



Material Technologies
Solving Tough Problems

WearGard™-225SG

Polymeric Alloy for Protection from Severe Abrasion

- Resistant to small particle abrasion
- Resistant to SO₃, SO₂, HCl, CO₂ and NO_x gases
- Very low surface energy
- Simple application by airless spray or roll
- Excellent performance up to 225°C (437°F)

Product Description

WearGard™-225SG is a two component polymer alloy material. Main application is for abrasion and corrosion protection in the flue gas section of industrial plants. The flue gases found in cement plants, metal smelters, waste incinerators, power generation and oil refineries, contain dust particles and SO₃, SO₂, HCl, CO₂, NO_x and dust. They are extremely abrasive and corrosive. WearGard™-225SG has outstanding performance on carbon steel and stainless steel surfaces.

Applications

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

- Screw conveyors, fans, cyclones, bag houses, precipitators and ducts in cement plants and waste incinerators.
- Flue Gas Desulfurization scrubbers, ducts and chimneys in power generation plants, metal smelters and oil refineries.

Performance

WearGard™-225SG has excellent performance protecting the steel areas exposed to abrasion and corrosion from dust in the hot flue gases of industrial facilities. It is resistant to abrasion, corrosion, and impact at temperatures from ambient up to 225°C. Most important, it will not fail by delamination as other high temperature coatings. WearGard™-225SG also resists severe chemical corrosion in industrial and marine environments due to its tough thermoset nature and a strong chemical bond to the substrate.



Screw Conveyor Protected with WearGard™-225SG

Installation

WearGard™-225SG is supplied as a two component system in 5 gallon kits, it is mixed in a 4:1 volume ratio prior to application. Mixed material is applied by airless spray on a sandblasted, dry steel surface in several layers.

The material cures at room temperature after 12 to 24 hours, into an elastomeric coating. The recommended thickness is from 40 to 80 mils depending on the severity of the application.

Once the coating inspection is satisfactory, the final cure is performed by careful heating from room temperature to 140/180°C (284/356°F) and holding for few hours. Normally this is done using the hot flue gases during the start up of the process. Also can be done with an external heat source.

Additional Information

The shelf life of both components of WearGard™-225SG will be at least one year. The material shall be stored in a cool and dry area.

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
Pencil hardness	ASTM D-3363	>B
Taber abrasion, mg. (CS-17, 1Kg., 1000 cycles)	ASTM D-4060	<10
Adhesion to steel, psi.	ASTM D-4541	>3000
Impact resistance, in-lbf	ASTM D-2794	> 92
Heat ageing	ASTM D-2485	225°C (437°F)
Chemical resistance (weight gain, 1 week immersion)		
HCl 37%	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	Airless spray, roll or trowell
Vertical dry film thickness, single coat	20 to 25 mils (0.5 to 0.63 mm)
Coverage at 40 mils dry film thickness	30 sq.ft./gallon
Surface preparation	Sand blast, SSPC SP-10, NACE 2(Near white metal)
Surface profile	> 3 mils (>75 microns)
Coating inspection time	After 12 to 24 hours
Recoating interval	Up to 72 hours after initial application
Solvent for dissolving, viscosity adjustment	Toluene, Xylene, dry MEK
Maximum dry film thickness	80 mils (2.0 mm)

Handling Properties

Shelf life	1 year
Shipping and storing temperature	10°C to 40°C (50°F to 104°F)
Mix ratio by volume	4 to 1 (Part B previously dissolved)
Pot life after mixing	>2 hr. at 25°C (77°F)
Cure time to tack free	<24 hours.
Final cure time	1 hr. at 180°C (356°F) to 8 hrs. at 140°C (284°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 WearGard™-225SG

Product is supplied as two components in 5 gallon kits, clearly identified as Part A (5 gallon pail, color black) and Part B (1 gallon can, solid pellets color white)

Description	Part A	Part B	Total Volume	Net Weight	Minimum Order
WearGard-225SG Kit	4 Gl (15.2 L)	1 Gl (3.8 lt.)	5 Gl(19 L)	45 lb(20 Kg.)	10 gallons

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