

SAUEREISEN

FURAN RESIN MORTAR/GROUT NO. 21

Sauereisen Furan Resin Mortar/Grout No. 21 is a two-component bonding mortar/grout for chemical resistant masonry units and quarry tile. No. 21 and chemical resistant masonry units used with a suitable membrane form a complete system to protect concrete and steel substrates from attack by corrosive chemicals and physical abuse.

No. 21 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. 21 has excellent resistance to a wide range of acids (including hydrofluoric) alkalis and most solvents up to 350°F. No. 21 is not recommended for exposure to hypochlorites or oxidizing agents such as nitric, chromic acid or sulfuric acid greater than 50%. Refer to Sauereisen's Chemical Resistance Chart for specific service conditions.

No. 21 complies with ASTM C-395, "Standard Specification for Chemical-Resistant Resin Mortars," and ASTM C-658, "Standard Specification for Chemical-Resistant Grouts." It can be used in accordance with ASTM C-399, "Standard Practice for Use of Chemical-Resistant Resin Mortars," and ANSI/ASTM C-723, "Standard Practice for Chemical-Resistant Tile or Brick Grouts."

Sauereisen Furan Resin Mortar/Grout No. 21 is authorized by USDA for use in federally inspected meat and poultry plants.

CHARACTERISTICS

- Resists a wide range of acids, alkalis and most solvents.
- Withstands temperatures to 350°F.
- Authorized by USDA for use in federally inspected meat and poultry plants.

PHYSICAL PROPERTIES

Absorption (ASTM C-413)	<0.14%
Application time at 73°F	30 minutes
Bond strength (ASTM C-321)	> 200 psi (14.1 kg/cm ²)
Color	Black
Compressive strength (ASTM C-306)	12,000 psi (843.7 kg/cm ²)
Density (ASTM C-905)	
Mortar	120 pcf (1.92 gm/cm ³)
Grout	118 pcf (1.89 gm/cm ³)
Maximum service temperature (ASTM D-648)	350°F (176°C)
Mix ratio (Powder:Liquid by weight)	
Mortar	2.5 to 1
Grout	2 to 1
Shrinkage (ASTM C-531)	.5%
Tensile strength (ASTM C-307)	1,600 psi (112.5 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. Data should not be used for specification purposes.

AREA PREPARATION

Temperature of Working Area

Maintain a temperature of 50° - 80°F on air, substrate, No. 21 Powder, No. 21 Liquid, and masonry units during mixing, application, and cure. Maintain materials between 60°F - 80°F for 48 hours prior to beginning work.

At temperatures below 65°F, the viscosity increases and application becomes more difficult. No. 21 can be applied at temperatures as low as 50°F. However, if temperatures below 60°F are expected, use of Furan LT Additive is recommended. 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. 21 should be clean, dry, and free of dust, dirt, grease, oil, and other contaminants.

Surface preparation 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 or hoe until mortar is uniformly blended to a workable consistency, or use a mechanical means of mixing such as a Jiffy blade and drill motor or a bucket mixer. After mixing, spread mortar in a thin layer in a mortar pan to ensure maximum working time of 30 minutes at 73°F. Recommended mix ratio, parts by weight, is as follows:

	Powder to Liquid (parts, by weight)	
Mortar	2.5	1
Grout	2.0	1

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

Bricklayers Method

Trowel on a minimum 3/16 inch thick bed joint of No. 21 directly on top of the membrane or preceding course of brickwork. Apply the mortar by buttering one side and one end of each brick with a pointing trowel. Set the masonry units in place and position by tapping to form an average 1/8 inch wide vertical joint.

Tilesetters Method

The masonry units or quarry tile may have waxed faces, however, No. 21 is a water-washable grout. Place a quantity of the grout onto the surface of previously set masonry units or quarry tile. Spread and work grout across surface of the tile at a 45° angle to the joints using an American Olean K&R trowel. When filling the joints in this manner, take special care to work the grout to full depth of the joint. Consult Sauereisen for setting bed recommendation.

FINISHING

Bricklayers Method - Strike extruded mortar off face of masonry unit with a trowel.

Tilesetters Method - After filling the joints, remove the excess mortar from the surface of the masonry units or quarry tile using the trowel as a squeegee. If the masonry units or quarry tile have not been waxed immediately after striking the joints, dampen the face of the tile with water and wipe clean with water soaked burlap.

CLEAN-UP

All equipment should be cleaned with MEK before No. 21 cures. If removal is required after cure, consult Sauereisen for recommendations.

SETTING/CURING

No. 21 is self-hardening due to a chemical reaction which occurs when the Powder and Resin are mixed together.

An initial set occurs in 4 to 4-1/2 hours at 73°F - the material is ready for service after a three (3) day cure at 73°F. Brickwork should not be subject to water, steam or chemicals before the mortar is completely cured.

EXPANSION/CONTROL JOINTS

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

PACKAGING

Standard packaging for units of No. 21 includes 100 lbs. of Powder and 40 lbs. of Liquid.

No. 21 Liquid: 40 lbs. in a 5-gallon pail.

No. 21 Powder: (2) 50-lb. bags

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)	3 ⁷ / ₈	3 ⁷ / ₈	4	4	3 ³ / ₄	2 ¹ / ₄	4 ¹ / ₂	3 ³ / ₄	4 ¹ / ₂	4 ¹ / ₂	2 ¹ / ₂	3	6	6
Thickness (in)	1 ³ / ₁₆	1 ³ / ₈	1 ³ / ₈	1 ¹ / ₂	2 ¹ / ₄	3 ³ / ₄	3 ³ / ₄	4 ¹ / ₂	2 ¹ / ₂	3	4 ¹ / ₂	4 ¹ / ₂	1 ¹ / ₂	3 ¹ / 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, brick warpage and tolerances, experience of workmen, field conditions and other contingencies. Personnel using the above chart should, therefore, add an appropriate wastage factor.

Where setting bed or side joint is required, add side joint material requirements to setting bed or back joint material requirements

SHELF LIFE

Sauereisen Furan Resin Mortar/Grout No. 21 Liquid and Powder have a shelf life of one (1) year when stored in unopened, tightly sealed containers in a dry location at 70°F. 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 non-conforming goods at our factory or, at our sole option, to repayment of the purchase price of non-conforming goods.

☐ **Distributors and agents in major cities throughout the world. Consult manufacturer for locations.**

☐ **Sauereisen also produces inorganic compounds for assembling, sealing, electrically insulating and grouting.**

SAUEREISEN ...since 1899

160 Gamma Drive
Pittsburgh, PA 15238-2989 USA
Phone 412/963-0303 Fax 412/963-7620
www.sauereisen.com