



Interior Load Floor Performance Seat Back Cushion

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 procedure evaluates interior compartment load floor for all seats that are designed to put the seat backs into load floor position. It is applicable for all rows of seating.

1.2 Applicability. This test shall be applied to all General Motors vehicle seats with fold flat seat backs.

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.

- Statement of Requirements (SOR), Appendix G2.
- Subsystem Technical Specification (SSTS).
- Test report.
- Thermotron Incorporated, (thermotron.com)

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 Blocks. Rigid mounting blocks to simulate the floor attachment point to mount the seat system in body position on a bed plate of equivalent work space or test body.

3.2.2 Temperature Controlling Device. Thermotron Environmental Chamber or equivalent.

3.2.3 Knee Form. A 127 mm diameter hard rubber or steel knee form.

3.2.4 Weight. A weight for the impact load shall be a 120 N weight with a hard rubber bumper attached. Weights for distributed load application shall be sufficient to load the floor to 615 kg/m².

3.2.5 Load Cell. A load cell attached to the knee form capable of recording up to 1200 N.

3.2.6 Electromagnet. A fixture that contains an electromagnet strong enough to hold the 12 N weight.

3.2.7 H-Frame Fixture. A fixture capable of accurately positioning the load cell, weight, and knee form above the designated load location (see Figure 1).

Figure 1: H-Frame Fixture Example



3.3 Test Vehicle/Test Piece. Complete 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).

3.4 Test Time.

Calendar time: 4 days
Test hours: 3.5 h
Coordination hours: 0.5 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. The following individuals are necessary to complete this test procedure:

3.6.1 General Motors Design Release Engineer.

3.6.2 General Motors Validation Engineer.

3.6.3 Testing Organization's Test Engineer.

3.6.4 Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Inspect the seat assembly for correct part numbers, quality of frame welds, proper fit and assembly, and the presence of all required parts.

4.1.2 Use the temperatures outlined in the Subsystem Technical Specification (STS) for each of the three required loads, respectively. If none exist, the GM Responsible Engineer will specify the applied temperatures.

4.2 Conditions.

4.2.1 Environmental Conditions. The GM Validation Engineer to use Engineering judgment based on materials used. If not otherwise agreed to, conduct test at the temperature environment noted in the STS.

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. Distributive Load.

4.3.1 Positioning. Attach the seat assembly in the body or to the mounting blocks in design position, then fold down the seat back to make the load floor.

4.3.2 Measure load floor height with a Coordinate Measurement Machine (CMM) in at least ten (10) positions on the hard trim only, and record. Confirm the positions to measure and record with the GM Validation Engineer prior to testing.

4.3.3 Weights. Add weights to the load floor or seat back to distribute the load across the folded seat back to load specified in the SSTS shown in Figure 2.

Note: The load should be applied uniformly across the entire load floor, including soft foam and trim around hard back panels as indicated by the yellow arrows in Figure 3.

4.3.4 For split back seat assemblies, test both halves (as well as the filler panels if so equipped).

4.3.5 Let the seat and test apparatus soak for 4 h at the intended test temperature according to the SSTS.

4.3.6 After 4 h, apply additional weights to the load floor to achieve the maximum load specified in the SSTS.

4.3.7 Remove the load. Return the seat to an ambient environment, and let the seat assembly recover for 4 h.

4.3.8 Record the load floor height in the same positions that were used for the initial height measurement in 4.3.2.

4.3.9 Inspect the seat assembly (as well as the filler panel if so equipped).

4.3.10 Record the results and photos of the post-test condition.

Figure 2: Load Floor Position

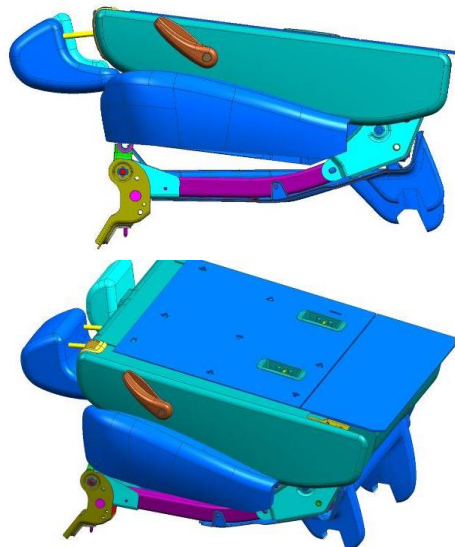


Figure 3: Distributed Load Floor Weight Application Area

