BLOME INTERNATIONAL

Surrounding You with Exceptional Protection

TANK LINING SYSTEMS

TL-400 BPO

Reinforced Vinyl Ester Lining System for Bleach Service

PRODUCT DESCRIPTION:

TL-400 BPO tank lining system is a high performance Vinyl Ester lining system specially modified for sodium hypochlorite (bleach) service. TL-400 BPO consists of a primer, a trowel-applied, carbon-filled mortar basecoat, and two (2) layers of synthetic veil (or carbon fiber) saturated with TL-400 BPO resin.

TYPICAL USES:

TL-400 BPO is a heavy duty, reinforced lining system that is crack and impact resistant. TL-400 BPO is typically used to line steel and concrete tanks holding or processing bleach solutions. It is resistant to bleach solutions up to 21% in full immersion conditions. Because bleach solutions can degrade rapidly in the presence of certain metals (even at trace amounts), TL-400 BPO is formulated without cobalt-based promoters to avoid possible contamination.

HANDLING CHARACTERISTICS:

The basecoat of the TL-400 product is applied by trowel. The saturant for the reinforcement is applied by roller.

TYPICAL PROPERTIES:

PROPERTY	TL-400 BPO
Tensile strength (filled) (ASTM C-307)	2,500 psi
Compressive strength (filled) (ASTM C-579)	14,500 psi
Flexural Strength (filled) (ASTM C-580)	5,500 psi
Coefficient of thermal expansion (ASTM C-531)	14-16 x 10^{-6} in/in/°F
Permeability (perm-inch) ASTM E-96	0.0009
Abrasion Resistance, mg lost (ASTM D-4060 - CS17 wheel, 1000g load, 1000 cycles)	17
Bond Strength (ASTM D-4541)	Greater than the strength of concrete
Hardness, Shore D (ASTM D-2240)	>80
Color	Black

PACKAGING & COVERAGE:

TL-400 BPO is a multi-component system consisting of Part A (resin) and Part B (BPO paste catalyst), #410C Filler (carbon), and 2 layers of 443 Synthetic Cloth Reinforcement. TL-400 BPO components are packaged as follows:

Component	Packaging Size	Coverage
TL-400 BPO Use for basecoat AND saturant (includes 3 oz. BPO catalyst/gallon resin)	1 gallon can 5 gallon pail	16 sq. ft./gallon
410C Filler Powder (carbon) – Use for carbon-filled basecoat	50 lb. Bag (add 14-20 lbs/gal.)	130 sq. ft./bag
443 Synthetic Cloth Reinforcement – 2 Layers	Rolls	2 x Area + 10%

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 BPO (basecoat, and saturant)	20-40 MINUTES	Basecoat: min. N/A** max. 30 – 40 min.	Finished system: 48 hours, unless post cured (see below)

*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 synthetic veil and veil must be saturated before basecoat begins to gel.

POST CURING:

When using a BPO/Amine cure system such as the one used in TL-400 BPO, post cure is strongly recommended and should be done within two weeks of construction. Cure at 80°C/180°F for 1.5 – 2 hours once saturant/veil layer has initially cured (at least 4-6 hours, but within two weeks). System may be placed into service immediately after lining has cooled to ambient temperatures. Consult Blome International for specific recommendations.

BID SPECIFICATION GUIDE:

Use Blome TL-400 BPO system consisting of a 40-50 mil basecoat mortar applied by trowel, and two 15-20 mil layers of synthetic veil or carbon fiber reinforcement, saturated with TL-400 BPO catalyzed resin. **(Do NOT designate HMW for bleach service.)**

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 BPO.

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

MIXING AND APPLICATION:

Important note: Plan your work carefully. Pre-cut reinforcing veil 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 two layers of veil 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 BPO 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 BPO resin and catalyst together for 1-2 minutes, slowly add the 410C Carbon 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 40-50 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 443 synthetic cloth reinforcement** 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-400 BPO Saturant: Mix the Part A resin and Part B catalyst in a clean 5-gallon pail. Immediately apply saturant to the synthetic reinforcement using a medium nap roller. Apply saturant coat at an approximate rate of 80 sq ft per gallon. Work from the pail dipping the roller into the resin and applying in even coats to saturate the veil. DO NOT pour the resin onto the surface as this will greatly reduce coverage rates.

Reinforcement is saturated when the silver color of the glass disappears.

2nd Reinforcement layer: Immediately repeat the placement of a second layer of Blome 443 synthetic cloth reinforcement into the preceding wet (uncured) reinforced layer. Mix and apply additional saturant as indicated above.

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 BPO materials.

CLEANUP:

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

SAFETY PRECAUTIONS:

The various components of TL-400 BPO 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 Sheet prior to using these products.

CAUTION:

TL-400 BPO 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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