



Material Technologies
Solving Tough Problems

KilnGard™-600SCW

Nano-Ceramic Composite Material Corrosion Protection for Cement Kilns

- Resistant to hot corrosive gases
- Excellent performance up to 600°C (1112°F)
- Resistant to severe abrasion
- Simple application by air spray, roll, brush
- Easy inspection and maintenance

Product Description

KilnGard-600SCW is a two component, high temperature corrosion protection system, for the inside of the kiln shell in cement plants.

The flue gases found in cement or lime plants are extremely corrosive and abrasive. Recently with the increase use of alternative fuels, the corrosion of the kiln shell under the refractory is more severe. KilnGard-600SCW has an outstanding performance on steel surfaces exposed to this unusually aggressive environment.

Applications

The main areas of application are under refractory on the inside surfaces of:

- Rotating kilns in cement and clay manufacturing.
- Industrial furnaces in waste incineration plants.
- Ducts, filters and stacks in copper, zinc or lead smelters.

Performance

KilnGard-600SCW has good performance in the areas exposed to the hot flue gases of industrial facilities. It protects the steel from corrosion, abrasion and impact at temperatures ranging from ambient up to 600°C.

KilnGard-600SCW will resist chemical and salt corrosion in industrial and marine environments due to its tough impervious thermoset nature and a strong bond to the metal substrate.



KilnGard-600SCW Application in a Cement Kiln

Installation

KilnGard-600SCW is a dual component system. The material is applied on the kiln by air spray, roller or brush on a sandblasted, dry steel surface.

The material cures at room temperature after 12 to 24 hours, into a dry to touch coating. At this stage it can be inspected for thickness and integrity and any defect can be recoated.

Once the coating inspection is satisfactory, the final cure is performed at 250°C for a minimum of one hour. Typically this is done using the hot flue gases during the start up of the process.

Additional Information

The shelf life of KilnGard-600SCW will be one year. The material shall be stored in a cool and dry area.

The product contains alkalis, avoid excessive exposure to inhalation and body contact. Use in well ventilated areas, for indoor applications use forced ventilation.

See the corresponding MSDS sheets.

Product Properties

Physical properties	Test method	Typical Value
Hardness, Shore D	ASTM D-2240	>90
Taber Abrasion, mgr. (Si, 1Kg., 1000 cycles)	ASTM D-4060	<140
Adhesion to steel, psi.	ASTM D-4541	>1000
Coating Impact, in-lbf	ASTM G-14	> 30
Heat ageing, hours @ 600°C (1112°F)	3L&T M-12	>1000
Chemical properties (weight gain, 1 week immersion)		
NaOH 50%	ASTM D-471	< 1.0 %
H ₃ PO ₄ 54%	ASTM D-471	< 0.5 %
H ₂ SO ₄ 36%	ASTM D-471	< 0.5 %
H ₂ O	ASTM D-471	< 0.5 %

Application

Application methods	Air spray, roller or brush
Vertical wet film thickness, single pass	18 to 22 mils
Coverage at 20 mils dry thickness	35 sq.ft./gallon
Surface preparation	Grit blast, SSPC SP-10 (Near white metal)
Surface profile	> 3.0 to 4.0 mils (75 to 100 microns)
Coating inspection time	After 6 to 12 hours
Recoating interval	Up to 24 hours after inspection
Solvent for viscosity adjustment, cleaning	Distilled Water
Solvent for cleaning tools after curing	Water

Handling Properties

Shelf life	1 year
Shipping and storing temperature	10°C to 40°C (50°F to 104°F)
Mix part A with part B	2 to 4 minutes to uniform consistency
Pot life after opening	4 hrs. at 25°C (77°F), Keep covered
Cure time to tack free	2 hours.
Final cure time	1 hr. at 250°C (482°F)
Surface temperature for application	10°C to 50°C (50°F to 122°F)
Air relative humidity for application	<90%, 5°C above dew point

Ordering Information for KilnGard-600

Product is supplied in 1 or 4 gallon kits.			
Description	Total Volume	Weight	Minimum Order
KilnGard-600SCW 1 gallon Kit	Can 1 gallon	15 lb.	8 gallons
KilnGard-600SCW 4 gallon Kit	Pail 4 gallons	62 lb.	16 gallons

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