



Windshield Coatings

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 test determines if non-lacerative windshield coatings are stained or otherwise degraded by cigarette smoke.

1.2 Applicability. This standard applies to passenger cars, and to multipurpose passenger vehicles, trucks, and buses of 4536 kg gross vehicle mass (weight) rating or less.

1.3 Remarks. This document is the GM Worldwide Glazing Testing Standard. Its purpose is to establish a common test methodology for glazing systems to ensure that a high quality world class system is consistently developed and produced. This is a living document and any suggestions or revisions will be reviewed and/or updated annually by the Fixed Glass Global Subsystem Leadership Team (GSSLT).

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3059

GMW3600

2.3 Additional References.

- 5-Phase Document.
- GM Security Guidelines. <https://gmweb.gm.com/HR/Security/Pages/FutureGuide.aspx>.
- Program specific Component Technical Specification (CTS).
- Subsystem Technical Specifications (SSTS).

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 Burette stand.

3.2.2 Two clamps for burette stand.

3.2.3 Non-filter short pack (7 mm) cigarettes (10).

3.2.4 Laboratory hood.

3.2.5 Holding fixture for glass sample.

3.2.6 Digital camera.

3.2.7 Personal Protection Equipment (PPE). Safety glasses.

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3.3 Test Vehicle/Test Piece. Sample size of 7 cm x 7 cm minimum.

3.3.1 GM shall approve validation methods for product/process changes before the supplier is committed to the change. Refer to GMW3600.

3.3.2 Unless otherwise specified, three samples of components or systems shall be tested.

3.3.3 All components/systems used in testing shall be within drawing specifications and have supporting data prior to start of test.

3.4 Test Time.

Calendar time: 1 d

Test time: 2 h

Coordination time: 2 h

3.5 Test Required Information.

3.5.1 Product Security. Security protocol for the test vehicle must be followed per GM Security Guidelines.

3.5.2 Notification. GM Validation shall be notified of test failures within 24 h period of occurrence.

3.5.3 Five (5) Phase. Supplier to develop five phase document approved by GM Lead Engineer for all test failures.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation. Not applicable.

4.2 Conditions. Test must be conducted in a laboratory hood with exhaust fan off and sliding door closed to minimize air currents. No materials that violate GMW3059 shall be used.

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 Ensure PPE is used.

4.3.2 Place Glass in the holding fixture.

4.3.3 Photograph the test setup and attach to the test report.

4.3.4 Cigarette is to be suspended horizontally from burette stand.

4.3.5 Sample is to be suspended horizontally from burette stand 10 cm above the cigarette.

4.3.6 Light cigarette.

4.3.7 When cigarette has finished burning, replace it with another.

4.3.8 Repeat 4.3.4 and 4.3.7 until ten (10) cigarettes have been burned.

4.3.9 Clean sample with ammoniated cleaner or the manufacturer's recommended cleaner.

4.3.10 Examine sample for evidence of degradation; i.e., yellowing or rippling.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. General Motors Validation is to be notified of test failures within a 24 h period of occurrence. Test samples shall have no objectionable discoloration from the cigarette smoke. Test samples are to remain fully functional and in compliance with Federal Regulations. Check program specific Component Technical Specification (CTS)/Subsystem Technical Specification SSTs for other requirements.

5.3 Test Documentation.

5.3.1 Test reports shall include all of the following:

- Test equipment.
- Serial numbers.