



Seat Structure Lateral Fatigue Durability

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.

Note: All stated values are valid unless otherwise specified, i.e., in Subsystem Technical Specification (SSTS).

1.1 Purpose. Determine the transverse alternating load fatigue resistance on front seats.

1.2 Applicability. This procedure is applicable for all front seats.

1.3 Remarks. The transverse alternating load test is a development/weak point analysis for the complete seat structure. Any damage occurring shall be assessed individually on the basis of relevance. If damage occurs in newly developed seats, correlations shall be ascertained between the transverse alternating load test and the field (determine collective loading in vehicle).

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.

None

3 Resources

3.1 Facilities. An approved GM certified test lab with an 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 Weights. Weight with ballast; hang one on the seat back and put weights on cushion or use SAE J826 buttocks.

3.2.2 A Lateral Fatigue Test Rig that allows lateral movements ($\pm y$ direction) of the loaded dummy on the seat and also lateral load on the backrest with actuators and control to generate these movements simultaneously (0.5 Hz frequency). (See Figure 1, Figure 2 and Figure 3.)

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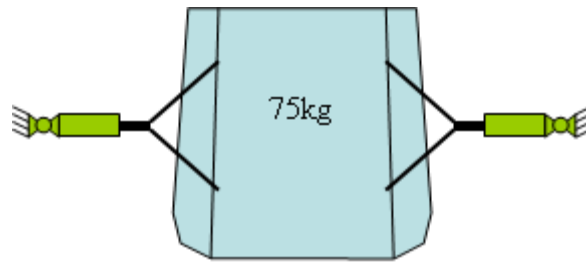


Figure 1: Seat Load

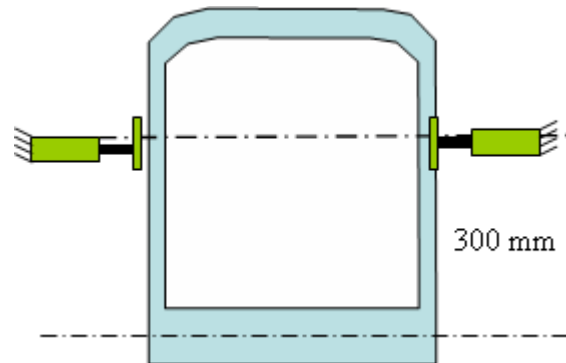


Figure 2: Backrest Load (Front View)

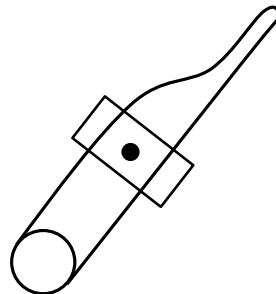


Figure 3: Backrest Load (Side View)

3.2.3 Force-Displacement Measuring Device integrated with the actuator.

3.2.4 A Seat fixture replicating the fixation in the car.

3.3 Test Vehicle/Test Piece.

3.3.1 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)/Design Engineer (DE).

3.4 Test Time. Not applicable.

3.5 Test Required Information. Obtain the design position for the adjustment and reclining systems from the DRE/DE and GM Validation Engineer.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation. Samples of components released for this test shall be tested previously for conformity with the functional requirements and approved by the responsible GM department prior to the start of test. The GM

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