



**THERMOPLASTIC POLYOLEFIN (TEO) MOLDING COMPOUND,
COLOR PIGMENTED, UV STABILIZED, FOR HIGH GLOSS (CLASS "B")
MOLDED IN-COLOR APPLICATIONS, EXTERIOR**

WSS-M4D995-A

1. SCOPE

The material defined by this specification is a weatherable thermoplastic polyolefin (TEO) injection molding compound for body exterior ornamentation with suitable gloss and durability to achieve a Class "B" surface.

2. APPLICATION

This specification was released originally for material used for body side moldings, claddings, wheel lips and other body exterior ornamentation to achieve a Class "B" surface. This material is to be used for accent colors only. This material cannot achieve an exact body color match and cannot meet the same gloss level or weathering performance as body paint.

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 All requirements of this specification, identified by symbol (s), shall be met with data representing 3 sigma values.

3.2 MOLDING COMPOUND

(s) 3.2.1 Melt Flow Rate 27 - 34 g/10 minutes
(ISO 1133, 240 °C, 2.16 kg)

(s) 3.2.2 Mineral Filler Content, max 3%
(ISO 3451-1, Method A, talc filler, 3 h
at 565 +/- 25 °C, test portion 4 - 5g)

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.

Date	Action	Revisions
2005 09 28	Activated	



Documents

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The following dimensions are required:

- A. 150 minimum x 10 x 4.0 +/- 0.2 mm (ISO 3167, Type 1A)
- B. 60 x 60 x 2.0 +/- 0.1 mm (ISO/DIS 294-3)
- C. 355 x 100 x 1.0 +/- 0.1 mm (ISO 3795)

Test specimen A shall be molded using molding conditions defined in ISO 1873-2. Specimens with shorter dimensions shall be cut from the center of the specimen A. No annealing allowed.

	3.3.2	Density (ISO 1183, Method A)	0.88 – 0.94 g/cm
	3.3.3	Hardness, Durometer D (ISO 868, 15 s dwell)	55 - 65
(s)	3.3.4	Tensile Strength at Yield, min (ISO 527-1 & ISO 527-2, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, test speed: 50 mm/minute)	16 MPa
(s)	3.3.5	Flexural Modulus, min (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, [use center section of specimen A], 2 mm/min test speed, 64 mm support span)	600 MPa
	3.3.6	Tensile Stress/Strain Curves (ISO 527-1, ISO 527-2, ISO 11403-1 150 x 10 x 4 mm specimen [specimen A] Test speed shall be 5 mm/minute for all materials)	
		A tensile stress versus strain curve must be provided using one specimen per lot at each of the following temperatures: -40 °C, 23 °C and 80 °C (Page 8).	
(s)	3.3.7	Impact Strength, Izod, min (ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)	
	3.3.7.1	At 23 +/- 2 °C	30 kJ/m ²
	3.3.7.2	At -40 +/- 1 °C	2 kJ/m ²
	3.3.7.3	At 0 +/- 2 °C	4 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 chamber, if not possible, test may be conducted outside, but within 5 seconds.



- (s) 3.3.8 Heat Deflection Temperature, min 45 °C
(ISO 75-1 & ISO 75-2, 80 x 10 x 4.0
+/- 0.2 mm specimen [use center
section of specimen A], flatwise,
0.34 +/- 0.1 mm deflection.
At 1.80 MPa)
- 3.3.9 Heat Aging Performance
(ISO 188, except 150 +/- 50 air
changes/h, 1000 h at 120 +/- 2 °C.
Unaged property values shall be
determined at the time of the aged
properties determination)
- 3.3.9.1 Tensile Strength at Yield Change +/- 20%
(Test Method per para 3.5.3)
- 3.3.9.2 Impact Strength, Izod Change +/- 25%
(Test Method per para 3.5.6.1,
specimens to be notched before
heat aging)

3.4 APPEARENCE PROPERTIES

- 3.4.1 Color As determined by
(FLTM BI 109-01 Visual Assessment) Color Harmony team
(SAE J1545, Three-Angle CMC)
- Shall match the Master Appearance Sample or initial sample as approved by Design Center.
- 3.4.2 Appearance
- Color, gloss and surface finish shall match the Master Appearance Sample or the initial sample approved by Design Center.
- 3.4.3 Visual Evaluation
- The finished parts shall show no evidence of deleterious surface defects.
- 3.4.4 Handling
- Shall withstand normal handling without damage.