



Seat Back Structure, Abusive Load Performance

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 seat system's structural stiffness and strength when subjected to a rearward load applied to the seat back.

1.2 Applicability. This procedure applies to all GM passenger cars, light duty and medium duty trucks with free-standing seat systems.

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.

3 Resources

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

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 rigid mounting blocks, or equivalent, simulating the floor attachment points to mount the seat system in body position on a bedplate.

3.2.2 Load Application Device. A hydraulic cylinder, with a capacity of 227 kg (500 lb) minimum and an attachment permitting angular adjustment, mounted on a rigid stanchion or equivalent.

3.2.3 Load Cell. A load cell with a 227 kg (500 lb) capacity or equivalent for measuring applied load to seat back.

3.2.4 Transducers. Two (2) linear transducers with a 250 mm capacity or equivalent, and one angular transducer with a minimum of 20° capability, or other suitable electronic measuring devices.

3.2.5 A Graphic Recorder. A device for recording back angular deflection, linear deflection and applied load.

Note: Calibrate all instrumentation as required.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time.

Calendar time: 1 day

Test hours: 4 h

Coordination hours: 4 h

3.5 Test Required Information. Not applicable.

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

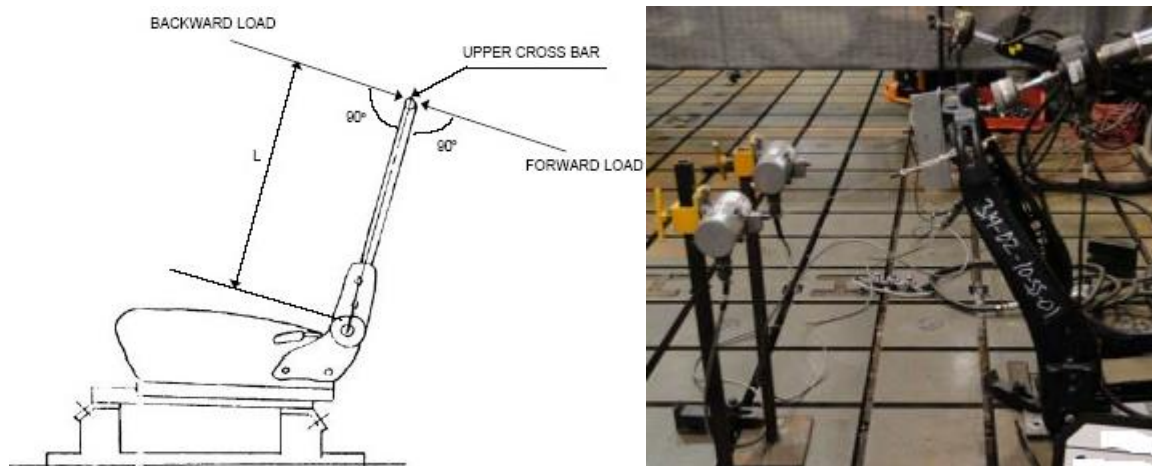
- General Motors Design Release Engineer.
- General Motors Validation Engineer.
- Testing Organization's Test Engineer.
- Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Mounting. Utilizing the appropriate mounting blocks (see Figure 1), mount the untrimmed seat frame assembly in body position to a rigid surface plate.

Figure 1: Load Application Example



4.1.2 Load Application. Establish the point of load application which is the uppermost structural member and on the occupant centerline.

Note: Where the application point can cause unrealistic local distortion, a rigid test bar (shaped closely to the contour of the back panel) may be attached to the frame across the loading point. Apply the test bar only to distribute the test load across the upper structure, not to reinforce the back panel, side members, or recliner brackets.

4.1.3 Positioning Seat.

4.1.3.1 Set the slide adjuster in rearmost position.

4.1.3.2 Set the height adjuster in highest position.

4.1.3.3 Set the seat back angle in design position.

4.1.4 Measuring Device. Attach the load cell to the load application device and position it normal to the seat back upper cross bar at the occupant centerline.

4.1.5 Linear and Angular Measurement. Mount the angular transducer on the seat back, directly behind the loading point, to measure angular displacement. Mount the linear transducers to the rigid stanchions connecting them to the seat back at the same height and at the sides of the seat back.

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