PRODUCT DATA SHEET: CERAM-KOTE 54®

Description: CeRam-Kote 54® is a thin-film, spray applied and air-dried ceramic coating engineered to provide excellent abrasion and corrosion protection in **critical service environments** for all metals, fiberglass reinforced plastics, concrete and plastic substrata. CeRam-Kote 54®'s highly modified epoxy resin system has been heavily loaded with a unique package of ceramic particles to enhance performance in extremely aggressive environments. The product may be force-cured for enhanced performance in extremely harsh environments. Available in a variety of colors, including safety colors. The CeRam-Kote 54® ATM formula has ABS approval per certificate #99-HS27360-X and an ABS Certificate of Design Assessment #03-HS391002-PDA.

Suggested Uses:

General Industry	Cooling Tower Fan Blades, Loading Ramps, Heavy Wear Areas on Equipment, Pump Casings & Impellers, Valves Internal and External
Marine	Potable Water Tanks, Hulls, Bilge Areas, Rudders, Engine Rooms and Water Jet Intake Tubes
Energy	Turbine Blades, Lock & Dam Gates, Pump Casing & Impellers, Wind Generator Blades, Trash Racks
Entertainment	Water Ride Substrates
Food Service	Internals in Hoppers, Most Service Areas of Equipment
Pulp and Paper	Critical Service Areas of Equipment
Transportation	Bridges (splash zones), Interior on Trailers (Salt Hauling, Asphalt and Fertilizer)
Oil and Petrochemical	Rotary Tables, Pump Casings & Impellers, Valves, Manifolds
Offshore Oil	Platform Splash Zone, Decks (heavy wear areas), Equipment, Skids, Heliports, Sub-sea Wellheads, Riser Pipes, Riser Guide Tubes
Wastewater*	Lifts Stations, Trash Racks, Pump Casings & Impellers (*Note: Freecom's current recommended formula for wastewater applications is NEW CeRam-Kote 2000).

TECHNICAL DATA

Volume Solids: CeRam-Kote 54® 80% +/- 2%

VOC: 1.63 lb/gal (196 g/liter) less water

Number of Coats: One Coat, two passes (each pass 4½-6 mils, 112½-150 microns)

Dry Film Thickness: CeRam-Kote 54® should be applied holiday-free at a minimum of 7 mils (175 microns) with a maximum thickness of 10 mils (250 microns).

Cure Time: A two-pass film of 7-10 mils DFT (175-250 microns) air dries to a touch-dry finish within three (3) hours at 72°F (22.2°C) and dries to a 70% cure in twelve (12) hours. Cure times lengthen at lower temperatures and shorten at higher temperatures. If the coating is to be exposed to a critical service environment, coating should be fully cured before placing into service.

Surface Preparation: Bonding strength depends on proper preparation of the surface to be protected for long-term performance of the product. The substrate should be free of oil, grease and salt/chloride contamination. Specifications call for a white metal (NACE 1, SSPC-SP5, Swedish Standards SA-3) finish with a 2-2.5 mil (50-62.5 microns) anchor profile. Surface preparation should be no less than a near white (NACE 2, SSPC-SP10, Swedish Standards SA 2½) finish. Cleanliness is the most important step to produce a coated surface that will perform and last. Call CERAM-KOTE COATINGS for surface preparation recommendations of materials such as aluminum, brass, plastic, fiberglass and/or concrete.

Mixing Ratio: Twelve (12) parts of Part A to one (1) part of Part B by volume
Twenty and one-half (20.5) parts of Part A to one (1) part of Part B by weight

Mixing:

CeRam-Kote 54® contains a high loading of ceramic particles which must be placed into full suspension with the epoxy resin prior to application. CeRam-Kote 54® is packaged in two cans, Part A (resin and ceramics) and Part B (curing agent). Shake Part A (coating) with a Cyclone air-powered shaker or mix Part A with a paddle mixer until all ceramic powders are suspended in the resin. Time required to place ceramics into suspension varies according to temperature and length of material storage time. At 72°F (22.2°C), generally a four (4) to six (6) minute shake will place the ceramic powders into suspension. **Regardless of time needed, shake all ceramic material into suspension prior to proceeding.** Failure to properly mix will keep CeRam-Kote 54® from performing or curing properly. Check the can to assure all solids are in suspension prior to proceeding to the mixing step.

Combine Part A (coating) and Part B (curing agent) and **stir** until both parts are thoroughly mixed (***when mixing quart or pint kits only, pour Part A into Part B.*** *Use this procedure* ***for quart or pint kits only*** *due to the small amount of curing agent in the Part B can).* Stirring time is temperature dependent, but a two (2) to four (4) minute stir at 72°F (22.2°C) should thoroughly mix the components. No induction time is needed before application.

Pot Life & Shelf Life:

Pot life for CeRam-Kote 54® at 72°F (22.2°C) is approximately one (1) hour. Colder temperatures will increase the pot life and warmer temperatures will decrease the pot life. Keep cans out of direct sunlight to prevent heat buildup. CeRam-Kote 54® has an indefinite shelf life. Preferred storage/usage is a dry enclosed area under 85°F (29°C) /used within two (2) years. However, if stored more than two years above 85°F (29°C), call CERAM-KOTE COATINGS' Technical Support prior to use.

Thinning:

Adjust viscosity with small amounts of CeRam-Kote Thinner 1 or CeRam-Kote Thinner 3. Use caution when adjusting the viscosity. A little goes a long way. We recommend thinning to a maximum of 15% by volume. Only a small portion of the total solution is epoxy resin and the resin is the only ingredient that can be thinned. Excessive thinning dilutes the high solids of CeRam-Kote 54®, creates excessive overspray and can cause some color changes in bright colors.

Application:

Spray apply for best results using conventional, airless, HVLP or cup gun. **The air source must be dry.** The compressed air source should be outfitted with air dryers as needed to supply moisture-free air. Use pressure feed equipment such as high volume, low pressure equipment or conventional equipment. Airless: use reversible carbide tip with orifice size of 0.019-0.021 inches. If applying with roller, use short nap, such as 1/4" (.244 mm).

After thoroughly mixing CeRam-Kote 54®, strain it with a standard paint strainer and pour CeRam-Kote 54® into the spray equipment.

Apply a first pass of four and one-half (4½) to six (6) mils (112½-150 microns) WFT and allow sufficient time for solvent to flash off. At 72°F (22.2°C), 30-40 minutes is sufficient. Apply a second pass of four and one half (4½) to six mils (112½-150 microns) for a total DFT of seven to ten mils (175-250 microns) DFT. Cure time is temperature dependent.

Apply additional mils without incurring runs or sags if the finished product requires thicker coverage. Whenever possible, apply second coat in a cross-coat method.

Climate:

Use CeRam-Kote 54® only if the substrate temperature and ambient air temperature is above 40°F (4.4°C). No coating should be permitted when substrate is wet from rain or dew, when surfaces are less than five degrees Fahrenheit (three degrees Celsius) above the dew point and holding or when relative humidity is greater than 85%. Moisture will inhibit the catalyst reaction and CeRam-Kote 54® will not cure or perform properly.

Holiday Detection:

CeRam-Kote 54® is classified as a thin-film coating and should be tested for defects and holidays using a 67½ volt, wet sponge spark detector set at 80,000 ohms resistance, such as a Tinker and Rasor model M-1.

Repairs:

If application of the coating is less than seventy-two (72) hours old and has not been exposed to contamination, repair by wiping with CeRam-Kote Thinner 1 or CeRam-Kote Thinner 3 and then re-apply CeRam-Kote 54®. If contaminated or more than 72 hours old, first sand with appropriate grit sandpaper, then repeat repair process.

Cleanup:

Purge and clean spray equipment within thirty (30) minutes of the final spray. Flush equipment with CeRam-Kote Thinner 1 or CeRam-Kote Thinner 3 until solvent sprays clear. Disassemble and clean equipment to manufacturer's recommendations. Material left in spray equipment will solidify and damage equipment. Use precautionary measure applicable to any catalyzed material.

Safety:

See individual product label for safety and health data. A Material Safety Data Sheet is available upon request.

3-20-07