



Load Compartment Trim

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. Inspection of the load compartment trim to different performance criteria. This specification determines the test conditions and the requirements for the testing of the load compartment trim.

1.2 Applicability. Load compartment trim of the complete vehicle range.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3059

GMW14264

GMW16586

GMW14093

GMW14444

2.3 Additional References.

None

3 Test Preparation and Evaluation

3.1 Resources.

3.1.1 Facilities.

3.1.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.1.2 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.

3.1.1.3 Milford Proving Grounds (Belgian Block road, Circle Track and Oval Track) or equivalent proving ground.

3.1.1.4 Climatic chamber with road simulator.

3.1.2 Equipment.

3.1.2.1 Apparatus as required by the appropriate test method.

3.1.2.2 Tensile/compression gauge (measuring range (0 to 500) N with piston (diameter 10 mm)) and hook.

3.1.2.3 Torque wrench.

3.1.2.4 Thermometer.

3.1.2.5 Clinometer.

3.1.2.6 Gauges with mounting rack.

3.1.2.7 Device for clip/retainer tear out tests.

3.1.2.8 Falling ball testing device/Pendulum impact device.

3.1.3 Test Vehicle/Test Piece. Body or body section with completely equipped tailgates including seals on body. Side-panel trim, service flaps, storage box covers, all associated parts and sill cover in assembled condition.

3.1.4 Test Time.

Calendar time: 7 d

Test time: 8 h

Coordination time: 4 h

3.1.5 Test Required Information. Not applicable.

3.1.6 Personnel/Skills. Not applicable.

3.2 Preparation. Side-panel trim, service flaps, storage box covers, all associated parts and sill cover shall be checked for conformance to the current development, drawing and release status before each test.

All deviations shall be noted and, if possible, corrected. Any modifications shall be noted.

3.3 Conditions.

3.3.1 Environmental Conditions. If not otherwise stated, all performance requirements shall be fulfilled in a temperature range of (-30 to +80) °C.

The tests shall be performed at (-30 ± 3) °C, (+23 ± 5) °C and (+80 ± 3) °C.

3.3.2 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.

3.4 Instructions. Not applicable.

3.5 Data. Not applicable.

3.6 Safety.

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

3.7 Documentation. Samples of components or material released to this standard shall be tested for conformity with the requirements of this standard and approved by the responsible GM Department prior to the start of delivery of production level components or materials.

Any change to the component or material, e.g., design, function, properties, manufacturing process and/or location of manufacture requires a new release of the product. It is the sole responsibility of the supplier to provide the customer, unsolicited, with documentation of any change or modification to the product/process, and to apply for a new release.

If not otherwise agreed to, the entire verification test shall be repeated and documented by the supplier prior to start of delivery of the modified or changed product. In some cases, a shorter test can be agreed to between the responsible GM department and the supplier.

3.7.1 Test Results. Variables shall be provided for values which are not explicitly listed. The values shall be entered in the drawing under the relevant variables.

Subjective evaluation shall be performed according to GMW14264.

The results shall be entered in the relevant data sheets (Appendix B thru Appendix E; Data Sheet B1, C1, D1 and E1). The supplier shall work with the GM Design Responsible Engineer to comprehend these requirements.

4 Requirements and Procedure

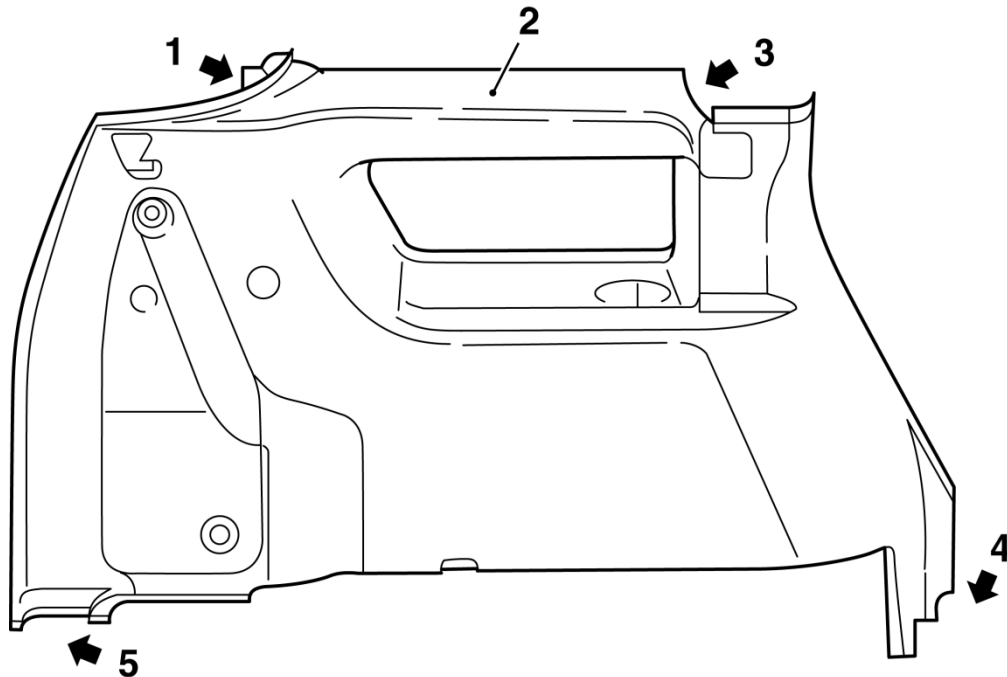
4.1 General. Tests and requirements according to GMW14444.

4.2 Appearance.

4.2.1 Gap Dimensions. Gap dimensions of the side-panel trim to the C/D-pillar trim panel, rocker trim rear, the rear side windows and the sill cover shall be measured at predefined points (see Figure 1).

Gap dimensions as specified by drawing Design Technical Specification (DTS).

Figure 1: Measuring Areas

**Note Key:**

- 1 = D-pillar
- 2 = Side window
- 3 = C-pillar
- 4 = Rocker trim
- 5 = Sill cover

4.2.2 Fit. The fit of the side-panel trim to the sheet metal and all associated parts in the side-panel trim shall be evaluated according to GMW14264.

4.2.3 Surface Appearance. The surface of the side-panel trim and all associated parts shall be evaluated according to GMW14264.

4.2.3.1 Plastic parts shall not show any sunken spots or flashes.

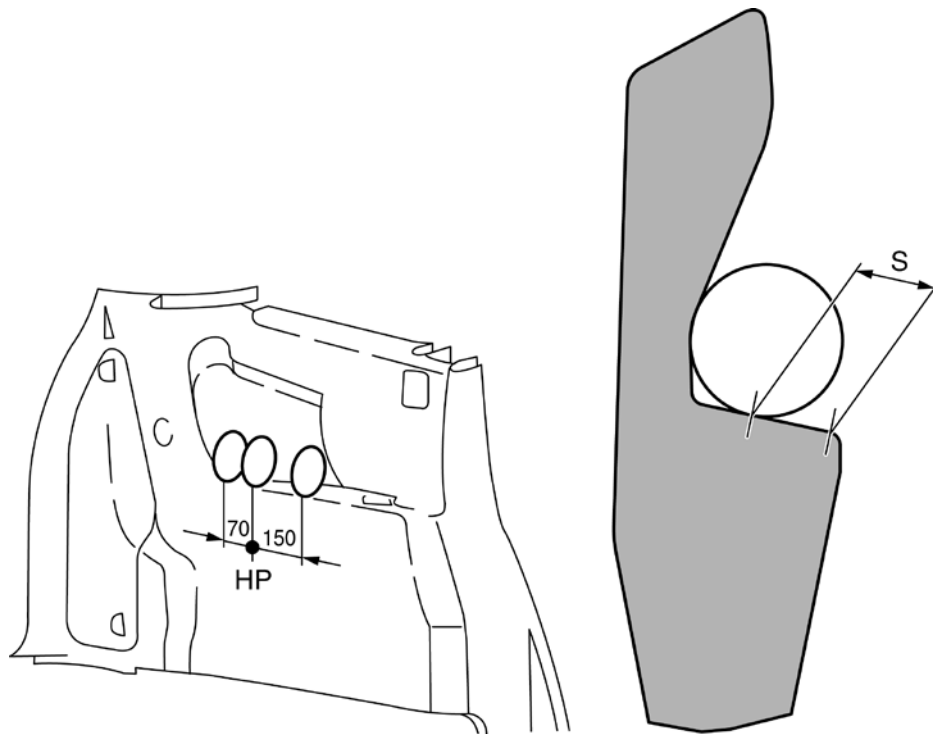
4.2.3.2 Covered components shall have a uniform surface structure.

4.2.3.3 Overall evaluation to obtain is Rating ≥ 8 .

4.3 Comfort. The location of the H Point (HP) shall be taken from the drawing and transferred onto the side-panel trim. This point shall be transferred to the arm rest and marked.

4.3.1 A mark shall be located onto the armrest each in a distance of 70 mm behind and 150 mm in front of this point. The circular template shall be positioned at the marked points respectively. The distance s from the contact point of the template to the radius run out of the arm rest shall be measured with a steel tape and documented in Appendix B (see Figure 2).

Figure 2: Test of Armrest Surface



4.4 Haptics. The tactile characteristics of the side-panel trim and associated parts shall be tested and subjectively evaluated according to GMW14264. Required rating as follows:

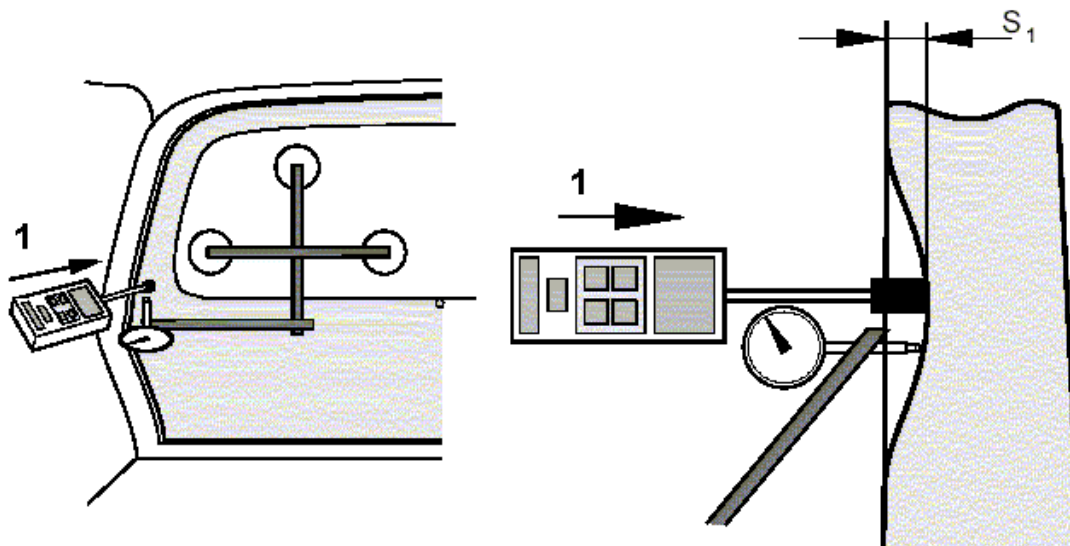
- Grained Plastic Parts: Rating ≥ 6
- Painted Plastic Parts: Rating ≥ 7
- Covered Parts: Rating ≥ 8

4.5 Noise. No disturbing noises (e.g., chattering, squeaks and rattles) shall occur when opening and closing the tailgate/trunk lid or touching the side-panel trim, especially in the contact area to the sheet metal.

4.5.1 No disturbing noises and vibrations shall be emitted by the side-panel trim and associated parts in the stationary vehicle with the engine running or when driving on Expressways, Highways, or Belgian Blocks (e.g., Milford Proving Grounds test center or equivalent).

4.6 Dimensional Stability of the Side-Panel Trim. A gauge shall be used for measuring the deformation distance. The gauge shall be attached to a tripod fastened in the load compartment (see Figure 3).

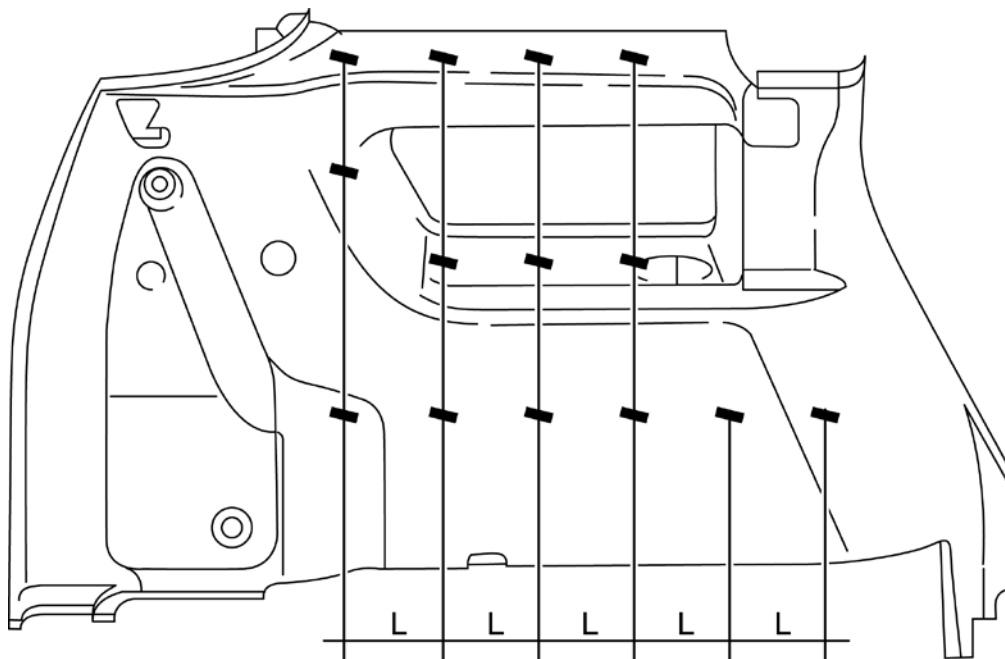
Figure 3: Tripod Fastened to the Load Compartment



Note Key: 1 = F_{Pressure} ; S_1 = Deformation Distance

4.6.1 Measurement points may vary depending on the trim panel and the vehicle. The definition shall be performed specifically for every vehicle. The measuring points shall be located in the areas mostly used by the customer (armrest, handles, covers/flaps etc.), as shown in Figure 4.

Figure 4: Location of Measuring Points (Example)



4.6.2 The gauge shall be located perpendicular to the side-panel trim and be reset to zero.

4.6.3 The tensile/compression gauge with piston (10 mm diameter) shall be used for force application. The force F_0 shall be applied perpendicular to the surface of the side-panel trim. The force application point shall be located 20 mm next to the measuring point and in same height.

4.6.4 The load shall be performed with forces of 50 N and 100 N. The deformation of the side trim panel shall be documented after each load. Three (3) readings shall be documented per load and measuring point.

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