



POLYAMIDE (PA) 6 MOLDING COMPOUND

WSK-M4D672-A

1. SCOPE

The material defined by this specification is a polyamide 6 molding compound.

2. APPLICATION

This specification was released originally for material used for plugs.

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

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).

3.3 CONDITIONING AND TEST CONDITIONS

All test values indicated herein are based on material and specimens with moisture content not exceeding 0.2% (test according to ISO 960, Method B/ASTM D 789).

All test materials immediately after processing have to be sealed in containers that are impermeable to water vapor. If the moisture content exceeds 0.2%, condition the material for a minimum of 16 h at 40 - 50 °C at a reduced pressure below 133 Pa.

Conduct tests in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5% relative humidity. Individual specimens shall not be removed from closed containers until immediately before testing.

3.4 MOLDING COMPOUND

3.4.1 Melt Temperature 215 - 225 °C
(ISO 1218, Method B/ASTM D 789)

3.5 MOLDED TEST SPECIMEN

3.5.1 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

Date	Action	Revisions
2009 09 22	Revised	See Summary of Revisions J. Souza, SA
2007 02 16	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.8, 3.9 & 4
1989 09 29	Released	SM/EQ035825



Documents

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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.

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| 3.5.2 | Density
(ISO 1183, Method A/ASTM D 792, Method A1) | 1.12 - 1.16 g/cm ³ |
| 3.5.3 | Tensile Strength at Yield, min
(ISO R 527/ASTM D 638M, 150 x 10 x 4.0 +/- 0.2 mm specimen, 50 mm/minute test speed) | 70 MPa |
| 3.5.3.1 | Elongation at Yield, min
(Test Method according to para 3.5.3) | 2% |
| 3.5.4 | Flexural Modulus, min
(ISO 178/ASTM D 790M, Method I, Procedure A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 64 mm support span) | 2.4 GPa |
| 3.5.5 | 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) | |
| 3.5.5.1 | At 23 +/- 2 °C | 4.5 kJ/m ² |
| 3.5.5.2 | At -40 +/- 2 °C | 4.0 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, if not possible, test can be conducted outside, but within 5 s. | |
| 3.5.6 | Heat Deflection Temperature, min
(ISO 75/ASTM D 648, 120 x 10 x 4.0 +/- 0.2 mm specimen) | |
| 3.5.6.1 | At 1.82 MPa | 55 °C |
| 3.5.6.2 | At 0.45 MPa | 165 °C |
| 3.5.7 | Heat Aging Performance
(ISO 188/ASTM D 573, 150 +/- 50 air changes/h, 1000 h at 90 +/- 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) | |