

**THERMOPLASTIC POLYESTER ETHER ELASTOMER (TEEE),
90 DUROMETER A HARDNESS, GENERAL PURPOSE****WSD-M2D384-A1****1. SCOPE**

The material defined by this specification is a nominally 90 Durometer A melt-processable polyester-ether elastomer (TEEE) for general purpose use where retention of visual appearance after outdoor exposure is not required (See General Information).

2. APPLICATION

This specification was released originally for material used as a radio antenna-to-body seal. The material can withstand prolonged exposure to temperatures up to 100 °C. Being thermoplastic, the material will soften and creep significantly under load at temperatures exceeding 110 °C.

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).

3.3 DYNAMIC MECHANICAL ANALYSIS

Ford Motor Company, at its option, may establish a shear modulus/damping vs. temperature curves plotted for -50 to +150 °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.

3.5 MOLDED TEST SPECIMEN**3.5.1 Preparation of Test Specimens**

Unless otherwise specified, all test 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. No annealing allowed, unless specified otherwise.

3.5.2 Density 1.18 – 1.20 g/cm³
(ISO 1183, Method A/ASTM D 792,
Method A1)

3.5.3 Hardness, International 85 - 95
(ISO 48/ASTM D 1415)

Date	Action	Revisions
2004 09 15	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.4, 3.7, 3.8, 4; Corrected numbering in 3.7, 5
1988 10 31		All sheets revised. B/031517 TC
1988 04 11	Released	WSD-M2D384-A1 only. SM/ER 3718 TC



ENGINEERING MATERIAL SPECIFICATION

WSD-M2D384-A1

3.5.4	Hardness, Durometer A (ISO 868/ASTM D 2240, instantaneous, plied-up specimen)	85 - 95
3.5.5	Tensile Strength, min (ISO R 527, type 2/ASTM D 412, Die C, 500 mm/min test speed)	15 MPa
3.4.5.1	Elongation at Break, min (Test acc. to para 3.4.5)	300%
3.5.6	Modulus at 100% Elongation, min (Test acc. to para 3.4.5)	10 to 13 MPa
3.5.7	Tear Strength, min (ISO 34, Method B, procedure a/ ASTM D 624, Die C)	
3.5.7.1	Parallel to Flow	80 kN/m
3.5.7.2	Perpendicular to Flow	80 kN/m
3.5.8	Compression Set, max (ISO 815, Large Type-plied specimen//ASTM D 395, Method B, Type 1 plied specimen)	
3.5.8.1	22 h at 70 +/- 1 °C	70%
3.5.8.2	70 h at 100 +/- 2 °C	85%
3.5.8.3	1,000 h at 100 +/- 2 °C	85%
3.5.9	Brittleness Point, max (ASTM D 2137, Method A)	-50 °C
3.5.10	Ozone Resistance, max (FLTM BP 101-01, at 20% elongation)	Rating 0
3.5.11	Heat Aging (ISO 188/ASTM D 573, 1,000 h at 100 +/- 2 °C)	
3.5.11.1	Hardness Change, max	+/- 5
3.5.11.2	Tensile Strength Change, max	-15%
3.5.11.3	Elongation Change, max	-10%
3.5.11.4	Modulus at 100% Elongation, min	11 to 14 MPa