

TL-400
Glass Mat Reinforced Vinyl Ester Lining System

PRODUCT DESCRIPTION

TL-400 Series tank lining systems are available in vinyl ester and high molecular weight (HMW) vinyl ester resin systems. TL-400 systems consist of a primer, a trowel applied mortar basecoat, a layer of chopped strand fiberglass mat saturated with the appropriate resin and a pigmented, flake filled topcoat. An optional synthetic fabric reinforcement can also be used with carbon filler powder for hot caustic or fluoride service. (This system is designated TL-400C)

TYPICAL USES:

TL-400 Series products are heavy duty, reinforced lining systems that are crack and impact resistant. TL-400 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 the TL-400 product is applied by trowel. The saturant for the glass reinforcement and the topcoat material is applied by roller.

TYPICAL PROPERTIES

	PROPERTY	TL-400/HMW
Tensile strength	ASTM C-307-83	2,400 psi
Compressive strength	ASTM	11,000 psi
Coefficient of thermal expansion		14-16 x 10 ⁻⁶ in/in/°F
Color*		Gray

*graphite filled systems are only available in black

PACKAGING & COVERAGE

TL-400 is a multi component system consisting of Part A (resin) and Part B (catalyst), #410 Filler, 1 ½ oz chopped strand mat and a TL-400T flake filled topcoat resin and catalyst. TL-400 components are packaged as follows:

Component	Packaging Size	Coverage
TL-400 Use for basecoat and saturant (includes 3 oz. catalyst/gallon resin)	1 gallon can 5 gallon pail	20 sq. ft./gallon
410 Filler Powder	50 lb. Bag	80 sq. ft./bag
410C Filler Powder (carbon)	50 lb. Bag	100 sq. ft./bag
440 Glass Mat Reinforcement	Rolls	Area + 10%
443 Synthetic Cloth Reinforcement (for use with carbon filled systems)	Rolls	Area + 10%
TL-400T Topcoat (includes 3 oz. catalyst/gallon resin) If graphite filled is required, specify VE400T/G	1 gallon can 5 gallon pail	100 sq. ft./gallon

**POT LIFE AND CURE
SCHEDULE @ 75°F***

Product	Pot life	Recoat	Chemical service
Primer 205	15-20 minutes	Min. 4 hrs, max. 48 hrs	N/a
TL-400 (basecoat, saturant and top coat)	20-30 MINUTES	Basecoat: min. N/A** max. 30 – 40 min. 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°F – 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-400 Series system (designate standard product or HMW) consisting of a 40-50 mil basecoat mortar applied by trowel, one layer of 1 ½ ounce chopped strand mat saturated TL-400 catalyzed resin, and a 15-20 mil TL-400T, flake filled, top coat

**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°F-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°F-80°F to facilitate handling of the product. This product has a shelf life of 3 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 205 by brush, roller or spray. Apply at 6-8 mils. Do not allow primer to puddle. Coverage rate should be 200 – 250 square feet per gallon. Allow primer to cure tack free before proceeding with application of TL-400.

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-400 basecoat material and allow to cure tack free before proceeding with application of TL-400.

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 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-400 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-400 resin and catalyst together for 1-2 minutes, slowly add the 410 Filler Powder to the mixed resin and catalyst 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 **Blome 440 chopped strand mat or synthetic fabric** using a dry short nap or a ribbed roller to press the glass into the wet basecoat. Overlap seams of fabric a minimum of two inches.

TL-400 Saturant: Mix the Part A resin and Part B catalyst in a clean 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. DO NOT pour the resin onto the surface as this will greatly reduce coverage rates.

Reinforcement is saturated when the silver color of the fabric disappears. Allow to cure.

TL-400T 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 24 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-400 materials.

CLEANUP

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

SAFETY PRECAUTIONS

The various components of TL-400 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 Material Safety Data Sheet prior to using these products.

CAUTION

TL-400 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.

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Supersedes all previous literature