Hyster-Yale Group, Inc.	Document Control Number:
Title: ZINC PHOSPHATE COATING	**HC-403**
Page 1 of **1** **Document Author:** Caitlin Toohey	**Effective Date:** 01-Mar-2017 **Revision No.** 2017-03

1.0 SCOPE

Zinc phosphate coating without supplementary treatment for ferrous parts.

2.0 CITED

See Master Index or attached Annex for a complete list of Citing & Cited Documents.

3.0 REQUIREMENTS

Normal part processing and finished coating shall conform to the requirements of MIL-DTL-16232, Type Z, Class 4.

Parts harder than HRC 39 shall be suitably stress-relieved prior to coating.

Minimum coating weight shall be 1000 milligrams per square foot.

Coated parts shall withstand a 72 hour salt spray test per ASTM B117 without signs of corrosion.

Coating shall be evenly deposited with a crystalline texture not visible to the unaided eye and shall not show any evidence of etching or intergranular attack of the base metal.

Coating shall be grey to black in color and free of white stains (dried phosphate solution), rust, or fingerprints. Brown or orange stains caused by chromic acid rinse and nonuniformity of color due to heat treatment, degree of cold work, or base metal composition shall not be cause for rejection.

For electroplated parts, refer to HC-411 for requirements.

Certification

The supplier shall include with each material lot shipped to Hyster-Yale Group a statement certifying compliance with the HC-403 requirements signed by an authorized representative of the supplier.

4.0 ENGINEERING INFORMATION (Not Part of Requirement)

Application

Zinc phosphate coating is normally used as a corrosion resistant paint base prior to painting with epoxy primer and polyurethane enamel. Zinc phosphate coatings can also be utilized alone for extended corrosion protection of ferrous parts.

Method of Specifying

HC-403

Annex

ASTM B117, Standard Practice for Operating Salt Spray (Fog) Apparatus

HC-411, Electroplated Parts

MIL-DTL-16232, Phosphate Coating, Heavy, Manganese or Zinc Base