



THERMOPLASTIC POLYOLEFIN ELASTOMER (TEO) HIGH COLD IMPACT EXTRUSION MOLDING COMPOUND

WSS-M4D777-A8

1. SCOPE

The material defined by this specification is a thermoplastic polyolefin elastomer (TEO) extrusion molding compound with high cold impact resistance and low burn rates.

2. APPLICATION

This specification was released originally for material used for airbag covers, non-visible to customer.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

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).

3.1.1 All requirements of this specification, identified by symbol (s), shall be met with data representing 3 sigma values.

3.2 MOLDING COMPOUND

(s) 3.2.1 Melt Flow Rate 0.4 - 1.1 g/10 minutes
(ISO 1133, 230 °C, 2.16 kg)

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.

3.3.2 Density 0.87- 0.9 g/cm³
(ISO 1183, Method A)

Date	Action	Revisions
2006 07 28	Activated	



ENGINEERING MATERIAL SPECIFICATION

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	3.3.3	Hardness, Durometer D (ISO 868, 15 s dwell)	40-55
(s)	3.3.4	Tensile Strength at Max Load, min (ISO R 527, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, 50 mm/min test speed)	10 MPa
(s)	3.3.4.1	Elongation at Break, min (Test Method according to para 3.5.4)	350%
(s)	3.3.5	Flexural Modulus, min (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)	250 MPa
	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)	133 MPa
		Additionally, a Shear Modulus versus Temperature curve shall be plotted for -50 to +140 °C temperature range, at 5 °C minimum intervals. The plotted curve must be within tolerance range shown on page 5.	
(s)	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	35kJ/m ²
	3.3.7.2	At -40 +/- 1 °C	45 kJ/m ²
	3.3.7.3	At -20 +/- 2 °C	55 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.	
(s)	3.3.8	Heat Deflection Temperature, min (ISO 75, 120 x 10 x 4.0 +/- 0.2 mm specimen, edgewise, 0.32 +/- 0.01 mm deflection)	
	3.3.8.1	At 1.80 Mpa	37 °C

