



Elastomer for Body Grommets

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.

This specification covers the materials and performance of elastomeric grommets for use in body applications up to +100 °C maximum.

1.1 Purpose/Material Description. Materials covered by this specification are divided into two (2) Types.

1.1.1 Type A. Guiding grommets, up to continuous operating temperature of +70 °C. Guide grommet are simple geometries, typically used in static applications. See Appendix A, Figure A1 for example of a guide grommet

1.1.2 Type B. Guard grommets, up to continuous operating temperature of +100 °C. Guard grommets typically have a corrugated section and are used in the areas such as door openings and the wiring harness from body to door must be protected with a flexible rubber part. See Appendix A, Figure A2 and Figure A3 for examples of a guard grommet.

1.2 Symbols. Not applicable.

1.3 Applicability. Elastomeric grommets for use in body applications.

2 References

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

2.1 External Standards/Specifications.

ISO 37	ISO 188	ISO 1431-1	ISO 23529
ISO 48-2	ISO 815-1	ISO 1629	

2.2 GM Standards/Specifications.

GMW3059	GMW14270
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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 test method.

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. The same state of cure between slabs or buttons and finished parts must be ensured by appropriate tests, which must be described in the test report.

Unless otherwise stated, ambient temperature test conditions shall be held to +23 °C ± 5 °C, all other temperatures shall be held to ± 3 °C. 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 procedures.

3.1.2 Conditioning. The minimum time between vulcanization and testing of elastomers shall be 72 h. The test pieces shall be maintained at a temperature of +23 °C ± 5 °C and 50% ± 5% relative humidity for at least 24 h prior to test and shall be free from strain during this period. Any additional conditioning shall be as specified in the relevant test methods.

3.1.3 Equipment. Conforming to the relevant test methods.

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 test methods.

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

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

Table 1: Material and Performance Properties

Property	Test Method	Unit	Value
Hardness			
Type A, Type B	ISO 48-2 Method M	IRHD	As specified on drawing, ± 5 units
Elongation at Break			
Type A	ISO 37, test piece in the shape of ring, 500 mm/minute $\pm$ 50 mm/minute	%	250 Minimum
Type B	ISO 37, Type 4 dumbbell, 200 mm/minute $\pm$ 20 mm/minute	%	500 Minimum
Age Resistance (Heat Aging)			
Type A	ISO 188 Method B, 168 h (+0/-2 h) at +70 °C $\pm$ 3 °C Change in Hardness	IRHD	+10 Maximum
Type B	ISO 188 Method B, 168 h (+0/-2 h) at +100 °C $\pm$ 3 °C Change in Hardness	IRHD	+15 Maximum
Ozone Resistance			
Type A	ISO 1431-1, 50 pphm, 20% strain on mandrel, +25 °C $\pm$ 2 °C, 72 h (+0/-2 h), visual examination (no magnification)		No cracks
Type B	ISO 1431-1, 50 pphm, 20% strain on mandrel, +40 °C $\pm$ 2 °C, 72 h (+0/-2 h) visual examination (no magnification)		No cracks
Compression Set			
Type B	ISO 815-1 test piece Type B +70 °C $\pm$ 3 °C, 24 h (+0/-2 h), 25% compressed	%	30 Maximum
Cold Resistance			
Types A and Type B	ISO 23529, -30 °C $\pm$ 3 °C, 5 h (+1/-0 h) Bending test radius = 2.5 mm		No cracks

Note: IRHD = International Rubber Hardness Degree, Pphm = Parts per Hundred Million.