

## **TL-280**

### **High Temperature Sprayable Flake Glass Novolac Vinyl Ester Lining**

#### **PRODUCT DESCRIPTION**

TL-280 is a high performance, flake glass-filled, novolac vinyl ester lining system, utilizing carefully selected and sized glass flake reinforcement which maximizes permeation resistance and physical properties. TL-280 is specially formulated to withstand high temperatures, wet gas and chemical exposures found in wet FGD systems. This unique formulation is suitable for service up to 280°F in wet FGD service and will withstand dry service temperatures up to 380°F (with higher excursions.)

#### **TYPICAL USES**

TL-280 provides a tough, durable lining system that protects properly prepared and primed substrates from high temperature chemical attack. The product is especially suited for use in high temperature service such as FGD systems, oxidizing acid service including nitric or chromic, and in acid bleach environments such as chlorine dioxide and acid/solvent solutions.

#### **HANDLING CHARACTERISTICS**

TL-280 is best applied with plural component (catalyst injection) spray equipment. Conventional spray equipment is better suited for smaller areas and repairs. The product can be applied by brush or roller for areas requiring stripe coating and touch-up or when used for "cutting in" small areas. However, areas applied by brush or roller will have a rough texture finish and will be different in appearance than the spray applied lining.

#### **TYPICAL PROPERTIES**

Solids by Volume	82% + - 3% mixed.
Tensile strength	6,000 PSI
Tensile elongation	0.3 – 0.4%
Bond strength to steel	1,400 – 1,700 PSI
Bond strength to concrete	Concrete cohesive failure
Flexural strength	12,500 PSI
Permeability ( perm-inch) ASTM E-96	0.0005
Shelf life @ 70°F	4 months
Color	off white/gray
Pot life @ 70°F	35-45 minutes
Tack free at 70°F	4 – 6 hours
Final Cure	75%; 24 hours
	100%; 7 days
Primer	Primer 205

#### **PACKAGING & STORAGE**

TL-280 is a two-component material consisting of Part A (resin) and Part B (catalyst). TL-280 is packaged in 1 gallon, 5 gallon and drum quantities. 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 and sprayability of the product. This product has a shelf life of 4 months when properly stored.

## **BID SPECIFICATION GUIDE**

Use TL-280 as manufactured by Blome International O'Fallon Mo. Use in accordance with manufactures most currently published technical product information.

## **APPLICATION GUIDELINES**

### **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.

### **JOB SITE 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 and sprayability of the product.

## **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. All voids, pits, rock pockets and honeycombed surfaces should be filled with Blome CP-100, CP-110HB or CP-110HB vinyl ester mortar prior to application of TL-280.

## **PRIMING/SURFACE REPAIR**

Mix and apply primer 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-280.

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 CP-100 vinyl ester mortar and allow to cure tack free before application of TL-280.

## APPLICATION

Blome TL-280 is a high viscosity material and requires special measures to be taken during application. Application methods include conventional airless and plural component (catalyst injection). Use multidirectional passes to ensure positive coverage and proper film build.

Apply TL-280 in a minimum of two coats allowing each coat to cure tack free before applying the next coat. The maximum thickness of a single coat on a vertical surface will be 30 mils at 75-85°F.

### Catalyst Injection Spray Equipment

Stir Part A to a smooth, uniform consistency and color using a Jiffy type mixer. (Note – Resin and Catalyst are not premixed when using catalyst injection equipment).

## SINGLE COMPONENT SPRAY RECOMMENDED FOR TOUCH-UP ONLY

### **Conventional airless heavy-duty spray equipment:**

Pump ratio:	min 60:1 (See Note below)
Pump output:	min. 12 litres/minute (theoretical)
Input pressure:	min. 6 bar/90 psi
Spray hoses:	max. 50 metres/100 feet, 3/8" internal diameter, nylon lined max. 3 metres/10 feet, 1/4" internal diameter
Nozzle pressure:	2800 psi at 25°C/77°F
Regular surfaces:	
Nozzle size:.	.033" through .039" reversible tip
Fan angle:	40-60°

(Airless spray data are indicative and subject to adjustment)

**Filter:** Surge tank filter and tip filter should be removed.

**Note:** Avoid the use of a suction hose. The use of a S.S hopper is best.

The pump should preferably be fitted with leather seals although Teflon (PTFE) seals are acceptable for small jobs.

Pump ratio 60:1 is recommended, however, if only 45:1 is available, it is recommended to shorten the hoses to 15 metres/50 feet (Min. 1/2" internal diameter). Before application starts, the filter should be removed and hoses should be washed with MEK. MIXING

### Conventional (Single Component) Spray Equipment

Using a Jiffy-type mixer, stir Part A for 1-2 minutes until a smooth, uniform consistency and color is achieved.

For every gallon of Part A, add 2-4 ounces of Part B (catalyst), and mix thoroughly for 2-3 minutes (note: catalyst is supplied in pre-measured containers in quantities of 3 oz. catalyst per gallon of resin).

Be sure to scrape the sides and bottom of the mixing pail to ensure thorough mixing. Do not whip air into mix.

Pot life of the mixture using 2 ounces of Part B per gallon of resin will be approximately 35-45 minutes at 75°F (significantly less at elevated temperatures). The longer the material is in the pail after mixing, the shorter the pot-life will be...USE IMMEDIATELY. Do not mix more material than can be used in 25-35 minutes at 75°F. Material that has begun to set cannot be thinned with additional resin or solvent.

All tools, mixing equipment, gloves and application equipment should be cleaned up immediately using a citrus or biodegradable cleanser, with hot water, while material is still wet. If material begins to cure, solvent-based cleaners will be required for removal.

## **CATALYST INJECTION**

### **Catalyst Injection Rig: RECOMMENDED APPLICATION METHOD**

For spray application of TL-280 -- the use of a High Production Catalyst Injection Spray Unit is highly recommend. CI pump should be equipped with a 7.5 gal S.S material hopper/w cover and inline material heater. The use of insulated/heated hose set is recommended for spray applications in cool weather. (For optimal atomization, warm TL-280 base resin to 90F prior to spray application.) Pump should be capable of maintaining 2,800 to 3,200 psi at the spray tip. A Century AA gun w/tungsten carbide needle and seat w/ 4409 fluid nozzle, .028 external catalyst injector works well for spraying TL-280

Typical nozzle sizes range from 3609 to 4409

### **SPRAY METHOD**

Use multidirectional passes to ensure positive coverage and proper film build. Apply TL-280 in a minimum of two coats allowing each coat to cure tack free before applying next coat. The base coat should be applied at 25-30 mils.

## **INTER-COAT PREP**

When applying subsequent coats, allow previous coat to cure firm to the touch. If surface is not contaminated and has not cured beyond 72 hours at an average temperature of 75°F, no inter-coat prep is required. If surface has been exposed to contamination or has cured beyond 72 hours or has been exposed to direct sunlight for over 4 hours do the following: Remove any contamination and mechanically abrade by sanding or lightly abrasive blasting the surface to be coated.

## **INSPECTING FOR PINHOLES**

Spark test cured lining at 100 volts per mil. Mark all pinholes and repair using the following touch-up procedure. Retest only the areas that have been repaired.

## **TOUCH-UP OR RECOATING**

Allow material to cure firm to the touch. If surface is not contaminated and has not cured beyond 72 hours at an average temperature of 75°F, no inter-coat prep is required. If surface has been exposed to contamination or has cured beyond 72 hours or has been exposed to direct sunlight for over 4 hours do the following: Remove any

contamination and mechanically abrade. Apply lining material and allow to cure.

## **CLEANUP**

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

## **SAFETY PRECAUTIONS**

The various components of TL-280 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.

## **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 MERCHANT ABILITY 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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