



Seat Back Torsional Rigidity and Strength

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 procedure is to determine the torsional stiffness of the seat back.

1.2 Applicability. This test shall be applied to all General Motors' vehicles with free-standing seat systems having folding bucket split bench seat backs, including those with outboard upper body supports.

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.

- Seating arrangement drawing.
- Statement of Requirements (SOR).
- Subsystem Technical Specification (SSTS).
- Test report form.

3 Resources

3.1 Facilities. An approved GM certified test lab with adequate bed plate 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 Block. Appropriate model mounting blocks (stanchions, fixtures, or brackets) to secure the seat subsystem in body position.

3.2.2 Load Application Device. (0 to 1000) N ((0 to 200) lbf) capacity – hydraulic or air cylinder with hard rubber end fitting approximately 50 mm (2 in) in diameter and rigid stanchion to allow for vertical and angular adjustment of the load application device.

3.2.3 Load Measuring Device. (0 to 1000) N ((0 to 200) lbf) capacity – (load cell, etc.,) with attachments to the seat back/load application device.

3.2.4 Linear Measurement Devices. String pots or equivalent and fixturing to measure deflection and set of the seat back during the test.

3.2.5 Angular Measurement Devices. Angular transducer or equivalent and fixturing to measure angular deflection and set of the seat back during the test.

3.2.6 Angle Measuring Device. Adjustable protractor, or equivalent, to measure the seat back frame angle.

3.2.7 X-Y-Z Recorder. To plot load versus deflection of the seat back during loading and unloading.

Note: All instrumentation is to be calibrated as required.

3.3 Test Vehicle/Test Piece.

3.3.1 Seat Subsystem. An appropriate seat structural subsystem consisting of a back frame, cushion frame, adjuster, and seat back recliner, as specified by the Design Release Engineer (DRE).

3.4 Test Time.

Calendar time: 1 day

Test hours: 1 h

Coordination hours: 4 h

3.5 Test Required Information. Obtain from the seating arrangement drawing or from the DRE, the design position of the seat (seat back angle, cushion frame angle, H-point location, and location of upper structure of seat back).

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

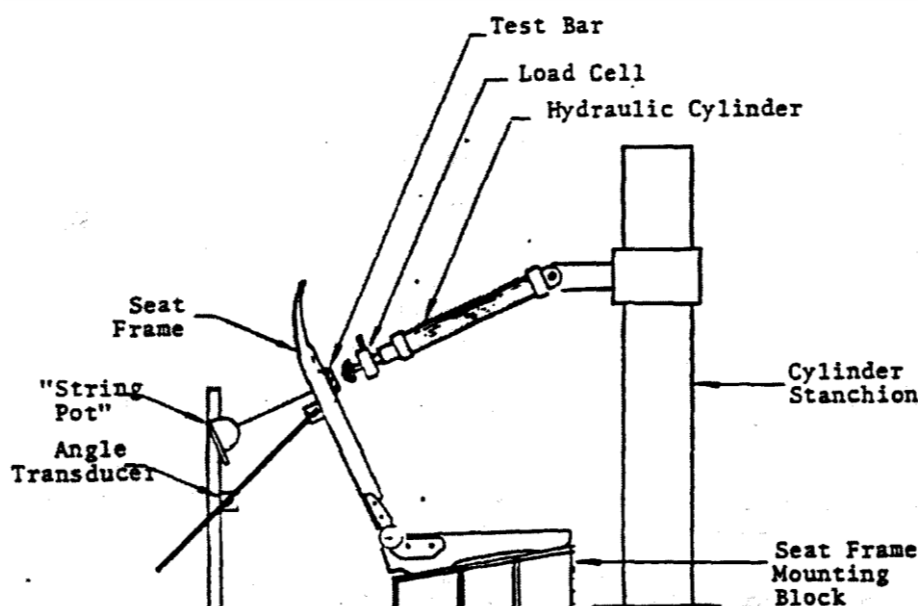
- General Motors Design Release Engineer.
- General Motors Validation Engineer.
- Testing Organization's Test Engineer.
- Testing Organization's Test Technician.

4 Procedure

4.1 Preparation. See Figure 1.

4.1.1 Visual Inspection. The Design Release Engineer and Validation Engineer shall visually inspect the seat assembly for correct part numbers, quality of frame welds, proper fit and assembly and the presence of all required parts.

Figure 1: Ultimate Rearward Load Test Setup



Note: Change Test Bar to Loading Pad if necessary.