

PRODUCT DESCRIPTION

CERALOY 403 is a hybrid two component, specialty blend of micro-ceramic alloy filled polymer epoxy coating used as a lining to protect against corrosion, cavitation, erosion and wear on various fluid flow equipment. It offers superior barrier for protection of metal from corrosive, erosive and chemical attack. With it's high compressive strength, ultra low friction, super smooth surface. It also assists in reducing turbulence and enhance flow of fluids thereby increasing efficiency of operating equipment.

INTENDED USES

- Offers a complete turn-key system to rebuild pump internals, pump casings and impellers.
- Total protection against corrosion and erosion of heat exchanges, tube sheets, condensers, water boxes fan blades, pipe internals (elbows), butterfly & gate valves, kurt nozzles.
- Increases efficiency and reduces friction of water circulating equipment
- Repair and protection of old and new equipment

BENEFITS

- Solvent Free & Non-Shrink
- High temperature up to 375°F
- Slick coating designed to reduce turbulence
- Chemical, Corrosion, Abrasion, Erosion Resistant
- Immersion grade
- Easy mix ratio, no special tools required
- No hot work involved
- Sold as kit containing applicators, spatula, short bristle brush
- Highly chemical resistant to most chemicals
- Excellent bonding to steel, aluminum, copper, brass, stainless steel

PRODUCT SPECIFICATIONS

Performance Data	#787
Color	Grey, Red, Blue & Custom Colors
Adhesive Tensile Shear(ASTM D1002)	2200psi
Compressive Strength (ASTM D695)	14000 psi
Cured Hardness Rating (Shore D)	85
Coverage per kit @ 15 mils Note: account for waste & surface roughness	~15 sq. ft
Dielectric Strength	Not Applicable
Flexural Strength (ASTM D790)	8300 psi
Initial Cure	5 Hours @ 75F/24C
Full Cure	24 Hours @ 75F/25C
Full Immersion (Water) @ 75F/25C	24 Hours
Full Immersion (Chemicals) @ 75F/25C	36 Hours
Machinable @ 75F Cure Time	Not Applicable



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Pot Life (Working Time)	30 min @ 75F
Pull of adhesion (ASTM D4541)	4950 psi
Ratio Mix by Volume	Pre-Measured
Recoat Window Max @ 75F/24C	4-5 hour
Shrinkage	0%
Temperature Resistance Dry	375F/190C
Temperature Resistance Wet (Immersion/Water)	170F/71C

***Cure Time:** Ceraloy Series cures faster with warmer temperatures and slower with colder temperatures. Temperatures will affect the pot life, initial cure, full and immersion cure rates of the product as well. However product performance after cure is un-affected. Pot Life can be extended if mixed material is further divided into smaller containers or poured on a flat paint pan. Please consult with EMP Inc.

SURFACE PREPARATION

1) Surfaces must be clean, dry, free of oils and foreign matter. Remove any rust or oxidation. For optimum results (highly recommended) metals must be properly prepared with grit blasting and achieve a surface profile of 3-5 mil. Grit media must produce an angular surface profile. If grit blasting is not available, use a grinding wheel with a metal disc to achieve white metal finish. Proper profiling creates a tenacious mechanical bond and durability.

2) If substrate to be coated was exposed to salt water (eg: sea water), prepare as follows:

- a) Grit Blast Surface as per specifications above
- b) Wait 24 hours for salts to leech out of the metal substrate
- c) Thoroughly wash the surface
- d) Brush blast the surface
- e) Blow off or vacuum surface to remove dust and residue
- f) Chloride contamination test should read < 40 mgs

OR

- a) Grit Blast Surface as per specifications above
- b) Spray or brush on EMP Inc, SALZITE #45 (Salt Neutralizing Compound) and wet out substrate
- c) Wash down the area using a pressure washer or water hose using clean water, vacuum and allow to dry. Please contact EMP Inc for further technical advice on SALTZITE #45, application and procedures.

Note: Flash rust may occur after grit blasting. If doing a large area and CERALOY 403 cannot be applied within an hour, please spray FLASHLOX #48 to prevent flash rust. FLASHLOX will hold a grit blasted profile for 24 hours and will give you ample time to return and coat.



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3) Blow off, vacuum or wipe off any dust from surface preparation.

4) Using a stiff bristle brush (paint brush), clean and wash area vigorously with the quick evaporating, non-residue forming E.M.P. Metal Cleaner #701. Repeat twice if necessary and allow to dry properly. Begin application of CERALOY 403 immediately on the newly prepared surface before substrate starts to oxidize or produce flash rust.

EMP Release Agent PN# 1126 can be used in areas where CERALOY 403 shouldn't adhere to.

Metal Rebuilding:

If there is metal loss due to pitting, corrosion, erosion, wear or cavitation. Use Industrial Metal, Supergrade Metal, Allzite Metal or Ceraloy 439 to rebuild the metal back to its original level and then coat with Ceraloy 403.

Additional information: Please consult with our technical department for proper guidelines for surface preparation. Training and consultation are available on all E.M.P. Inc. products.

Mixing

*This product is conveniently packaged in pre-measured kits ready to mix and apply. Each kit contains hardener and resin. Pour the Hardener into the Resin container. Mix both parts using the wooden paddle supplied in the kit. Continue to mix scraping sides and bottom until a streak free, even and smooth consistency is reached. (Normally about 2-3 minutes)

Note: Mixing full kits is always highly recommended for mix and cure consistency. In certain cases, small batches can be mixed with appropriate weight measurements only (not volume measurements). Use this method sparingly or unless absolutely necessary. Obtain an accurate and calibrated digital weight scale. The kit may be divided into halves by weight. Divide Resin container into 2 parts using two small cups and weigh both parts until they are of equal weight. Do the same for the hardener container. The end result is 2 half kits. Mix as above.

Application Method

Application Instructions:

Temperature Considerations:

If product is being stored in cold conditions, please move tubs to warm area to soften epoxy before use. Store product at 75F/23C before for use. For best results always apply product at 40F/4.5C or above. Heaters may be used by enclosing area with plastic to elevate the temperature for proper application.

Humidity Considerations:



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In general, it is best to avoid applying coating materials to a surface whose temperature is within 5°F of the dew point temperature. Or when humidity exceeds 90%.

Check Pot Life (working time) in above specifications and apply within this specified time.

Coverage Recommendations:

Note: Dry film thickness (DFT) and Wet film thickness (WFT) are the same since Ceraloy 403 has no product shrinkage. A wet film thickness gauge can be used during application.

Ceraloy 403 is normally applied in two coats using two different colors. The second coat assures a complete protection in case of accidental misses & pinholes on the first coat. Two different colors are used for each coat so that the second color is visible over the first color. Ceraloy 403 is available in Gray, Blue, Red and custom colors can be made.

Apply 2 coats as follows:

1st Coat @ 15 mils DFT (or ~15 sq. ft per 2 lb kit of color 1)

2nd Coat @ 15 mils DFT (or ~15 sq. ft per 2 lb kit of color 2)

Minimum Total DFT required 24 mils (2 coats at ~12 mils)

Note: Account for rough surfaces and waste.

Apply the mixed CERALOY 403 using a short bristle brush supplied in the kit. Brush material onto the metal and wet out the surface evenly. The second coat of Ceraloy 403 can be applied as soon as first coat is to dry to touch or within 3-5 hours @ 75F. Finger lift test can be done. Do not exceed 6 hours before recoat or sand first coat using sand paper to roughen up the surface and then apply the second coat.

COMPATIBILITY:

Ceraloy 403 can be used as a standalone system for metal. It may also be used in conjunction with other E.M.P. systems as the final protective coating. All E.M.P. Inc metal repair systems are designed to be compatible to one another to produce a monolithic system.

Lathing & Machining

Machining Ceraloy 403 and Ceraloy Series of products are extremely hard using conventional techniques. These products may be machined using diamond bits.

Storage & Handling

Store at room temperature in a cool, dry place. Keep containers tightly closed after use. If long term storage is required after use, encase the resin and hardener in a plastic bag, remove all air and store. Vacuum

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packaging via plastic bags increases the shelf life.

Packaging

CERALOY 403 (Available in Gray, Red, Blue, Green & White)

2 lb/Kit (Hardener & Epoxy)

1 - Paddle

1 - Stiff Bristle Brush

CERALOY 404 , PN# 404 (Available in Gray, Red, Blue, Green & White)/ Custom Formulation

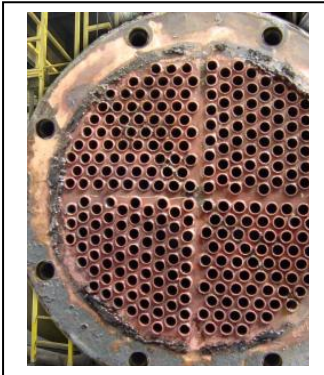
CERALOY 405 , PN# 405 (Available in Gray, Red, Blue, Green & White)/Custom Formulation

Optional, Additional Products:

EMP

Metal Cleaner #701 - Non-Residue forming, metal surface prep cleaner. Fast evaporation.

EMP Release Agent PN# 1126 - can be used in areas where Ceraloy 403 and other epoxies shouldn't adhere to. (eg: forming casting metal components/molds etc)



Rebuilt Heat Exchanger, Pump Volute Impeller epoxy Coated for corrosion protection.

Products used: Industrial Metal for metal pitting & corrosion followed by top coating of Ceraloy 403.



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Warranty Information



SAFETY PRECAUTION: READ MATERIAL PRODUCT SAFETY DATA SHEETS BEFORE USING PRODUCT. Our products are intended for use by experienced professional only. Suitable chemical resistant gloves, safety glasses or full face shields, protective clothing and respirators must be worn as per product safety data sheet while conducting surface preparation and applying product. Do not smoke or drink while using product. Keep away from open flames and sparks.

EMPCORR warrants their product from defects. Because the application, handling or storing of our products is beyond our control, EMPCORR will not be held liable and in any form whatsoever for the results obtained after usage. To the best of our knowledge, the technical data contained herein is accurate on the date of publication and is subject to change without prior notice. Purchasers shall conduct their own tests to determine the suitability of our products for their particular purpose. Product properties, performance data and contents of this technical data sheets should not be constructed as specifications. User must contact EMPCORR to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. EMPCORR assumes no responsibility for coverage, performance or injuries resulting from use. No other warranty or guarantee of any kind is made by EMPCORR, express or implied, statutory, by operation of law, or otherwise, including merchantability and fit for a particular purpose

Liability, if any, is limited to replacement of products or net selling price of the product; EMPCORR shall not be liable for incidental or consequential damages, direct or indirect including but not limited to lost profits, down time, damages to property of the purchaser or other persons, bodily harm or injuries to purchaser or other persons, or damages for which the purchaser may be liable to other persons, whether or not occasioned by EMPCORR's negligence. Acceptance of delivery of our product means that you have accepted the terms of this notice, warranty and liability whether or not orders or other documents state terms that vary from this warranty. Our products contain chemicals that may cause serious physical injury. Before using, read the safety data sheet and follow all safety precautions, and use proper protective equipment (PPE) to prevent bodily harm before using the product.