

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

SewerSeal™ commonly 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 exhibits high strength to withstand loads imposed upon underground infrastructure.

CHARACTERISTICS

- o Pumpable, Sprayable and Castable
- o Apply by spincast, spray or trowel
- o Moisture tolerant
- o Corrosion resistant
- o Low permeability
- o Fiber reinforced for added durability

AREA PREPARATION

Temperature of Working Area

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

At temperatures below 65°F, the application becomes more difficult and curing is slower. Above 80°F, 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.

In order for any material to adhere, the substrate must be clean and free of all contaminants. Surfaces which are contaminated with oils or grease must be chemically cleaned or scarified 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 chemicals, debris, and loose concrete must be removed. The recommended method of surface preparation is 5000 psi minimum hydroblasting or sandblasting. Hydroblasting should be utilized to remove laitance, contaminants or loose particles and to produce a clean hard surface. 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 should be thoroughly dampened with water prior to application.

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. To insure maximum adhesion and prevent dehydration of F-170 at the substrate interface, the concrete should be thoroughly dampened with water prior to application. If concrete cannot be dampened or an unusual stress condition exists, a concrete bonding agent is recommended. Consult Sauereisen for specific recommendations.

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. 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 weighed 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 until uniform consistency. Inadequate mixing or addition of more water will decrease physical properties and may cause cracking, excessive shrinkage and disbondment.

APPLICATION

- continued

Installation

Sauereisen SewerSeal™ No. F-170 is usually applied by spincast methods within manholes. This allows application to proceed from ground level. In certain situations, applicators may choose to apply SewerSeal™ No. F-170 by a straight-shot spray method or by trowel.

Using a suitable material pump and spincaster 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.

For delivery of material to the spincaster, a pump will 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 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 70°F. A final set is achieved in 2 1/2 hours at 70°F, (ASTM C-403).

No. F-170 may be topcoated with a SewerGard™ lining system after 8 hours at 70°F.

COVERAGE

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

0.42 ft³ per 50 lb. bag -OR-
10 ft² 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 six (6) months when stored in unopened, tightly sealed containers in a dry location at 70°F. 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.

- 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.**

SAUEREISEN ..since 1899

160 Gamma Drive
Pittsburgh, PA 15238-2989 USA
Phone 412.963.0303 Fax 412.963.7620
www.sauereisen.com