



PHOSPHATE BASE, BONDED PTFE RESIN COATING – STEEL

ESL-M3P30-A

1. SCOPE

This specification defines the performance requirements for steel fasteners, phosphated and coated with a bonded fluorocarbon (PTFE) resin. The one-component resin bonded PTFE is cured between 149 to 204 °C. The PTFE resin offers lower coefficient of friction for bolt drive torque.

2. APPLICATION

2.1 USE

This specification was released originally for moderate corrosion resistance of steel fasteners for automotive purposes.

2.2 QUALITY

The quality required shall be obtained by the best commercial practice to consistently meet the requirements of this specification. Complete phosphate coverage is expected on properly cleaned parts, prior to the bonding of a uniform PTFE resin coating and solvent type oil.

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 FINISH

3.1.1 Phosphate

Any type phosphate which meets the other requirements of this specification.

3.1.1.1 Coating weight, min 600 mg/ft² (6.5 g/m²)
(FLTM AQ 101-01 or AQ 101-02) on all surfaces.

3.1.1.2 Adhesion

There shall be no chipping away of the phosphate coating from the metal when the coating is tested by scratching with a knife blade held at an angle of 90° to the surface.

3.1.1.3 Visual Examination

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

Date	Action	Revisions
2003 08 28	Revised	Para 3.0 inserted; Para 3.2.2 & 3.3 & 4 deleted
1983 01 25		Released TM2-01-3-0





3.1.2 Resin Bonded PTFE

3.1.2.1 Film Thickness 0.0003 - 0.0012 in (8 - 30 μ m)

3.1.2.2 Finish

The coating shall be free of cracks, blisters and foreign materials, and shall be continuous homogeneous coating, with good adhesion.

3.1.3 Oil Sealer

A water base inhibitor shall be applied as a sealer as the final processing step.

3.1.3.1 Oiliness

Parts need not be completely dry to the touch, however, parts shall not be excessively oily.

3.2 FINISH PART REQUIREMENTS

3.2.1 Color Black, or as specified on the engineering drawing.

3.2.3 Salt Spray Resistance, min 48 h
(ASTM B 117)

One rust or corrosion spot on the significant surface area is acceptable, provided such spot is not larger than 1/16 in (1.6 mm) in diameter. On other surfaces, rust or corrosion shall not exceed 2% of the areas.

3.2.4 Gasoline Immersion 72 h
(ASTM D 471)

Finished metal parts shall show no evidence of coating failure or loss of adhesion after immersion in reference Fuel "B" at room temperature.

3.2.5 Oil Immersion 72 h
(ASTM D 471)

Finished parts shall show no evidence of coating failure or loss of adhesion after immersion in ASTM Oil #3 at room temperature.