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**TEST REPORT**

PRODUCT: FT 1149X  
SUPPORT: FLOCK  
SUBSTRATE: TPO  
CERT NO.: 221213 - 1126



**FORD WSS-M99P32-E1**  
OEM Rev Date: Mar 21  
Performance, Acoustical And Insulators, Interior Assemblies  
Above the Belt  
Horizontal or Vertical Parts Above the Belt Line - Pillars; upper quarter panels; hard instrument panels

**TAPE REQUIREMENTS:**

**SECTION: Thickness**

Thickness, Flock & Adhesive

Specification	Results	Status
0.9 +/- 2 mm	0.78	Pass

**SECTION: 3.3 Weight**

3.3.2 Weight per Unit Area (Foams) - Adhesive Composite

3.3.2 Weight per Unit Area (Non-Foams) -

Specification	Results	Status
Reported kg / m <sup>2</sup>	Minimum 365.8 Average 368.8	Reported
Reported kg / m <sup>2</sup>	Minimum 232.3 Average 238.3	Reported

**SECTION: 3.4 Odor**

3.4.1 Odor, Condition 1 - 24 hrs @ RT, Deionized Water  
3.4.2 Odor, Condition 2 - 24 hrs @ 40°C, Deionized Water  
3.4.3 Odor, Condition 3 - 2 hrs @ 65°C

Specification	Results	Status
3 Max Rating	Rating 1.5 Slightly Perceptible	Pass
3 Max Rating	Rating 2 Perceptible, Not Disturbing	Pass
3 Max Rating	Rating 2 Perceptible, Not Disturbing	Pass

**SECTION: 3.5 Fogging, Oil Bath**

3.5, 3 hrs @ 100°C, 21°C Cooling, 16 hrs @ RT

Specification	Results	Status
> 70 Units	96.6	Pass

**SECTION: 3.6 Flammability**

3.6, Initial, Component

Specification	Results	Status
< 100 mm / min	< B 25	Pass

**3.7 Construction Properties**

**SECTION 3.7 Resistance To Mildew**

3.7.1, 7 Days @ 38°C / 98% RH

Specification	Results	Status
No Evidence of Mildew Growth or Objectionable Odor	No Significant Odor or Mold Growth	Pass

**SECTION: 3.7.2 Environmental Testing**

3.7.2.1, Short Term Environmental Cycling

5 hrs @ -30°C 30 mins @ RT  
5 hrs @ 80°C 30 mins @ RT  
2 hrs @ 50°C / 95% RH 30 mins @ RT  
5 hrs @ -30°C

Specification	Results	Status
No Wrinkling, Blistering, Warping, Staining, Odor or Delamination	Good, Stable, No Ooze, Odor, Warping or Lifting	Pass

3.7.2.2, Long Term Environmental Cycling, 7 Days @ 80°C

Specification	Results	Status
FLTM BO 040-01 B* (c)	Good, Stable, No Ooze, Odor, Warping or Lifting	Pass

**SECTION: 3.7.2 Adhesion**

3.7.2, Ambient, 20 minutes  
3.7.2.1, Short Term Environmental Cycling, Long Term Cycling, 7 Days @ 80°C  
3.7.2.2, Long Term Cycling, 7 Days @ 80°C

Specification	Results	Status
TBD N / cm	15.8	TBD
TBD N / cm	5.3	TBD
TBD N / cm	5.6	TBD

**SECTION: 3.8 Physical Properties**

3.8.1, Original Breaking Strength

Specification	Evaluation	Mode	Status
35 N / In min	285.1	TEAR	Pass

**SECTION: 3.8 Climate Control Applications**

3.8.1.1, Change After Short Term 3.7.2.1 Aging  
3.8.1.2, Change After Long Term 3.7.2.2 Aging

Specification	Evaluation	Mode	% Change	Status
< 30 % Change	283.3	TEAR	1%	Reported
< 30 % Change	290.6	TEAR	2%	Reported

**SECTION: 3.8.2 Tear Resistance (Foam Materials Only)**

3.8.2, Finished Part, Tear Resistance (Foam Materials Only)

Specification	Results	Status
Reported N / m	Not Applicable	Not Applicable

**SECTION: 3.8.3 Compression Force Deflection Test (Foam Materials Only)**

Compression Force Deflection Test (Foam Materials Only)  
3.8.3.1, Finished Part, Compression Force Deflection

Specification	Results	Status
250 mm (10 in)	Not Applicable	Not Applicable

**SECTION: 3.8.4 Constant Deflection Compression Set Test (Floor Foam Materials Only)**

3.8.4.1, Original Breaking Strength  
3.8.4.2, Change After Short Term 3.7.2.1 Aging  
3.8.4.3, Change After Long Term 3.7.2.2 Aging

Specification	Results	Status
Report Value %	Not Applicable	Not Applicable
< 40 % Change	Not Applicable	Not Applicable
< 10 % Change	Not Applicable	Not Applicable

**SECTION: 3.8.5 Peel Strength (Laminates Only)**

3.8.5, Peel Strength (Engine and Underbody Laminates Only)

Specification	Results	Status
6 N / 50 mm min	31.5	Pass

**SECTION: 3.8.6 Moisture Absorption**

3.8.6, Suspended 24 hrs @ 38°C / 95% RH

Specification	Results	Status
30 % max	0.8	Pass

**SECTION: 3.8.7 Fiber Loss Test for Insulation (Fibrous Materials Only)**

3.8.3.1, Fiber Loss Test

Specification	Results	Status
0.4 mg / cm <sup>2</sup> max	0.1	Pass

**SECTION: 3.9 Adhesion Strength**

3.9.1 Original  
3.9.2 After Short Term Environmental Cycling, 168 hrs @ 100°C  
3.9.2 After Long Term Environmental, 168 hrs @ 100°C

Specification	Results	Status
300 N / m - No Adhesion Failure	473.7	No Lifting or Appearance Changes
225 N / m - No Adhesion Failure	243.3	No Lifting or Appearance Changes
225 N / m - No Adhesion Failure	449.8	No Lifting or Appearance Changes

CERTIFIED BY:

Dave Nichols Jr, Automotive Lab Technician

ISSUE DATE: 1-1-24

Materials tested to OEM requirements @ 72°F +/- 2°F and 50% RH +/- 5%. Test uncertainty and minor exclusions are available online or upon request.

This certificate or report shall not be reproduced except in full, without the written approval of the Avery Dennison Performance Tapes.

Status opinion based upon measurements obtained by personnel with appropriate training and professional experience.

This laboratory is not accredited for the calibrations or tests marked \*. See further explanation for some tests methods on the last page \*(a, b, c...)



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**TEST METHOD EXPLANATION:**

SECTION: **Thickness**

\* This been added per Mat Spec drawing callouts

SECTION: **3.4 Odor**

\*(a) Test performed by accredited personnel. Due to the nature of this test, accreditation to the specific test method has not been deemed necessary or desired (subjective)

SECTION: **3.5 Fogging, Oil Bath**

SAE J1756 is called out on our Scope

SECTION: **3.6 Flammability**

ISO 3795

\*(b) ISO 3795 is technically equivalent to FMVSS 302. Our lab scope includes FMVSS 302, which was used.

SECTION: **3.7.2 Environmental Testing**

FLTM BO 040-01 A\* (c)

\*(c) FLTM BO 040-01 A is outside of our scope however we are accredited to perform environmental simulations under Customer Specifications and ASTM D4332 which are listed on our scope.

SECTION: **3.7.2 Environmental Testing**

FLTM BO 040-01 B\* (c)

\*(c) FLTM BO 040-01 B is outside of our scope however we are accredited to perform environmental simulations under Customer Specifications and ASTM D4332 which are listed on our scope.

Adhesion per ASTM D1000 has been added per Mat Spec drawing callouts

SECTION: **3.8 Physical Properties**

ASTM D5034\* (d)

which are listed on our scope.

SECTION: **3.8.2 Tear Resistance (Foam Materials Only)**

ASTM D3574 F\* (e)

This test is not applicable to the substrate involved.

SECTION: **3.8.3 Compression Force Deflection Test (Foam Materials Only)**

This test is not applicable to the substrate involved.

SECTION: **3.8.4 Constant Deflection Compression Set Test (Floor Foam Materials Only)**

This test is not applicable to the substrate involved.

SECTION: **3.8.5 Peel Strength (Laminates Only)**

FLTM BN 151-05\* (f)

D3300 which are listed on our scope.

SECTION: **3.8.6 Moisture Absorption**

No method addressed within Ford WSS M99P32-E1

SECTION: **3.8.7 Fiber Loss Test for Insulation (Fibrous Materials Only)**

FLTM BN 058-01\* (g)

\*(g) FLTM BN 058-01 is outside of our scope however the test was performed by accredited personnel.

SECTION: **3.9 Adhesion Strength**

FLTM BO 040-01

\*(h) FLTM BO 040-01 is outside of our scope however the test was performed by accredited personnel.

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Status opinion based upon measurements obtained by personnel with appropriate training and professional experience.