



MODIFIED POLYPROPYLENE (PP), EPDM MODIFIED SHEET 25% WOOD FLOUR FILLED, VIRGIN AND/OR RECYCLED POLYMER MATRIX

WSK-M98D25-A2

1. SCOPE

The material defined by this specification is an extruded sheet of EPDM rubber modified polypropylene filled with 25% wood flour. The polymer matrix may be based on virgin material and/or up to 100% recycle, providing the physical properties including statistical process control data of virgin composite can be met.

2. APPLICATION

This specification was released originally for material used for shields - lower back panel to bumper.

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).

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

3.4 EXTRUDED SHEETS

(s) 3.4.1 Filler Content 23 - 27%
(Wood flour and nonextractable residue)

Test Method: FLTM AP 150-04 para 1 through 9 of procedure, except:

- use fritted glass filters
- solvent - 150 mL xylene
- duration of extraction - 24 h
- wash solvent for insoluble residue - 150 mL acetone
- drying period - 4 h at 100 +/- 2 °C
- cooling period - 15 minutes in desiccator.

Calculation:

% Nonextractables = Weight Residue x 100 /Weight Sample

3.4.2 Water Absorption, max 1.5%
(ISO 62, Method 1, except result shall be expressed as percentage)

Date	Action	Revisions
2006 09 28	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.9, 3.10, 4
1992 12 01	Revised	EP00E10258833000 Revised 3.5.3
1993 09 01	Released	EP00E10258825000



3.5 TEST SPECIMEN

3.5.1 Preparation of Test Specimens

Unless otherwise specified all tests shall be carried out on test specimens machined from extruded sheets.

The following dimensions are required:

- A. 150 min x 10 x 2.4 +/- 0.2 mm (Tensile Bar)
- B. 120 x 10 x 2.4 +/- 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 machined according to ISO 2818. No annealing allowed.

	3.5.2	Density (ISO 1183, Method A)	0.95 - 1.05 g/cm ³
(s)	3.5.3	Tensile Strength at Max Load, min (ISO R 527, 150 min x 10 x 2.4 +/- 0.2 mm specimen, 5 mm/minute test speed)	
		Extrusion Direction (ED)	18 MPa
		Across Extrusion Direction (AED)	17 MPa
(s)	3.5.4	Flexural Modulus, min (ISO 178, 80 x 10 x 2.4 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)	
		ED	2.0 GPa
		AED	1.8 GPa
	3.5.5	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 2.4 +/- 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).	570 - 960 MPa
		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.	
(s)	3.5.6	Impact Strength, Izod, min (ISO 180/1A, 80 x 10 x 2.4 +/- 0.2 mm specimen, 10 specimens for each test)	
	3.5.6.1	At 23 +/- 2 °C	
		ED	4.7 kJ/m ²
		AED	4.0 kJ/m ²

