



Seat Heater Trench Vertical Load Durability Test

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 the performance of the heater pads in seats under a cyclical localized loading. It is intended to evaluate the performance of the heater pad in the seat, not the seat structure.

1.2 Applicability. This test shall be applied to all General Motors vehicles.

1.3 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

SAE J826

2.2 GM Standards/Specifications.

None

2.3 Additional References.

Global Seat Subsystem Technical Specification

3 Resources

3.1 Facilities. An approved GM certified test lab with an adequate bed plate 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 points to mount the seat system in body position on a bed plate or equivalent work surface.

3.2.2 SAE J826 Three Dimensional (3D) Butt Form.

3.2.3 Load Application Device. A pneumatic or hydraulic cylinder capable of applying a maximum load, as specified in the Global Seat Subsystem Technical Specification (SSTS), and capable of attaching to the load cell connected to the butt form.

3.2.4 Heater Pad Monitoring Device. A Control Area Network (CAN) controller capable of interfacing with and sending commands to GM Local Area Network (LAN) vehicle systems (NEO VI, CANoe, etc..) and a computer with Vehicle Spy software installed and configured to GM LAN systems. Specifically, this is a Neo VI CAN controller interface to send commands to GM LAN vehicle system and a computer with Vehicle Spy software installed and configured for GM LAN serial data.

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

GM Confidential

© Copyright 2016 General Motors Company All Rights Reserved

February 2016

Page 1 of 4

3.4 Test Time.

Calendar time: 9 days approximately
Test hours: 7 hours approximately
Coordination hours: 0 hours

3.5 Test Required Information. See 5.3.

3.6 Personnel/Skills. The following individuals are necessary to complete this test procedure: GM DRE, GM Validation Engineer, Testing Organization's Test Engineer, and Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Obtain Necessary Details. Obtain test details from the DRE/Design Engineer (DE) and GM Validation Engineer, i.e., loading locations, center load over trench, etc. The loading location is over seat cushion, wires or bus bar, passing through trench. If all wires or bus bars cannot be covered, then bias the butt form over outboard side trench.

Repeat location procedure above for the seat back trench.

The test equipment - butt form - shall be moved forward from the bite line of the cushion until it sits on top of the seat trench that has the heater mat wire running through it. See Figure 1.

4.1.2 Mounting Seat Cushion. Mount the seat subsystem to the appropriate model mounting blocks. Include mounting spacers if specified for installation.

4.1.3 Mounting Seat Back. By using the recliner or other attachment, suspend seat back 50 mm minimum horizontal above mounting block, allowing the back to flex.

4.1.4 Setup. There are multiple setups for this procedure and, therefore, other preparation information is integrated into 4.3 Instructions.

Figure 1: Test Setup



4.2 Conditions.

4.2.1 Environmental Conditions. Conduct test in a room temperature environment.

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 Install the seat cushion in the design position. Let the system soak a minimum of 4 h at temperature.

4.3.2 Attach the heater pad monitoring device to the seat harness to ensure the seat heat module and the seat heater system is used to simulate the integrated system. Monitor current and change of resistance.

GM Confidential

© Copyright 2016 General Motors Company All Rights Reserved

February 2016

Page 2 of 4