FOAM PERFORMANCE (INTERIOR, EXTERIOR, UNDERHOOD) **WSS-M99P48-A1**

FOAM PERFORMANCE, SEWN IN OR LAMINATION (INTERIOR) **WSS-M99P48-A2**

FOAM PERFORMANCE, PRESSURE SENSITIVE ADHESIVE TAPE (INTERIOR, EXTERIOR, CLIMATE CONTROL AND UNDERHOOD) **WSS-M99P48-A3**

FOAM PERFORMANCE, PRESSURE SENSITIVE ADHESIVE TAPE, HIGH TEMPERATURE APPLICATIONS, UNDERHOOD **WSS-M99P48-A4**

1. SCOPE

These specifications define the minimum durability requirements of foams and foam tapes made of various materials including polyurethane, polypropylene foam and pressure sensitive adhesive tapes.

2. APPLICATIONS

WSS-M99P48-A1 - The materials defined by this specification are for interior, exterior or underhood applications not covered by any other specification. The materials are typically but not limited to a flexible polyether polyurethane or polypropylene foam.

WSS-M99P48-A2 – The materials defined by this specification are for foam laminated or tack sewn in applications in interior applications. The specification includes foams laminated or tack sewn in to vinyl, leather or fabric and are typically but not limited to slab stock flexible polyether polyurethane foams. These must contain a flame retardant for the flame lamination process. For Lamination Requirements refer to WSS-M8P18-B1/B4 and WSS-M8P3-E1/E3.

WSS-M99P48-A3 – The materials defined by this specification are foam tapes for interior, exterior and underhood applications not covered by any other specification (excludes tape performance specifications for emblems, badges and body side moldings). The foam may be from the same source as those in WSS-M98P48-A1 with a pressure sensitive adhesive (PSA) applied to one or both surfaces. The PSA must be tested on the intended substrate. The supplier providing the final product will be listed on the Ford Material Database (FMD) though all sub-suppliers must provide data to the requirements below if requested.

WSS-M99P48-A4 – The materials defined by this specification are for continuous high heat applications to 180 °C with excursion to 220 °C for a maximum of 100 hours for the life of the vehicle. These materials are composed of foam tapes for high heat underhood applications not covered by any other specification (excludes tape performance specifications for emblems, badges and body side moldings). The foam may be from the same source as those in WSS-M98P48-A1 with a pressure sensitive adhesive (PSA) applied to one or both surfaces. The PSA must be tested on the intended substrate. The supplier providing the final product will be listed on the Ford Material Database (FMD) though all sub-suppliers must provide data to the requirements below if requested.

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2.1 LIMITATIONS

WSS-M99D48-A1 – Excluded from this specification are headliner (WSS-M15P27-F/latest), instrument panel (WSS-M15P45-C/latest), acoustical and thermal assemblies and energy absorbing (WSS-M99P32-D1/D2/D3/D4/D5/D6/latest), seat cushion (WSS-M15P20-B1/B2/latest),

Date	Action	Revisions	Rev. 3
2016 07 25	Revised	Released A4. See summary of revisions	G. Kowalski, NA
2014 11 21	Editorial	See Summary of Revisions	D. Murtonen, NA
2014 07 18	Released	Released A1, A2, A3	L. Soreide, NA

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Small molded foam parts (WSS-M99P50-A1/latest),small foam in place parts WSS-M99P50-A2/latest) or whose performance is specified separately.

These foams may not be made of polyurethane polyester foam since they are not durable when exposed to heat and light.

WSS-M99P48-A2 – These foams may not be made of polyurethane polyester foam since they are not durable when exposed to heat and light.

WSS-M99P48-A3 – These foam tapes do not contain a biocide. For applications that require a biocide (i.e. Climate Control), the biocide must be stated on the Engineering Drawing. Excluded from this specification are tape performance for emblems and badges (WSS-M11P65-A/latest and body side moldings (WSS-M11P65-A2/latest) or whose performance is specified separately.

WSS-M99P48-A4 – Climate Control is excluded from this specification. These foams may not be made of polyurethane polyester foam since they are not durable when exposed to heat.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification is performance based and does not have approved sources.

3.1.1 Performance Criteria:
Parts using this specification shall meet the appropriate component performance specification and must fulfill the applicable SDS/CDS requirements.

3.1.2 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:

Density
Tear Resistance
Constant Deflection Compression Set Test

3.1.3 See Table 1 at the end of the specification to determine testing needed by application and sample size.

3.2 DURABILITY REQUIREMENTS AND CHARACTERIZATION OF PRODUCTION MATERIALS

3.2.1 Odor
(FLTM BO 131-03, see below for Variant)

Condition 1 (23 +/- 2 °C)	Rating 3 max
Condition 2 (40 +/- 2 °C)	Rating 3 max
Condition 3 (65 +/- 2 °C)	Rating 3 max

WSS-M99P48-A1 and A3: Variant A
WSS-M99P48-A2: Variant C

Odor is not performed for WSS-M99P48-A4

3.2.2 Fogging Photometric
(SAE J1756, Specimen F, 3 h at 100 °C heating, 21 °C cooling plate, post test conditioning 16 h)

Fog Number 70 min

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Formation of clear film, droplets or crystals is cause for rejection.

3.2.3 Flammability
(ISO 3795/SAE J369)

Burn Rate	100 mm/minute max

3.2.4 Resistance to Mildew
(FLTM BO 131-03)

	Rating 3 max
	No visible mildew

The material shall exhibit no visible evidence of mildew growth and/or objectionable odor evaluated per the Rating Scale in FLTM BO 131-03 after 7 days exposure in a humidity cabinet maintained at 98 +/- 2% relative humidity and 38 +/- 2 °C. Sample size 100 x 100 mm x part thickness or a part if smaller.

3.2.5 Stress Cracking Test for Plastics
(FLTM BO 127-03) — No cracking or crazing

All foams, tapes or foam tapes containing plasticizers, mineral oil, or solvents must be tested with the intended substrate (such as but not limited to PC, PC/ABS, ABS, SMA, ASA, PPO) for potential incompatibility.

3.2.6 Accelerated Weathering Resistance — Rating 4 min

Preferred Method
Standard Practice for Xenon Arc Exposure Test
with Enhanced Light and Water Exposure for
Transportation Coatings
(ASTM D7869, 2250 hours, ISO 105-A02
AATCC Eval Procedure 1)

or

Performance Based Standard for Accelerated
Exposure of Automotive Exterior Materials
Using Controlled Irradiance Xenon-Arc Apparatus
(Boro/Boro, SAE J2527, Atlas Water Cooled,
Rotary Drum Xenon-Arc Apparatus only.
Modified Type "S" borosilicate inner and outer filters,
0.55 W/m^2 radiant exposure monitored at 340 nm,
3750 hours, ISO 105-A02 AATCC Eval Procedure 1)

Securely attach a piece of the test specimen to the holder. If testing foam with PSA use the appropriate substrate.

Test specimen shall show no surface cracking, delamination, peeling from substrate, tackiness, or other defects after exposure.

3.2.7 Corrosion
(FSMS Test Method 00.00-L-467, 8 weeks, medium corrosivity,
evaluate per RQT-18-001101-002492, para. 4.10) — No galvanic corrosion

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