



Abrasion Resistance for Glass Seals

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. This standard describes the method to test and evaluate the durability of weatherstrip coatings, including flocking, spray applied coatings, and co-extruded low friction materials, and geometric effectiveness of a given profile on glass run sections and areas where constant wear is likely to occur on the vehicle.

1.2 Applicability. This standard is applicable to all coated glass run channel seals.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3221 GMW14125

2.3 Additional References.

Glass Fab, Incorporated, 257 Ormond Street, Rochester, New York 14605, (585) 262-4000, part number 44750-0001 or equivalent.

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.

3.2 Equipment.

3.2.1 Wear Resistance Tester. Suitable wear resistance tester (e.g., see Appendix A, Figure A1 or linear abrasion tester to GMW14125).

3.2.2 Appropriate wear resistance mounting fixture for profile to be tested.

3.2.3 Test Glass Abrader. Non-tempered or semi-tempered, acid etched, 4 mm thick, radius on edge shall be 6 mm. Abrader source: Glass Fab, Incorporated, 257 Ormond Street, Rochester, New York 14605, (585) 262-4000, part number 44750-0001 or equivalent.

3.3 Test Vehicle/Test Piece. Cut three (3) sections of weatherstrip seal to be tested, each 200 mm $\pm$ 5 mm in length. Lips may be trimmed as necessary for mounting to wear resistance fixture.

3.4 Test Time. Reference the lab test procedure(s) in Section 4 for timing details.

3.5 Test Required Information. See 5.3.

3.6 Personnel/Skills. Per laboratory accreditation requirements.

4 Procedure

4.1 Preparation. Not applicable.

4.2 Conditions.

4.2.1 Environmental Conditions. The minimum time between manufacturing and testing shall be 72 h. The test pieces shall be conditioned according to GMW3221 Code A for a minimum of 24 h prior to test and shall be free from strain during this period.

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.

4.3 Instructions.

Note: A new abrader shall be used for each test.

4.3.1 Mount seals to wear resistance mounting fixture.

4.3.2 Attach mounting fixture to wear resistance tester.

4.3.3 Center mounting fixture and tighten so that the mounting fixture remains stationary and straight during test.

4.3.4 Apply weight as defined in performance specification.

4.3.5 Set wear resistance tester to 60 cycles/minute, where the stroke of the abrasion element (glass) is 150 mm $\pm$ 1 mm with one (1) back and forth movement as one (1) cycle. A constant speed tester may be used.

4.3.6 Load the abrader to the wear resistance tester.

4.3.7 Run the wear resistance test, examining profiles every 1000 cycles. Abrader shall be wiped with Methyl Ethyl Ketone (MEK) at each evaluation interval. Evaluation of the profile may be needed more or less frequently according to initial results.

4.3.8 Record cycles and any observations such as element scratching or pressure points.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. Not applicable.

5.3 Test Documentation. With reference to this test procedure, the results shall be represented in a test report. The report shall include the following:

- Complete identification of the specimen.
- Conditioning of the test specimen.
- Test conditions.
- Any deviations to the test method.
- Observations of the condition of each tested area.
- Number of cycles.

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.