

# SAUEREISEN

## UNDERLAYMENT NO. F-120

### PHYSICAL PROPERTIES

	Trowelable	Castable	Gunite
Abrasion Resistance (ASTM C-704)			
Volume loss, cm <sup>3</sup>	5.14 cm <sup>3</sup>	1.66 cm <sup>3</sup>	No data
Volume loss, %	0.65%	0.16%	"
Application time			
Working time at 70°F	30 minutes	30 minutes	--
Initial set at 70°F	3 hours	3 hours	1 hour
Compressive strength (psi)			
@ 24 hours	4,500	1,900	2,500
@ 7 days	5,000	7,000	5,000
@ 14 days	5,000	7,000	5,000
@ 28 days	6,000	7,000	6,000
Density (pcf)	137	148	144
Mix ratio (powder to water, by weight)	9:1	11:1	--

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 Underlayment No. F-120 is a fast-setting, high early strength, Portland-based resurfacing material available in three formulations - Trowelable, Castable or Gunite. Selection of material is dependent upon concrete condition and whether application is on vertical, horizontal or overhead surfaces.

Where concrete deterioration is less than 1/2 inch depth and on vertical or overhead surfaces, Underlayment No. F-120 Trowelable is recommended for resurfacing to pre-existing planes, establishing elevations, or patching substrate voids or irregularities which can affect performance of chemical-resistant lining systems. For those areas that exceed 1/2 inch of deterioration or where troweling would be cost prohibitive, Underlayment No. F-120 Castable or Gunite grade is recommended depending on the preferred method of application.

Underlayment No. F-120 is mixed with potable water for a safe, easily applied, fast-setting material. Installation of a chemical-resistant lining may proceed after five (5) hours at 70°F of No. F-120 application, minimizing downtime.

### CHARACTERISTICS

- High early strength.
- Quick set allows fast turnaround.
- Easy application on vertical and overhead surfaces.
- Excellent freeze-thaw durability... (Durability factor = 87.2 via ASTM C666-A)
- Topcoat in 5 hours at 70°F.

### AREA PREPARATION

#### Temperature of Working Area

For optimum conditions, maintain a temperature of 60°-90°F on air, substrate, water and No. F-120 Powder during mixing, application and cure.

The Underlayment components should be maintained at 65°F to 85°F for 48 hours prior to beginning work to ensure ease of application.

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

Above 90°F, the material working time decreases. It is recommended that the material components be stored in a cooler area prior to mixing.

Shading the substrate and using ice water to cool mixing equipment is not uncommon. Special consideration should be taken when elevated temperatures or low humidity conditions are present during application. Consult Sauereisen for recommendations.

#### Anchoring System

When No. F-120 is applied on vertical or overhead surfaces at a thickness greater than 1 inch it must be reinforced or anchored. "T" type anchors or 2 inch x 2 inch mesh are suitable to secure the No. F-120 Castable or Gunite grade materials. Consult Sauereisen for recommendations on proper reinforcing or anchoring systems.

#### Surface Preparation

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

All surfaces to receive Underlayment No. F-120 must be properly designed and capable of withstanding imposed loads. Surfaces must be free of dust, loose particles, laitance, oil, grease, chemical contaminants, and previously applied coatings.

Concrete surfaces which are contaminated with form oils or grease must be chemically cleaned or scarified to remove contaminants prior to beginning recommended surface preparation.

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 Underlayment No. F-120. To ensure maximum adhesion and to prevent dehydration of No. F-120 at 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 recommendations.

*New Concrete* - Concrete receiving Sauereisen Underlayment No. F-120 must have sufficient strength to support cured material.

*Old Concrete* - All chemically attacked concrete must be removed and substrate chemically cleaned if necessary.

Following hydroblast, all active hydrostatic leaks must be stopped by use of Sauereisen InstaPlug No. F-180 and all structural defects, voids, or cracks in substrate must be repaired prior to No. F-120 application.

*Brick* - Remove oil, grease, and other contaminants that may inhibit bond. Hydroblast mortar joints to a depth of 1/2" to remove all loose material and to provide a clean, firm surface. Loose brickwork must be regouted with appropriate Sauereisen mortar to ensure structural integrity and all active hydrostatic leaks must be stopped prior to application of No. F-120.

## EXPANSION/CONTROL JOINTS

Control joints should only be used when No. F-120 is placed over concrete surfaces where existing expansion/control joints are present. Consult Sauereisen for recommendation.

## TROWELABLE/CASTABLE APPLICATION

### Mixing

Mixing should be done mechanically with a slow-speed mortar mixer or drill motor with a "Jiffy" type mixer blade to obtain a uniform consistency. The mixing equipment must be clean and free of Portland cement or other contaminants. The size of the batch 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.

Selection of No. F-120 Trowelable or Castable grade will be dependent upon extent of concrete deterioration; whether the application is on vertical, horizontal, or overhead surfaces; and degree of slope required if resurfacing to pre-existing levels.

Sauereisen recommends that Powder and water ratios are accurately weighed prior to mixing. If water must be measured in the field by volume, the approximate amount per 50 lb. bag of Powder is 83.2 fluid ounces (2.46 liters) for the Trowelable Grade and 67.8 fluid ounces (2.06 liters) for the Castable Grade.

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 at least 5 minutes until uniform consistency. Inadequate mixing or addition of more water will decrease physical properties.

Do not add sand, gravel, Portland cement or other additives to No. F-120 material. Remove 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

*Trowelable* - Underlayment is installed by trowel. A maximum 1/2 inch thickness may be used on vertical or overhead. Where thickness exceeds 1/2 inch, consult Sauereisen.

*Castable* - After mixing, place No. F-120 Castable onto properly prepared substrate to specified thickness. If forms are required, they should be constructed of firmly braced wood or metal which has been given a light coating of form release agent. The form release agent must prevent No. F-120 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. Seal forms placed over horizontal rough surfaces.

The form and screed systems should be strong enough to retain No. F-120 Castable in place without deformation. Forms and screeds may be removed after set has occurred and No. F-120 has sufficient strength to support itself.

Do not impose loads until final set has been achieved. Lower temperatures will require longer cure periods before removing forms.

Cold joints require a liberal priming of the previously placed material with epoxy bonding agent. The bonding agent should not be allowed to dry prior to placing the freshly mixed Underlayment No. F-120 Castable material.

## GUNITE APPLICATION

### Predampening

Underlayment No. F-120 Gunite grade should be predampened by adding 1 1/4 pints of potable water to each 50 lbs. of Powder. This can be achieved by mixing in a rotating blade mixer equipped with a water meter. Mix thoroughly to distribute moisture throughout the Powder. The predampened No. F-120 Gunite material must be gunited within a 10 minute period after mixing. Avoid overdampening as this will cause premature set and weaken strength of the cured material.

## Installation

The predampened No. F-120 should be applied with a standard double chamber or rotary-type gunite machine. Potable water should be pumped to the nozzle through a piston-primed airless pump to assure a constant 80 psi pressure at the nozzle. Normal adjustments may be made to get the correct proportions for good adhesion without slipping or slumping.

After application of F120G, no material should be placed over rebound. All rebound and other loose material on surfaces already gunited should be removed if a chemical-resistant topcoat will be added. DO NOT REUSE REBOUND.

## FINISHING

*Castable* - Pour in place and screed to desired height. A trowel can be used to distribute material. Broom or brush finish to provide a more desirable bonding surface.

*Trowelable* - After placement of material by trowel, apply a broom or brush finish to provide a more desirable bonding surface.

*Gunite* - Underlayment No. F-120 Gunite hardens rapidly by a hydraulic-setting action. Troweling can be used to produce desired finish. Troweling should be done immediately after guniting otherwise it will damage the surface of partially set cement.

## COVERAGE

### Quantities\* required per square foot at one (1) inch thickness.

Type	Amount (Lbs.)
Trowelable	11.4
Castable	12.3
Gunite	12

\*Quantities do not include losses during application or normal density variations.

## SETTING/CURING

Proper curing of No. F-120 is critical to the serviceability of the completed structure. No. F-120 may be top coated after it's initial set in 5 hours at 70°F. Final set is achieved at 24 hours at 70°F.

Underlayment No. F-120 must be properly cured in a high humidity environment (fog spray or equivalent). A Sauereisen curing compound may be utilized. If special condition exists, please consult Sauereisen's technical service department for additional information.

## CLEAN-UP

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

## PACKAGING

Underlayment No. F-120 is packaged in 50 lb. moisture-resistant bags on plastic wrapped pallets.

## SHELF LIFE

Sauereisen No. F-120 has a shelf life of six (6) months when stored unopened 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 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.**

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

**SAUEREISEN** ...since 1899

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