GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW15891

Solvent Rub Method for Determining Cure of Painted Metal or Plastic Substrates

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. This standard describes the test method to determine the cure of a coating on painted metal or plastic parts and test panels.

1.2 Applicability. All vehicles.

1.3 Remarks. None.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

Relevant Material Specification

Relevant Product Certification Process (PCP)

3 Resources

3.1 Facilities.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition. Any deviations must be agreed by the responsible GM engineer.

3.2 Equipment.

3.2.1 A minimum of 12 cm x 12 cm of soft cloth i.e., cheesecloth (light weight, coarse, cotton gauze or similar).

3.2.2 Test Solvents. Each paint technology requires a solvent suitable to the paint technology. Use an appropriate solvent, as agreed upon between the paint supplier and the responsible GM engineer.

3.3 Test Vehicle/Test Piece. Minimum sample size of 10 cm x 10 cm.

3.4 Test Time. Reference the lab test procedure(s) in Section 4 for timing details.

3.5 Test Required Information. See 5.3.

3.6 Personnel/Skills. Test technicians skilled to prepare and meet requirements.

4 Procedure

4.1 Preparation.

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4.1.1 Test samples shall be cut from parts that are being evaluated when size and geometry of the part permit. When this is not possible, special test plaques (test panels of 100 mm x 300 mm are most suitable), shall be prepared using the same substrate material, substrate thickness, surface preparation (such as phosphatizing or anodizing), and coating material processing that represents the production part.

4.1.2 If this test is being used as quality control validation, the procedure is to be performed on completed parts/vehicle bodies.

4.1.3 The painted samples for technology approvals must be allowed to age per the relevant material specification, prior to conducting this cure test.

4.1.4 In-Plant Testing. Refer to the relevant product certification process (PCP) for the paint layer being evaluated.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 Fold cloth in quarters. Saturate cloth with the appropriate solvent. Squeeze out excess solvent and test immediately.

4.3.2 Firm pressure shall be exerted during rubbing. With a 25 mm to 50 mm back-and-forth motion, apply ten (10) double rubs (a back-and-forth motion constitutes one double rub) to the sample using the forefinger. The contact area should be a minimum of 16 mm in diameter.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. The test samples shall be evaluated by examining the painted surface and paint residue on the rubbing cloth. Samples shall be rated per the rating scales immediately upon completion of the test. If sample to be tested is electrodeposition coating (ELPO), primer surfacer, conductive primer or monocoat, use Table 1. If sample is clearcoated, use Table 2.

Table 1: Paint Rating for Elpo, Primer Surfacer, Primer or Monocoat Scale [Note 1]

Rating	Paint Surface Change	Paint Residue on Cloth
Zero (0)	No Change	None
One (1)	Slight: Barely Observable	Trace Amount
Three (3)	Moderate: Readily Noticeable, Tackiness	Readily Noticeable
Five (5)	Severe: Very Obvious, Sticky	Saturated with Color

Note 1: Test panels must have been given the recommended bake.

Table 2: Clearcoat Rating Scale

Rating	Clearcoat Surface Change
Zero (0)	No Change
One (1)	Slight: Barely Observable Haze
Three (3)	Moderate: Noticeable Haze, Tackiness
Five (5)	Severe: Very Obvious, Foggy, Sticky

5.3 Test Documentation. A written report must be submitted with the test samples to the responsible engineers.

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