



Masticated Rubber

1 Scope

This standard covers the material requirements of a combination of rubber and fiber mixed in sheet form.

1.1 Material Description. The material composition shall be a masticated black compound consisting of nylon, rayon, or polyester fiber, and reinforced rubber. There shall be no addition of fillers, waxes, or oils to the base material. These materials have minimal fuel and oil resistance.

1.1.1 Material Types. Material types are delineated by hardness values. The types and corresponding hardnesses available are identified in Appendix A, Table A1.

1.2 Symbols. Not applicable.

1.3 Applicability. Typical applications include radiator air baffles, wheelhouse splash guards, mud flaps, close-outs, and after-market bed mats. The maximum service temperature shall not exceed +100 °C.

1.4 Remarks. These materials may contain recycled content. Recycled content (type and percent) shall be reported and documented as part of the material approval.

2 References

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

2.1 External Standards/Specifications.

ASTM D297	ASTM D1171	ISO 37	ISO 1183
ASTM D412	ASTM D2137	ISO 188	ISO 1431-1
ASTM D573	ASTM D2240	ISO 812	
ASTM D624	ISO 34-1	ISO 868	

2.2 GM Standards/Specifications.

GMW3059	GMW3221	GMW3232	GMW14270
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2.3 Additional References.

Not applicable.

3 Requirements

3.1 Requirements on Test Specimens. Unless otherwise specified, all test specimens shall be conditioned per GMW3221 Code A. Test specimens shall be prepared in accordance with the respective test method. Tests shall be conducted using the latest issue of the test methods indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and/or handling the materials required by this specification.

3.2 Compound Properties. Important physical, mechanical, and thermal properties that characterize the material are summarized in Table 1.

Table 1: Compound Properties (Black)

Property	Test Method	Unit	Type			
			1	2	3	4
Shore A Hardness	ASTM D2240 or ISO 868, instantaneous	Shore A	55 to 65	65 to 75	75 to 85	85 to 95
Density	ASTM D297 or ISO 1183	g/cm ³	To Be Reported			
Tensile Stress at Break Parallel to Grain	ASTM D412, Meth. A, Die C, 500 mm/minute or ISO 37, Type 1 dumbbell, 500 mm/minute	MPa	0.7 minimum	3.3 minimum	4.8 minimum	10.3 minimum
Tensile Stress at Break Perpendicular to Grain	ASTM D412, Meth. A, Die C, 500 mm/minute or ISO 37, Type 1 dumbbell, 500 mm/minute	MPa	0.5 minimum	3.6 minimum	2.4 minimum	3.1 minimum
Elongation at Break Parallel to Grain	ASTM D412, Meth. A, Die C, 500 mm/minute or ISO 37, Type 1 dumbbell, 500 mm/minute	%	59 minimum	105 minimum	15 minimum	5 minimum
Elongation at Break Perpendicular to Grain	ASTM D412, Meth. A, Die C, 500 mm/minute or ISO 37, Type 1 dumbbell, 500 mm/minute	%	49 minimum	49 minimum	40 minimum	15 minimum
Tear Strength Parallel to Grain	ASTM D624, Die B, 500 mm/minute or ISO 34-1, Method B, angle die, 500 mm/minute	kN/m	11.5 minimum	24.3 minimum	26.0 minimum	30 minimum
Tear Strength Perpendicular to Grain	ASTM D624, Die B, 500 mm/minute or ISO 34-1, Method B, angle die, 500 mm/minute	kN/m	9.3 minimum	25.2 minimum	35 minimum	80 minimum
Low Temperature Brittleness	ASTM D2137 or ISO 812, Type B	°C	-40 maximum			
Flammability	GMW3232	mm/minute	≤ 100			
Ozone Resistance	ASTM D1171 or ISO 1431-1, (100 ± 10) pphm, (40 ± 2) °C, 72 h +0/-2 h		No cracks when viewed under 2x magnification			
Tear Strength after Ozone Resistance Testing (parallel and perpendicular to grain)	ASTM D624, Die B, 500 mm/minute or ISO 34-1, Method B, angle die, 500 mm/minute	kN/m	To Be Reported			
Properties After Heat Aging	ASTM D573 or ISO 188, 70 h at +70 °C in an air-circulating oven followed by indicated property testing at +23 °C. Test methods are the same as for original mechanical property testing.	Change in Property	-			
Tensile Stress		%	±25			
Elongation at Break		%	±25			
Hardness		Shore A	±10			

pphm Parts per Hundred Million