

SermeTel® Process 6F-1 Coating System

The SermeTel® Process 6F-1 coating system is a multi-layer inorganic overlay. The basecoat consists of a dense aluminum-filled galvanically sacrificial coating. The topcoat is a chromate/phosphate chemically inert sealant. The sealant retards corrodants from penetrating to the base metal, thus significantly extending the useful life of the coating system in the harsh environments found in gas and steam turbines and in industrial processing equipment.

Advantages

SermeTel Process 6F-1 was developed to provide extended corrosion protection and anti-fouling protection for industrial and electric utility gas turbine compressor rotors.

When used in gas turbine engines, SermeTel Process 6F-1 has yielded cost savings from extended component life and reduced maintenance costs.

Although the recommended thickness of SermeTel 6F-1 is 2.0 to 4.0 mils, the coating system can be applied in precise thicknesses ranging from 0.5 mils and up. SermeTel 6F-1 provides protection against cyclical erosion and corrosion. It also can restore the surface finish of corroded/eroded components.

Applications

The coating system can be used on components such as steel compressor blades, vanes, disks, hubs, shafts, cases, and bearing supports for its added erosion characteristics.

Extensive OEM testing of SermeTel coatings has shown no fatigue impact on coated parts.



Physical Properties

Thickness	0.5 mils (12.5 µm) to 2.0 mils (50 microns) or more as required
Surface Profile (R _a) (Typical)	≤ avg. 35 µinches at .030" cutoff (.89 micron @ .8 mm)
Maximum Continuous Operating Temperature	1050°F (565°C) (on non-rotating parts)
Peak Operating Temperature/Time	1100°F (593°C)/1 hour
pH Operating Range	3.5 to 8.5 (up to 11.0 in amines)

Performance Data (2 mil coating (50 µm) on 1010 steel)

Test	Results
Salt Spray (ASTM B117)	No red rust after 2500 hours.
Abrasion Resistance (ASTM D968)	> 300 liters/mil
Tensile Bond Strength (ASTM C633) (measured on basecoat alone)	≥ 8,000 psi (70 MPa) strain rate: 0.1 inch per minute

Approvals

Dresser Rand Specification 015-009-029