



Elastomeric Floor Mats

1 Scope

1.1 Material Description. This standard describes elastomeric materials that are suitable for floor mat applications. Testing shall be performed on production intent parts. The performance tests can be applied as well to floor mats made of thermoplastic elastomers (TPE), the material properties of the TPE must be tested to the relevant GMW material specification for TPE.

1.2 Symbols. Not applicable.

1.3 Applicability. Elastomeric or thermoplastic elastomer materials that are suitable for floor mat applications.

2 References

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

2.1 External Standards/Specifications.

ISO 37	ISO 188	ISO 3865	ISO 23529
ISO 105-B06	ISO 1431-1	ISO 7619-1	SAE J1530

2.2 GM Standards/Specifications.

GMW3059	GMW3235	GMW14102	GMW15634
GMW3205	GMW3283	GMW14162	
GMW3232	GMW6992	GMW14270	

2.3 Additional References.

Relevant GMW Material Specification for TPE

Relevant GMW Material Test Procedure

3 Requirements

3.1 Resources.

3.1.1 Test Samples. Unless otherwise specified, the shape, size and number of test pieces shall be in accordance with the relevant GMW material test procedure.

3.1.1.1 Unless otherwise specified, samples are finished parts or to be taken from finished parts. Where the dimensions on the finished parts do not allow preparing of test pieces, tests are to be performed on sheet material of same production batch. Tests must be carried out to state same state of cure between sheet material and finished parts. If not otherwise stated, mechanical properties in delivery state and after heat or fluid immersion are to be tested at +23 °C and with the same test methods.

3.1.2 Conditioning. Conditioning shall be as specified in the relevant GMW material test procedure.

3.1.3 Equipment. Conforming to the relevant GMW material test procedure.

3.1.4 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.5 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this specification shall be determined correctly with respect to its physical definition.

3.1.6 Facilities. Conforming to the relevant GMW material test procedure.

3.1.7 Visual Evaluation of Automotive Trim. The color, pattern, aesthetics and other related qualities shall be approved by the appropriate engineering department as an acceptable match to the standard when viewed under conditions set forth in GMW6992.

3.2 Material and Performance Requirements. Material requirements are summarized in Table 1, performance requirements are summarized in Table 2.

3.3 Conditions.

3.3.1 Environmental Conditions. The minimum time between vulcanization and testing of elastomers shall be 72 h. The test pieces shall be maintained at a temperature of $23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ for at least 8 h prior to test and shall be free from strain during this period.

3.4 Instructions. Not applicable.

3.5 Data. Not applicable.

3.6 Safety. This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

3.7 Documentation. Samples of components or material released to this standard shall be tested for conformity with the requirements of this standard and approved by the responsible GM Department prior to the start of delivery of production level components or materials.

Any change to the component or material, e.g., design, function, properties, manufacturing process and/or location of manufacture requires a new release of the product. It is the sole responsibility of the supplier to provide the customer, unsolicited, with documentation of any change or modification to the product/process, and to apply for a new release.

If not otherwise agreed to, the entire verification test shall be repeated and documented by the supplier prior to start of delivery of the modified or changed product. In some cases, a shorter test can be agreed to between the responsible GM department and the supplier.

3.7.1 Test Results. With reference to this specification, the test results shall be presented in a test report.

3.7.2 Deviations. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

3.8 Dimensions and Tolerances. Dimensions and tolerances shall be specified on the engineering part drawing or in the math data file.

3.9 All materials supplied to this standard must comply with GMW3059, Restricted and Reportable Substances, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

Table 1: Properties for Rubber Material and Requirements

Property	Test Method	Unit	Value
Hardness			
All Types	ISO 7619-1	Shore A	65 (+5/-10)
Elongation at Break			
All Types	ISO 37, Type 2 or Type 4 dumbbell, 200 mm/minute $\pm$ 20 mm/minute	Percent (%)	150 minimum
Tensile Strength			
All Types	ISO 37, Type 2 or Type 4 dumbbell, 200 mm/minute $\pm$ 20 mm/minute	Millipascal (Mpa)	3 minimum
Age Resistance (Heat Aging)			
All Types	ISO 188 Method B, 168 -2 h at $+70\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ Change in Hardness Tensile Strength Appearance	Shore A MPa	+10 maximum 2.6 minimum No whitening or appearance change.