



POLYPROPYLENE (PP), 40% GLASS FIBER REINFORCED, COLOR PIGMENTED, UV STABILIZED, EXTERIOR

WSS-M4D982-A

1. SCOPE

The material defined by this specification is a 40% glass fiber reinforced, high impact rigid polypropylene (PP) molding compound. This material is UV stabilized and color pigmented for exterior use.

2. APPLICATION

This specification was released originally for material used for exterior molded in color truck running boards.

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).

3.4 MOLDING COMPOUND

3.4.1 Glass Fiber Content 35 - 45%
(ISO 3451-1, Method A,
5h @ 500 °C)

3.5 MOLDED TEST SPECIMEN

3.5.1 Specific Gravity 1.15 – 1.3
(ASTM D 792, Method A)

3.5.2 Tensile Strength at Yield, min 50 MPa
(ISO 527-1 and ISO 527-2, 150 min x 10 x
4.0 +/- 0.2 mm specimen, 5mm/minute
test speed)

3.5.3 Flexural Modulus, min 5.5 GPa
(ISO 178, 80 x 10 x 4.0 +/- 0.2 mm
specimen, 2 mm/minute test speed, 64 mm
support span)

3.5.4 Shear Modulus at 23 °C 1000 - 1600 MPa
(ASTM D 4065, forced constant amplitude,
fixed frequency of 1 Hz +/- 15%, strain
level below 1%. Specimen approximately
60 x 10 x 4.0 +/- 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 min)

Additionally, a shear modulus vs. temperature curve shall be plotted for -50 °C to +150 °C temperature range, at 5 °C min intervals. The plotted curve must be within tolerance range granted on the original material approval and it shall constitute the reference standard for materials supplied to this specification and shall be kept on file at the designated material laboratory and be available on request.

Date	Action	Revisions
2006 07 25	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.8, 3.9 & 4
2002 01 14	Activated	



Documents

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3.5.5 Impact Strength, Izod, min
(ISO 180, 80 x 10 x 4.0 +/-
0.2 mm specimen [use center
section of specimen A], 10 specimens for each test)

3.5.5.1 At 23 °C +/- 2 °C 40 J/m²

3.5.5.2 At -40 °C +/- 1 °C 55 J/m²

The test specimen must be conditioned for min of 6 h at the above specified temperature prior to impact test. Low temperature testing shall be done within the cold chamber, if not possible, test may be conducted outside, but within 5 s.

3.5.6 Heat Deflection Temperature, min 150 °C
(ISO 75-1, 80 x 10 x 4.0 +/- 0.2 mm specimen
[use center section of specimen A], flatwise, 0.34
+/- 0.1mm deflection. At 1.80 MPa)

3.5.7 Heat Aging Performance
(ISO 188, except 150 +/- 50 air
changes/h, 1000 h at 140 °C +/- 2 °C.
Unaged property values shall be
determined at the time of the aged
properties determination)

3.5.7.1 Tensile Strength at Yield Change +/- 25%
(Test Method per para
3.5.2)

3.5.7.2 Impact Strength, Izod Change
(Test Method per para
3.5.5, specimens to be
notched before heat aging)

3.5.7.2.1 At 23 °C +/- 2 °C +/- 25%

3.5.7.2.2 At -40 °C +/- 1 °C +/- 25%

3.6 FLAMMABILITY (ISO 3795/SAE J369)

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.

3.7 WEATHERING RESISTANCE

After exposure in accordance with para 3.7.1, 3.7.2, and 3.7.3, the material shall show no color change in excess of specified Gray Scale rating (AATCC Evaluation Procedure 1/ISO 105-A02).

In addition, there shall be no cracking, crazing or other deterioration.

A slight loss of gloss or chalking will be allowed provided an acceptable appearance can be achieved by washing and/or polishing with Ford car polish (auto wax) after the outdoor exposure, at permission of the affected Product Development Materials Activity.

