

PetraForge® Thermal Barrier Coating TWR-228-0

High Temperature, Wear Resistant, Corrosion Resistant, Low CTE

PetraForge coatings are waterborne, Zero VOC, ceramic-like coatings that combine the formulation and process versatility of a polymer coating with the physical properties of an advanced ceramic. PetraForge coatings can be applied by dipping, wet spraying, and rolling processes. The coating adheres to various substrates such as steel and glass.

Features and Benefits

- Medium thermal conductivity (about 2 W/mK)
- High hardness, scratch, and abrasion resistance (20+ times greater than other coatings)
- Superior corrosion resistance and high chemical stability
- Modular properties; different combinations of optical, thermal, and mechanical properties can be achieved depending on the requirements of the applications

Downloads

- [PetraForge Thermal Barrier Coating TWR-228-0.pdf](#)

Applications

Slurry pump impellers, backing plates, turbine blades, rolls, grain chutes, etc.

Technical Specifications

Property	Measured Value	Testing Method
Coating Method	Spraying	
Specific Gravity (g/ml)	2.41±0.05	
Thickness (um)	135±15	Coating Thickness Gauge PCE-CT27
Theoretical coverage	400 SqFt/gal	
Cohesion - Scratch Hardness (MPa)	85±10	ASTM C1624-05, un-failed load
Hardness (Mohs)	7.5±0.5	Mohs Hardness (1-10)
Adhesion - Bend Test (deg.)	35±5	ASTM D522M
Taber Abrasion testing (cycles/mil)	28000	ASTM D4060
Total Reflectivity at RT-550°C	10%	Calculation from Blackbody FTIR (ASTM E408-13)
Max Operating Temp	Tested up to 1100°C (2012°F)	Tested in Furnace
Corrosion Inhibition (h, stopped with no sign of corrosion)	>500 hours	ASTM B117 equivalent on carbon steel