CeramaClad™ ARX

high temperature abrasion resistant coating

DESCRIPTION

CeramaClad™ ARX is a ceramic epoxy composite coating that incorporates an advanced molecular cross-linking of inorganic and organic chemistry to provide a thermally stable polymer matrix. The matrix is designed to achieve maximum wear and temperature resistance. The performance of ARX is ideal for the restoration of surfaces subjected to severe erosion. This 100% solids, zero VOCs coating technology is a two component system that can be spray applied in a single coat.

SUGGESTED USES :

Bag house	Scrubbers	Chutes	Wear plates
Air heater	Cyclones	Pulverizers	Fly ash separators

PERFORMANCE PROPERTIES

Performance Property	Test Method	Result
Hardness	ASTM D 2240	85 Shore D
X-cut Adhesion	ASTM D 6677	Rating 10
Pull off Adhesion	ASTM D 4541	Greater than 3, 800 psi
Abrasion	ASTM D 4060	Less than 15 mg loss
Compressive Strength	ASTM D 695	12,000 psi
Flexural Strength	ASTM D 790	11,500 psi
Chemical Resistance	ASTM D 543	Excellent
Temperature Resistance	Bake cycle	Up to 525 °F (274 °C) (will darken)
Solids Content	ASTM D 1259	100%
Volatile Organic Compounds	ASTM D 2369	0 grams/liter

PHYSICAL PROPERTIES

Color:	Dark gray (will darken with elevated temperature exposure)
Volume ratio:	4:1
Pot Life at 77 °F (25 °C)	40 minutes
Pot Life at 90 °F (32 °C)	20 minutes
Application Temperature:	55-100 °F (12 °C – 38 °C)
Dry to Touch at 77°F (25 °C):	6 hours
Cure Time: Recommended	6 hours at 150 °F (65 °C)
Alternative	48 hours at 77 °F (25 °C)
Recommended Thickness:	40 mils (1000 microns)
Max. Recoat Time at 77 °F (25 °C):	no recoat time must be applied wet on wet

MIXING INSTRUCTION

This is a two-component system. COMPLETE UNIT MUST BE MIXED AND APPLIED AT ONE TIME. DO NOT MIX PARTIAL QUANTITIES FROM CONTAINERS OR PROPER RATIOS MAY NOT BE OBTAINED. Prior to mixing, components A Resin and B Hardener should be at room temperature 70-90 °F (20 – 32 °C). Pre mix Part A Resin, be sure that any settled material is dispersed. Mix for 2 minutes until a uniform color and consistency is achieved. Pour Part B Hardener into Part A Resin slowly while mixing. Mix for 2 to 3 minutes using a Jiffy mixer head and a mechanical drill. To ensure complete mixing, scrape the sides and the bottom of the container with paddle and continue mixing for an additional 1 or 2 minutes with a mechanical mixer. DO NOT HAND MIX. Do not mechanically mix at high speed or in a manner that will introduce excessive air into the product.

MIX AND APPLY (brush)
Once mixed, the product may be applied with a short bristle brush. Work the coating into the abraded profile to ensure complete wetting. Once the surface is wet with coating, additional coating may be applied by plastic spreader or brush.

SINGLE LEG AIRLESS SPRAY
Requires two experienced personnel to mix and operate the pump. Constant attention to the product reaction temperature and viscosity is required.
Minimum recommended airless pump is a 56:1. Preheating the coating will improve flow but will reduce the pot life. Remove all filters from inlet leg, spray unit and airless gun. Coating hose lines should be 1/2 inch diameter, a maximum length of 100 feet, with a 3/8 inch diameter 10 foot whip hose. If the product temperature reaches 130 °F (54 °C) at any time while spraying, the application must stop. The pump, gun and hose lines must be flushed out immediately with the recommended cleaning solvent to prevent hardening and seizing of the equipment.

HEATED PLURAL COMPONENT AIRLESS SPRAY
Requires experienced personnel with a working knowledge of plural component spray equipment. Constant attention to the spray machine temperature, mixing and pressure is required.
Minimum pump requirement is 5500 psi, 4:1 ratio heated plural component pump. Remove all filters from the leg inlet, spray pump and gun. Install two
(2) 1/2" X 8 inch elemental in-line static mixers between the remote mix manifold and 25 foot long 3/8" integration hose. Place a third static mixer 1/2" X 8 inch static mixer between the 3/8" integration hose and the 10 foot 1/4" whip hose connected to the gun.
Both A and B side containers must be preheated to 115 °F (46 °C). The inline pump heaters and heated hose bundle are to be set to 130 °F (54 °C). DO NOT HEAT ABOVE 140 °F (60 °C).
Recommended reversa clean tips, size 0.021 to 0.030. Suggested spray pressure is 2,500 psi.
Purge all hoses, static mixers and remote manifold within 5 minutes of stopping the spray application.

SPRAY APPLICATION
Before the coating application ensure that the surface temperature is between 55 °F(12 °C) - 100 °F(38 °C). The substrate temperature must be 5°F (3 °C) above the dew point temperature and the relative humidity below 85%. Prior to full coating, stripe coat all continuous welds and edges by brush or by spray followed by brush to ensure that the entire surface is completely wet. While the stripe coat is still wet apply the full coating at no more than 8 mils (200 microns) to 10 mils (250 microns) per pass. Apply the coating to the specified thickness in a crisscross multi pass technique to the final recommended coating thickness.
Use a wet film thickness gauge to check for correct coating thickness as the coating is being applied. Final coating thickness can be verified with an electronic or magnetic pull off dry film thickness gauge.

SURFACE PREPARATION

Prior to surface preparation, remove all surface contaminants such as soluble salts, grease and oil (hydrocarbons) and loose rust;

1) Ensure that the surface is clean, dry and uncontaminated. Proceed only if the substrate temperature is more than 5°F (3 °C) above the dew point temperature and relative humidity is below 85% during surface preparation and coating application.

2) Abrasive blast clean with garnet or aluminum oxide (G40 or coarser). DO NOT USE steel shot or non-angular media.

For steel surfaces, blast to a White Metal Blast (SSPC-SP10; NACE No. 2; SA 2.5):

- minimum 3.0 mil (75 microns) profile for immersion and elevated temperature service.

CHLORIDE AND SULFATE CONTAMINATED SUBSTRATES

Substrate surfaces shall be inspected for soluble salt contamination prior to applying the coating system. Levels of contamination shall be below 2 µg/cm^2. Neutralization of the surface shall be performed with commercially available solutions such as Chlorid™ and high pressure water jetting.

It is highly recommended that where the substrate has been exposed to salt water immersion that the surface is abrasive blasted, allowed to sit for 24 hours, followed by high pressure water jetting with a neutralization solution before reblasting for the application of the coating.

INSPECTION

Immediately following the application of the coating visually inspect the coating for pinholes and areas of missed coating. These areas can be repaired immediately if the coating is tacky to touch.

Further inspection is to be performed once the coating has cured. Visually inspect the coating for discoloration, pinholes, uncured coating, blisters, and other visual defects. Mechanical removal and reapplication may be required depending on the defect type.

Where the coating is to be used for immersion service or service where corrosion protection is required, discontinuity testing in accordance with relevant ASTM standards shall be performed. The minimum recommended voltage is 3,500 volts or 120 volts/mil based on the average coating thickness.

PACKAGING AND COVERAGE

Kit Size	Theorectical Coverage Rate	Nominal Thickness
2.5 gallon (9.5 liter)	100 square feet (9.3 square meter)	40 mils (1000 microns)
25 gallon (95 liter)	1000 square feet (93 square meter)	40 mils (1000 microns)

NOTE: Waste factor is not included in the theoretical coverage rate. Actual field coverage rates will be dependent on the surface roughness, over spray, applicator experience, drum heal waste and overbuild beyond the nominal thickness.

CLEAN-UP AND STORAGE

1) Use commercial solvents (Acetone, Xylene, Methyl Ethyl Ketone) to clean tools immediately after use.
2) Once the coating is dry, the material must be abraded off.
3) Keep containers tightly sealed and store upside down.
4) Store between 50°F (10°C) and 80°F (27°C). DO NOT FREEZE. Use product within 6 months of receiving.

SAFETY

Before using any products, please refer to the Safety Data Sheet (SDS). Follow standard confined space entry and work procedures, if appropriate.

Wear eye safety protection, chemical resistant gloves. Use NIOSH approved respirator where mist occurs.