



THERMOPLASTIC POLYESTER-ETHER ELASTOMER (TEEE), 70 DUROMETER D HARDNESS BLOW MOLDING COMPOUND

WSS-M4D1006-A2

1. SCOPE

The material defined by this specification is a thermoplastic blow molding compound based on polyester-ether elastomer.

2. APPLICATION

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

2.1 LIMITATIONS

This material has a higher compression set compared to elastomers.
This material is not suitable for use with concentrated acids and bases.

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, however materials with recycled content as defined by WRS-M99P42-A1 (post-consumer and/or postindustrial recyclates and repolymerised recycled materials) should be used whenever technically feasible and following all materials and PV testing required by Ford Materials Engineering.
- 3.1.3 The use of regrind is permitted, for economic / environmental reasons, with compliance as indicated in Ford Engineering CAD and Drafting Standard E-4
- 3.1.4 Performance Criteria:
Parts using this specification shall meet the appropriate performance specifications, WSS-M15P50-B/Latest.
- 3.1.5 As specified in WSS-M99P1111-A, paragraph 3.2, Ford Materials Engineering may request a Control Plan and Certificate of Analysis (CoA) containing lot testing requirements which must include, but are not limited to:

Date	Action	Revisions	Rev 00
2013 07 26	Released	New specification	



Documents

G. Kowalski, NA

Document Sharing Hub



Melt Flow Rate
Filler Content
Impact Strength, Notched Charpy at 23°C
Flexural Modulus

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 TEEE. No annealing is allowed. See Table 1 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 Flow Rate (ISO 1133 230 °C, 10 kg)	6 - 12 g/10 minutes
3.3.2	Density (ISO 1183, Method A)	1.20 – 1.26 g/cm ³
3.3.3	Hardness, Durometer D (ISO 868, 15 s dwell)	63 - 73
3.3.4	Tensile Strength at Break (ISO 527-1 and ISO 527-2, Specimen A, 50 mm/minute test speed)	10 MPa min
3.3.5	Elongation at Break (ISO 527-1 and ISO 527-2, Specimen A, 50 mm/minute test speed)	100% min
3.3.6	Tensile Modulus (ISO 527-1 and ISO 527-2, Specimen A, 1 mm/minute test speed)	827 MPa min
3.3.7	Flexural Modulus (ISO 178, Specimen D, 64 mm support span, 2 mm/minute test speed)	800 MPa min