

## **TL-223 S AR**

### **Sprayable, Abrasion Resistant Vinyl Ester Lining System**

#### **PRODUCT DESCRIPTION**

TL-223 S AR is an abrasion resistant vinyl ester lining system. We use only the highest quality resins manufactured to exacting specifications to ensure maximum chemical resistance for reliable barrier protection. This formulation utilizes highly abrasion-resistant fillers to improve wear and erosion resistance, while maintaining excellent permeation resistance and physical properties. TL-223 S AR is resistant to phosphoric acid and the aggressive chemical environments that exist, including acid fluoride generation, during its production. Typical abrasion resistance of Blome TL-223 S AR is 20 mg weight loss at 1,000 cycles, (1000 g load using a CS17 wheel).

#### **TYPICAL USES**

TL-223 S AR provides a tough, durable lining system that protects properly prepared and primed substrates from high temperature chemical attack. The product is especially suited for linings for steel and concrete tanks used for a wide variety of chemical processing, chemical storage, and wastewater applications. TL-223 S AR can be used as a topcoat on existing Blome vinyl ester systems or as a stand-alone coating.

#### **HANDLING CHARACTERISTICS**

TL-223 S AR is best applied by spray method. The product can be applied by brush or roller for areas requiring 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.

#### **APPLICATION METHODS**

Spray, brush or roller.

#### **PRIMER**

Steel: Primer 205 (optional)  
Concrete: Primer 205

#### **SURFACING AND COVING MATERIALS**

CP-110HB

#### **TYPICAL RECOMMENDED THICKNESS**

30-40 mils applied in two coats

## TECHNICAL DATA

### Cure time

Temp	Pot life	To re-coat	Service
75°F	35-45 minutes	Min 6 hrs, Max 7 days	48hrs
50°F	45-60 minutes	Min 12 hrs, Max 7 days	72hrs

Curing time varies with temperature, air movement, humidity and lining thickness.

## TYPICAL PROPERTIES

Solids by Volume:	82% + - 3% mixed.
Tensile strength:	5800 psi
Tensile elongation:	0.4 – 0.6%
Bond strength to steel:	>1500 psi
Bond strength to concrete:	Concrete cohesive failure
Abrasion Resistance, mg lost (ASTM D-4060 - CS17 wheel, 1000g load, 1000 cycles)	20
Permeability ( perm-inch) ASTM E-96:	0.0009
Color:	Dark gray
Pot life @ 70°F:	35-45 minutes
Tack free at 70°F:	4 – 6 hours
Final Cure:	75 °F; 48 hours 50 °F; 7 days
Primer (Concrete):	Primer 205
Storage Conditions:	Min. 45°F Max 75°F
Shelf Life:	4 months
Packaging:	1 gallon units, 5 gallon units and drums
Weight per gallon:	10.3 lbs.
Coverage:	1315 sq. ft./gal/mil

## BID SPECIFICATION GUIDE

Use TL-223 S AR with abrasion-resistant filler 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 coated 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.
- All surfaces to be lined must be free of all dirt, oil, grease, chemical contamination, salts, incompatible coatings and other deleterious substances.

## **JOB SITE STORAGE OF MATERIAL**

- 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 temperature of the storage conditions to 75-85°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-110HB vinyl ester mortar prior to application of TL-223 S AR.

**Existing Vinyl Ester Systems:** Blome Vinyl Ester coatings/linings (e.g., TL-220-S) must be clean, dry and have not set longer than the recommended recoat interval for the last applied layer of the base lining/coating. If the coating's recoat window has been exceeded, lightly abrade the surface and remove dust prior to the application of TL-223 S AR.

## **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-223 S AR.
- When priming concrete, it is important to apply the primer when ambient and substrate temperatures are declining. Apply enough 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 concrete or steel surface using Blome CP-110HB vinyl ester mortar and allow to cure tack free before application of TL-223 S AR.

## **APPLICATION EQUIPMENT FOR PLURAL COMPONENT SPRAY**

- Use air assist Binks 37:1 ratio B8-DSQ cart mounted Super Slave spray unit with air controls, 7-1/2 S.S. hopper with cover and quick disconnect, SQ S.S. line filter, 50' resin, catalyst and air hose assembly, swivel, Century Gun with T.C. Seat, needle and tip.

- Premix Part A resin immediately before use using a Jiffy type mixer to ensure that settling of the fillers has not occurred during shipping and storage.
- Use spray equipment in accordance with equipment manufacturer instructions.

## **MIXING AND APPLICATION**

- Stir Part A to a smooth, uniform consistency and color using a Jiffy type mixer.
- For every gallon of Part A, add 2-3 ounces of Part B (catalyst), and mix thoroughly for 2 minutes.
- Pot life of the mixture using 2 ounces of Part B will be approximately 45-60 minutes at 75°F (significantly less at elevated temperatures). The pot life is approximately 35-45 minutes using 3 ounces of Part B at 75°F.
- The longer the material is in the pail after mixing, the shorter the pot-life will be USE IMMEDIATELY.

## **SINGLE COMPONENT SPRAY**

- Conventional or airless spray equipment can be used to apply TL-223 S AR. Conventional standard air spray gun, with pressure pot or low ratio pump, and a minimum .070" fluid nozzle is recommended. If airless equipment is used, a minimum 30:1 ratio pump is required. The gun should have a reversible "self-cleaning" tip with a .05" orifice or larger, tungsten carbide nozzle.

## **IF APPLYING WITH CATALYST INJECTION SPRAY RIG**

- Pour the pre-mixed Part A and the Part B into their appropriate hoppers on the rig. Recirculate the Part A component through its hoses until it reaches the correct working temperature of 85°F.
- A minimum .070" fluid nozzle is recommended.

## **SPRAY METHOD**

- Use multidirectional passes to ensure positive coverage and proper film build.
- Apply TL-220-S AR 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 20 mils at 75-85°F.

## **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 7 days at an average temperature of 75°F, no inter-coat prep is required. If surface has been exposed to contamination or has cured beyond 7 days 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 7 days at an average temperature of 75°F, inter-coat prep may not be required. If surface has been exposed to contamination or has cured beyond days 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-223 S AR 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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