



THERMOPLASTIC POLYOLEFIN ELASTOMER, EXTERIOR
PAINTABLE - LOW MODULUS

ESB-M2D246-A1

THERMOPLASTIC POLYOLEFIN ELASTOMER, PAINTABLE
INTERMEDIATE MODULUS

ESB-M2D246-A2

THERMOPLASTIC POLYOLEFIN ELASTOMER, PAINTABLE
HIGH MODULUS

ESB-M2D246-A3

1. SCOPE

The materials defined by these specifications are thermoplastic modified elastomers. Body components molded or extruded in these materials can maintain class "A" surfaces and are generally painted body color.

2. APPLICATION

These specifications were released originally for materials used in impact system related components such as bumper sight shields, and may be specified for any applications requiring paintable elastomers within the modulus ranges specified below. Three room temperature (23 °C) modulus ranges are defined.

ESB-M2D246-A1	Low Modulus	20,000 psi (138 MPa) max
ESB-M2D246-A2	Intermediate Modulus	20,000 – 50,000 psi (138-345 MPa)
ESB-M2D246-A3	High Modulus	50,000 psi (345 MPa) min

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.1 MOLDED TEST SLAB

The following mechanical properties requirements apply to test specimens prepared from unpainted slabs measuring 0.100 - 0.125 in (2.5 - 3.2 mm) in thickness. Molded slabs must also comply with all "finished part requirements" specified in para. 3.2.

		A1	A2	A3
3.1.1	Hardness - Durometer "D" (ASTM D 2240, instantaneous reading)	35 - 45	34 - 50	50 - 60

Date	Action	Revisions
2004 07 23	Revised	Para 3.0 inserted; para 3.2.3, 3.3 & 4 deleted
1978 11 17	Metricated and Retyped	CAH1-RD572066-176
1977 01 05	Released	AG1 6000-179





ENGINEERING MATERIAL SPECIFICATION

ESB-M2D246-A1/A2/A3

		A1	A2	A3
3.1.2	Tensile Strength, psi (MPa), min (ASTM D 412, Die "C")	900 (6.2)	1,000 (6.9)	1,500 (10.3)
3.1.2.1	Elongation, %, min	200	70	70
3.1.3	Tear Strength, lb/in (kN/m), min (ASTM D 624, Die "C")	200 (35)	180 (32)	300 (53)
3.1.4	Flexural Modulus "E", psi (Mpa) (ASTM D 790, tangent, Method "T", Procedure "B" room temperature)	20,000 max (138 max)	20,000 – 50,000 (138 - 345)	50,000 min (345 min)
3.1.5	Low Temperature Brittleness Point, C max (ASTM D 746)	-45	-45	-45
3.1.6	Ozone Rating (FLTM BP 101-01, sample per ASTM D 412, 100% elongation)			
	ESB-M2D246-A1 ESB-M2D246-A2 ESB-M2D246-A3			ESB-M9P1-A ESB-M9P1-A ESB-M9P1-A
3.1.7	Paint Staining (ESB-M9P4-A)	None	None	None
3.1.8	Acrylic Staining (ESB-M9P5-A)	None	None	None
3.1.9	Heat Aged (ASTM D 573, 70 h at 100 +/- 1 °C)			
	Hardness – Durometer "D" Change, max	+5	+5	+5
	Tensile Strength Change, % max	-30	-30	-30
	Elongation Change, % max	-40	-40	-50
3.1.10	Surface Resistivity, Ω-cm (ASTM D 257, applied voltage 10, 23 °C, 50% relative humidity, 30 s)		3 x 10 ⁴ to 1 x 10 ⁹	

Unless specifically exempted on the part drawing, components molded in materials defined by these specifications shall be paintable by electrostatic deposition and must conform to this surface resistivity requirements. This test is required for initial material qualification only. The Ransburgh Meter No. 236 may be used for quality control purposes with meter readings of 140 desired. A range of 90 minimum and 160 maximum are absolute limits. These tests must be conducted on properly prepared samples.