TEST FOR DETRIMENTAL EFFECTS DUE TO ABUSIVE WAXING METHODS

Application

This method is used to determine the resistance to failure of polymeric laminates, molded-in-color polymers, painted metal and painted plastic parts and representative test panels when subjected extended exposure to UV and heat following the improper application of service wax.

Materials and Apparatus Required

1. **Weather-O-meter**
Atlas CI4000 Xenon Arc Weather-Ometer, modified with borosilicate, inner and outer filters or equivalent per SAE J1960.

Atlas Electric Devices Company http://www.atlas-mts.com
4114 North Ravenswood Avenue
Chicago, IL 60613

2. **Gloss Meter**
Byk-Gardner model GB4532 or equivalent per FLTM BI 110-01, 20° gloss.

BYK-Gardner USA http://www.bykgardner.com
9104 Guiford Road
Columbia, MD 21046

3. **Color Scale**
AATCC Gray Scale (part number 08359) or equivalent per ISO 105 A-02/AATCC.

AATCC http://www.aatcc.org
PO Box 12215
Research Triangle Park, NC 27709

4. **Color Spectrophotometer**
i5 Spectrophotometer or equivalent per FLTM BI 109-03

Gretag-Macbeth http://www.gretag-macbeth.com
617 Little Britain Road
New Windsor, NY 12553

5. **Oven**
Convection Oven
Fischer Isotemp, catalogue number 13-247-750F or equivalent

Fischer Scientific http://www.fischersci.com
1401 Wayne Avenue
Indiana, PA 15701

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6. Wax
Motorcraft Premium Liquid Wax, ZC-53-A or equivalent.

Conditioning and Test Conditions

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.

Procedure

A. Laminate and Molded-In-Color Test Specimens

Prepare plaques as required by the relevant Engineering Materials Specification.

B. Painted Sheet Steel Specimens

Prepare plaques as required by the relevant Engineering Materials Specification. Panels for this test shall have their backs and edges protected, e.g. sprayed with 50 micrometers of primer. There shall be no areas of steel unprotected.

1) Prepare and number seven replicates, measuring 60 X 150 mm, of each material - six specimens for exposure testing, one to be retained as a control.

2) Measure the initial gloss levels (FLTM BI 110-01, 20°, 60° for slightly curved specimens) and color levels (FLTM BI 109-03, Illuminant C, 10° Observer) on top and bottom of each plaque.

3) Apply the currently approved automotive wax to the top half of each plaque.

4) With three plaques of each material:
   - Bake the plaques at 180°F for four hours.
   - Attempt to remove the wax after baking by polishing by hand (do not use a buffing wheel).
   - Report the relative ease of removal and, if applicable, the approximate amount of wax that could not be removed.
   - Measure the resulting gloss and report as percent loss or increase, waxed and unwaxed sides.
   - Evaluation Procedure 1, waxed and unwaxed sides, relative to the untested retain sample.
   - Determine the spectrographic color change and report as ΔE, waxed and unwaxed sides.

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