



Removable Seat Latch Durability

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 test is to determine the durability characteristics of the latches and associated components of removable seat systems.

1.2 Applicability. This test shall be applied to all General Motors vehicles with removable free-standing seat systems mounted on devices that lock the seat system to the floor.

1.3 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- Lab standard durability data sheet.
- Latch assembly drawing.
- Latch component drawing.
- Statement of Requirements (SOR) Appendix G2.
- Subsystem Technical Specification (SSTS).
- Test report form.

3 Resources

3.1 Facilities. An approved GM certified test lab with an adequate bedplate or equivalent work surface necessary for mounting of the test sample and associated test fixtures.

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 Mounting Fixture. A means to support the seat system including applicable mounting systems, or equivalent, simulating the floor attachment points to mount the seat system in body position on a bedplate, or use a buck or underbody.

3.2.2 Load Application Device(s). Pneumatic or hydraulic cylinder(s) and associated equipment capable of applying the specified loads with a stroke capacity specified by the test.

3.2.3 Force Gage. A force gage of (0 to 500) N ((0 to 100) lb) capacity or equivalent.

3.2.4 Controls. Electronic programming unit, timer, limit switches and any other necessary equipment.

Note: Instrumentation calibrated as required.

3.3 Test Vehicle/Test Piece. Completed trimmed seat subsystem. An appropriate seat subsystem consisting of all components necessary to qualify as complete for the model and trim level specified by the Design Release Engineer (DRE) and GM Validation Engineer.

3.4 Test Time.

Calendar time:	3 days
Test hours:	16 h
Coordination hours:	8 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills.

3.6.1 The following individuals are necessary to complete this test procedure:

- General Motors Design Release Engineer.
- General Motors Validation Engineer.
- Testing Organization's Test Engineer.
- Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Visually inspect all components, including body for cracks.

4.1.2 Assemble latch systems and lubricate according to the latch component and latch assembly drawings. Torque all fasteners to minimum specifications according to the latch assembly drawing.

4.1.3 Cycle seat latches and hinge mechanism to verify that it operates to design intent.

4.1.4 Seats with adjusters shall be set in the full rear position. Seat with seat back recliners shall be set at design position. Seats with fold-flat seat backs shall be folded flat.

4.1.5 Do not lubricate the seat system except by direction of the Design Release Engineer. Record if lubrication has been performed.

4.1.6 Spray all components with white stencil ink to aid in identifying wear areas and cracks. Spray the underside of the body in the latch areas. Place index marks on all fasteners subject to loading.

4.1.7 Using a force gage, measure the maximum efforts required to latch/unlatch handle and to remove seat out of the floor retainer.

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.

4.3 Instructions.

4.3.1 Setup and Operation for Automated Testing.

4.3.1.1 Connect actuator(s) to operate the latch. The actuator(s) should be attached to the latch handle(s) and the seat in a manner that simulates actual loading inputs.

4.3.1.2 Adjust the actuator(s) to apply the Subsystem Technical Specification (SSTS) specified force(s) or speed required to operate the latch(es). Ensure that all intended latches are engaged and disengaged during the cycle.

Note: Ensure that there is excess stroke in the actuator or cylinder, so that the latching or unlatching actuation does not occur at maximum stroke.

4.3.1.3 Adjust actuator(s) to apply the SSTS specified force(s) required to release the latch(es) and lift the seat to the height specified in the SSTS. As a default for this height, use 178 mm (7 in) above the rear mounting hooks or a (6 ± 1) degree forward tilt of the seat. During the lift, the seat shall remain in the front attachments. Release the seat so that the seat drops into the latched position or if a re-latching effort is required by design, use an actuator to apply the SSTS required latching effort. This constitutes one cycle.