



Window Glass Entry During Driving Operation

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. Determination of the driving speed at which the window still closes to the maximum closed position.

1.2 Foreword. Not applicable.

1.3 Applicability. All vehicles with frame and frameless doors.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14264

2.3 Additional References.

- Subsystem Technical Specification (SSTS).
- Vehicle Technical Specification (VTS).

3 Resources

3.1 Facilities.

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.

3.1.3 Wind tunnel.

3.1.4 GM Proving Ground with track where vehicles can be tested over 200 km/h. For example: Circular track at Milford Proving Ground.

3.2 Equipment. Torque wrench or torque measuring facility.

3.3 Test Vehicle/Test Piece. Vehicles with manually and electrically operated window regulators with the nominal glass to door header offset as measured at the center of the door header with the door closed.

3.4 Test Time.

Calendar time:	2 days
Test hours:	10 hours
Coordination hours:	4 hours

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Workshop technician with knowledge of measuring technique.

4 Procedure

4.1 Preparation.

4.1.1 The actual state of the door shall be checked, and corrected to the nominal or drawing status where necessary.

4.1.2 In the case of manual window regulators, the crank torque shall be measured by applying a torque wrench to the window regulator spindle. Due to space limitations in the vehicle, this measurement is not required on the driver door. The targets must not exceed the values of the valid Side Closures Subsystem Technical Specification (SSTS).

4.1.3 In the case of electrical window lifters, it shall be ensured that the drop window and motor run smoothly into the window guide rail or alternatively against the window seal during window guide entry. The rating according to GMW14264 in a subjective evaluation must meet the target of the valid SSTS.

4.2 Conditions.

4.2.1 Environmental Conditions.

- Dry weather.
- Ambient temperature.
- Wind velocity for outdoor tests.
- 30 km/h maximum.

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.

4.2.2.1 The vehicle shall be dry.

4.3 Instructions.

4.3.1 Window Guide Entry During Driving Operation on the Test Track. The test shall be performed both at maximum blower speed and with the blower switched off.

4.3.1.1 The initial speed is free selectable and has to be raised in stages until a closing window does not enter into the guide rail. The highest speed at which the drop window still closes securely into the outer lip of the guide rail is the critical speed.

4.3.1.2 Every speed has to be driven for at least 5 s, before starting one complete drop window opening and closing. The test has to be performed for every drop window separately and successively. The last speed when the window closed into the door header is the value to be recorded.

4.3.2 Window Guide Entry in the Wind Tunnel. The test must be performed similar to the road test with straight air flow and with a 56 km/h crosswind.

4.3.3 Window Guide Entry in the Wind Tunnel. Either method (Wind Tunnel or Test on Track) can be used to determine the window entry performance during driving operation. The Wind Tunnel method is preferred if facilities are available.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results.

5.2.1 Final Vehicle Speed > 200 km/h. Window guide entry shall be guaranteed up to a speed according to the value in the Vehicle Technical Specifications (VTS) both with and without the blower switched on.

5.2.2 Final Vehicle Speed ≤ 200 km/h. Window entry shall be guaranteed at least to the maximum vehicle speed.