Material Name

CORROSION PROTECTIVE COATING - HEAT AND OXIDATION RESISTANT - ALUMINUM FILLED, CERAMIC BONDED

Specification Number

WSE-M21P21-A

1. SCOPE

This specification defines the performance level of a proprietary corrosion, heat and oxidation resistant protective coating for low carbon sintered iron which is a thermosetting inorganic binder, aluminum coating material.

2. APPLICATION

This specification was released originally to provide an anodic coating on Ignition Pulse Rings for corrosion, heat and oxidation resistant properties.

3. REQUIREMENTS

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 STRESS RELIEVE

Prior to coating, the parts must be stress relieved at 850 +/- 10 C for 0.5 hours minimum at temperature in a neutral atmosphere furnace.

3.3 PREPARATION

After stress relieving and before coating, the parts shall have cleaned, roughened surfaces, accomplished by dry grit blasting.

3.4 COATING

The cleaned parts shall be coated by any suitable technique capable of producing a uniform coating conforming to the requirements of this specification.

3.5 CURING

The coating on parts shall be cured in a circulating air furnace at such temperature and for such time as required to cure without reducing properties of the part.

Date	Release No.	Release/Revision
1991-04-03	NE01-E-10127076-002	Revised 3.11, updated 4. J.C. Webster
1989 09 08	NE01E10000474052	Released J.C.Webster, G.Schley,NAAO. NPR, EAO

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3.6 BURNISH

The cured coating shall be burnished by glass bead peening to produce a conductive surface.

3.7 COLOR

The color of the coating shall be uniform matte gray and shall closely match the color of the standard part agreed upon by purchaser and vendor.

3.8 APPEARANCE

The coating shall be smooth, continuous, adherent to the base metal, uniform in appearance, and free from pin holes, blisters, nodules, and pits.

3.9 COATING THICKNESS
(FLTM BI 117-01)

The coating thickness on parts shall be 0.02 - 0.08 mm. In case of a dispute between a supplier and Ford Motor Company, coating thickness will be measured by microscopical examination (ASTM B 487).

3.10 ADHESION
(FLTM BI 106-01)

The coating shall be continuously bonded to the base metal. Parts shall withstand a scrape test so conducted as to indicate quality of bond. The coating shall shear away from the base metal without bond failure of the adjacent coating.

3.11 CORROSION RESISTANCE
(ASTM B 117)

The coating shall withstand continuous exposure to 42 days of ASTM B 117 salt spray test. Corrosion to the base metal shall not exceed Rating Number 8, Procedure B of ASTM D 1654.

3.12 HEAT RESISTANCE

When heated in air at 535 +/- 15 C for 4 hours and cooled in air, the coating shall conform to the following requirements.

3.12.1 Electrical Resistivity

Determined by means of a Wheatstone Bridge or suitable direct reading ohm-meter operated on direct current. The contact areas of the probes shall be of such configuration as to make intimate contact with the surface without penetrating the coating with a minimum distance of 25 mm between the probes. The readings shall be not greater than 15 ohms per 25 mm.

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