GM	WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW3368

Quick Knife Adhesion Test for Stationary Glass Bonding Materials

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 procedure to determine the compatibility of stationary glass adhesive to automotive paint and fixed glass systems. To determine adhesion capability of low modulus, low durometer adhesives, e.g., standard glass bonding urethane.

1.2 Applicability. In addition to determination the compatibility of glass adhesive to paint and glass systems, it may also be used on a variety of substrates with or without adhesive primers.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

9982270	9986400	GMW3041	GMW3221
9982280			

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 Quantity of 100 × 300 mm painted panels baked in gas fired oven unless otherwise specified.

3.2.2 Paintbrush or dabber applicator for priming.

3.2.3 Razor knife.

3.2.4 Air operated or electric cartridge dispense gun.

3.2.5 Metric linear measuring device capable of measuring to the nearest millimeter (mm).

3.2.6 Clamps, clamping devise for securing test panels.

3.3 Test Vehicle/Test Piece.

3.3.1 Test Material.

3.3.1.1 Appropriate pinchweld primer as needed.

3.3.1.2 Appropriate glass primer systems as needed.

© Copyright 2016 General Motors Company All Rights Reserved

Documents
Document Sharing Hub

Copyright General Motors Company
Provided by IHS Markit under license with General Motors Company
Reproduction, distribution or publication of these standards is expressly prohib
Licensee=/, User=,
Not for Resale,
Full document details: GM GMW3368 2016

3.3.1.3 Appropriate stationary glass bonding adhesive.

3.4 Test Time. Less than one (1) minute.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Persons performing this procedure must understand the content and techniques described within. As required, training maybe provided by the adhesive material suppliers approved to GM glass adhesives specifications that this procedure could be used for, e.g., 9982270, 9982280 and 9986400.

4 Procedure

Summary of Test Method. This test procedure is to be used to prepare painted metal and glass samples to determine the failure mode of the stationary glass adhesive sealing compound.

Standard Conditions. All testing in standard conditions to this standard shall be performed in accordance with GMW3221 Code A, Procedure for Standard Conditions of Organic Materials.

4.1 Preparation.

4.1.1 Test Sample Preparation.

4.1.1.1 Test Panel Aging.

4.1.1.1.1 Painted Panels. Unless otherwise specified, age painted test panels maximum 8 h at 22 °C ± 3 °C and 50% ± 5% maximum relative humidity (RH) prior to primer and/or adhesive application. Record the actual temperature and relative humidity.

4.1.1.2 Primer Application.

4.1.1.2.1 As applicable, apply primer (s) to the location of the painted panel or glass sample with 25 mm wide films in necessary lengths. Follow manufacturer's procedures and recommendations for primer flash, cure, and dry film thickness.

Note: Primers for adhesive testing will be used as required and approved by the responsible GM Engineering Group.

4.1.1.2.2 Unless otherwise specified, air dry primed panels for 30 minutes at 22 °C ± 3 °C and 50% ± 5% maximum relative humidity (RH). Record the actual temperature and relative humidity.

4.1.1.3 Adhesive Application.

4.1.1.3.1 Bead Size. Adhesive bead cross sections may range from 6 mm × 6 mm to 10 mm × 10 mm^2 of the appropriate stationary glass bonding adhesive.

4.1.1.3.2 Standard Quick Knife Adhesion (QKA) Length, Painted 100 mm × 300 mm Panels. Unless otherwise specified, apply 200 mm minimum length adhesive beads, evenly spaced apart, parallel to the 300 mm length of the painted panel.

4.1.1.3.3 Cold Cure for QKA, Painted 100 x 300 mm Panels. Apply five (5) evenly spaced adhesive beads to the painted panel parallel to the 300 mm length.

4.1.1.3.4 Glass or Other Substrates. When glass or other substrates are used for QKA testing, refer to the appropriate GM Engineering Group for agreement of substrate size and bead lengths to be used.

4.1.1.3.5 Aging. Unless otherwise specified, age the prepared samples (with adhesive) for 4 h at 22 °C ± 3 °C and 50% ± 5% maximum RH prior exposure to additional environmental conditions. Record the actual temperature and relative humidity.

4.1.1.4 Cure Conditions. Unless otherwise specified, allow the prepared test samples to cure for the durations and environments as indicated in the appropriate specifications (GMW3041). Record the actual temperature and relative humidity.

4.2 Conditions.

4.2.1 Environmental Conditions.

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.

© Copyright 2016 General Motors Company All Rights Reserved

Documents
Document Sharing Hub

Copyright General Motors Company
Provided by IHS Markit under license with General Motors Company
Reproduction, distribution or publication of these standards is expressly prohib
Licensee=/, User=,
Not for Resale,
Full document details: GM GMW3368 2016