

SAUEREISEN

FAST-TRAK LINING SERIES No. 219 NONOLAK LINING & VE LINING 441

PHYSICAL PROPERTIES

Concrete failure	Bond strength to concrete (ASTM D-4541)	Concrete failure
6,600 psi (464.0 kg/cm ²)	Compressive strength (ASTM C-579)	7,800 psi (548.3 kg/cm ²)
3,100 psi (217.9 kg/cm ²)	Flexural strength (ASTM C-580)	5,300 psi (372.6 kg/cm ²)
180°F (82°C)	Maximum service temperature	250°F (121°C)
10.5 x 10 ⁵ psi (7.4 x 10 ⁴ kg/cm ²)	Modulus of elasticity (ASTM C-580)	7.1 x 10 ⁵ psi (5.0 x 10 ⁴ kg/cm ²)
2,300 psi (161.7 kg/cm ²)	Tensile strength (ASTM C-307)	2,700 psi (189.8 kg/cm ²)
60 mils, 100% solids	Thickness (WFT)	80 mils, 78% solids
30 minutes	Working time at 70°F	30 minutes

Physical properties were determined on specimens prepared under laboratory conditions using applicable ASTM procedures. Actual field conditions may vary and yield different results; therefore, data are subject to reasonable deviation.

The Sauereisen Fast-Trak™ Lining Series is a fiber-reinforced lining system specifically designed to protect concrete, steel or masonry surfaces in the pulp & paper industry. Fast-Trak™ has the chemical resistance to withstand the bleaches, liquors and other corrosive substances that attack unprotected trenches, sumps and chests in paper mills. Depending on the chemical and temperature environment, Fast-Trak™ is available in either vinyl ester or novolak epoxy formulations which are used with an appropriate Sauereisen Primer.

A monolithic lining applied by airless spray, the Fast-Trak™ system may be used to restore deteriorated tile linings that would otherwise require extensive demolition, re-pointing and replacement. Downtime of the Fast-Trak™ installation is minimized by the ability to coat existing tile structures with a uniform thickness of corrosion-resistant material. Since spray installations proceed at a much quicker rate than re-pointing or construction by the tile setter's method, pulp & paper infrastructure can return to service in a fraction of the time.

Fast-Trak™ is also ideal for new construction because it eliminates the possibility of disbonded tile falling into processing liquids and subsequently damaging plant equipment.

CHARACTERISTICS

- An installation-friendly alternative to tile linings.
- Fast chemical set - less down time.
- Fiber reinforcement allows for maximum strength with moderate thickness.
- Available in vinyl ester or novolak epoxy formulations.
- Low porosity.

AREA PREPARATION

Temperature of Working Area

Maintain a temperature of 60°-85°F on air, substrate, Hardener and Liquid components during mixing, application and cure. The monolithic components and substrate should be maintained at 65°F to 80°F for 48 hours prior to beginning work.

At temperatures below 60°F, the application becomes more difficult and curing is retarded.

Above 85°F, the working time decreases and it is recommended that the components be stored in a cooler area prior to mixing. Shading the substrate and using ice water to cool mixing equipment is not uncommon. In extreme temperatures it may be necessary to postpone the application or to apply during cooler hours.

Surface Preparation

Surfaces should be dry and made free of oil, grease and other contaminants that may inhibit bond. This can be achieved by chemical cleaning.

Concrete - Refer to SSPC-SP13/NACE 6 "Surface Preparation of Concrete" for detailed guidelines.

New Concrete - Abrasive blast, high-pressure water blast, or acid etch concrete to remove laitance and obtain uniform surface texture. Voids should be filled with an appropriate Sauereisen substrate repair material.

Old Concrete - Concrete must be dry, firm and structurally sound as specified by the architect/engineer. All structural cracks and voids must be repaired using Sauereisen No. F-120, Epoxy Filler Compound No. 209, or Vinyl Ester Mortar No. 400 depending on service conditions.

Abrasive blast, high-pressure water blast, or acid etch concrete to remove laitance and obtain uniform sound and clean substrate.

If abrasive or high pressure water blasting is used as the method of surface preparation, all sand and/or debris must be removed by thoroughly vacuuming the area with an industrial vacuum cleaner. If surface does not have desired characteristics, repeat surface preparation procedure.

Existing Tile - Removal of all loose tile is recommended prior to the lining application. In cases where damaged tile may be refurbished, contact Sauereisen regarding back-filling procedures with epoxy grout.

Chemically clean to remove contaminants which may inhibit bonding of the monolithic. Abrasive blast to provide a profile and to remove deteriorated concrete and loose mortar. Thoroughly vacuum all blast media debris.

In applications subject to service temperatures less than 180°F, re-point mortar joints flush with the tile surfaces using Epoxy Filler Compound No. 209. For higher temperature applications, joint repair may be accomplished with Vinyl Ester Mortar No. 400. Large voids resulting from disbonded tile may be filled with Underlayment No. F-120 Trowelable.

Metal - Abrasive blast to a nominal 2.5 mil profile employing SSPC-SP5 White Metal Blast for immersion and SSPC-SP10 for other service conditions. All welds must be continuous, free of flux and have a smooth rounded radius or be ground flat without any sharp edges or protrusions.

APPLICATION

Sauereisen has four bond-enhancing primers recommended for use prior to the Fast-Trak™ Lining application. Each is designed for specific conditions.

ConoWeld No. 501 is the epoxy primer to be used with Fast-Trak™ NovolaK Lining No. 219.

VEPrime No. 550 is the vinyl ester primer for use with Fast-Trak VE Lining No. 441.

Hi-Temp Primer No. 560 is a single component, moist-cured urethane primers for use with both Nos. 219 and 441.

Both primers are suitable over concrete or tile. When applied over ferrous substrates, No. 560 requires the addition of Zinc Filler No. 561.

The moist-cured urethanes are designed for use where a higher temperature is expected than either Nos. 501 or 550 can tolerate or where atmospheric and/or substrate moisture is likely to be present.

Mixing

Components of the Fast-Trak™ Linings and Primers No. 501 and 550 are packaged in premeasured containers consisting of Hardener Part A and Resin Part B which must be mixed together before use. Individual components should be remixed before combining. Nos. 560 and 562 are single-component and require only remixing before use. The following procedures are applicable to the mixing of the Linings and multiple-component Primers:

Completely empty contents of Hardener Part A into Resin Part B container. Using a slow-speed drill motor with a "Jiffy" type blade, mix for a minimum of 3 minutes until thoroughly blended.

Mix only complete batches. Material which has begun to set must be discarded. Do not try to retemper the material.

When mixing single-component, moist-cured urethanes, remix the containers with the lid in place. If mechanically stirring, use a very slow mixer and avoid creating a vortex which will entrain atmospheric moisture in the coating causing gelation.

Installation

Primer - Apply Nos. 501 and 550 at a wet film thickness of 5-10 mils, whereas No. 560 is applied at a maximum of 5 mils wet. All three primers may be applied using specified airless spray equipment or a short nap roller with a non-degradable core.

The Fast-Trak™ Lining should be applied while the Nos. 501 and 500 Primers are firm but tacky. No. 560 will dry to touch in approximately 1-2 hours at 70° F. and must be fully cured prior to topcoating. If the duration before topcoating exceeds 24 hours, consult Sauereisen to discuss proper solvent-wipe procedures.

Fast-Trak™ Lining - The monolithic lining is recommended to be applied by spray to allow for a more easily regulated thickness and to speed the installation process.

A single coat of 60 mils of the Fast-Trak™ NovolaK Lining No. 219 is suitable for most applications. Two 40 mil coats of the Fast-Trak VE Lining No. 441 are generally recommended when using the vinyl ester grade. This will result in a dry film thickness of 63 mils for No. 441. Allow a minimum of 4 hours between coats at 70°F.

If 24 hours elapse between the application of two coats, sand the surface, solvent wipe and remove any debris prior to re-coating.

Application should be done with a 50% overlap in a "cross hatch" pattern to reduce the possibility of pinholes and to assure complete coverage. After Fast-Trak has sufficiently cured, a holiday detector should be used to ensure a continuous, pinhole-free lining. When spark testing a tile tank, grounding strips should be placed 16 ft. apart, to allow for the proper testing of the lining.

The following equipment is typically used for spray application.:

Airless Spray Pumps - FibreCrete may be sprayed with a minimum 45:1 piston-primed, airless pump such as the model formerly manufactured by Graco. Alternative equipment such as the Graco 56:1 King Piston Primed Airless, Model 236-477 is also suitable. The current specification is the Graco Xtreme Sprayer X60 - MDL#X60-DH4. Remove all filters including the filter from surge tank. Other pumps may be suitable, depending on job site requirements.

Moisture Air Dryer - RFI Model DA-300 or equivalent. Moisture air dryer must be placed at least 50' from air compressor on air line.

Gun - Graco's Ultra-Lite pistol grip Flo-Gun, Model 235-628 is preferred. This gun must be combined with Seat Adapter Model 235-006. Alternatively, the Graco Flo-Gun Model 224-991 is acceptable.

Gun tip - For fiber filled materials, use Tip Housing Part No. XHD-001 with Graco Reversa Tips MDL No. XHD with orifices of 0.025 to 0.031 inches. Alternative brand tips may be suitable, however, never use tips that contain a diffuser pin.

Material hoses -

- ♦ 6' whip end, 3/8" i.d.; working pressure 5,000 psi, 16,000 psi burst.
- ♦ 0-25' overall, 1/2" i.d.; working pressure 4,000 psi, 16,000 psi burst.
- ♦ 25-75' overall, 3/4" i.d.; working pressure 4,000 psi, 12,000 psi burst.

Air compressor - 180 ft³ per minute at 100 psi, minimum.

Air hose from compressor - 3/4" to 1" i.d.: 100' maximum length to mastic pump.

Measures such as water traps, dryers, or filters should be used to prevent pump freeze-up.

COVERAGE

ConoWeld No. 501

200 ft² per gallon at 8 mils.

VEPrime No. 550

267 ft² per gallon at 6 mils wet film thickness, resulting in a dry thickness of approximately 5 mils.

Hi-Temp Primer No. 560

320 ft² per gallon at 5 mils wet film thickness resulting in a dry thickness of approximately 3 mils.

Fast-Trak NovolaK Lining No. 219

27 ft² per gallon at 60 mils.

Fast-Trak VE Lining No. 441

40 ft² per gallon at 40 mils wet film thickness, resulting in a dry thickness of approximately 31 mils.

All coverage data is theoretical and will vary depending upon surface conditions, porosity, application techniques and project specific conditions.

HOLIDAY DETECTION

Spark testing is recommended to assure the quality of an application. A holiday detector will confirm complete coverage of the coating system and identify any pinholes that must be repaired.

Sauereisen offers SparkPrime No. 562 for projects that include spark testing as a control measure. The conductive primer will replace ConoWeld No. 501, VEPrime No. 550 or Hi-Temp Primer No. 560 in these cases.

SparkPrime is a single-component, moisture-cured urethane resistant to 400°F. It promotes excellent bond strength for epoxy and vinyl ester materials over concrete and tile. The SparkPrime contains carbon black that provides conductivity beneath the coating system which is necessary for holiday detection. Grounding strips should be placed 16 feet apart within the conductive primer.

SETTING/CURING

By properly maintaining air and substrate temperatures, the Fast-Trak System can be cured to meet production scheduling. Contact Sauereisen regarding specific curing parameters.

PACKAGING

ConoWeld No. 501

Unit Size	Part A	Part B
1 gallon	1/2 gal. can	1 gal. can
3 gallon	2 gal. pail	3.5 gal. pail

VEPrime No. 550

VEPrime No. 550 is packaged in a one gallon Regular Unit that includes:

Regular Unit:

Part A Hardener

0.053 pounds in a 2 ounce bottle

Part B Liquid

7.375 pounds in a 1 gallon can

Hi-Temp Primer No. 560

Unit Size

1 gallon, approximately 8.5 lbs.

Fast-Trak NovolaK Lining No. 219

Unit Size	Part A	Part B
1 gallon	1 qt. can	2 gal. pail
2.5 gallon	1 gal. can	3.5 gal. pail
5 gallon	1 gal. can	6 gal. pail

Fast-Trak VE Lining No. 441

Unit Size	Part A	Part B
1 gallon	1 - 2 oz. bottle	1 gal. can
2.5 gallon	1 - 4 oz. bottle	1 pail

Containers are filled by weight, not volume. Container size does not indicate exact volume of contents.

CLEAN-UP

All equipment should be cleaned by scrubbing with a stiff brush and solvent at the end of each working period or when build-up becomes pronounced. Use MEK for epoxies and urethanes and MCT (Monochlorotoluene) for the vinyl esters.

SHELF LIFE

Sauereisen Fast-Trak VE Lining No. 441, and VEPrime No. 550 have a shelf life of three months. Hi-Temp Primer No. 560 have a shelf life of six months when stored in unopened, tightly sealed containers in a dry location at 70°F. Under the same conditions, Fast-Trak NovolaK Lining No. 219 and ConoWeld No. 501 have a shelf life of one year. Avoid freezing. If there is a doubt as to the quality of the materials, consult a Sauereisen representative.

CAUTION

Consult Material Safety Data Sheets and container label Caution Statements for hazards in handling these materials.

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. WE GIVE NO WARRANTY, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE OR OTHERWISE, EXPRESS OR IMPLIED, OTHER THAN AS EXPRESSLY SET FORTH HEREIN. We are glad to offer suggestions or to refer you to customers using Sauereisen cements and compounds for a similar application. Users shall determine the suitability of the product for intended application before using, and users assume all risk and liability whatsoever in connection therewith regardless of any suggestions as to application or construction. In no event shall we be liable hereunder or otherwise for incidental or consequential damages. Our liability and your exclusive remedy hereunder or otherwise, in law or in equity, shall be expressly limited to our replacement of nonconforming goods at our factory or, at our sole option, to repayment of the purchase price of nonconforming goods.

- ❑ **Distributors and agents in major cities throughout the world. Consult manufacturer for locations.**
- ❑ **Information concerning government safety regulations available upon request.**
- ❑ **Sauereisen also produces inorganic compounds for assembling, sealing, electrically insulating and grouting.**

SAUEREISEN ... since 1899

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