GM	WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW14312

Adjustable Latch Plate – Sliding Efforts

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. To measure the effort required to slide the latch plate along the webbing.

1.2 Applicability. All adjustable latch plates, whether locking or dual mode.

1.3 Remarks. The intent is to measure the effort required to adjust the loop size of a belt assembly via the latch plate.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14831

2.3 Additional References.

GM Math File Log

3 Resources

3.1 Facilities. GM certified test lab.

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. The equipment or equivalent is required.

3.2.1 Latch plates and webbing to be tested.

3.2.2 Force gauge with webbing hook (25 N to 50 N capacity).

3.2.3 Fixture to hold latch plate or clamp webbing.

3.3 Test Vehicle/Test Piece. Applicable latch plate and webbing.

3.4 Test Time. Determined as needed.

3.5 Test Required Information. Record the force and distance as required.

3.6 Personnel/Skills. A test technician or engineer capable to measure the effort as required.

4 Procedure

4.1 Preparation. See GMW14831.

4.2 Conditions. See GMW14831.

4.2.1 Environmental Conditions. Not applicable.

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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. Deviations from the requirements of this standard shall be approved by GM engineering and documented in the GM Math File Log.

4.3 Instructions.

4.3.1 Locking Adjustable Latch Plates.

4.3.1.1 Pre-cycle the assembly by sliding the latch plate back and forth over the length of webbing to be tested for ten (10) cycles.

4.3.1.2 Clamp the shoulder belt end of the webbing such that the webbing is suspended with the latch tip pointing downwards.

4.3.1.3 Pull downward by the tip of the latch plate and measure the force required to slide the latch plate downward on the webbing (**Note:** The latch plate is to be pulled at a rate of approximately 25 mm (1 in) per 3 s.)

4.3.2 Dual Mode and Semi-Locking Adjustable Latch Plates Sliding Efforts.

4.3.2.1 Mount the latch plate to a holding fixture with the tip pointing upwards and the webbing hanging downwards.

4.3.2.2 Pre-cycle the assembly ten cycles by pulling the webbing back and forth through the latch plate.

4.3.2.3 Pull downwards on the shoulder belt end of the webbing and measure the force required to slide the webbing through the latch plate (pull the webbing at a rate of approximately 25 mm (1 in) per 3 s).

4.3.2.4 Record the force required to move the latch plate along the webbing.

4.3.3 Dual Mode and Semi-Locking Adjustable Latch Plates Slip Measurement.

4.3.3.1 Mount the latch plate to a holding fixture with the tip pointing upwards and the webbing hanging downwards.

4.3.3.2 Pre-cycle the assembly ten (10) cycles by pulling the webbing back and forth through the latch plate.

4.3.3.3 Apply a preload of 44.5 N to the lap belt end of the webbing in a direction parallel and in line with the latch, using a tension pull device capable of measuring 0 N to 445 N. The shoulder portion of the webbing must remain free of load.

4.3.3.4 Mark the lap portion of the webbing at the latch exit.

4.3.3.5 From the 44.5 N preload, continue to apply load to 267 N. The onset rate shall be no more than 22 N/s. In addition, the load shall be attained in not more than 5 s. Maintain the 267 N load for 5 s, re-mark the lap portion of the webbing at the latch exit after 5 s.

4.3.3.6 Unload the webbing and measure the distance between the two marks on the webbing. Record the distance measured.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. Not applicable.

5.3 Test Documentation. Not applicable.

6 Safety

This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

7 Notes

7.1 Glossary.

Adjustable Latch Plate – Dual Mode (Sliding and Locking): This is similar to the free sliding latch plate except when the belt loop is secured snugly about an occupant, webbing cannot transfer from the shoulder belt portion to the lap belt portion unless the specified load is exceeded. This latch plate will allow webbing to transfer back

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