

## SermeTel® Process 2F-1 Coating System

The SermeTel® Process 2F-1 coating system is a multi-layer inorganic overlay. The basecoat consists of an 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 turbines and industrial processing equipment, as well as steam turbines.

### Advantages

SermeTel 2F-1 provides protection against cyclical corrosion and erosion. It also can restore the surface finish of corroded/eroded components. Although the recommended thickness range of SermeTel 2F-1 is 2.0 to 4.0 mils, the coating system can be applied in precise thicknesses ranging from 0.5 mils and up.

### Applications

SermeTel Process 2F-1 was developed to provide extended corrosion protection for industrial and electric utility gas turbine compressor rotors and disks. The coating system is generally used on components such as steel compressor blades, vanes, disks, hubs, shafts, cases, and bearing supports.

When used in gas turbine engines, SermeTel Process 2F-1 has yielded cost savings from extended component life and reduced maintenance costs. 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 <sub>a</sub> ) (Typical)	≤ avg. 40 µinches at .030" cutoff (1.0 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)	> 150 liters/mil
Tensile Bond Strength (ASTM C633)	≥ 8,000 psi (70 MPa) strain rate: 0.1 inch per minute