**THERMOPLASTIC ELASTOMER (TPS)** **WSS-M2D517-A2**
**STYRENE BLOCK COPOLYMER, MEDIUM HEAT RESISTANT**
**50 DUROMETER A HARDNESS, EXTERIOR**

**THERMOPLASTIC ELASTOMER (TPS)** **WSS-M2D517-A3**
**STYRENE BLOCK COPOLYMER, MEDIUM HEAT RESISTANT**
**60 DUROMETER A HARDNESS, EXTERIOR**

**THERMOPLASTIC ELASTOMER (TPS)** **WSS-M2D517-A4**
**STYRENE BLOCK COPOLYMER, MEDIUM HEAT RESISTANT**
**70 DUROMETER A HARDNESS, EXTERIOR**

**THERMOPLASTIC ELASTOMER (TPS)** **WSS-M2D517-A5**
**STYRENE BLOCK COPOLYMER, MEDIUM HEAT RESISTANT**
**80 DUROMETER A HARDNESS, EXTERIOR**

## 1 SCOPE

The material defined by this specification is a thermoplastic elastomer based on styrene block copolymer.

## 2 APPLICATION

WSS-M2D517-A2/3/4/5 These specifications were released originally for material used for exterior applications.

### 2.1 LIMITATION

These materials should not be used for applications with heat requirements higher than 90°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 The use of regrind is permitted, for economic / environmental reasons, with compliance as indicated in Ford Engineering CAD and Drafting Standard E-4

3.1.2 Performance Criteria:
Parts using this specification shall meet the appropriate performance specifications, W*SS*-M98P13-C/Latest or WSS-M9P10-A/Latest.

### 3.2 APPEARANCE

3.2.1 Weathering Resistance Rating 4, min
(SAE J2527 Atlas Water Cooled,
Rotary Drum Xenon-Arc Apparatus only.
Modified Type "S" borosilicate inner and outer filters,

| Date | Action | Revisions | Rev 0 |
|---|---|---|---|
| | | | |
| | | | |
| 2014 05 16 | Released | T.Nover, M.Corley, EU | |


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0.55 W/m$^2$ radiant exposure monitored at 340 nm,
3000 h total exposure or as otherwise defined,
Specimen C, from smooth polished mold,
ISO 105-A02 / AATCC Evaluation Procedure 1)

For color durability submissions, test all program colors.

3.2.2 1 and 2 year Florida
*Initial Qualification for new resin technology*
(SAE J1976, 5° south, direct weathering inland,
Specimen C from smooth polished mold,
ISO 105-A02 / AATCC Evaluation Procedure 1)

(12 months) Rating 4, min

(24 months) Rating 4, min

After exposure the material shall show no color change in excess of the specified AATCC Rating. 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 as specified below by washing with mild detergents and water (ratio 5:95 by volume) or equivalent after the outdoor exposure only.

All initial approvals may be based on the accelerated weathering exposure, pending real world outdoor exposure results for final approval.

## 3.3 MATERIAL PROPERTIES

3.3.1 Density 0.85-1.2 g/cm$^3$
(ISO 1183-1, Method A)

3.3.2 Hardness, Shore A
(ISO 868, 6 mm piled-up specimen,
15 seconds dwell )

| A2 | A3 | A4 | A5 |
|---|---|---|---|
| 50 +/-5 | 60 +/-5 | 70 +/-5 | 80 +/-5 |

3.3.3 Tensile Strength at Break, MPa min
(ISO 37, Type 2 specimen, 75 x 4 x 2.0 +/- 0.2 mm
500 mm/minute test speed)

3.3.3.1 Parallel to Flow

| A2 | A3 | A4 | A5 |
|---|---|---|---|
| 2.0 | 2.5 | 4.0 | 5.0 |

3.3.3.2 Perpendicular to flow

| A2 | A3 | A4 | A5 |
|---|---|---|---|
| 2.5 | 3.5 | 4.5 | 5.5 |

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