POLYAMIDE (PA) 6, HEAT STABILIZED, 15% GLASS FIBER REINFORCED BLOW MOLDING COMPOUND **WSS-M4D1037-A1**

1. SCOPE

The material defined by this specification is a blow molding thermoplastic heat stabilized 15% glass fiber molding compound based on polyamide 6.

2. APPLICATION

This specification was released originally for material used for air induction system such as dirty air ducts.

2.1 LIMITATIONS

- 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.
- This material does not contain UV stabilizers, long term exposure to direct sunlight will cause chalking and loss of gloss.
- This material is not suitable for direct long term exposure to engine coolant, or direct exposure to strong acids or bases. It is not suitable for use above 150°C.

3. REQUIREMENTS

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 Many 4D resin specifications prior to 2011, identified certain requirements with the symbol (s), which indicated that the mean and +/- 3 sigma values were to be reported. The specification minimum, maximum or range was established using 3 sigma data. For 2011 and beyond, refer to Table 1 for number of samples required for each test to establish specification limits.

3.1.2 This specification is based on virgin materials. Materials with post-consumer, post-industrial, or repolymerised recycled materials as defined by WRS-M99P42-A1 are preferred and should be used whenever feasible.

3.1.3 The use of regrind is permitted for economic and environmental reasons with compliance as indicated in WSS-M99P1111-A.

3.1.4 Dry as molded:
All test values indicated herein are based on material and specimens with moisture content not exceeding 0.2% except where noted (Moisture Conditioned) (test according to ISO 15512 Method B/ASTM D 6869).

All test materials have to be sealed in moisture-proof containers and stored at 23 +/- 2 °C

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2013 05 30	Released		V. Cerato, EU

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for at least 24 h immediately after processing. If the moisture content exceeds 0.2%, conditioning the material for a minimum of 16 h at 40 – 50 °C at a reduced pressure below 133 kPa.

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.

3.2 SAMPLE PREPARATION

Unless otherwise specified all tests shall be carried out on compression molded, one-end gated test specimens. The test specimens A and D shall be molded using molding conditions defined in ISO 1874-2. See Tables 1 and 2 for the number of samples required.

Specimens shall be as follows:

Specimen A	150 minimum x 10 x 4.0 +/- 0.2 mm (ISO 527-2, Specimen Type 1A)
Specimen B	355 x 100 x 1.0 +/- 0.1 mm (ISO 3795)
Specimen C	145 x 60 x 3.2 +/- 0.2 mm
Specimen D	Center of Specimen A, 80 x 10 x 4.0 +/- 0.2 mm
Specimen E	100 mm diameter x 3.2 mm
Specimen F	80 mm diameter x 3.2 mm
Specimen G	90 mm x 200 mm
Specimen H	50 +/- 1 mm diameter x 3.2 +/- 0.2 mm
Specimen I	100 mm x 150 mm, min

3.3 MATERIAL PROPERTIES

3.3.1	Melt Temperature (ISO 11357, 10 °C /min heating rate)	218-224 °C
3.3.2	Determination of Ash (ISO 3451-4, Method A, Glass Fiber, 1h at 600 +/-50°C, test portion 2 to 2.5g)	12-18 %
3.3.3	Density (ISO 1183, Method A)	1.17-1.23 g/cm^3
3.3.4	Tensile Strength at Break (ISO 527-1 and ISO 527-2, Specimen A, 5 mm/minute test speed)	90 MPa min
3.3.5	Tensile Modulus (ISO 527-1 and ISO 527-2, Specimen A, 1 mm/minute test speed)	4.1 GPa min
3.3.6	Impact Strength, Notched Charpy (ISO 179-1/1eA, Specimen D)	
	3.3.6.1 At 23 +/- 2 °C	11 kJ/m^2 min Report Break Type
	3.3.6.2 At -40 +/- 2 °C	3 kJ/m^2 min Report Break Type

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