

# SAUEREISEN

## VINYL ESTER - SILICA FILLED MORTAR NO. 400

Sauereisen Vinyl Ester Mortar No. 400 is used in the construction of floors, sumps, trenches, tanks, vessels and bleach towers in chemical processing; food & beverage plants; dairies; laboratories; textile, steel and pulp & paper mills. No. 400 has excellent resistance to oxidizing bleach solutions, mineral and organic acids, alkaline solutions and some organic solvents. When used with chemical-resistant masonry units and the proper membrane, No. 400 will protect concrete and steel substrates from chemical attack and physical abuse. No. 400 is a silica-filled vinyl ester mortar supplied in two parts - Powder and Liquid - which must be mixed together in the proper proportions prior to use.

Sauereisen Vinyl Ester Mortar No. 400 meets standards of the USDA for use in federally inspected meat and poultry plants.

### CHARACTERISTICS

- o Resistant to strong oxidizing agents, acids, alkalis and bleaches through 250°F (121°C).
- o Low absorption and shrinkage.
- o High bond, tensile and compressive strengths.
- o Rapidly develops physical properties ...initial set time is one hour 70°F.

### AREA PREPARATION

#### Temperature of Working Area

Maintain a temperature of 60° - 80°F on air, substrate, No. 400 Powder, No. 400 Liquid, and masonry units during mixing, application, and cure. Maintain materials and substrate between 70°F - 80°F for 48 hours prior to beginning work.

At temperatures below 60°F, the viscosity increases, application becomes more difficult and curing is retarded. When using No. 400 at temperatures between 50°-60°F, No. 400A Accelerator can be

### PHYSICAL PROPERTIES

Absorption (ASTM C-413)	0.27%
Application time at 70°F	
Working time	25 minutes
Tack free	1 hour
Bond strength (ASTM C-321)	> 300 psi, brick failure (21 kg/cm <sup>2</sup> )
Color	white
Compressive strength (ASTM C-306)	12,000 psi (844 kg/cm <sup>2</sup> )
Density (ASTM C-905)	120 pcf (1.922 gm/cm <sup>3</sup> )
Flexural strength (ASTM C-580)	4,500 psi (316 kg/cm <sup>2</sup> )
Maximum service temperature (ASTM D-648)	250°F (121°C)
Mix ratio (powder to liquid, by weight)	3.25:1
Modulus of elasticity (ASTM C-580)	1.90 x 10 <sup>6</sup> psi (1.33 x 10 <sup>5</sup> kg/cm <sup>2</sup> )
Shrinkage (ASTM C-531)	.30%
Tensile strength (ASTM C-307)	2,200 psi (154 kg/cm <sup>2</sup> )

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. Data should not be used for specification purposes.

added to the Liquid to hasten the cure of the mortar. Consult Sauereisen for specific recommendations. Above 80°F, working time of the material decreases. In higher temperatures it is recommended that the Liquid be cooled by placing the pail in a large container filled with water and ice or storing in a cool area.

#### Surface Preparation

All surfaces in contact with No. 400 must be clean, dry, and free of dust, dirt, grease, oil, and other contaminants. Surface prep should be in accordance with membrane requirements.

### APPLICATION

#### Mixing

Empty correct proportion of Liquid into a clean mixing vessel. Gradually add measured amount of Powder while mixing continuously with a trowel, hoe or mechanical mixer until mortar is uniformly blended to a workable consistency. After mixing, spread mortar in a thin layer onto a mortar pan to ensure the maximum working time of 25 minutes at 70°F.

The recommended mix ratio, parts by weight, is as follows:

Powder	Liquid
3.25	1

For application in colder environments, No. 400A Low Temperature Accelerator may be added to assist workability and cure as needed.

Material which has begun to set cannot be retempered and must be discarded. Never add Liquid or other materials to mixed material or any component part.

#### Installation

Trowel an average 1/8 inch thick bed joint of No. 400 directly on top of membrane or preceding course of brickwork. Apply the mortar by buttering on side and one head joint of each masonry unit. Set the masonry units in place and position by tapping to form an average 1/8 inch wide vertical joint.

## FINISHING

Strike extruded mortar off the face of the masonry unit with a trowel. For floors where appearance is a factor, waxed face units are recommended.

When waxed units are used, wait until No. 400 Mortar has achieved full cure (24 hours at 70°F) and clean face of masonry units using 60 psi (minimum) steam pressure at the nozzle.

## CLEAN-UP

All equipment should be cleaned with acetone or MEK before No. 400 cures. If removal is required after cure, consult Sauereisen for recommendations.

## SETTING/CURING

No. 400 is self-hardening due to a chemical reaction which occurs when the Powder and Liquid are mixed together. An initial set occurs in one hour at 70°F. The material is ready for service after 24 hours at 70°F.

Brickwork should not be subjected to water, steam or chemical environment before the mortar is completely cured.

## COVERAGE

### Estimating Table - material quantities per square foot

Common floor and tank brick quarry tile sizes

Length (in)	8	8	8	8	8	8	8	8	9	9	9	9	6	6
Width (in)	37/8	37/8	4	4	33/4	21/4	41/2	33/4	41/2	41/2	21/2	3	6	6
Thickness (in)	13/16	13/8	13/8	11/2	21/4	33/4	33/4	41/2	21/2	3	41/2	41/2	1/2	3/4
No. of Brick with														
1/8-in joints	4.43	4.43	4.3	4.3	4.58	7.47	3.83	4.58	3.42	3.42	6.02	5.05	-	-
No. of Brick with														
1/4-in joints	4.23	4.23	4.11	4.11	-	-	-	-	-	-	-	-	3.69	3.69
Lbs Mortar for														
1/8" side														
joints	0.54	0.63	0.62	0.67	1.05	2.49	1.56	2.10	1.00	1.20	2.70	2.37	-	-
Lbs Grout for														
1/4" joints	1.04	1.20	1.18	1.28	-	-	-	-	-	-	-	-	0.38	0.58
Lbs Mortar for														
1/8" setting bed														
or back joint							1.25							

The above quantity requirements are based upon physical dimensions of chemical-resistant masonry units and actual weight of mortar as determined by ASTM C-905. Actual usage rate will vary dependent upon scope of installation, experience of workmen, field conditions and other contingencies. Personnel using the above chart should, therefore, add an appropriate wastage factor.

## EXPANSION/CONTROL JOINTS

Joints are to be provided on 20 foot centerlines, around all fixed objects, peripheries of rooms and all points of movement in the base slab. Consult Sauereisen for product recommendations.

## PACKAGING

No. 400 Liquid: 30 lbs. in a 5-gal pail.  
 No. 400 Powder: 100 lbs. in 2 plastic-lined 6-gal pail, 50 lbs each.  
 No. 400A: 2 ounce bottle.

## SHELF LIFE

Sauereisen Vinyl Ester Mortar No. 400 should be stored in unopened, tightly sealed containers in a dry location at 70°F. Avoid freezing.

Under these conditions, the No. 400 Powder has a shelf life of six months, No. 400 Liquid has a shelf life of four months and the No. 400A Low Temperature Accelerator has a shelf life of 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.

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

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