



POLYAMIDE 66 (PA66), IMPACT MODIFIED MOLDING COMPOUND, INTERIOR

WSS-M4D666-A2

1. SCOPE

The material defined by this specification is an elastomer modified polyamide 66 molding compound for molded in color applications.

2. APPLICATION

This specification was released originally for material used for seat belt D-rings.

NOTICE: This material absorbs and retains moisture. Part design and tolerances must accommodate changes in part dimensions and physical properties due to moisture absorption or loss in the service/assembly environment.

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 using the latest ISO test methods.

3.2 MOLDING COMPOUND

(s) 3.2.1 Melt Temperature 258 - 268 °C
(ISO 11357, DSC or DTA at
10 °C/min heating rate)

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 527)
- B. 80 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
2006 09 29	Revised	Paragraph 3.6, 3.6.1 & 3.6.2; Added 3.6.3. L. Schmalz
2005 10 27	Revised	Format Updated
2002 11 14	Activated	



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ENGINEERING MATERIAL SPECIFICATION

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	3.3.2	Density (ISO 1183, Method A)	1.05 - 1.11 g/cm ³
(s)	3.3.3	Tensile Strength at Yield, min (ISO 527, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, 50 mm/min test speed (unfilled), 5 mm/min (filled))	40 MPa
(s)	3.3.3.1	Elongation at Yield, min (Test Method according to para 3.3.3)	2%
(s)	3.3.4	Flexural Modulus, min (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)	1.5 GPa
(s)	3.3.5	Impact Strength, Izod, min (ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)	
	3.3.5.1	At 23 +/- 2 °C	50 kJ/m ²
	3.3.5.2	At -40 +/- 2 °C	9 kJ/m ²
		The test specimens must be conditioned for a 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, the test can be conducted outside, but within 5 seconds.	
(s)	3.3.6	Heat Deflection Temperature, min (ISO 75, 80 x 10 x 4.0 +/- 0.2 mm specimen, 0.32 +/- 0.01 mm deflection)	
	3.3.6.1	At 1.80 MPa	50 °C
	3.3.7	Heat Aging Performance (ISO 188, 1000 h at 110 +/- 2 °C. After heat aging test specimens are to be conditioned in a desiccator for 3 - 5 h at 23 +/- 2 °C. Unaged property values shall be determined at the time of the aged properties determination)	
	3.3.7.1	Tensile Strength at Max Load Change (Test Method per para 3.3.3) heat aging)	+/- 25%
	3.3.7.2	Impact Strength, Izod Change (Test Method per Para. 3.3.6, specimens notched before heat aging)	+/- 25%