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# E-BOND 1019 UNDERWATER EPOXY PUTTY

**FOR PROFESSIONAL USE ONLY; NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC**

## DESCRIPTION

- **E-BOND 1019** is a 100% Solids, solvent-free, MOISTURE INSENSITIVE epoxy resin system.
- **E-BOND 1019** has been developed for applications on steel, fiberglass and concrete surfaces. For repairs and to protect splash, tidal-zone and other underwater areas.

## WHAT IS IT? / WHAT WILL IT DO?

E-BOND 1019 UNDERWATER PUTTY is a 100% solids, 2 part Epoxy system. When mixed (equal parts by volume), chemical set-up action begins immediately, (55 minutes from time of combining "A" and "B" sides to a hard set, in 70°F. water). The compound cures to a tough, durable, resistant Epoxy with unequalled adhesion to surfaces that are wet, submerged, damp or even dry.

E-BOND 1019 UNDERWATER PUTTY is resistant to temperature changes, sunlight, chemicals, solvents, water (fresh or salt), vibrations, shock, strain and flexings. It does not become brittle or crack. It is non-shrinking.

For Emergency (Afloat Or At Sea) & Permanent Repairs On Wood, Fiberglass And Metal Boat Hulls

E-BOND 1019 UNDERWATER PUTTY is chemistry's answer to EMERGENCY hull repairs, below the water line, while the boat is afloat or at sea.... and to the need for a PERMANENT underwater coating to prevent corrosion. It is applied to wet or submerged surfaces with equal success.

**THE WETTER THE SURFACE - THE BETTER IT STICKS.**

E-BOND EPOXIES, INC. research has produced this Epoxy formulation that provides both these characteristics...a phenomenon, even in this day of sophisticated Epoxy chemistry.

## FOR WHAT IS IT SPECIFICALLY RECOMMENDED

Boat, ship and barge "emergency repairs" while afloat or, circumstances permitting, at sea.

E-Bond 1019 can be used on boat, ship and barge hulls of wood, fiberglass or metal. It eliminates the need for dry-docking to make bottom or keel repairs.

## ADVANTAGES

Ideal for patching of hair-line cracks and other cracks in underwater applications. Excellent bond to damp surfaces. Has a putty consistency and may be applied by hand in thicknesses of 1 /8" to 1/4".

Zero VOC - Fully Reactive, no low boiling constituents

## **PHYSICAL PROPERTIES**

<b>Type:</b>	Underwater 100% Solids Epoxy Coating		
<b>Mixing Ratio:</b>	1 A to 1 B by volume		
<b>Color:</b>	Part A Resin -		White
	Part B Hardener -		Black
	Ad-Mix -		Gray
	Not an aesthetic product. Color may alter due to variations in lighting or UV exposure		
<b>Viscosity:</b>	Ad-Mix	ASTM-D-2393	Heavy Paste Consistency
<b>Pot Life:</b>		Neat	65 Minutes
<b>Bond Strength:</b>	ASTM-C-881	14 Days	850 PSI
<b>Absorption, 24 hours.</b>	ASTM-D-570		.18%
<b>Compressive Yield:</b>	ASTM-D-695		6500 PSI
<b>Modulus of Elasticity:</b>	ASTM-D-695		150,000 PSI
<b>Tensile Strength:</b>	ASTM-D-638		900 PSI
<b>Flexural Strength:</b>	ASTM-D-790	14 Days	5000 PSI

## **PACKAGING**

Available in 1 gallon units (1/2 gallon Part A & 1/2 gallon Part B).

## **COVERAGE**

A 1-gallon unit of E-Bond 1019 will cover approximately 6 to 12 sq. ft. depending on the thickness of application.

## **SURFACE PREPARATIONS**

All surfaces must be structurally sound, clean and free of rust, scale, marine growth, debris, grease and any loose material. Sand blasting metal is recommended. High-pressure water spray may be sufficient on most concrete surfaces. Wire brushing and other mechanical abrasive methods may be used in small areas. This method may be used particularly in emergency repair situations.

Application of E-Bond 1019 should be applied as quickly as possible after surface preparation to eliminate any new marine growth or corrosion, which would be a potential bond breaker.

## **MIXING**

Mix equal volumes of Part A and Part B.

It is very difficult, due to the paste or dough-like consistency, to mix by hand. Mechanical mixing is recommended. At temperatures below 75°, this material has a tendency to thicken substantially. It is highly recommended that the material be stored prior to use at temperatures in excess of 75°, up to 90° F.

Scrape the sides of the container and the bottom to ensure complete and thorough mixing.

Do not mix more than can be used within 30 minutes after start of mixing.

For heavier applications, a small quantity of salt-free, kiln-dried, silica sand of 20 to 30 mesh may be added to the mix. When adding extra filler, take special precautions to ensure complete and thorough blending and mixing.

## **APPLICATION**

Most applications are made by hand. The mixed material may be handled by hand using tight-fitting rubber or plastic gloves. Thoroughly wet gloves with water before applying. Place a large ball of material in your hands, and gently knead or force into place. Do Not rub material over the surface, as it will cause the material to become stringy and/or pull away from the surface.

Hold the material in place until it has been determined that the material is adhering. By pressing in the center towards the outside edges, material can then be placed at an average thickness of 1/8" to 1/4"

Additional material may be applied using the same procedure. Apply a new handful of material over the existing epoxy, advancing material towards the outside perimeter. Once the entire surface has been coated to required thickness, surface may be smoothed by gently rubbing with water with the flat part of the gloved hand.

### **HOW EMERGENCY REPAIRS ARE MADE AFLOAT**

AS AN EMERGENCY AND TEMPORARY PATCHING PUTTY:

See MIXING INSTRUCTIONS AND FOLLOW CAREFULLY!

1. Using a hand or putty knife, smooth 1/8" to 1/4" thickness of the Marine Putty onto a piece of Canvas, Fiberglass or similar cloth.
2. Apply the coated patch (cloth side out) to the crack, hole or split in the hull. Hold the patch in place until initial tack occurs (20-30 seconds in water temperature of 70°F).
3. When initial tack has taken place, press the patch against the damaged area and with the hand, slowly "work" the air and water out from beneath the patch, working from the center to the sides. This will insure complete adhesion.
4. Apply a thin additional coat over the patch and immediately smooth and feather out the edges to the desired finish and to reduce "drag".
5. Be certain to allow at least 55 minutes from time of mixing before proceeding with craft. Reduced speed is desirable.

NOTE: A surface that has been cleaned to the basic steel, wood or Fiberglass is the most desirable. Adhesion of the putty is always proportionate to the strength of the coating to which it is being applied

### **CAUTION**

The above procedure for using E-Bond 1019 Underwater Epoxies is based on applications and water temperatures of approximately 75° F. At higher water temperatures, the epoxy will set faster. At cooler temperatures, it may be necessary to hold the material on the surface for a longer period of time to determine if the material is adhering.

Do not thin E-Bond 1019. Use of solvents will prevent cure and cause pinholes.

Minimum water temperature is 50° F. Do not use E-Bond 1019 when **product temperature** is below 70° F.

Minimum age of concrete to be coated is 14 days. E-Bond 1019 is a vapor barrier after cure.

Test application, should be performed to evaluate the method of application and adhesion after cure.

This application should be done under job-site conditions prior to start of any project where underwater application is necessary.

E-Bond 1019 is not designed to resist hydrostatic pressure during cure.

**CAUTION - For professional use only; not for sale to or use by the general public.** E-Bond's epoxies contain alkaline amines. Strong sensitizer; MAY CAUSE SKIN SENSITIZATION or allergic response ranging from a mild wheezing to a severe asthmatic type attack. Avoid contact with skin or eyes. IN CASE OF CONTACT immediately wash skin with soap and water. Flush eyes with water and obtain medical attention. Wear protective clothing, goggles, and barrier cream on all exposed skin

**LIMITED WARRANTY NOTICE:** E-BOND EPOXIES, INC warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. The purchaser must examine the product when received and promptly notify E-BOND EPOXIES, INC in writing of any nonconformity before the product is used and no later than 30 days after such non-conformity is first E-Bond/PDS/1019 V.050216

discovered. If E-BOND, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty.

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