



Window Seals and Moldings, Ice Scraper Damage Test

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 procedure describes the method to be used in order to test any glass, glazing area or moldings normally subjected to frost and/or ice scraping against damage caused by typical customer use of an ice scraper.

1.2 Foreword. This procedure subjectively evaluates damage to glass moldings and seals during ice scraping.

1.3 Applicability. This procedure applies to all passenger cars, light duty trucks, and medium duty trucks.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- **Release Documentation.** 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) and Vehicle Technical Specifications (VTS).** Paragraph 3.2.1.2.7 (Weatherstrip Ice Scraper Damage), of 55.01.01, the Side Door SSTS.

3 Resources

3.1 Facilities. Environmental chamber, capable of cooling a complete vehicle to -30 °C or as specified by the requesting engineer.

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 description includes fixturing and instrumentation typically used 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 Two ice scrapers of different construction. The ice scraping edge of the ice scrapers should consist only of hard polymer, and be approximately 127 mm (5 in) in width. See Figure A1 for examples.

3.2.1.2 A spray bottle capable of applying a water spray.

3.2.2 Instrumentation.

3.2.2.1 A camera capable of taking pictures in the specified temperature range.

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3.3 Test Vehicle/Test Piece. Additional information on test required material and its assembly can be found in the Release Documentation (see 2.3).

3.3.1 A vehicle/body equipped with a windshield and reveal molding, backlight and reveal molding, or door assemblies with all window seals and glass, depending on the parts being evaluated.

3.3.2 It is recommended that the test parts/assembly be dimensionally certified before testing is started.

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

Calendar time:	3 days
Engineer hours:	6 hours
Technician hours:	0 hours

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 part of these times.

3.5 Test Required Information. The requesting engineer is responsible for providing specifications appropriate to the particular vehicle line being tested. Reference Vehicle Technical Specifications (VTS) or Subsystem Technical Specifications (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 Desired test temperature.

3.5.1.2 Desired ice scrapers to be used.

3.5.1.3 Window locations to be tested.

3.5.1.4 Locations to be tested with each scraper. See paragraphs 4.3.2.1.6 and 4.3.2.1.8.

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 paragraph 3.4.

4 Procedure

4.1 Preparation.

4.1.1 Sample Inspection. The test and requesting engineers should inspect the test items to insure all material listed in 3.3 is of correct design level and assembled properly. Verify that there is no pre-test damage to any of the moldings and record any marks that may be seen.

4.1.2 Sample Preparation. This test is normally run on the test subject in an **as-received** condition. If it is requested to be run in a specifically adjusted condition, follow the applicable procedure(s).

4.1.2.1 Clean the glass to be tested (inside and outside) with glass cleaner.

4.1.2.2 For windshield and backlight, mark the inside of the glass into two longitudinal sections of approximately ½ the glass area. The two areas will be designated as Left Hand Side and Right Hand Side.

4.1.3 Facilities and/or Equipment Preparation. Acquire ice scrapers as specified in paragraph 3.5.1.2 or two commercially available ice scrapers of significantly different structures and identify them as **A** and **B**. Take photographs of each.

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