



PHOSPHATE COATING, MANGANESE IRON, MICRO CRYSTALLINE

WSS-M3P37-A

(BRAZIL ONLY)

1. SCOPE

This specification defines manganese iron phosphate coating on gears and shafts.

2. APPLICATION

This specification was released originally for manganese iron phosphate coating with no Hexavalent Chromium (Cr+6) that will provide a reduction in wear during the initial breaking-in period, and is not intended for anticorrosion or fastener applications. However, parts coated according to this specification may be oiled to prevent corrosion during shipment.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

Phosphated surface must be dull and colored dark grey. They shall be free from uncoated areas, from flakings and uneven deposits, and from residues of the processing solution, which may initiate corrosion.

3.1 QUALITY SYSTEM REQUIREMENTS

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

3.2 PHOSPHATING PROCESS

It is not intended to specify or limit the process details. Suppliers shall ensure that all the operations including pre-cleaning, rinsing, phosphating, rinsing and post-treatments are suitable to produce a coating that fully meets the requirements of the specification. The process and component test must shall form part of the Control Plan and, if applicable, the relevant Manufacturing Process Standard will be specified on Engineering Drawing.

3.3 CRYSTAL SIZE AND APPEARANCE

The coating must be evenly deposited and complete, and must be have a fine-grained uniform micro crystalline structure.

Manganese iron 0.003 – 0.010 mm

Measurement should be made using an Electron Microscope, measuring frequency established in the Process Control Plan.

Date	Action	Revisions
2006 10 23	Activated	



Documents

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3.4 COATING WEIGHT (Measured in completely covered sample)

(FLTM AQ 101-03 or ISO 3892 (method/frequency to be part of the Control Plan))

Coating weight 7.5 to 15g/m²

3.5 COATING THICKNESS (APPARENT)

The phosphating process has a dimensional influence on the component proportional to the actual phosphate thickness. In those instances when, for reasons of fit etc., dimensions are critical after phosphating, appropriate controls shall be included on the Engineering Drawing. For the coating weights specified, coating thicknesses are nominally 0.002 to 0.006 mm, and dimensional change of the component in this order should be expected. Actual thickness is dependent upon prior cleaning, crystal morphology, base material, process parameters and method of measurement.

3.6 CORROSION PROTECTION

By agreement between Ford and the supplier, parts phosphated in accordance with this specification may be oiled to provide short-term rust prevention during shipment.