

SermaPro™ CF HCB REACH-Compliant Coatings.

SermaPro™ CF HCB (chrome (VI) free hot corrosion barrier) is an environmentally-friendly, REACH compliant, coating system that provides excellent protection for new generation superalloy components against sulfate-induced hot corrosion.

Application

SermaPro™ CF HCB is an overlay coating system composed of a hexavalent chrome-free basecoat and topcoat. It is applied by robotically spraying a slurry onto the component surface and heat curing to form a uniform ceramic layer. The coating system is composed of a hexavalent chrome-free basecoat and topcoat. The overlay thickness is typically deposited as a 1 to 3 mils (25 - 75 microns) layer. SermaPro can act as a stand-alone system or in combination with diffusion coating systems.

Performance

After rigorous testing, SermaPro™ CF HCB performs equal to or better than current legacy chrome (VI) containing overlay slurry coating systems. In hot corrosion testing, minimal weight loss and deterioration was observed. In thermal quench testing and thermal cycling, SermaPro CF HCB demonstrated the capability to perform at temperatures up to 1400°F (760°C).

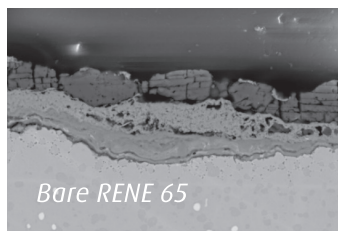
Benefits

- REACH-compliant, environmentally friendly
- Equal or superior performance to legacy chrome (VI) containing slurry coatings
- Excellent protection of Ni-based superalloys against hot corrosion
- Does not change substrate composition and therefore does not impact base alloy fatigue strength
- Can be combined with existing diffusion systems to optimize performance for both hot corrosion and high-temperature oxidation

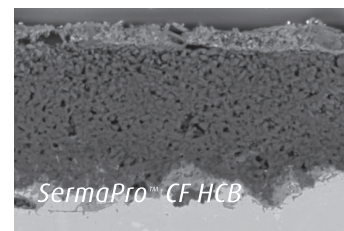


After quench adhesion test at 1400°F (760°C)

Performance	SermaPro™ CF HCB
Hot Corrosion Test 1310°F (710°C)	Preserved the topcoat, minimal weight change and protected the substrate from corrosion
Quench Adhesion Test 1400°F (760°C)	No deterioration or spallation
Thermal Cycle Test 1400°F (760°C) at 1000 Cycles	Minor weight loss and no deterioration or spallation
Thermal Stability Test 1600°F (870°C) for 1000 Hours	No deterioration or spallation



Bare RENE 65



SermaPro™ CF HCB

Hot corrosion cyclic test results after 500 cycles: severe deterioration of bare superalloy (left image), while SermaPro™ CF HCB coating protects and prevents loss of base metal (right image)



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