GM	WORLDWIDE ENGINEERING STANDARDS	Material Specification	GMW14744

Elastomer for Body Grommets

1 Scope

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

1.1 Material Description. Materials covered by this specification are divided into three (3) Types.

1.1.1 Type A. Guiding grommets, up to continuous operating temperature of 70 °C. Material defined on part drawing.

1.1.2 Type B. Guard grommets, up to continuous operating temperature of 100 °C. Material defined on part drawing.

1.1.3 Type C. Drawing defined (e.g., using SAE J200 or ASTM D2000 line callout).

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.

ASTM D2000	ISO 48	ISO 815-1	ISO 23529
ISO 37	ISO 188	ISO 1431-1	SAE J200

2.2 GM Standards/Specifications.

GMW3059	GMW14270

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. 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.

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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.

3.3 All materials supplied to this standard must comply with the requirements of the International Material Data System (IMDS) and GMW3059, **Restricted and Reportable Substances.**

Table 1: Material and Performance Properties

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

IRHD = International Rubber Hardness Degree
Pphm = Parts per Hundred Million

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