



METALLIZE, PLASTIC PARTS (FIRST SURFACE)

ESF-M5P1-A

1. SCOPE

This specification defines the performance requirements and processing procedure for decorative first surface coatings on interior thermoplastic or thermosetting plastic parts involving vapor deposition of metals in a vacuum.

The term "first surface" means the surface first meeting the eye when the part is installed in position.

2. APPLICATION

This specification was released originally for a finish used on plastic parts, either clear or opaque, where a bright metallic appearance is desired. Usage shall be governed by the nominal abrasion resistance of the protective coating applied over the metallized surface.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.1 COLOR AND LUSTER

Vacuum metallizing shall match master sample approved by Quality Control for Color Match (FLTM BI 109-01) and Gloss (FLTM BI 110-01).

3.2 INITIAL HARDNESS

The finish shall be sufficiently cured at time of packing to withstand normal handling and shipping without marring.

3.3 ADHESION

A 3/4 in (19 mm) wide strip of adhesive cellophane tape ESB-M3G68-A shall be applied to the finished surface. Upon quick removal of the tape, none of the finish shall adhere to the tape.

3.4 SCRATCH TEST

Scratch the finished surface with a sharp instrument, 16 lines/in (25 mm) in one direction. Scratch at right angles to the first lines, forming complete squares. Repeat the adhesion test as listed in para 3.3.

*3.5 EXPOSURE (FLTM BO 115-02)

Parts must meet requirements of para 3.1 and must not show any evidence of peeling, blistering or flaking.

Date	Action	Revisions
2003 08 28	Revised	Para 3.0 inserted; Para 3.12 & 4 deleted
1978 11 07		Metricated and Retyped CF4H-RD567168-35
1963 03 25		Released F6-1034





3.6 OPACITY

The metallized areas shall be opaque on clear plastic parts which are backlighted or edge-lighted. Metal film thickness on all parts shall be sufficient to give the finished surface a bright lustrous metallic appearance. If a colored pigmented base coat is desired for improved opacity or to match standard for luster or lighting, the part print shall so specify.

3.7 APPEARANCE

The surface of the part as finished shall be free from dirt, lint, and other contaminants. Masking, if required, shall produce a sharp line of demarcation between metallized and non-metallized areas. There shall be no visible runs, sags, or blisters in the base or top coat and no fogging of the non-metallized portion.

3.8 HEAT AND COLD RESISTANCE

*3.8.1 Parts must meet the requirements of para 3.3 and 3.5 after conditioning according to one complete cycle consisting of:

- . 85 +/- 1 °C for 24 h
- . 23 +/- 2 °C for 3 h
- . -29 +/- 1 °C for 24 h

*3.8.2 Parts must meet the requirements of para 3.7 and must not change in chemical and physical properties after one complete cycle consisting of:

- . 80 - 82 °C for 24 h
- . 23 +/- 2 °C for 3 h
- . -29 +/- 1 °C for 24 h
- . 23 +/- 1 °C for 24 h

*3.9 CLEANERS AND WAX RESISTANCE

Parts must meet the requirements of para 3.1 and 3.3 after subjection to a coating of the following cleaners and waxes for a period of 24 h. These materials shall be applied as directed by the instructions on the containers of the individual compounds. After the exposure period, the parts shall be wiped and/or rinsed and examined per para 3.1 and 3.3.

Test Compounds

Part Number

Wax	B4A-19534-A
Tar and Road Oil Remover	B7A-19520A
Porcelainize Liquid	B7A-19528A
Cleaner Wax and Polish	B7A-19530-A
Liquid Detergents (Undiluted)	-----

3.10 WATER SPOT AND SOAP TEST, max (FLTM BI 113-01)

Water Spot	0.3 N.B.S. Units
Soap Spot	0.8 N.B.S. Units