



Elastomer for Pads of Metal or Plastic Clamps

1 Scope

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

- **Type A:** Elastomer up to +125 °C permanent. For parts, which are suspended thermally higher loads, including engine compartment.
- **Type B:** Elastomer up to +100 °C permanent. For parts, which are used exclusively outside of the engine compartment.
- **Type C:** Drawing defined (e.g., using SAE J200 or ASTM D2000 line callout).

1.2 Symbols. Not applicable.

1.3 Applicability. This specification covers the materials and performance of elastomeric materials used for pads on metal or plastic clamps.

2 References

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

2.1 External Standards/Specifications.

ASTM D2000	ISO 188	ISO 1431-1	ISO 23529
ISO 37	ISO 815-1	ISO 7619-1	SAE J200

2.2 GM Standards/Specifications.

GMW3059	GMW14270	GMW17821
---------	----------	----------

2.3 Additional Resources.

Drawing/Math Data File
Relevant Test Method

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. 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 method.

3.1.2 Conditioning. Conditioning shall be as specified in the relevant test method.

3.1.3 Equipment. Conforming to the relevant test method.

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 method.

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 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: Material and Performance Properties

Property	Test Method	Unit	Value
Hardness			
Type A and Type B	ISO 7619-1	Shore A	As specified on drawing
Type C	As specified on drawing/math data file	Shore A	As specified on drawing
Elongation at Break			
Type A and Type B	ISO 37, Type 2 or Type 4 dumbbell, 200 mm/minute $\pm$ 20 mm/minute	Percent (%)	200 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 +125 °C $\pm$ 3 °C Change in Hardness	Shore A	+15 maximum
Type B	ISO 188 Method B, 168 h -2 h at +100 °C $\pm$ 3 °C Change in Hardness	Shore A	+10 maximum
Type C	As specified on drawing/math data file		As specified on drawing
Compression Set ^{Note 1}			
Type A and Type B	ISO 815 test piece Type B +70 °C $\pm$ 3 °C, 24 h -2 h, 25% compressed	%	30 maximum
Type C	As specified on drawing/math data file	%	As specified on drawing
Ozone Resistance			
Type A and Type B	ISO 1431-1, 50 pphm, 25 °C $\pm$ 2 °C, 20% Strain, Visual Examination		No cracks permissible
Type C	As specified on drawing/math data file		As specified on drawing
Cold Resistance			
Type A and Type B	ISO 23529, -30 °C $\pm$ 3 °C; 5 h +1 h Change in Hardness	Shore A	+20 maximum
Type C	As specified on drawing/math data file	Megapascals (MPa)	As specified on drawing

Note 1: More information regarding preparing and testing compression set, on pieces cut from finished parts, can be found in GMW17821. In special cases, a sketch must be attached on the drawing to clearly define the test piece and the direction of compression.