



COATED FASTENER CORROSION TEST

Application

This test procedure is used to evaluate the corrosion performance of coatings applied to fasteners and mounted on test panels. It is designed to simulate the corrosive conditions of the Arizona Proving Ground (APG) Vehicle Accelerated Corrosion Test (CETP 00.00-R-311).

Apparatus Required

Automatic Method:

Humidity Cabinet

Thermotron Industries
291 Hollen Park Drive
Holland, MI 49423
(616) 392-1491

Automated Cyclic Corrosion Test Chamber, model ACT-30-CHM-1, or equivalent, with forced air circulation, temperature control of $\pm 2^{\circ}\text{C}$ to 65°C and relative humidity control of $\pm 2\%$ up to 90%.

Manual Method:

Humidity Cabinet

Thermotron Industries
291 Hollen Park Drive
Holland, MI 49423
(616) 392-1491

Model No. SE-600, or equivalent with forced air circulation, temperature control of $\pm 2^{\circ}\text{C}$ to 65°C and relative humidity control of $\pm 2\%$ up to 90%.

Materials Required

Tank

Polyethylene or plastic-lined tank, with cover, of sufficient size and capacity to permit the test samples to be sprayed with the salt solution. For 100 x 300 mm test panels a 42 L Nalgene polyethylene tank (VWR Catalog No. 60463 - 040) is adequate.

Brush

Camel hair brush, flat style (VWR Catalog No. 17215-067, or equivalent).

Towels

Paper or cloth.

Date	Action	Revisions
2005 03 08	Revised	Automatic/Manual Cabinet procedure
2004 07 02	Activated	



**Sodium Chloride**

Reagent grade.

Hydrochloric Acid

Reagent grade.

Sodium Hydroxide

Reagent grade.

Distilled or Deionized Water

10-ppm max dissolved solids per ASTM D 1888.

Kaolin

Powder, N.F. grade.

Stop-off Lacquer

Microshield Stop-off Lacquer, or equivalent.

Source: Pyramid Plastic
Tolber Division
P.O. Box 704
Hope, Arkansas 71802-0704
Telephone: (501) 777-3251 or 5759

Test Panels:

Panels shall be prepared in accordance to FLTM BI 120-01 (for electrocoat systems) or as indicated by the requesting Engineering activity.

Panels shall be placed in slotted racks, such as used in salt spray testing at an angle of approximately 25° +/- 5° from vertical. The fasteners shall be driven into the panel at a right angle, and shall be alternately positioned in such a manner as not to allow corrosion bleeding from one fastener to another.

Sample Preparation:

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5% relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

In order to simulate dust contamination, load a camel hair brush with a small amount of dry kaolin powder and lightly brush it on the painted surfaces to obtain a uniform, thin, dry coating. (Remove kaolin from any masked areas) The application of kaolin shall occur only once (prior to testing).

(Optional) In instances of extended testing or for paint-coating systems that do not resist corrosive attack at the edges, it may be necessary to mask the edges and holes of the sample parts and the holes, edges and backs of panels with an air-dry stop-off lacquer. The requesting Engineering Activity shall denote such masking on the Laboratory Test Request. Allow drying for twenty-four hours.