptability (or otherwise) of the use of touch up material

If any of the above requirements are not given or are unavailable TWBayston Limited will process articles in accordance with best practice. Customer drawing requirements shall take precedence over this specification or any other TWBayston Limited related documents

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**4. PROCESS**

TWBayston Limited will select an appropriate process route giving due consideration to customer requirements, surface condition and the base material of the components.

**5. REQUIREMENTS OF THE COATING**

**5.1 APPEARANCE**

Unless specified otherwise the Significant Surface will pass TWBayston Limited Inspection Method 1.002: VISUAL INSPECTION OF PAINT FILMS.

***Note 1***

Unpainted areas or scratches of less than 3mm x 3mm are permissible as jig witness marks

***Note 2***

Colour and Gloss levels are not an inspection criteria

**5.2 ADHESION TEST**

Unless specified otherwise parts will be tested to TWBayston Limited Inspection Method 1.005: CROSS HATCH ADHESION TEST FOR PAINT FILMS. Adhesion will be better than 10% loss. This to be carried out on the Reference Area or test piece. Marks of the adhesion/hardness test on the test Reference Area are permissible.

**5.3 PAINT FILM THICKNESS**

Paint thickness will be measured by Eddy Current thickness meter as described in BS5411 pt3. Results to be within 10-24 microns.

**5.4 HARDNESS**

Unless specified otherwise parts or the test piece shall be tested to TWBayston Limited Inspection Method 1.004: PENCIL HARDNESS TEST FOR PAINT FILMS. Hardness shall be 4H or better. Marks of the adhesion/hardness test on the test Reference Area are permissible.

**5.5 CURE AND SOLVENT RESISTANCE**

Unless specified otherwise parts shall meet TWBayston Limited Inspection Method 1.003: CURE TEST FOR PAINTED FILMS

**5.6 CORROSION RESISTANCE**

The paint film shall meet a minimum of 480 hours Salt Spray resistance when tested in accordance with ASTM B117.

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5.7 TOUCH-UP

Unless specified otherwise touch up may be carried out to an area of the component on which the paint film does not adhere due to component design, air pockets, jig marks etc. The touch-up paint will be approved by the customer.

**6. TEST PIECE**

In cases where excessive surface roughness on the part prevent exact measurement or a test Reference Area is not allowable, the customer shall supply a test piece which has undergone the same surface treatment as the related part for test purposes. It is strongly recommended that the test piece be of the same material and has undergone the same manufacturing techniques to give accurate results.

**7. INSPECTION**

7.1 SAMPLING

Unless specified otherwise the TWBayston Limited Inspection Plan shall be used for the inspection and tests referred to in clauses 5.1 to 5.5 inclusive. The inspection and test referred to in clause 5.6 will be the responsibility of the customer.

7.2 RECORDS

Unless specified otherwise all records of inspection shall be recorded as laid down in TWBayston Limited Inspection Plan.

7.3 PROCESS CHANGE

Unless agreed otherwise TWBayston Limited are free to review and change process routes, plant, equipment and process parameters without disclosure to the customer provided in so doing the performance of the coating is not impaired.