



**PERFORMANCE SPRAYABLE COATING, ACOUSTIC, INTERIOR,
BODY PANELS, APPLIED IN BIW**

WSS-M99P31-A1

**PERFORMANCE SPRAYABLE COATING, ACOUSTIC, INTERIOR
AND/OR EXTERIOR, BODY PANELS, APPLIED ON EC**

WSS-M99P31-A2

1. SCOPE

These specifications define the performance requirements for material with good acoustical efficiency which is applied to body panels either in body-in-white or in the paint shop.

2. APPLICATION

These specifications were originally released for materials to be sprayed on or applied with wide slit nozzle in visible or non-visible areas of roof, floor, side panel, rocker panel, doors, liftgate etc. where body panel damping and/or panel stiffening is required. The materials with different chemical base are applied onto oily surfaces or dry electrocoat.

3. REQUIREMENTS

3.1 APPROVED SOURCES

These specifications are performance based and do not have approved sources.

3.2 FILM THICKNESS

Report wet film thickness and dry film thickness (high and low bake) for each application density from 2.5 kg/m² to 5.5 kg/m² in 0.5 kg/m² increments.

3.3 ABRASION RESISTANCE

(only applicable for materials used as underbody coating)

There shall be no exposed metal area showing after 370 liters gravel impact. No loss of adhesion on and around the area of stone impact.

3.3.1 Original
(24 h after application)

3.3.2 After Aging
(14 d at 90 +/- 2 °C, 24 h 23 +/- 2 °C)

Test Method: Prepare the test panels as follows:

Test panels of 300 x 100 mm shall be coated by material under test centrally 10 mm away from the edges. Dry film target thickness is 1 mm. Panels shall be baked separately for the min and max curing cycles according to FLTM BV 150-05 for the applicable region.

Date	Action	Revisions	Rev. 03
2017 03 20	Revised	See Summary of Revisions	W. Janitschke, EU
2016 07 05	Revised	See Summary of Revisions	W. Janitschke, EU
2004 03 25	Released		W. Janitschke, EU



After conditioning for 24 h at 23 +/- 2 °C determine the abrasion resistance according to ASTM D968, except I.D. of tube 25 mm and at a gravel through put rate of 30 - 40 l/h. For each specimen 5 L of fresh gravel shall be used.

GRAVEL: Type "GABBRO" grain size 5 - 8 mm or equivalent

SUPPLY SOURCE: ODENWALDER HARTSTEIN INDUSTRIE GMBH
Erbacher Strasse 62
D-6101 Rossdorf
or equivalent

3.4 CORROSION RESISTANCE, LABORATORY CYCLIC CORROSION TEST CETP 00.00-L-467

Test Method:

Test panels of 200 x 100 x 0.8 mm shall be coated by material under test centrally 10 mm away from the edges to produce the min required dry thickness of 0.75 mm. Panels shall be baked separately for the min and max curing cycles acc. to FLTM BV 150-05 for the applicable region, follow appropriate oven conditions for paint shop applied materials or for BiW.

After conditioning for 24 h at 23 +/- 2 °C, expose samples to CETP 00.00-L-467 as follows:

Samples applied to BIW surfaces: 6 weeks
Samples applied to e-coated surfaces: 12 weeks

The material shall protect the test panel from corrosion. Disregard the area 10 mm from the edges of test panel. Under the material and at the border line of material edges there shall be no visible corrosion, flaking, or any evidence of loss of adhesion of the material.

3.5 CORROSION RESISTANCE, PROVING GROUND (CETP 00.00-R-343)

New material technologies require total vehicle corrosion testing prior to approval and their introduction. Test details including film thickness, method of application, number of test cycles, etc. for the individual vehicles are defined by Materials Engineering, PV&T.

3.6 CONDENSING WATER VAPOR TEST (FLTM BI 104-02, Method A, 72 h, panels prepared per para 3.4)

No blisters,
swelling, no loss
of adhesion, no
re-dispersion

3.7 COLD ADHESION AT - 40 °C (FLTM BV 151-01, specimen preparation according to para 3.4. Test Load A, 300 x 300 x 0.9 +/- 0.05 mm panels, full area coated)

No flaking, no
loss of adhesion

3.7.1 Cold Slam Resistance (For Closure Applications)
(FLTM BV 101-02, Procedure E, condition for 4 h minimum at -29 +/- 2 °C prior to testing, test at - 29 °C for 10 slams)

Samples: Apply a 150 x 150 mm piece of material on a 300 x 300 mm panel substrate per EG and e-coat, 4 mm cured material thickness. Cure materials per FLTM BV 150-05 for the applicable region.

3.7.1.1 Initial
(Test after 30 days at 50 +/- 2 °C and
90 +/- 5% relative humidity)



3.7.1.2 Test after Cyclic Corrosion
(CETP 00.00-L-467, 6 weeks for BiW, 12 weeks for e-coated surfaces)

3.8 PAINT ADHESION TO MATERIAL UNDER TEST

(FLTM BI 106-01, Method C, preparation of specimens according to para 3.4, plus paint in line with process)

No chipping, no flaking, no loss of adhesion.

1. Materials: Sealer, primer and topcoat as specified
2. Topcoat colors: white, red, black, and silver

Use FLTM BV 150-05, for applicable region, cure sound deadener at 2.5 kg / m² and 5.5 kg / m² thickness and topcoat min/max thickness, demonstrating robustness at minimum and maximum bake conditions.

Panel Evaluation and Report:

- Primer Appearance Before Topcoat
0 - Uniform good appearance
1 - Crawling/pin holes
2 - Crawling/pin holes and sags
- Cross Hatch Adhesion Checks - FLTM BI 106-01 Method B
(0.5 - 0.008, 0.013 - 0.018, and 0.023 - 0.03 mm primer film builds)
0 - < 5% topcoat loss
1 - 6 - 10% topcoat loss
2 - > 11% topcoat loss
- Solvent Resistance Test After Topcoat - 10 xylene rubs
Record the number of rubs to paint transfer (avoid rubbing over sharp corners and edges)

3.9 VOLUME EXPANSION

+/- 5% based on
accepted Initial Sample

Test Method:

- 3.9.1 Determine the volume V1 of clean 150 x 25 mm test panels.
- 3.9.2 Apply test material in the groove of the test panel, scrape flush with the adjoining surfaces and determine volume V2.
- 3.9.3 Expose test specimens in a mechanical convection oven to the min curing cycle. The test specimens are to be cured in a horizontal position and protected from direct air flow. After heat curing and cooling to room temperature determine volume V3.

$$\% \text{ Volume Expansion} = \frac{V3 - V2}{V2 - V1} \times 100$$

Where: V1 - Volume of the test panel
V2 - Volume of the test panel and underbody coating
V3 - Volume of the test panel and material after cure.

