



Oven Aging Test Procedure for Painted 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 a test method to evaluate the ability of painted plastics to withstand elevated temperatures incurred in weathering without any deleterious effects to the topcoat or underlying substrate.

1.2 Applicability. This test procedure applies to painted plastic plaques or parts.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14729

GMW14829

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.

3.2 Equipment.

3.2.1 Air circulating oven capable of maintaining 70 °C ± 3 °C.

3.3 Test Vehicle/Test Piece. Painted plastic test panel or part.

3.4 Test Time. Seven (7) days.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Trained laboratory technicians for preparation of paint samples and operation of equipment.

4 Procedure

4.1 Preparation. Not applicable.

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 Select representative samples from lot to be evaluated. Place all but one (1) (control sample) in oven. Do not allow oven samples to come into contact with each other.

4.3.2 Oven Exposure Time. Samples shall be exposed for seven (7) days.

4.3.3 At the conclusion of the oven exposure, remove and allow to recover to room temperature. Wipe half of panel with VM and P (Varnish Makers and Painters) naphtha and compare to the control sample. Examine entire painted surface for any visual changes; i.e., plasticizer migration, hazing, color changes, warping, substrate softening, etc.

4.3.4 Perform the Humidity Test (GMW14729) for 96 h.

4.3.5 At the conclusion of the exposure, remove and allow to recover to room temperature. On the other half of the cleaned half, perform Knife Crosshatch Adhesion Test (GMW14829, Method A).

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. Not applicable.

5.3 Test Documentation. The test report shall report the substrate material identification, paint material identification, thickness of each paint layer, visual observations and adhesion test results.

6 Safety

This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

VM and P Varnish Maker and Painters

8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Test to GMW17485

9 Release and Revisions

This standard was originated in November 2015. It was first approved by Paints – Vehicle Systems - Paint Materials and Facility in November 2015. It was first published in November 2015.

Issue	Publication Date	Description (Organization)
1	NOV 2015	Initial publication.