



PLATING, BRIGHT DECORATIVE - STEEL – EXTERIOR

ESF-M1P43-A

1. SCOPE

This specification defines performance requirements for a finished coating of electrodeposited copper, nickel, and chromium for the decoration and protection of steel and/or iron surfaces.

2. APPLICATION

This specification was released originally for a coating where a bright decorative and/or protective metallic finish is required on steel and/or iron surfaces.

Unless otherwise specified on the engineering drawing, all parts shall be finished with a final coating of chromium. When a nickel finish is desired, the engineering drawing shall specify nickel plate, e.g., nickel plate ESF-M1P43-A, omit chromium plate.

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 APPEARANCE

All parts shall have a bright finish unless otherwise specified on the engineering drawing. The plated parts shall be free from surface imperfections such as rough or orange peel conditions, crazing, cold shuts, pits, slivers, dullness, stains, discoloration, breaks in the plate, and wheel marks or buff lines to the extent required by specifications for the visual inspection of appearance items established by Product Engineering.

3.2 BUFFING OF CHROMIUM PLATING

Because of the potential adverse effect on corrosion resistance, buffing of final chromium plating is not permitted.

3.3 ADHESION

The plate shall adhere to the base metal and show no separation between layers of plate when tested as follows:

3.3.1 Sawing

Position the part in a vise or holding fixture so that the significant plated surface is perpendicular to the saw blade and the cutting motion of the blade is in a direction which tends to pull the plating away from the base metal.

3.3.2 Bending

Any section of the part containing a significant plated surface shall be positioned in a vise or holding fixture and subjected to repeated bending until fracture of the section.

Date	Action	Revisions
2003 07 29	Revised	Para 3.0 inserted; Para 3.8 & 4 deleted
1978 08 30		Metricated and Retyped
1964 04 16		Released F6-1325



3.4 PLATING THICKNESS

Minimum plating thickness requirements for significant surfaces are as follows:

Copper	0.0003 in (8 μ m) (1)
Nickel	0.0012 in (30 μ m)
Total - Not including Chromium	0.0015 in (38 μ m)
Chromium	0.000010 in (0.25 μ m)

Note (1): Initial copper may be replaced with nickel provided parts meet all other requirements of this specification.

3.5 PLATING THICKNESS MEASUREMENT (ASTM A 219)

The optical measurement of copper and nickel deposits on significant surfaces shall be considered the standard thickness test method.

The chromium plate thickness on significant surfaces shall be checked by the spot test as described in ASTM B 556 or by the Coulometric method, ASTM B-504. In case of difference, ASTM B 504 shall be the umpire method.

3.6 SIGNIFICANT SURFACES

All surfaces visible on a part as assembled or surfaces which can be the source of corrosion products visible on an assembled vehicle are significant surfaces. Except as noted on the engineering drawing, all significant surfaces must meet the corrosion and plate thickness requirements.

3.7 CORRODKOTE TEST, min 16 h (FLTM BQ 004-01)

3.7.1 Evaluation of Corrodkote Test

- . Failure is to be noted for surface pitting corrosion if any grid area contains more than 10 spots 0.048 in (1.22 mm) in diameter or larger.
- . Any spots larger than 1/16 in (1.6 mm) shall be considered failure of the part.
- . Failure is to be noted as more than 2.0% corrosion of the entire significant surface.
- . Failure is to be noted if 15% or more corrosion in a grid section containing 100 - 1/4 x 1/4 in (6.4 x 6.4 mm) spaces placed anywhere on the significant surface.