



Elastomer for Wiper Blades

1 Scope

This specification covers the materials and performance of elastomeric materials used for wiper blade applications.

1.1 Material Description. Materials covered by this specification are divided into four (4) types:

1.1.1 Type A. Ethylene Propylene Diene Terpolymer (EPDM).

1.1.2 Type B. Natural Rubber (NR).

1.1.3 Type C. Polychloroprene Rubber (CR).

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

1.2 Symbols. Not applicable.

1.3 Applicability. Wiper blades.

2 References

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

2.1 External Standards/Specifications.

ASTM D2000	ISO 188	ISO 2285
ISO 37	ISO 1431-1	ISO 3865
ISO 48	ISO 1817	SAE J200

2.2 GM Standards/Specifications.

9985670	B 440 0064	GMW14162
B 040 0218	GMW3059	

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

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 procedure.

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 procedures.

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

3.1.3 Equipment. Conforming to the relevant test procedures.

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 procedures.

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 Procedure	Unit	Value
Hardness			
Type A, B, and C	ISO 48 Method M	IRHD	60 ± 5
Type D	As specified on drawing/math data file	Shore A	As specified on drawing
Tensile Strength			
Type A, B, C	ISO 37, Type 4 dumbbell, 200 mm/minute ±20 mm/minute	MPa	10 minimum
Type D	As specified on drawing/math data file	MPa	As specified on drawing
Tensile Modulus at 100% Elongation			
Type A, B, C	ISO 37, Type 4 dumbbell, 200 mm/minute ± 20 mm/minute	MPa	2 minimum
Type D	As specified on drawing/math data file	MPa	As specified on drawing
Elongation at Break			
Type A	ISO 37, Type 4 dumbbell, 200 mm/minute ±20 mm/minute	%	200 minimum
Type B	ISO 37, Type 4 dumbbell, 200 mm/minute ±20 mm/minute	%	350 minimum
Type C	ISO 37, Type 4 dumbbell, 200 mm/minute ±20 mm/minute	%	250 minimum
Type D	As specified on drawing/math data file	%	As specified on drawing
Age Resistance (Heat Aging)			
Type A, B, C	ISO 188 Method B, 168 -2 h at 80 °C ± 3 °C Change in Hardness Change in Tensile Strength Change in Elongation at Break Change in Volume	IRHD % % %	±5 maximum -25 maximum -25 maximum ±5 maximum
Type D	As specified on drawing/math data file		As specified on drawing
Tension Set			
Type A, B, C	ISO 2285, Test Piece Type 4 to ISO 37, 24 h -2 h at 70 °C ± 3 °C, 50% ± 5% strain, followed by cooling for 2 h -0.2 h at 23 °C ± 5 °C	%	25 maximum
Type D	As specified on drawing/math data file	%	As specified on drawing
Ozone Resistance			
Type A, B, C	ISO 1431-1, 50 ppm, 40 °C ± 2 °C, 15% strain, 72 h -2 h visual examination		No cracks permissible
Type D	As specified on drawing/math data file		No cracks permissible
Paint Staining			
Type A, B, C	ISO 3865, Method A, using production representative painted panels. Basecoat shall be white. To develop latent stain, the panels shall be exposed to Ultraviolet (UV) following the heat exposure. UV Exposure to GMW14162/B/2 MJ/m ² minimum.		No staining permissible