



ENGINEERING MATERIAL SPECIFICATION

Material Name	File Control No.	Specification Number
DECORATIVE ELECTROPLATING OF ZINC DIE CAST- MATT BLACK	SMT5001PD4070 SMT5001PD4080	SK-M1P9009-A SK-M1P9010-A

1. SCOPE

The material defined by this specification is for finished coatings of copper, nickel and chromium, applied by electrolytic means onto zinc die-cast parts.

2. APPLICATION

These specifications were released originally for material used as coatings where matt black decorative and corrosion protective coatings are required on zinc die castings. If not otherwise specified on the drawing, all parts shall be finished with a final chromium plate.
SK-M1P9009-A: INTERIOR. SK-M1P9010-A: EXTERIOR.

3. REQUIREMENTS

3.1 APPEARANCE

If not otherwise indicated on the drawing, the parts shall have a matt black surface. The electroplated parts shall be free from surface imperfections such as roughness, orange peel, crazing, cold shuts, pits, slivers, dullness, stains, breaks in the plate, and wheel marks and buff lines to the extent required by specifications for the visual inspection of appearance items established by Product Engineering. The black film need only cover significant surfaces.

3.1.1 Buffing of Chromium Plating

Because of the adverse effect on corrosion resistance, buffing of final chromium plating on exterior parts is not permitted. Wax polishing is allowed.

3.2 ADHESION

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

Date	Release No.	Release/Revision
1989 11 02	B/031529TP	Retyped revised clauses 3.3.2, 3.4. was 7 sheets
1977 11 11	B/103660TP	Revised para 3.1 and 3.3.3, added 3.2.3
1977 03 28	SM/EQ8215TP	Released

WP 3948-a

Page 1 of 5

9009160 0037110 717



3.2.1 Sawing

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

3.2.2 Bending

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

3.2.3 Thermal Shock Test

Parts shall be heated to 150 C for 1 h and rapidly quenched in water at room temperature (25 +/- 2 C). Parts shall exhibit no blistering, cracking or any loss of adhesion.

3.3 COATING THICKNESS

The minimum coating thickness requirements are listed under clause 3.3.3.

3.3.1 Significant Surfaces

All surfaces visible on a part as assembled in a vehicle, or surfaces which can be the source of corrosion products visible on an assembled vehicle, are significant surfaces. All significant surfaces shall meet the corrosion and plating thickness requirements as detailed in 3.3.3. Any exception from this rule shall be accordingly indicated on the engineering drawing.

Threads shall be completely plated, but shall not be considered as significant surfaces, unless so indicated on the engineering drawing.

3.3.2 Plating Thickness Measurement

The optical measurement of copper and nickel deposits on significant surfaces shall be considered the standard thickness test method (ASTM B 487). The chromium plate thickness on significant surfaces shall be checked by coulometric measurement of the layer to Ford Laboratory Test Method EU-BQ 3-1. In case of dispute, a metallographic examination must be carried out on a cross section.