



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.

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.

GMW14729 GMW14829

2.3 Additional References. None.

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. Not applicable.

3.4 Test Time. Required test duration is defined in 4.3 for prescribed test procedures.

Note: Some tests are conducted concurrently, and some are conducted consecutively.

Calendar time:	Varies by test and/or procedure
Test time:	Varies by test and/or procedure
Coordination time:	Varies by test and/or procedure

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 7 d.

4.3.3 At the conclusion of the oven exposure, remove and allow to recover to room temperature. Wipe half of panel with Varnish Makers and Painters (VM and P) 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 Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

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