



PAINT PERFORMANCE, RIGID SUBSTRATES, EXTERIOR

WSS-M2P180-B

1. SCOPE

This specification defines the performance of a multi-layered paint system required for all exterior rigid body sheet metal and all exterior rigid body parts where best appearance and highest durability are required. This system is specified for assembly plants, component suppliers and refinish repair.

2. APPLICATION

This specification was released originally to define paint performance of exterior surfaces and define the performance requirements for a complete service refinish paint system. It is specified for vehicle bodies, hoods, fenders and other exterior parts visible after assembly. This specification is applicable to all surfaces outboard of the weather-strip.

3. REQUIREMENTS

Terminating exterior edges visible after assembly shall conform to the full requirements of this specification.

In-department, pre-delivery and refinish paint repairs shall meet the requirements of this specification.

Effective for 2007 model year and beyond, all paint applicators must meet the Exterior Parts Painter Approval Process (AVP-T113-015). Applicable to North America only.

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).

3.2 SYSTEM COMPONENTS

3.2.1 Substrates

Auto body steel, aluminum, pre-coated or electroplated zinc or zinc alloy coated steel and zinc die casting or as specified on Engineering Documents.

Rigid polymers and rigid polymer blends, SMC, ABS, etc. with a flex modulus (ASTM D 790, Method 1) typically greater than 1250 MPa.

3.2.2 Substrate Condition

The surface to be coated must be cleaned by an automated process to ensure the absence of oil or alkaline residues, fingerprints, corrosion, mold release agents, dirt, moisture, and other foreign materials.

Date	Action	Revisions
2005 04 05	Activated	



Documents

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**3.2.3 Paint System Requirements**

Substrate	Pre-treat	Prime	Topcoat
Cold rolled steel Precoated steel Electroplate zinc Zn alloy coated steel Aluminum	Zinc Phosphate WSS-M3P1-D	Cathodic Electrocoat/ Primer, Surfacer WSS-M64J39-A/ ESB-M6J141-A Or current production	Basecoat/ Clearcoat WSS-M33J3-D1 Or current production
Thermoset Polymers SMC, BMC, DMC, etc.	Current production, as applicable	Primer, Surfacer ESB-M6J141-A Or current production	Basecoat/ Clearcoat WSS-M33J3-D1 Or current production
Thermoplastic Polymers ABS, PC/ABS PA, PA/PPE, etc.	N/A	Primer, Surfacer If necessary ESB-M6J106-C Or current production	Basecoat/ Clearcoat ESA-M16J9-A1 Or current production

Zinc phosphate coating per WSS-M3P1-D shall be used if steel and aluminum parts are processed concurrently and the aluminum tolerance of the process used shall not be exceeded.

When necessary in order to meet the requirements of this specification, an adhesion promoter and/or primer surfacer must be used as specified on Engineering Documents.

Primer must be applied over cathodic e-coat.

3.2.4 Repairs, In-Department and Pre-delivery

Repaired areas must meet the requirements of this specification. All repair materials and processes used should be approved by the affected Product Materials Activity. Maximum film thickness and/or number of repairs for repaired parts will be specified in the mutually agreed control plan and conform to para 3.3.6.

3.2.5 Finished Parts

Testing must be conducted on actual production parts. Where part dimensions limit equipment access, representative panels run through the production processes may be substituted for production parts.

These panels shall be processed together with parts and shall be representative of the parts with respect to substrate, phosphate coating, primer thickness, sanding, enamel thickness, and processing.



3.3 FILM PROPERTIES

- 3.3.1 Color
(FLTM BI 109-01 Visual Assessment)
(SAE J1545, Three-Angle CMC)

As determined by
Color Harmony team

Shall match the Master Approved Sample color panel or the initial sample as approved by Design Center.

- 3.3.2 Gloss
(FLTM BI 110-01)

As released by Corporate Design:
(Use as a guide)

A:	20° Glossmeter, min	92
B:	60° Glossmeter	76 - 84
C:	60° Glossmeter	66 - 74
D:	60° Glossmeter	58 - 66
E:	60° Glossmeter	47 - 53
F:	60° Glossmeter	33 - 38
G:	60° Glossmeter	17 - 23
H:	60° Glossmeter	7 - 13
J:	60° Glossmeter	4 - 6
K:	60° Glossmeter	2 - 4
L:	60° Glossmeter	0.5 - 2

- 3.3.3 Hardness

Shall be sufficiently cured after baking to withstand normal handling and shipping without damage.

Properly cured paint finish shall be hard enough to dry sand easily with 360 grit paper without gumminess or severe scratching.

- 3.3.4 Polishing

A and B Gloss surfaces shall be capable of being sanded with 1200 grit or finer and polished. No noticeable change in gloss or appearance except for a min of polishing lines shall result. Deep polishing lines or swirl marks are not acceptable.

- 3.3.5 Film Thickness, min
(FLTM BI 117-01, Metallic Substrates, PELT or equivalent)
(ASTM B 487, Non-Metallic Substrates, PELT or equivalent)

Coating thickness must be sufficient to meet all requirements of this material specification. Refer to applicable materials specifications and will be specified on the mutually agreed upon control plan.

- 3.3.6 Film Thickness, max
(FLTM BI 117-01, Metallic Substrates, PELT or equivalent)
(ASTM B 487, Non-Metallic Substrates, PELT or equivalent)

The finished unit, part, or test specimen shall not exceed 350 micrometers total film thickness. There shall be no more than 3 in-department repairs.