

**POLYETHYLENE (PE), HIGH DENSITY
MOLDING COMPOUND****WSK-M4D645-A****1. SCOPE**

The material defined by this specification is a high density polyethylene molding compound.

2. APPLICATION

This specification was released originally for material used for fuel tanks.

3. REQUIREMENTS**3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS**

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

3.4 MOLDING COMPOUND

3.4.1 Melt Flow Rate 3.0 - 8.0 g/
(ISO 1133/ASTM D 1238, 190 °C, 21.6 kg) 10 minutes

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

All test specimens shall be prepared from compression molded sheets 200 x 200 x 4.0 +/- 0.2 mm unless specified otherwise. Preparation of compression molded sheets according to ISO 293/ASTM D 1928, Procedure C, except; aluminum foil, 180 - 200 °C molding temperature, 15 +/- 2 °C/min cooling rate. The values of this specification are based on unannealed specimens.

3.5.2 Density 0.942 - 0.948 g/cm³
(ISO 1183, Method A/ASTM D 792, Method A1)

3.5.3 Tensile Strength at Yield, min 20 MPa
(ISO R 527/ASTM D 638M, 150 min x 10 x 4.0
+/- 0.2 mm specimen, 50 mm/minute test speed)

3.5.3.1 Elongation at Break, min 200%
(Test Method according to
para 3.5.3)

3.5.4 Flexural Modulus, min 880 MPa
(ISO 178/ASTM D 790M, Method I,
Procedure A, 80 x 10 x 4.0 +/- 0.2 mm
specimen, 64 mm support span)

Date	Action	Revisions
2009 12 10	Revised	See summary of revisions J. Souza, SA
2005 10 14	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.7, 3.8 & 4
1989 04 07	Released	SM/EQ15817 TP





3.5.6 Impact Strength, Izod, min
(ISO 180, Method A/ASTM D 256, Method A, 63.5 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)

3.5.6.1 At 23 +/- 2 °C 20 kJ/m²

3.5.6.2 At -40 +/- 2 °C 16 kJ/m²

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, if not possible, test can be conducted outside, but within 5 s.

3.5.7 Heat Deflection Temperature, min 40 °C
(ISO 75/ASTM D 648, 120 x 10 x 4.0 +/- 0.2 mm specimen, at 1.82 MPa)

3.5.8 Heat Aging Performance
(ISO 188/ASTM D 573, 1000 h at 120 +/- 2 °C. Unaged property values shall be determined at the time of the aged properties determination)

3.5.8.1 Tensile Strength Change +/- 15%
(Test Method per para 3.5.3)

3.5.8.2 Impact Strength, Izod Change,max -15%
(Test Method per para 3.5.6.1, specimens to be notched before heat aging)

3.6 FLAMMABILITY (ISO 3795)

Burn Rate, max 100 mm/minute

The specimen size required for material approval is 355 x 100 x 1.0 +/- 0.1 mm with a smooth surface.