



Pneumatic Adjustable Seat Support Systems Performance

1 Scope

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 operational characteristics of the pneumatic adjustable comfort features in so equipped seat system.

1.2 Foreword. Not applicable.

1.3 Applicability. This procedure applies to all seat systems with pneumatic adjustable comfort systems as provided in a seat as well as subsystems tested as a component.

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 Subsystem Technical Specification (GSSTS)

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.

3.2.2 Temperature Controlling Device. Thermotron environmental chamber or equivalent.

3.2.3 Body Forms. Seat back and/or bottom form (SAE J826) - a form which represents the portion of the occupant body form that contacts the seat back and/or bottom when seated in the vehicle seat.

Note: Calibrate all instrumentation as required.

3.3 Test Vehicle/Test Piece. 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) for seat complete testing, as well as subsystem testing of the components as specified by the Bill of Material Family Owner (BFO).

3.4 Test Time. Not applicable.

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, and a Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Mounting. Mount the seat subsystem on the appropriate model mounting blocks.

4.1.2 Setup. There are two setups for this procedure and, therefore, other preparation information is integrated into the instructions (see 4.3).

4.2 Conditions.

4.2.1 Environmental Conditions. Conduct at the temperature/environment specified in the Global Seat Subsystem Technical Specification, if no temperature exists, then default to the temperatures within the test procedure.

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 Seat Back Systems.

4.3.1.1 Fully deflate the seat and place in chamber. Adjust temperature to -20 °C for and allow the seat to soak for 4 h, continue with 4.3.1.2 through 4.3.1.3.

4.3.1.2 Remove from chamber, recline the seat back fully rearward and rest the back form onto the seat back.

4.3.1.3 Inflate the lateral and/or lumbar support system and record the time and pressure for complete inflation. Allow the system to set at ambient for 8 h, measure the pressure and record.

4.3.1.4 Fully deflate the seat and place in chamber. Adjust temperature to 60 °C and soak the seat for 4 h.

4.3.1.5 Remove from chamber and inflate the lateral and/or lumbar support system and record the time and pressure for complete inflation. Allow the system to set at ambient for 8 h, measure the pressure and record.

4.3.1.6 Totally deflate the system, inflate the system and record time and pressure for complete inflation.

4.3.1.7 Allow the seat to sit at ambient condition for 8 h, record the pressure.

4.3.2 Seat Bottom Systems.

4.3.2.1 Fully deflate the seat and place in chamber. Adjust temperature to -20 °C for and allow the seat to soak for 4 h, continue with 4.3.2.2 and 4.3.2.3.

4.3.2.2 Remove from chamber and place the seat back in design back angle position and rest the bottom form onto the seat bottom (cushion).

4.3.2.3 Inflate the support system and record the time and pressure for complete inflation. Allow the system to set at ambient for 8 h, measure the pressure and record.

4.3.2.4 Fully deflate the seat and place in chamber. Adjust temperature to 60 °C and soak the seat for 4 h.

4.3.2.5 Remove from chamber and inflate the support system and record the time and pressure for complete inflation. Allow the system to set at ambient for 8 h, measure the pressure and record.

4.3.2.6 Totally deflate the system, inflate the system and record time and pressure for complete inflation.

4.3.2.7 Allow the seat to sit at ambient condition for 8 h, record the pressure.

4.3.3 Component/Subsystem Testing Outside of the Seat.

4.3.3.1 Mount the components in the position as expected in seat environment.

4.3.3.2 Fully deflate the system and place in chamber. Adjust temperature to -20 °C for and allow the components to soak for 4 h, continue with 4.3.3.3 and 4.3.3.4.

4.3.3.3 Remove from chamber and place the seat back in design back angle position and rest the bottom form onto the seat bottom (cushion).

4.3.3.4 Inflate the support system and record the time and pressure for complete inflation. Allow the system to set at ambient for 8 h, measure the pressure and record.