



Power Sliding Rear Window Plastic Creep

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. The purpose of this procedure is to evaluate the structural integrity of power sliding rear window components. This procedure covers the creep behavior of power sliding rear window components.

1.2 Applicability. This procedure applies to all cable-driven power sliding rear window regulator systems. This document and any suggestions or revisions will be reviewed and/or updated annually by the Fixed Glass Global Subsystem Leadership Team (GSSLT). This standard is applicable for all car, multipurpose passenger vehicle (MPV), and truck models produced by GM Worldwide.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3600

2.3 Additional References.

- Applicable Component Technical Specifications (CTS)
- Five Phase Template
- GM Security Guidelines
- Subsystem Technical Specification (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. Testing should be performed using a test fixture as shown in Figure A1 or similar.

3.3 Test Vehicle/Test Piece. Test samples shall be of production intent design and material for design validation (DV) or production intent design and materials manufactured with production processes (home line) for product validation (PV). Any changes to the components or material, e.g., design, fit, form, function, properties, manufacturing process, and/or location of manufacture require revalidation. GM shall approve validation methods for product/process changes before the supplier is committed to the change. See GMW3600.

3.3.1 Unless otherwise specified, six (6) samples of components or systems shall be tested.

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

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3.4 Test Time.

Calendar time:	42 to 44 working days
Test hours:	1000 hours
Coordination hours:	40 hours to 60 hours

3.5 Test Required Information.

3.5.1 GM Validation is to be notified of test failures within a 24 h period of occurrence.

3.5.2 Supplier is to develop a Five Phase document for all test failures. The Five Phase document shall be submitted within 48 h of test failure.

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

3.6 Personnel/Skills. The test facility shall have sufficient personnel having the necessary education, training, technical knowledge, and experience for performing the required tests.

4 Procedure

4.1 Preparation. Not applicable.

4.2 Conditions. All conditions specified shall be targeted toward the specified value with any given ($\pm$) tolerance used to compensate for variation. During testing, conditions specified shall not be readjusted within the tolerance unless it is to maintain the particular test condition within the specified tolerance. If such an adjustment is made, it shall be approved by the appropriate GM engineer prior to the start of any testing. Unless otherwise specified, perform the tests in the as-received condition without any special preconditioning.

4.2.1 Environmental Conditions. The following conditions apply to all tests unless otherwise specified.

- Voltage: $V_{\text{NOM}} \pm 0.3 \text{ V}$ at terminals.
- Humidity is to be a minimum of $50\% \pm 5\%$ for all tests unless otherwise specified.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon with the appropriate GM Subsystem Validation Engineer (SVE) and/or Design Engineer (DE). Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions. Mount the power rear sliding window such that all of the components, including pulleys, sliders, glass channels, cable conduit routing pattern and related interference conditions, and electric motor, are oriented correctly per design (Figure A2).

4.3.1 Soak the system for 1000 h at 85°C in an environmental chamber with the following conditions:

- Sixteen (16.0) $\text{V} \pm 0.2 \text{ V}$ (running) as measured at the motor terminals.
- To ensure cable tension is maintained, exercise the system three (3) times per day to stall.
- Each cycle shall consist of three (3) full open/close cycles plus two (2) half-open/half-close cycles.
- The system shall be returned to the full closed condition at completion of exercise.

4.3.2 During each cycle, the following shall be documented:

- Time of exercise and evaluation, and temperature.
- Whether the system opens and closes to the design intent correctly.
- Cable tension.
- Objectionable noise or function during cycling, i.e., any squeak, rattle, itch, moan, groan, chatter, etc.

4.3.3 Cool down the system to room temperature.

4.3.4 Conduct a Design Review Based on Test Results (DRBTR) to examine the system for any component damage or permanent deformation. Examples include, but are not limited to, pulley out of round conditions, cracking of pulley, drum or housing, loss of tension in the cable system, etc.

5 Data

5.1 Calculations. Not applicable.

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