BLOME INTERNATIONAL

Surrounding You with Exceptional Protection

TANK LINING SYSTEMS

TL-222 HP/TL-222 HP ESD

High Temperature, Graphite Filled, Halogenated Polyester Lining Systems

PRODUCT DESCRIPTIONS

Blome TL-222 HP and TL-222 HP ESD are high performance, high temperature-resistant, graphite filled, sprayable halogenated polyester lining systems. Both TL-222 HP and TL-222 HP ESD utilize carefully selected and sized graphite reinforcement which maximizes permeation resistance and physical properties. These systems are used as coatings in very demanding applications where enhanced performance and resistance to hydrofluoric acid and hot alkaline chemistry is required. TL-222 HP ESD contains additional additives to impart electrostatic dissipative properties to the system.

TYPICAL USES

Linings for steel and concrete tanks used for a wide variety of food processing (non-food contact surfaces), chemical processing, chemical storage, and wastewater applications. The use of halogenated polyester imparts additional resistance to strong oxidizing acids.

APPLICATION METHODS

Spray, brush, roller

PRIMER

Steel: Primer 205 (optional)
Concrete: Primer 205

SURFACE AND COVING MATERIALS

CP-100, CP-110HB

TYPICAL RECOMMENDED THICKNESS

50-60 mils WFT applied in two coats to achieve 40-50 mils total dry film thickness.

ENVIRONMENTAL CONDITIONS CLIMATE CONDITIONS

Work area must be dry. Work must be stopped if temperature drops within 5 degrees of dew point. Temperature in work area must be maintained at between 50°F – 90°F. The ideal temperature for application is 75°F.

TECHNICAL DATA

TL-222 HP/TL-222 HP ESD Cure times (Note – Curing time varies with temperature, air movement, humidity and lining thickness.)

Temperature	Pot Life	Re-coat	Service
75 °F	35-45 minutes	Min – 5 hours Max – 72 hours	48 hours
50 °F	45-60 minutes	Min – 12 hours Max – 7 days	72 hours

TYPICAL PROPERTIES –CURED

Property	Result
Hardness, Shore D (ASTM D-2240):	80-85
Tensile Strength (ASTM D-638):	4000 psi (27.6 MPa)
Tensile Elongation (ASTM D-638):	0.6%, average
Flexural Strength (ASTM D-790):	12500 psi (86.2 MPa)
Bond Strength to Steel (ASTM D-4541):	1850 psi (12.8 MPa)
Bond Strength to Primed Concrete (ASTM D-4541):	>Strength of Concrete
Abrasion Resistance (CS17, 1000g, 1000 cycles) (ASTM D-4060):	25-30 mg lost
Water Vapor Transmission/Permeability (ASTM E-96):	0.0008 Perm-Inch
Heat Deflection Temperature (HDT) ASTM D-648):	325 °F
Static dissipation (TL-222 HP ESD):	Electrostatic Dissipative (ESD)

COVERAGE, STORAGE AND PACKAGING

Theoretical coverage:	1363 sq. ft./gal/mil (85 ± 2% volume solids)
Color:	TL-222 HP – Dark gray. TL-222 HP EDS - Black
Storage conditions:	Store between 35 °°F and 75 F
Shelf life:	3 months at 75 °F*
Packaging:	5-gallon units
Weight per gallon:	10.2 lbs.

*Shelf life can be prolonged with refrigeration

Keep TL-222 HP/TL-222 HP ESD components tightly sealed in their original containers until ready for use. Store out of direct sunlight.

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 at job site in unopened containers in a dry place, at 50-75°F (cooler for longer term storage), 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 -GENERAL

Surfaces must be dry and free of dust, dirt, grease, oil, chemicals and contaminants immediately prior to applying each coat of either primer or TL-222 HP/TL-222 HP ESD.

SURFACE PREPARATION OF STEEL

1. Abrasive blast steel surfaces to a minimum near white metal finish with a 3.5 to 5 mil anchor profile. (Ref. SSPC-SP-10)

2. All welds should be continuous and should be ground to remove all sharp edges, laps, under cuts and other surface irregularities. Relatively smooth, ripple finished welds are acceptable. Avoid skip welds. Grind all sharp projections and round all corners to a 1/8” radius.

3. Stripe-coat all welds just prior to applying coating.

4. Steel in Non -Immersion Service
   Abrasive blast steel surfaces to a near white metal finish with 2 to 4 mil anchor profile. (Ref. SSPC-SP-10)

SURFACE PREPARATION OF 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. Prime concrete surfaces with Primer 205. All voids, pits, rock pockets, and honeycombed surfaces should be filled with Blome CP-100 or CP-110HB vinyl ester mortar prior to application of TL-222 HP/TL-222 HP ESD.

MASKING

Mask surfaces that are not to be coated. TL-222 HP/TL-222 HP ESD is difficult to remove, once cured.

PRIMING

Note - Priming of steel is optional.

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-222 HP/TL-222 HP ESD.

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/CP-110HB vinyl ester mortar and allow to cure tack free before application of TL-222 HP/TL-222 HP ESD.

APPLICATION

Blome TL-222 HP/TL-222 HP ESD 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-222 HP/TL-222 HP ESD 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.

MIXING

<u>Conventional (Single Component) Spray Equipment</u>

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 ounces of Part B (catalyst), and mix thoroughly for 2-3 minutes (note: catalyst is supplied in pre-measured containers in quantities of 2 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 are into mix.

Pot life of the mixture using 2 ounces of Part B per gallon of resin will be approximately 25-35 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.

<u>Catalyst Injection Spray Equipment (PREFERRED METHOD)</u>

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

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/150 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. Use an interchangeable pipe, which makes it possible to remove cured paint.

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. ½" internal diameter). Before application starts, the filter should be removed and hoses should be washed with MEK.

CATALYST INJECTION

Catalyst Injection Rig:

Information below is specific to equipment from Binks. Comparable spray equipment may be used.

Name:	Binks Vinyl Ester Outfit
Gun:	Binks Century Vinyl Ester
Pump:	Binks "B 8"
Tank:	No tank
Slave/Catalyst Ratio:	Catalyst ratio of 2% - 3%
Resin Pump Ratio:	Binks B8-D Pump ratio is 37:1
Flow (GPM) @ 60c/m:	3.4 GPM (12.9 l/m) at 60 cycles/min of resin
Max Output Fluid Pressure:	2960 psi (204 bar)

The pump should be equipped with an in-line heater to get resin up to an application temperature of 90 °F. The pump should also be equipped with a heated hose set if material is to be applied during cool weather (50s to low 60s °F). The heated hose set helps maintain the outgoing resin temperature on its way to the gun. Typical nozzle sizes range from .030 to .038.

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/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 intercoat 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 12 hours do the following: Remove any contamination and mechanically abrade. Apply lining material and allow to cure.

CLEANUP

Before material gels, tools and equipment should be cleaned solvents such as MEK or toluene. Chlorinated solvents may be used if flammable solvents are prohibited.

SAFETY PRECAUTIONS

The various components of TL-222 HP/TL-222 HP ESD products present health and safety hazards if they are handled improperly. Do not store, mix or use near open flame, sparks or heat source. Refer to 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 there with 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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