



Seat Wiring Harness Durability Test in the Vehicle Environment

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 is used to evaluate the durability of a complete seat assembly's wiring harness in the vehicle environment when subjected to its entire window of travel.

1.2 Applicability. This test shall be applied to all adjustable seat systems that include a wire harness. The seat shall be completely trimmed.

1.3 Remarks. All noted values are valid unless otherwise specified in the Subsystem Technical Specification (SSTS) for seats.

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.

- Design Review Based on Test Results (DRBTR).
- Drawing of the wire harness routing, wire harness attachments, body harness attachment location, and the body connector pinout.
- Subsystem Technical Specification (SSTS).
- Test report.
- Wire harness routing released drawing.

3 Resources

3.1 Facilities. An approved General Motors (GM) certified test lab with an adequate bed plate or equivalent work surface necessary for mounting of a fixture, body in white, or a vehicle with a representative vehicle floor.

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 Body Harness. Body wiring harness for the model year and type of seat being tested.

3.2.2 Controller. A station that is capable of keeping cycle count, time of applied voltage and amperage, measuring voltage and amperage supplied, and setting fault limits based on time or amperage.

3.2.3 Limit Switch or Proximity Sensor. A switch or sensor to provide feedback to the controller, notifying the system that the full direction of travel has been completed.

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3.2.4 Fan, Chiller, or Blower. A unit to keep motors cool during cycling.

3.2.5 Power Supply. Supplies Direct Current (DC) power to the motors.

3.2.6 Weights. Sand bags totaling 105 kg to represent the American Male (AM) AM95th percentile occupant.

3.2.7 Control Interface Communication Device. A Controlled Area Network (CAN) controller capable of interfacing with and sending commands to GM Local Area Network (LAN) vehicle systems (neoVI Fire or neoVI Fire 2) and a computer with vehicle spy software installed and configured to GM LAN systems.

Note: Instrumentation is to be calibrated as required. Instrumentation details and date of calibration are to be recorded.

3.3 Test Vehicle/Test Piece.

3.3.1 Seat Complete. A fully trimmed seat shall be used. All harness routing variations shall be tested (consider harnesses from ventilation, heater, suppression, airbag, pre-tensioner, lumbar, haptic, bladders, massage, etc.) It is mandatory to test a front seat and rear seat. The seats Subsystem Validation Engineer (SVE) and Design Release Engineer (DRE) shall determine the variation(s) of seat to test depending on the harness bundle. Compare all seat variants to see if the harness routing, bundles, or types are different as shown in Figure 1, for example.

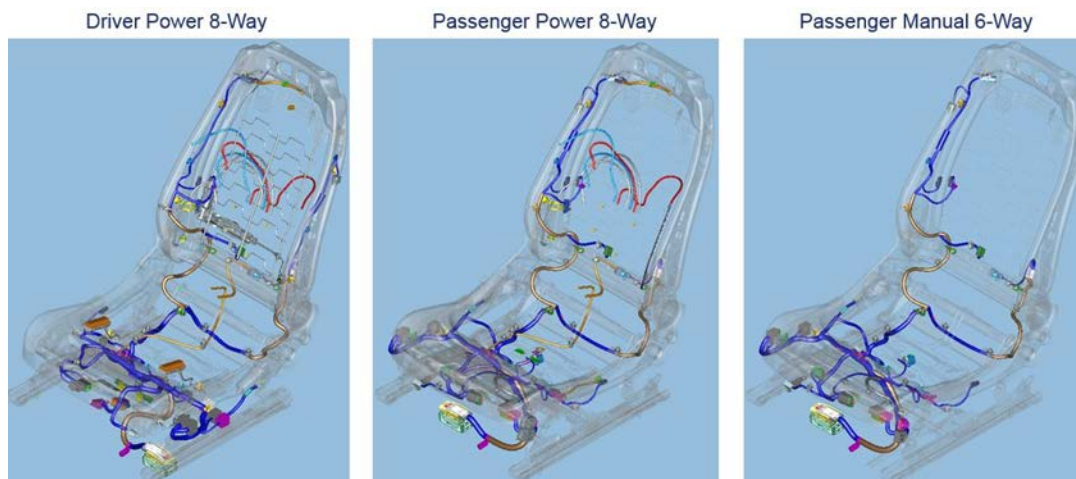


Figure 1: Wire Harness Routing Variation Based on Seat Type for the Same Program

3.3.2 Vehicle Trim. A trimmed Body-in-White (BIW) or vehicle shall be used. All content underneath the seat (such as carpet, chipped foam, or ventilation nozzle) that may come in contact with the wire harness shall be required. If the BIW or vehicle is not available at the time of test, an alternative setup can be considered if the representative interfaces are included. The SVE and DRE must approve the alternative setup.

3.4 Test Time.

Calendar time: 5 days

Test time: 4 days

Coordination time: 8 h

3.5 Test Required Information. Obtain a drawing of the wire harness routing, wire harness attachments, body harness attachment location, and the body connector pinout from the GM seat SVE or seat DRE.

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

- General Motors Seat SVE.
- General Motors Seat DRE.
- Test Engineer.
- Test Technician.

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Documents

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