GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW4726

Water Repellent Properties of Automotive Textiles

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 test procedure is used to determine the ability of an automotive textile to repel water.

1.2 Applicability. This test is recommended for fabrics having a water repellent finish.

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

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 Water. Distilled or Deionized.

3.2.2 Water Repellent Property Tester consisting of a funnel with an attached spray nozzle supported directly above the tilted test specimen. Proposed dimensions are shown in the equipment diagram. See Appendix A, Figure A1. The sprayer may be different than prescribed as long as it meets the criteria of a water flow rate of 250 mL in 25 s to 30 s. Distance and angle between sprayer and test specimen are also critical dimensions. The holder shall hold the test specimen so that a circular area having a diameter of 165 mm ± 5 mm with both sides of the test specimen exposed.

3.2.3 Cutting dies or shears for preparation of test specimens.

3.2.4 Apparatus for conditioning to the appropriate requirements as described in GMW3221 Code A, unless otherwise specified in the relevant materials specification.

3.3 Test Vehicle/Test Piece. A minimum of three (3) test specimens, 180 mm ± 10 mm square, shall be prepared.

3.4 Test Time. Contact the GM Lead Engineer for approximate times.

3.5 Test Required Information. Unless otherwise specified in the relevant material specification, conditioning shall be performed according to GMW3221 Code A.

3.6 Personnel/Skills. Personnel trained in accordance with the laboratory accreditation and Standard Operating Procedure requirements.

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4 Procedure

4.1 Preparation. After securing a test specimen in a sample holder at a prescribed angle, a known quantity of water is sprayed at a specified rate onto the test specimen. Excess water is then removed from the test specimen and its water repellent property is rated.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable**.**

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.

4.3.1 Place a test specimen, show surface up, in the holder so that there are no wrinkles.

4.3.2 Position the test specimen and spray nozzle so that the water will fall onto the center of the test specimen.

4.3.3 Place 250 mL ± 10 mL of +23 °C ± 2 °C water into the funnel. Water must be emptied in 25 s to 30 s.

4.3.4 Remove the test specimen and holder and turn so that the specimen faces downward.

4.3.5 While holding one of the corners/sides of the sample holder, strike the opposite corner/side against a hard surface to remove excess water.

4.3.6 Rotate the test specimen 180 degrees, and remove excess water again by striking the opposite corner/side of the holder against a hard surface.

5 Data

5.1 Calculations. Not applicable

5.2 Interpretation of Results. Evaluate the test specimen's appearance and use Table 1 to determine the rating. Use Appendix A, Figure A2 as a general representation of the appearance of some possible results/ratings.

5.3 Test Documentation. Report the rating for each test specimen and the average rating of the three (3) test specimens.

Table 1: Test Specimen Rating Scale

Rating	Description
10	No water remains on or in fabric
8	No water in fabric, small droplets on surface
6	Small wet areas
4	About half (½) of surface is wetted
2	About 80% wetted surface

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