SAUEREISEN

SEWERSEAL™ F-170

Sauereisen SewerSeal™ No. F-170 is a fiber reinforced, 100% calcium aluminate bonded cementitious corrosion resistant liner and water infiltration barrier for use in wastewater collection systems. The product combines 100% calcium aluminate cement with fiber reinforcing and finely graded inert aggregate, thereby offering corrosion resistance to mild acids and alkalies.

SewerSeal™ F-170 seals and resurfaces deteriorated masonry and concrete structures. Typical applications include manholes, wet wells, lift stations, and pump stations common to municipal wastewater. This product also exhibits high strength to withstand loads imposed upon underground infrastructure.

CHARACTERISTICS

- Apply by spin cast, spray or trowel
- Moisture tolerant
- Corrosion resistant
- Low permeability
- Fiber reinforced for added durability

AREA

Temperature of Working Area

Maintain a temperature of 50º - 90ºF on air, substrate and material during mixing, application, and cure.

At temperatures below 60ºF, the application becomes more difficult and curing is slower. Above 80ºF, the working time decreases

Surface Preparation

The first step in any masonry rehabilitation is proper preparation of the substrate. For concrete substrates, refer to SSPC-SP13/NACE 6"Surface Preparation of Concrete" for detailed guidelines.

For proper adhesion, the substrate must be clean and free of all contaminants. Surfaces which are contaminated with oils or grease must be thoroughly cleaned ~~of~~ to remove contaminants prior to beginning recommended surface preparation.

PHYSICAL PROPERTIES

Compressive strength (ASTM C109)	
1 day	7,000 psi (482 kg/cm^2)
7 days	8,200 psi (555 kg/cm^2)
28 days	9,600 psi (662 kg/cm^2)
Density (ASTM C905)	136 pcf (2.18 gm/cm^3)
Flexural strength (ASTM C293)	
7 days	1,900 psi (133.6 kg/cm^2)
Freeze/Thaw (ASTM C666), 300cycles	Excellent durability, No physical damage
Mix ratio (powder to water, by weight)	7.1 to 1
Permeability (AASHTO T-277) (ASTM C1202)	50 coulombs
Shear bond strength @ 28 days (ASTM C882)	3200 psi (220 kg/cm^2)
Shrinkage (ASTM C596 @ 85% R.H.)	
7 days	0%
28 days	0%
Tensile strength (ASTM C496)	
7 days	800 psi (56.24 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 is subject to reasonable deviation.

All contaminants, debris, loose concrete, loose masonry and damaged joints must be removed. The recommended methods of surface preparation are 5000 psi minimum hydro-blasting or abrasive blasting. The surface preparation should remove laitance, contaminants or loose particles and ~~to~~ produce a clean hard surface with a minimum 4-6 CSP per ICRI 310.2 on concrete surfaces. All standing surface water should be removed prior to applying the F-170. To ensure maximum adhesion and to prevent dehydration of the F-170 at substrate interface, the concrete or masonry should be thoroughly dampened with water per Surface Saturated Dry (SSD) standards prior to application. If concrete cannot be dampened or an unusual stress condition exists, a concrete bonding agent is recommended.

Once the substrate has been properly prepared, active water leaks should be stopped with either Sauereisen InstaPlug F-180 or Hydroactive Polyurethane Grout F-370.

Where necessary, damaged areas should be rehabilitated prior to application of the F-170 with a Sauereisen cementitious Restokrete Resurfacer.

APPLICATION

Mixing

Mixing should be done mechanically with a slow speed mortar mixer or drill motor with a "Jiffy" type mixing blade to obtain a uniform consistency. The mixing equipment must be clean and free of contaminants, especially Portland cement-based materials. Batch size will be governed by the area to be covered, the number of workers applying the material, temperature of the area and the speed with which it can be placed.

Sauereisen recommends that powder and water ratios are accurately measured prior to mixing. When water is measured in the field by volume, the approximate amount per 50-lb. bag of powder is in the range of 107 fluid ounces (3.3 quarts / 3.16 liters) to 122 fluid ounces (3.8 quarts). / 3.61 liters).

Pour the entire amount of potable water into the mixing container and add the powder slowly, mixing continuously to avoid entrapped air. Mix slowly and thoroughly for 5 minutes to a uniform consistency. Inadequate mixing or addition of more water will decrease physical properties and may cause cracking, excessive shrinkage and disbondment.

APPLICATION

Installation

Sauereisen SewerSeal™ No. F-170 is typically applied by spin cast or straight shot spray methods within manholes and other structures. In manholes this allows application to proceed from ground level. In structures other than manholes applicators may choose to apply SewerSeal™ No F-170 by a straight-shot spray method or by trowel.

Using a suitable material pump and spin-caster nozzle with internal air motor or straight-shot nozzle, apply a uniform coat of SewerSeal™ to the required thickness. The minimum thickness per coat is 1/2-inch. Trowel applications should be applied at ½ inch per layer.

For delivery of material to the spincaster, a pump must be utilized. Sauereisen recommends trailer-mounted pump rigs equipped with a 16-hp motor, mortar mixer and agitating feeder. These types of rigs may be sourced through the Putzmeister, RFI and ChemGrout Companies.

Sauereisen SewerSeal™ No. F-170 may also be used as a castable Polymer Concrete* with the addition of five (5) pounds of 3/8 inch clean pea gravel per 50 pounds of SewerSeal powder.

** Consult Sauereisen for specific design and mixing recommendations.*

SETTING/CURING

Proper moist curing of No. F-170 is critical to the serviceability of the completed structure. No. F-170 has an initial set in 90 minutes at 70ºF. A final set is achieved in 2 1/2 hours at 70ºF, (ASTM C-403).

No. F- 170 may be top coated with a SewerGard™ lining system after 8 hours at 70ºF.

COVERAGE

When mixed at the proper ratio of powder and water, a bag of No. F-170 will yield the following:

0.42 ft^3 per 50 lb. bag -OR-
10 ft^2 per bag at a thickness of 1/2-inch.

CLEAN-UP

All equipment should be cleaned with a stiff brush and clean water at the end of each working period or when build up becomes pronounced.

PACKAGING

No. F-170 is packaged in 50-lb. moisture resistant bags on plastic wrapped pallets.

SHELF LIFE

Sauereisen SewerSeal™ No. F-170 has a shelf life of one (1) year when stored in unopened, tightly sealed bags in a dry location at 70ºF. If there is a doubt as to the quality of the materials, consult Sauereisen.

CAUTION

Consult 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.

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