



ABS, ELECTROPLATING GRADE MOLDING COMPOUND, EXTERIOR
ABS, ELECTROPLATING GRADE MOLDING COMPOUND, INTERIOR

WSS-M4D836-B1
WSS-M4D836-B2

1. SCOPE

The material defined by this specification is an electroplating grade of molding compound based on acrylonitrile/butadiene/styrene (ABS).

2. APPLICATION

WSS-M4D836-B1 - This specification was released originally for material used in electroplated or painted badges, grilles, and exterior lighting chrome trim.

WSS-M4D836-B2 – This specification was released originally for material used in electroplated interior trim such as rings and knobs.

2.1 LIMITATIONS

This material does not contain UV stabilizers, long term exposure to direct sunlight will cause chalking and loss of gloss.

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 The use of regrind is permitted, for economic / environmental reasons, with compliance as indicated in Ford Engineering CAD and Drafting Standard E-4.

3.1.3 For WSS-MD836-B2 only: Materials used in interior applications must meet the requirements outlined in WSS-M99P2222-C1/Latest, *Performance, Vehicle Interior Environment Quality Material/Component Requirements*. Data must be included in material submission package.

3.1.4 Performance Criteria:
Parts using this specification shall meet the appropriate performance specifications:
Plated applications: WSS-M1P83-D1/D2/D3 or latest.
Interior painted applications: WSS-M2P188-A1 or latest
Exterior painted applications: WSS-M2P180-D or latest. A primer may be required to reduce appearance defects such as blushing.

Date	Action	Revisions	Rev. 1
2012 09 24	Revised	Editorial correction to Melt Flow rate.	S Zhang ARA
2012 05 14	Activated		C McComb NA



3.2 SAMPLE PREPARATION

Unless otherwise specified all tests shall be carried out on injection molded, one-end gated test specimens. The test specimens A and D shall be molded using molding conditions defined in ISO 2580-2. No annealing is allowed. See Table 1 for the number of specimens 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 2.0 +/- 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	Density (ISO 1183, Method A)	1.02 - 1.1 g/cm ³
3.3.2	Tensile Strength at Yield (ISO 527-1 & ISO 527-2, Specimen A, 50 mm/minute test speed)	35 MPa min
3.3.3	Elongation at Yield (ISO 527-1 & ISO 527-2, Specimen A, 50 mm/minute test speed)	2 % min
3.3.4	Tensile Modulus (ISO 527-1 & ISO 527-2, Specimen A, 1 mm/minute test speed)	1.7 GPa min
3.3.5	Flexural Modulus (ISO 178, Specimen D, 64 mm support span, 2 mm/minute test speed)	1.7 GPa min
3.3.6	Impact Strength, Notched Charpy (ISO 179-1/1eA, Specimen D)	
3.3.6.1	At 23 +/- 2 °C	7 kJ/m ² min Report Break Type
3.3.6.2	At -40 +/- 2 °C	5 kJ/m ² min Report Break Type

The test specimen must be conditioned for minimum of 6 hours 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.