



Door Window System Glass Wipe Area Determination

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 evaluates the glass wiping characteristics of door outer beltline seals on movable door window systems.

1.2 Foreword. Not applicable.

1.3 Applicability. This procedure applies to all passenger cars, light duty trucks, and medium duty trucks. It can be used for all door, midgate and endgate glass systems which utilize an outer beltline weatherstrip seal. This test may also be performed as part of a window system durability schedule to evaluate glass wipe characteristics after outer belt wear.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW15938

2.3 Additional References.

- Release Documentation. This includes Master Process Documents (MPD), Local Process Plans (LPP), etc., which show any product assembly, orientation, fit, assembly specifications, etc., for the system being evaluated.
- Subsystem Technical Specifications (SSTS) or
- Vehicle Technical Specifications (VTS). Paragraph 3.2.1.4.4 (Door Window Moisture Clearing), of 55.01, the Side Closures SSTS.

3 Resources

3.1 Facilities. GMNA Body Test Lab or a similarly equipped test facility.

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.

Note: The following sections include fixturing and instrumentation typically used by the GMNA Body Test Lab to perform this test. Other equipment may be substituted at the discretion of the testing facility as long as it provides the same data and/or data record, with equivalent accuracy as specified herein or by the requestor.

3.2.1 Fixturing.

3.2.1.1 This test can be performed on a door mounted on a door cart or on a body. Doors without upper frames should be tested on a body or partial body.

3.2.1.2 Tape measure or scale to establish/determine grid line locations.

3.2.1.3 Combination square (or equivalent) of sufficient size to span the vertical distance of the door glass.

3.2.1.4 Colored material to provide a contrasting background to the grid color and the material applied to the glass surface. This aids in photographing areas not wiped clean by the belt strips.

3.2.1.5 Tape to apply contrasting colored material to the inner glass/door surface.

3.2.2 Instrumentation.

3.2.2.1 Variable Direct Current (DC) power supply (if testing power window systems) 12 V $\pm$ 4 V DC.

3.2.2.2 Permanent marking pen or equivalent to mark a reference grid on door glass surface.

3.2.2.3 Proper electrical connectors and leads, if testing power window systems.

3.2.2.4 Atomizer for spraying liquids, if applicable.

3.2.2.5 Dust gun, if applicable.

3.2.2.6 Specified material to apply to glass surface, i.e., grit, snow, slush, etc.

3.2.2.7 Camera to record final results.

3.3 Test Vehicle/Test Piece. One (1) door assembly including a manual or power window system and a complete glass guidance system, including belt strips, run channels, handle cranks, and any items affecting window system performance. A body or partial body is required for testing frameless doors. It is recommended that the test parts/assembly be dimensionally certified before testing is started.

Note: Additional information on test required material and its assembly can be found in the Release Documentation (see 2.3).

3.4 Test Time. The following is an estimate of the amount of time (work-hours) needed to perform this procedure.

Note: These time estimates are approximate averages. Actual times vary considerably depending on early component failures (and subsequent availability of replacement parts), testing to varying multiples of cycle lives, varying requirements for frequency of environmental test conditions, scheduling problems for test facilities, test equipment malfunctions, scheduling of overtime and/or multiple shifts, scheduling of witnesses for tests, actual readiness of test samples upon receipt, unique or additional requests for detailed test information, running multiple samples (times shown are for one system), etc.

These times consider preparation and other downtime, actual test, and analysis of data in capturing a total calendar time. Report writing, approval, processing, etc. are not included in these times.

Calendar time: 2 days

Test hours: 6 hours

Coordination hours: 2 hours

3.5 Test Required Information. The requesting engineer is responsible for providing specifications appropriate to the particular vehicle line being tested (reference VTS/SSTS paragraph numbers, if applicable. See 2.3).

Testing worst case scenarios may uncover some potential problems. Discuss with the requesting engineer, if testing should include some worst case scenarios. Depending on which test is being performed and which level of parts or systems is being tested, consider if any of the following may apply: tolerance stack-ups, build variations, misalignment, minimum/maximum fastener torque(s), lubrication, environmental extremes, location of customer representative load application, symmetry (Left Hand vs. Right Hand), color, mold or die source, etc.

3.5.1 The following specifications or information are required to run this test:

3.5.1.1 Types of materials to be applied to glass surfaces.

3.5.1.2 Environmental exposure conditions and length of time.

3.5.1.3 Door glass operation range and number of cycles before evaluation.

3.5.1.4 Grid size to use for area determination and location.

3.5.1.5 Specific locations and areas of concern on glass surface.

3.6 Personnel/Skills. Prior experience in setting up and running similar tests and experience in the use of the referenced test equipment are critical to achieving the estimated times shown in 3.4.