



**THERMOPLASTIC ELASTOMER (TES)
STYRENE BLOCK COPOLYMER
45 DUROMETER A HARDNESS, INTERIOR**

WSS-M2D507-A

**THERMOPLASTIC ELASTOMER (TES)
STYRENE BLOCK COPOLYMER
60 DUROMETER A HARDNESS, INTERIOR**

WSS-M2D507-A2

**THERMOPLASTIC ELASTOMER (TES)
STYRENE BLOCK COPOLYMER
75 DUROMETER A HARDNESS, INTERIOR**

WSS-M2D507-A3

**THERMOPLASTIC ELASTOMER (TES)
STYRENE BLOCK COPOLYMER
80 DUROMETER A HARDNESS, INTERIOR**

WSS-M2D507-A4

**THERMOPLASTIC ELASTOMER (TES)
STYRENE BLOCK COPOLYMER
90 DUROMETER A HARDNESS, INTERIOR**

WSS-M2D507-A5

1. SCOPE

The materials defined by these specifications are colored and U.V. stabilized thermoplastic elastomers based on Styrene block copolymers (TES) for interior use of nominal instantaneous Durometer A hardnesses ranging from 45 to 90 having good long term resistance to heat at temperatures up to 100 °C. These materials can be considered as lower cost alternatives to TPV materials.

2. APPLICATION

These specifications were released originally for materials used for general unpainted interior components which are black or color keyed such as seals, bezels, gaskets, edge strips, control knob covers, etc but excluding air bag covers. The materials can be processed by conventional thermoplastics molding techniques such as injection molding, extrusion and blow-molding.

3. REQUIREMENTS

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.2 DYNAMIC MECHANICAL ANALYSIS (ASTM D 4065)

Ford Motor Company, at its option, may establish shear modulus/damping vs. temperature curves plotted for -50 to +170 °C temperature range for material/parts supplied to this specification. The shear modulus and damping curves established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce shear modulus and damping curves that correspond to the reference standard when tested under the same conditions.

Date	Action	Revisions
2004 12 07	Revised	Updated format; Inserted 4.
2003 06 04	Activated	





3.3 PREPARATION OF TEST SPECIMENS

Unless otherwise specified, all tests shall be conducted on specimens die cut from injection molded plaques 150 x 100 x 2.0 +/- 0.2 mm. The plaques shall be molded according to ISO 294 and film gated along the upper 100 mm edge, and preceded by a 0.8 mm diameter pin gate. No annealing allowed, unless specified otherwise.

3.4 FINISHED PART REQUIREMENTS

The finished part must conform with the requirements of the performance specification WSS-M15P4-E and/or the relevant System Design Specifications (SDS).

	507-A1	507-A2	507-A3	507-A4	507-A5
3.5 DENSITY, +/- 0.05 g/cm³ (ISO 1183, Method A/ ASTM D 792, Method A1)	1.18	1.20	0.95	1.12	0.90
3.6 HARDNESS, DUROMETER A (ISO 868, after 15 sec.)	45 +/- 5	60 +/- 5	75 +/- 5	77 +/- 5	90 +/- 5
3.7 TENSILE STRENGTH, MPa, min (ISO 37/ASTM D 412, Die C, 500 mm/min test speed. Measured Parallel to Flow)	1.5	3	7.5	6.3	12.2
3.7.1 Elongation at Break, % min (Test per para 3.7)	150	280	580	180	620
3.8 MODULUS AT 100% ELONGATION, +/- 20% (Test per para 3.7)	2.1	2.5	4	5.7	6.2
3.9 TEAR STRENGTH, kN/m, min (ISO 34, Method B, procedure a/ ASTM D 624, Die C)					
3.9.1 Parallel to Flow	11	19	39	26	48
3.9.2 Perpendicular to Flow	19	23	36	30	48
3.10 COMPRESSION SET, %, max (ISO 815, Large Type plied specimen//ASTM D 395, Method B, Type 1 plied specimen)					
3.10.1 72 h at 23 +/- 1 °C	13	19	44	31	NA*
3.10.2 24 h at 70 +/- 2 °C	33	39	53	45	NA*

