SAUEREISEN

VINYL ESTER POLYMER CONCRETE NO. 410

PHYSICAL PROPERTIES

Application time	
Working time at 70ºF	30 minutes
Initial set at 70ºF	1 Hour
Density (ASTM C-905)	142 pcf (2.3 gm/cm^3)
Compressive strength (C-579) 7 days	12,700 psi (894 kg/cm^2)
Flexural strength (ASTM C-580) 7 days	3,500 psi (246 kg/cm^2)
Maximum service temperature	220ºF (104ºC)
Modulus of elasticity (ASTM C-580) 7 days	4.16 x 10^5 psi (2.9 x 10^4 kg/cm^2)
Moisture absorption (ASTM C-413)	0.10%
Shrinkage (ASTM C-531) 7 days	.12%
Tensile strength (ASTM C-307) 7 days	2,200 psi (155 kg/cm^2)

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.

Sauereisen Vinyl Ester Polymer Concrete No. 410 is a vinyl ester castable for chemical-resistant construction of sumps, dikes, containment areas, trenches, walls and other structural support columns or bases. No. 410 has been specifically formulated for independent foundation construction and should be installed with proper reinforcement. Mixing, forming and finishing will proceed with similar methods used for Portland cement installations.

Vinyl Ester Polymer Concrete No. 410 can also be used as a monolithic topping to rehabilitate chemically deteriorated concrete or to protect new construction. This system incorporates Sauereisen VEPrime No. 550 to promote a strong bond.

CHARACTERISTICS

- ☐ Vinyl ester polymer offers superior chemical resistance.
- ☐ Maximum service temperature of 220ºF (104ºC).
- ❑ Fast chemical set - less down time.
- ☐ Low porosity.

AREA PREPARATION

Temperature of Working Area

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

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

Above 85ºF, the material working time decreases. Under these conditions, the material components should 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.

Reinforcement

When applying Vinyl Ester Polymer Concrete No. 410, appropriate corrosion resistant reinforcement must be incorporated. All monolithic applications must be affixed to the substrate by "T" type anchors. Consult Sauereisen for recommendations.

Surface Preparation

Foundation Construction - The foundation base should be constructed with appropriate materials to support load of the engineered design. No. 410 must not be applied over standing water or loose soil.

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

New Concrete - Surfaces should be dry and made free of oil, grease and other contaminants that may inhibit bond. This can be achieved by chemical cleaning. Abrasive blast, high-pressure water blast or acid etch concrete to remove laitance and to obtain a uniform surface texture.

Old Concrete - Concrete must be dry, firm and structurally sound as specified by the architect/engineer. Surfaces should be made free of oil, grease, water and other contaminants that may inhibit bond. This can be achieved by chemical cleaning. All structural cracks must be repaired. Abrasive blast, high-pressure water blast or acid etch concrete to remove laitance and to obtain a uniform sound substrate.

Brick - Remove oil, grease, water and other contaminants that may inhibit bond. Abrasive blast or hydroblast mortar joints to a depth of 1/2 inch to remove all loose material and provide a clean, firm surface.

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 conditions, repeat surface preparation procedure.

EXPANSION/CONTROL JOINTS

Joints are to be provided on 14 foot centerlines, around all fixed objects, peripheries of rooms and over all points of movement in the base slab. The joint should then be filled with the appropriate expansion joint filler. Consult Sauereisen for recommendations.

APPLICATION

Mixing

Vinyl Ester Polymer Concrete No. 410 is packaged in pre-measured units of Aggregate, Liquid and Hardener components. Mixing should be done mechanically with a slow-speed mortar mixer. The mixing equipment must be clean and free of Portland cement or other contaminants.

Remix Part B Liquid prior to combining components. Empty contents of the Liquid into a clean, dry mixing container. Pour contents of Hardener into Liquid and mix thoroughly until blended for at least one minute. Empty liquids into a clean, dry mortar mixer. Add Aggregate component gradually while mixing to a uniform consistency.

Mix only complete batches. Material which has begun to set must be discarded. Do not try to retemper the material. Do not add solvent, additive or adulterant to any component or mixed material.

Remove the entire batch from the mixer when mixing is completed to prevent build-up in the equipment. While pouring one batch, another should be mixed in order to eliminate delays and permit continuous operation.

Installation

VEPrime No. 550 - Apply primer to a nominal thickness of 5-10 mils using a short nap roller with a non-degradable core or nylon brush. For more detailed information regarding VEPrime No. 550, consult the specific Sauereisen product data sheet.

Polymer Concrete No. 410 - When casting No. 410, forms should be constructed of firmly braced wood or metal which have been given a light coating of release agent. The release agent will prevent No. 410 from adhering to the screeds or forms, but should not leave a residue on the freshly cast material.

Forms are to be completely sealed and rendered watertight with heavy consistency pliable caulking, especially when placed over rough surfaces. Do not apply over standing water or damp surfaces.

The form and screed systems should be strong enough to retain No. 410 in place without deformation. Forms and screeds may be removed after set has occurred and No. 410 has sufficient strength to support itself. Lower temperatures will require longer cure periods before removing forms.

Tamping methods or pencil vibration are suitable for distributing the material. Use a trowel or screed board to level the polymer concrete flush with the top of the form. Trowel finish within 15 minutes after mixing. Avoid imposing loads until a final set has been achieved.

COVERAGE

VEPrime No. 550:

1-gal. unit coverage is 267 ft^2 @ 6 mils. WFT

Vinyl Ester Polymer Concrete No. 410:

Regular unit yields 1.3 ft^3

Large unit yields 2.6 ft^3

No. 410 must be cast at least 1-1/2 inches thick. A 2-inch thickness of No. 410 will require approximately 24 lbs. of material per square foot.*

*Quantity estimations do not include losses during application or normal density variations.

SETTING/CURING

VEPrime No. 550 can be topcoated after twelve (12) hours at 70ºF. If the duration before topcoating exceeds 24 hours, consult Sauereisen to discuss solvent-wipe procedures.

Vinyl Ester Polymer Concrete No. 410 will take an initial set in one (1) hour at 70ºF. Proper curing of No. 410 is critical to the serviceability of the completed structure; therefore, the substrate and material temperatures should not be allowed to fall below 60ºF until final cure has been achieved. Do not allow water or chemicals on the material surface for a minimum of 48 hours. For temperatures below 70ºF, cure a minimum of 72 hours prior to water or chemical exposure.

PACKAGING

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

Regular Unit:

Part A Hardener

0.053 pounds in a 2 ounce bottle

Part B Liquid

7.375 pounds in a 1 gallon can

No. 410 Regular unit:

Hardener: 1 - bottle includes 0.328 lbs.
Liquid: 1 - pail includes 16.5 lbs.
Aggregate: 3 - 55 lb. bags

Unit weight is approximately 181.8 lbs.

No. 410 Large unit:

Hardener: 1 - bottle includes 0.658 lbs.
Liquid: 1 - pail includes 33 lbs.
Aggregate: 6 - 55 lb. bags

Unit weight is approximately 363.7 lbs.

CLEAN-UP

All equipment should be cleaned by scrubbing with a stiff brush and acetone or MEK at the end of each working periodor when build-up becomes pronounced.

SHELF LIFE

Sauereisen No. 410 Liquid and Hardener have a shelf life of three (3) months when stored in unopened, tightly sealed containers in a dry location at 70ºF. Shelf life for the Aggregate component is one year. 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.**

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