



TECHNICAL DATA SHEET

CERALOY 439

Product Codes: 439

Corrosion, Erosion & Cavitation Repair (Paste Grade)

PRODUCT DESCRIPTION

CERALOY 439 is a hybrid two component, specialty blend of micro-ceramic alloy filled polymer epoxy paste grade used to repair/rebuilding metal substrates affected by corrosion, erosion & cavitation on various fluid flow equipment. Excellent as non-sag compound for vertical applications up to 1/2".

INTENDED USES

- Rebuild worn, pitted and gouged pump internals, pump casings, impellers, heat exchangers, tube sheets, kort nozzles, butterfly gate valves
• Forming irregular load bearing shims due to its high compressive strength
• Repair and protection of old and new equipment

BENEFITS

- Solvent Free & Non-Shrink
• Chemical, Corrosion, Abrasion, Erosion Resistant
• Immersion grade
• Easy mix ratio, no special tools required
• No hot work involved
• Sold as kit containing applicators, spatula and mix boards
• Highly chemical resistant to most chemicals
• Excellent bonding to steel, aluminum, copper, brass, stainless steel
• Maybe coated with Ceraloy 403 for a high wear, chemical resistance and turbulence reducing properties.

PRODUCT SPECIFICATIONS

Table with 2 columns: Performance Data and #439. Rows include Color, Adhesive Tensile Shear, Compressive Strength, Cured Hardness Rating, Coverage per kit, Dielectric Strength, Flexural Strength, Initial Cure, Full Cure, Full Immersion (Water), Full Immersion (Chemicals), Machinable, Pot Life, Pull of adhesion, Ratio Mix by Volume, Recoat Window Max, and Shrinkage.



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Temperature Resistance Dry	375F/190C
Temperature Resistance Wet (Immersion/Water)	160F/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 (or contact EMP for Bristle Blaster) 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 439 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.

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 439 immediately on the newly prepared surface before substrate starts to oxidize or produce flash rust.

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

Mixing

*This product is conveniently packaged in pre-measured kits ready to mix and apply. Each kit contains hardener and resin. Remove resin and hardener on the mixing board supplied. Using a large spatula, mix both components by lifting and "spackling down" motion until an even smooth streak free consistency is achieved.

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. Read product label for further instructions of volume measurements.

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:

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: Account for rough surfaces and waste.

Apply the mixed CERALOY 439 with the spatulas supplied. Apply material with firm pressure into the damaged metal by pushing material in making sure there are no voids in product. Overfill the material and then bring back to level of substrate using the spatulas. Alternatively, after cure (<15 hours), Ceraloy 439 can be machined down to bring back to level using a grinder. CERALOY 439 is extremely hard to machine after full cure hence mechanical leveling must be done in the appropriate times.



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COMPATIBILITY:

Ceraloy 439 can be used as a standalone system for metal. It may also be used in conjunction with CERALOY 403. 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 439 and Ceraloy Series of products are extremely hard using conventional techniques. These products may be machined using diamond bits or proper grinding equipment.

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 packaging via plastic bags increases the shelf life.

Packaging

CERALOY 439

3 lb/Kit (Hardener & Epoxy)

1 - Paddle

Spatulas

Mixing Board (Non-Absorbing)

Gloves

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

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

Optional, Additional Products:

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

EMP Release Agent PN# 1126 - can be used in areas where Ceraloy 439 and other epoxies shouldn't adhere to. (eg: forming casting metal components/molds etc)



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Safety, Warranty & Limited Liability 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.

