



PAINT QUALITY, FASTENERS AND RETAINERS - LIMITED EXTERIOR

ESB-M2P35-B

1. SCOPE

This specification defines the performance requirements for heavy zinc phosphate coated and zinc chromate finished carbon steel fasteners. This is a soft coating and should only be used for parts not subject to friction, such as "J Nuts". Two levels of corrosion protection are offered for use in specific applications.

2. APPLICATIONS

This specification was released originally for a finish where maximum corrosion resistant carbon steel fasteners are required to attach assemblies in areas such as the engine compartment. The finish is primarily specified in areas of intermediate visibility.

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 ZINC PHOSPHATE

(FLTM AQ 101-01 or AQ 101-02 or AQ 101-03)

1,500 – 2,000 mg/ft² (16 - 22 g/m²) on all significant surfaces.

3.1.1 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. Except as noted on the engineering drawing all significant surfaces shall meet the corrosion and coating weight requirements.

Threads, crevices, holes and screwdriver slots or recesses are not to be used for finish thickness measurement or for interpreting corrosion test results, unless they are designated significant surfaces.

3.2 VISUAL EXAMINATION

Phosphate, coated parts are subject to surface inspection for such imperfections as an excessively coarse phosphate structure, incompletely covered area, etc.

Date	Action	Revisions
2003 08 11	Revised	Para 3.0 inserted; Para 3.6 & 4 deleted
1978 11 14		Metricated and Retyped CAH1-RD572066-169
1969 10 06		Released AZ1-468



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3.3 ZINC CHROMATE FINISHES

Type I: This finish is produced by applying two separate coats of zinc chromate primer over phosphate coated parts. After each primer application, parts are oven baked for 12 - 15 min at 163 - 191 °C. The total dry film thickness shall be 0.0005 in (13 µm) minimum.

Type II. This finish is produced by applying one coat of zinc chromate primer over phosphate coated parts. After the primer application, parts are oven baked for 12-15 min at 163 - 191 °C. The total dry film thickness shall be 0.0003 in (8 µm) minimum. This finish shall be black unless otherwise specified on the engineering drawing.

3.4 OILINESS

Phosphated and zinc chromate primer coated parts should, as a final step, be coated with a solvent type liquid corrosion inhibitor (ESB-M7C44-A), which does not necessarily have to be dry to the touch.

3.5 SALT SPRAY RESISTANCE, min (ASTM B 117)

Type I 169 h

Type II 96 h

The fasteners shall be exposed to salt spray, after being prepared for test as follows:

Using appropriate nuts and bolts, attach parts to 0.035 in (0.89 mm) steel panels painted as required by performance specification ESB-M2P4-A using sufficient torque to assure deformation normally associated with part assembly. Torques which result in gross deformation should be avoided. Red rust creepage from the attaching bolts or panel shall not be considered when interpreting the corrosion results.

In the event of dispute between the supplier and the Product Engineering Office related to the corrosion results, the referee salt spray resistance tests shall be conducted employing the maximum torque specified for the part in question. The specified torque limit information should be obtained from the responsible Product Engineering Office design activity.

The coating shall exhibit no evidence of blistering, peeling or loss of adhesion when tested. The finish shall not change color in salt spray any more than the master approved samples retained by the BEPE Materials Engineering Department.

The parts shall exhibit no more than 2% light red rust on any significant surface after salt spray exposure, based on a minimum of 25 fasteners tested for each approval. (See para 3.1.1)

A minimum of 10 pieces tested from each lot shall be considered satisfactory for Production Quality Control.