BLOME INTERNATIONAL

Surrounding You with Exceptional Protection

TANK LINING SYSTEMS

TL-490

Mat Reinforced Novolac Epoxy Lining System

PRODUCT DESCRIPTION

TL-490 Series tank lining system is a high performance Novolac Epoxy lining system. TL-490 consists of a primer, a trowel applied mortar basecoat, a layer of chopped strand fiberglass mat saturated with the appropriate resin and a pigmented and flake filled topcoat.

TL-490 can also be used as a saturant for carbon fiber reinforcement. When used as a saturant for carbon fiber reinforced systems, **EC-90 Hardener** is mixed with TL-490 Resin (clear) (in lieu of TL-490/495 Hardener) for enhanced chemical resistance against sulfuric acid and other harsh chemicals. See section titled, "Mixing and Application" below for additional information.

TYPICAL USES

TL-490 is a heavy duty, reinforced lining systems that is crack and impact resistant. TL-490 is typically used to line steel and concrete tanks holding or processing various chemicals. Because of the systems wear resistance, impact resistance and crack bridging qualities it is also ideally suited for protecting concrete floors, walls, trenches and sumps exposed to aggressive chemicals.

HANDLING CHARACTERISTICS

The basecoat of TL-490 is applied by trowel. The saturant for the glass reinforcement and the topcoat material is applied by roller.

TYPICAL PROPERTIES

PROPERTY	TL-490
Tensile strength ASTM C-307-83	2,700 psi
Compressive strength ASTM C-579-82	12,600 psi
Coefficient of thermal expansion	14-16 x 10^{-6} in/in/°F
Color*	Red, gray

*carbon-filled systems are only available in black

PACKAGING & COVERAGE

TL-490 is a multi component system consisting of Part A (resin) and Part B (hardener), #410 Filler, 1 ½ oz chopped strand mat and a TL-490T topcoat resin and catalyst. TL-490 components are packaged as follows:

Component	Packaging Size	Coverage
TL-490	1 gallon unit	20 sq. ft./gallon
Use for basecoat and saturant	5 gallon unit	
410 Filler Powder	50 lb. Bag	80 sq. ft./bag
	(add 20-30 lbs/gal.)	40 mil basecoat
410C Filler Powder (carbon)	50 lb. Bag	100 sq. ft./bag
	(add 14-20 lbs/gal.)	40 mil basecoat
440 Glass Mat Reinforcement	Rolls	Area + 10%
443 Synthetic Cloth Reinforcement	Rolls	Area + 10%
(for use with carbon filled systems)		
TL-490T Topcoat	1 gallon can	100 sq. ft./gallon
If graphite filled is required, specify 490T/G	5 gallon pail	

POT LIFE AND CURE SCHEDULE @ 75°F*

Product	Pot life	Recoat	Chemical Service
Primer 75	15-20 minutes	Min. 4 hrs, max. 48 hrs	N/a
TL-490 (basecoat, saturant and top coat)	20-30 MINUTES	Basecoat: min. N/A** max. 30 – 40 minutes Saturant: min. 5 hrs, max. 48 hrs. Topcoat: min. 4 hrs max. 24 hrs	FINISHED SYSTEM: 48 HOURS

*These materials may be applied between 50 – 90°F. The pot life will be longer at the lower temperature range and much shorter at the higher temperature range.

** Basecoat must be covered with glass mat and glass mat must be saturated before basecoat begins to gel.

BID SPECIFICATION GUIDE

Use Blome TL-490 system consisting of a 40-50 mil basecoat mortar applied by trowel, one layer of 1 ½ ounce chopped strand mat saturated with the appropriate resin and a 15-20 mil TL-490T, flake filled, top coat manufactured by Blome International O'Fallon Mo.

APPLICATION GUIDELINES
STORAGE OF MATERIALS

Proper storage of these materials is critical to handling characteristics and performance. Store all components in unopened containers in a dry place, at 50-75°F, out of direct sunlight, and protect from the elements. Keep away from heat and flame. 24 hours before use, narrow the storage temperature to 70-80°F to facilitate handling of the product. This product has a shelf life of 12 months when properly stored.

JOB SITE ENVIRONMENTAL CONDITIONS

The temperature of the surface to be lined and the ambient air temperature must be at least 50°F while applying this product and as it cures. Monitor weather conditions and dew point. Stop the application if the temperature falls within 5°F of the dew point. Use dehumidification and/or temperature control if necessary to meet this requirement.

SURFACE PREPARATION

STEEL: Steel surfaces intended for lining application must be clean and free of oil, grease, dirt, rust, mill scale, salts, other coatings, corrosion products and other deleterious substances. Welds and weld splatter must be ground smooth. Avoid skip welds. Grind all sharp projections and round all corners to a 1/8" radius. All steel to be lined must be abrasive blasted to white metal finish (NACE no. 1, SSPC SP5) with a 2-4 mil sharp anchor profile. Mask all areas that are not to be lined.

CONCRETE: New concrete must cure a minimum of 28 days. Concrete surfaces should be abrasive blasted to provide a sound surface with a texture similar to medium grit sandpaper. Surfaces must be dry.

PRIMING/SURFACE REPAIR

Mix and apply Primer 75 by brush, roller or spray. Apply at 6-8 mils. Do not allow primer to puddle. Coverage rate should be 150-175 square feet per gallon. Allow primer to cure tack free before proceeding with application of TL-490.

When priming concrete, it is important to apply the primer when ambient and substrate temperatures are declining. Apply sufficient amount of primer to seal the surface of the concrete without creating puddles. This may require more than one coat of primer depending on the porosity of the concrete. If more than one coat is necessary, allow each coat to cure tack free before applying the next coat. After the last coat of primer has cured tack free, fill any voids in the concrete surface using Blome TL-490 basecoat material and allow to cure tack free before proceeding with application of the TL-490 lining system.

MIXING AND APPLICATION

Important note: Plan your work carefully. Pre-cut reinforcing mat into easy to handle pieces. It's a good idea to have at least a couple of pair of metal spiked shoes such as golf shoes on hand so that the crew members can walk onto the wet basecoat without disturbing it and address minor problems that cannot otherwise be reached. Cover just enough area with basecoat that can be finished with glass and saturant before the basecoat begins to set. Areas in direct sunlight and in a warm environment will set much faster than shaded, cool areas. Also, working in direct sunlight may cause pinholes and bubbles to form in the basecoat.

TL-490 Carbon Fiber Reinforced System: Mix TL-490 Resin (clear) with **EC-90 Hardener** at a ratio of 4 parts Resin to 1 Part EC-90 Hardener. Apply to substrate at a rate of 40-50 sq. ft./gal. Immediately place carbon fiber into wet resin/hardener mix, and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. Immediately saturate the carbon fiber reinforcement with additional TL-490 Resin/EC-90 Hardener mix using a medium nap roller. Apply saturant coat at an approximate rate 50-60 sq. ft./gal until the carbon fiber is wetted out completely. Depending on the weight of the carbon fiber used, one gallon of TL-490 Resin/EC-90 Hardener mix will yield approximately 20-30 sq. ft., when applied as directed above.

TL-490 basecoat is a mortar mix. To make it you will need an empty, clean five-gallon pail and a mixing drill with a mixing paddle attached. Mix TL-490 resin and hardener together for 1-2 minutes, slowly add the 410 Filler Powder to the mixed resin and hardener and blend thoroughly. Immediately apply to prepared and primed surface using a notched trowel, dry wall blade or plaster trowel. Apply at an even thickness of 40 mils. As soon as an area is covered with the basecoat and before it begins to set up or gel, imbed a layer of **#440 chopped strand mat** using a dry short nap or a ribbed roller to press the glass into the wet basecoat. Overlap seams of glass a min. of two inches.

TL-490 Saturant: Mix the Part A resin and Part B hardener in a 5-gallon pail. Immediately apply saturant to the glass reinforcement using a medium nap roller. Apply saturant coat at an approximate rate of 0.3 lbs per square foot. Work from the pail dipping the roller into the resin and applying in even coats to saturate the glass. Apply liberal coat between overlapped glass. DO NOT pour the resin onto the surface as this will greatly reduce coverage rates.
Glass reinforcement is saturated when the silver color of the glass disappears. Allow to cure until hard, usually about 12 hours at 75°F or above.

TL-490T Topcoat: Roughen the surface of the saturant coat and grind away any protrusions and imperfections. Remove all dust and debris by vacuuming and wiping with a clean cloth. Mix topcoat material (Part A and Part B) for 1-2 minutes. For flat surfaces, pour the material out of the pail and spread with a notched squeegee. Back roll with a medium nap roller to remove squeegee marks and achieve a uniform thickness of approximately 15 – 20 mils. For vertical or overhead surfaces, use a medium nap roller and apply in even layers to a thickness of 15-20 mils. Check the thickness with a wet film gauge. Allow to cure for 48 hours at above 75°F before placing in service.

TOUCH UP OR RE-COATING

Inter-coat prep for touch up or re-coating requires that the surface be clean, dry and roughened by sanding, grinding or abrasive blasting. Touch up or recoat as needed using TL-490 materials.

CLEANUP

Clean tools and equipment with nonflammable chlorinated solvents before material begins to set.

SAFETY PRECAUTIONS

The various components of TL-490 products present health and safety hazards if they are handled improperly. Do not store, mix or use near open flame, sparks or heat source. Keep all containers closed when not in use. Always wear safety glasses, proper respirator, protective clothing and rubber gloves while mixing or applying these products. Refer to Safety Data Sheets prior to using these products.

CAUTION

TL-490 may cause skin irritation with prolonged or repeated contact. Handle with care and read the material safety data sheet, which is available for each product.

WARRANTY

We warrant that our goods will conform to the description contained in the order and that we have good title to all goods sold. Our material data sheets and other literature are to be considered accurate and reliable, but are used as guides only. WE GIVE NO WARRANTY OR GUARANTEE, WHETHER OF MERCHANTABILITY OR FITNESS OF PURPOSE OR OTHERWISE, AND WE ASSUME NO LIABILITY IN CONNECTION THEREWITH. We are happy to give suggestions for applications; however, the user assumes all risks and liabilities in connection therewith regardless of any suggestion, we may give. We assume no liability for consequential or incidental damages. Our liability, in law and equity, shall be expressly limited to the replacement of non-conforming goods at our factory, or at our sole option, to repayment of the purchase price of the non-conforming goods.

Printed: June 17, 2020