



Roof Rail Air Bag (RRAB) 25 mm Gap Fixture

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 measure and evaluate the Roof Rail Air Bag (RRAB) Cushion deployment trajectory to be within 25 mm of the cross-car upper garnish requirement per GMW3121. Which supports the verification document for GMW3118.

1.2 Applicability. Applies to all vehicles with Roof Rail Air Bags that are required to meet FMVSS 226 and CMVSS 226.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

CMVSS 226 FMVSS 226

2.2 GM Standards/Specifications.

GMW3118 GMW3121

2.3 Additional References.

- CG4680 Airbag System Deployment Video Analysis
- Rollover Occupant Protection Feature Technical Specification (Version 1.0)

3 Resources

3.1 Facilities. None required.

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 Digital inclinometer.

3.2.2 RRAB 25 mm Gap Fixture. See Figure 1. The fixture represents a 50th percentile head form mounted on a semi-rigid form. The simulated head form position is adjustable on the fixture both cross-car and up/down. The seat adjustment provides the fore/aft position. This adjustment allows the simulated head form to be positioned at the approximate height of a 50th percentile Anthropomorphic Test Device (ATD) head and in line with the center portion of the upper garnish trim panel at a distance of 25 mm from the garnish trim when measured perpendicular to the trim.

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Figure 1: RRAB 25 mm Gap Fixture

3.3 Test Vehicle/Test Piece. Body in White (BIW)/Fixture to be used in ambient RRAB System Static deployments. Use fixture in Ambient (LH/RH) RRAB System Static Deployments per body style. Use production intent trim.

3.4 Test Time.

Calendar time: 1 day

Test time: 8 h

Coordination time: 3 days

3.5 Test Required Information.

- Seat back design angle

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation. Contact Seat Design Release Engineer (DRE) and Side Impact Performance Engineer before the start of test to get the seat back design angle for the program. Seat back design angle is required for test setup.

4.2 Conditions.

4.2.1 Environmental Conditions.

- a. Condition RRAB System at +23 °C.
- b. Monitor deployment surface and maintain +23 °C.
- c. Deploy module at +23 °C.

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.

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4.3 Instructions.

- a. Position front seat:
 - Full rear and full down.
 - Head-rest design position: Mid position.
- b. Adjust seat back to design angle. Measure the seat back angle at the headrest posts. Use a digital inclinometer to measure angle. Adjust articulating headrest to mid-position. See Figure 2.



Figure 2: Adjusting Seat Back to Design Angle

- c. Move seat belt buckle down out of view.
- d. Place fixture on the seat cushion. Center fixture cross-car on seat cushion. The fixture's rear edge base should contact the seat back. The top horizontal bar of fixture should touch the headrest of the seat. See Figure 3.

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