



PAD PRINTING, PLASTIC or PAINTED PLASTIC, PROTECTED EXTERIOR or UNDERHOOD

WSS-M99P14-A5

1. SCOPE

This specification defines the performance requirements for pad printing on all Ford Motor Company non class A surfaces located underhood or in protected exterior. Protected exterior is defined as an area where there is very low or no UV exposure.

2. APPLICATION

This specification was released originally for pad printing using ink for graphics on globally designed radiator caps. The pad printing process is an ink system which is transferred onto the surface of the part.

2.1 Engineering Drawing

Ink supplier and corresponding product codes, color codes, and number of hits must be documented on the engineering drawing following the performance specification number.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials. All parts must also meet the appropriate DVP & R and Subsystem Design Specification 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).

3.2 SYSTEM COMPONENTS

3.2.1 Substrates

Plastic and painted plastic as specified on Engineering Documents.

3.2.2 Substrate Condition

The surface to be pad printed 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.

3.2.3 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. If regrind is used, testing at the maximum loading level is required and must meet the specification requirement.

These panels shall be processed together with parts and shall be representative of the parts with respect to substrate, paint, and processing.

Date	Action	Revisions	Rev. 1
2011 05 26	Revised	Corrected para number ref. in 3.3.9	A. Reaume, FNA
2009 03 05	Activated		A. Reaume, FNA



When panels are used as a substitute, this must be clearly reported on the PSW or the laboratory test report.

3.2.4 Ageing

Test specimens prepared for investigations according to this specification must be aged at least 72 hours at 23 +/- 2 °C prior to testing.

- 3.2.5 Process/Product Validation Test Requirements as listed in Table 1. This table is for only Approved paint technologies as shown on Ford Approved Source List otherwise full WSS-M99P14-A5 specification testing is required.

Design Verification Testing (DV) is done on plaques by *the ink* supplier.

Product/Process Validation Testing (PV) is done on production painted parts.

3.2.6 GENERAL ACCEPTANCE CRITERIA

Initial

The graphic ink shall be legible and free of blisters, wrinkles, ragged edges, and any other surface imperfections that will make them unsuitable for the intended usage. The color shall be as specified on the engineering drawing.

After Exposure

After each of the exposure conditions described in the requirements the ink graphics must not show visual evidence of peeling, loss of printing or legibility, loss of adhesion, staining, blistering, checking, cracking, excessive shrinkage, or any other effect which would detract from its proper function or appearance.

3.2.7 PRINT ADHESION

Place a strip of 25 mm wide 3M #898 or current equivalent tape on the ink. Apply the tape with moderate thumb pressure to the ink and substrate. Remove the tape by pulling one end at a 90° angle with a quick snap. There shall be no effect on legibility and no graphic delamination from the substrate.

3.3 RESISTANCE PROPERTIES

- 3.3.1 PAINT ADHESION, max
(FLTM BI 106-01, Method B
carbide tip scribe only)

Grade 2

Lightly hand sand ink film surface (10 double rubs, moderate pressure) with P600 paper until dull, before scribe operation and checking adhesion.