



THERMOPLASTIC POLYOLEFIN ELASTOMER (TEO) 27% MINERAL FILLED MOLDING COMPOUND PAINTABLE

WSK-M4D714-A2

1. SCOPE

The material defined by this specification is a rigid thermoplastic polyolefin elastomer (TEO) injection molding compound, 27% mineral (talc) filled. This material requires painting to achieve higher surface requirements.

2. APPLICATION

This specification was released originally for material used for painted reinforcements of instrument panels on Escort and Fiesta.

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 MOLDING COMPOUND

3.2.1	Melt Flow Rate (ISO 1133, 230 °C, 2.16 kg)	Report g/ 10 minutes
3.2.2	Filler Content (ISO 3451/1, Method A, talc filler, 1 h at 850 +/- 50 °C, test portion 2 to 2.5 g)	25 - 32%

3.3 MOLDED TEST SPECIMEN

3.3.1 Preparation of Test Specimens

Unless otherwise specified all tests shall be carried out on injection molded one-end gated test specimens.

The following dimensions are required:

- A. 150 min x 10 x 4.0 +/- 0.2 mm (Tensile Bar, ISO 3167)
- B. 120 x 10 x 4.0 +/- 0.2 mm

Specimens with shorter dimensions shall be cut from the center portion of the test specimen A and/or B. The specimens shall be prepared according to ISO 294. No annealing allowed.

Date	Action	Revisions	Rev 02
2012 09 04	Revised	Changed melt flow and density to report	L. Soreide, NA
2005 12 08	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.9, 3.10 & 4	
1993 11 02	Released	EP00E10258829000	



3.3.2	Density (ISO 1183, Method A)	Report g/cm ³
3.3.3	Hardness, Durometer D (ISO 868, 15 s dwell)	64 - 70
3.3.4	Tensile Strength at Yield (ISO R 527, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, 5 mm/min test speed)	20 MPa min
3.3.5	Flexural Modulus (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)	2.6 GPa min
3.3.6	Shear Modulus at 23 °C (ASTM D 4065, forced constant amplitude, fixed frequency of 1 Hz +/- 15%, strain level below 1%. Specimen approx. 60 x 10 x 4.0 +/- 0.2 mm cut from the center of specimen A. Specimen length between clamps 35-40 mm. Soak time at each temperature interval - 3 minutes minimum).	1.0 - 1.8 GPa

Additionally, a Shear Modulus versus Temperature curve shall be plotted for -50 to +150 °C temperature range, at 5 °C minimum intervals. The plotted curve must be within tolerance range shown on page 5.

3.3.7	Impact Strength, Izod, min (ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)	
3.3.7.1	At 23 +/- 2 °C	4.0 kJ/m ²
3.3.7.2	At -40 +/- 1 °C	1.8 kJ/m ²
3.3.7.3	At 10 +/- 2 °C	2.8 kJ/m ²

The test specimens must be conditioned for minimum of 6 h at the above specified temperature prior to impact test. Low temperature testing shall be done within the cold box.

3.3.8	Heat Deflection Temperature (ISO 75, 120 x 10 x 4.0 +/- 0.2 mm specimen, 0.32 +/- 0.01 mm deflection)	
3.3.8.1	At 1.80 MPa	58 °C min
3.3.8.2	At 0.45 MPa	110 °C min
3.3.9	Heat Aging Performance (ISO 188, except 150 +/- 50 air changes/h, 1000 h at 120 +/- 2 °C. Unaged property values shall be determined at the time of the aged properties determination)	