



Engineering Material Specification

Material Name

Specification Number

ANTISQUEAK, GRAPHITE AND POLYETHYLENE BLEND

ESA-M6G10-A

1. SCOPE

The material defined by this specification is a high density polyethylene resin blended with graphite having high abrasion resistance, plus resistance to penetration by oils, greases, chemicals and moisture.

2. APPLICATION

This specification was released originally for material used as an interleaf insert in automotive leaf springs.

3. REQUIREMENTS

3.1 BASE MATERIAL, Molded Test Specimen (Compression molded)

3.1.1	Flow Rate, max (ASTM D 1238)	3.5 g/10 min
3.1.2	Tensile Strength, min (ASTM D 638, 2.0 in (50 mm)/min pull)	3,100 psi (21.4 MPa)
	Elongation at Break, min	40%
3.1.3	Specific Gravity (ASTM D 792)	0.95 - 1.05
3.1.4	Deflection Temperature, min (ASTM D 648, 66 psi (455 kPa))	63°C
3.1.5	Deformation Under Load (ASTM D 621, Method "A", 500 lb (227 kg) load at 50°C)	15%
3.1.6	Graphite Content, by weight	4 - 6%
	Graphite Particle Size	96 minimum to be 80 µ or less

3.2 MOLDED PARTS - QUALITY CONFORMANCE

3.2.1	Specific Gravity (ASTM D 792)	0.95 - 1.05
3.2.2	Flow Rate, max (ASTM D 1238)	3.0 g/10 min

Date	Para. No.	Revisions	Approval
			<i>G. Friederich</i> 11-2-78
1979 01 10		Metricated, Renumbered & Retyped <i>CAH2 823385</i>	<i>P. Handford</i> 11-6-78
1969 06 19		Released COY2-960330	<i>E. F. Fournier</i> 11-29-78
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3.3 Additional properties of the molded part such as below may be specified on the engineering drawing or in the engineering performance specification when required.

3.3.1 Cold Impact Test

Must not break

Test Method: Condition part 30 min at -40°C . Drop a 1-7/8 in (48 mm) diameter steel ball, 16 + 1 oz (454 + 28 g), from a height of 12 in (300 mm) onto the part supported by a 2 in (50 mm) ring, 1/8 in (3.2 mm) radius on edge. Test to be run at -40°C .

3.3.2 Cold Bend Test

Must not break

Test Method: Condition part 30 min at -40°C , test at -40°C . Bend part a minimum of 10° over a 1/4 in (6.4 mm) mandrel.

3.3.3 Solvent Resistance

No deleterious effect such as crazing, cracking and softening or other surface conditions after 1 h immersion at $23 \pm 2^{\circ}\text{C}$ in each of the following mixtures consisting of:

- . 5% sodium chloride and water
- . 5% calcium chloride and water
- . 50% gasoline and 50% grease (ESB-M1C82-A)

3.4 SUPPLIER'S RESPONSIBILITY

Material supplied to this specification must be equivalent to that originally approved. Changes in formulation or processing shall not be made without prior approval as described in Supplier Procedure I-A.

4. APPROVAL OF SUPPLIERS

Suppliers to this specification must be approved by the affected product engineering office. Procedure for gaining approval of a specific material to a new/existing ES-M specification is contained in Supplier Procedure I-A. Approved new suppliers will be added to the Engineering Materials Approved Source List.

9.7.16
4.7.

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