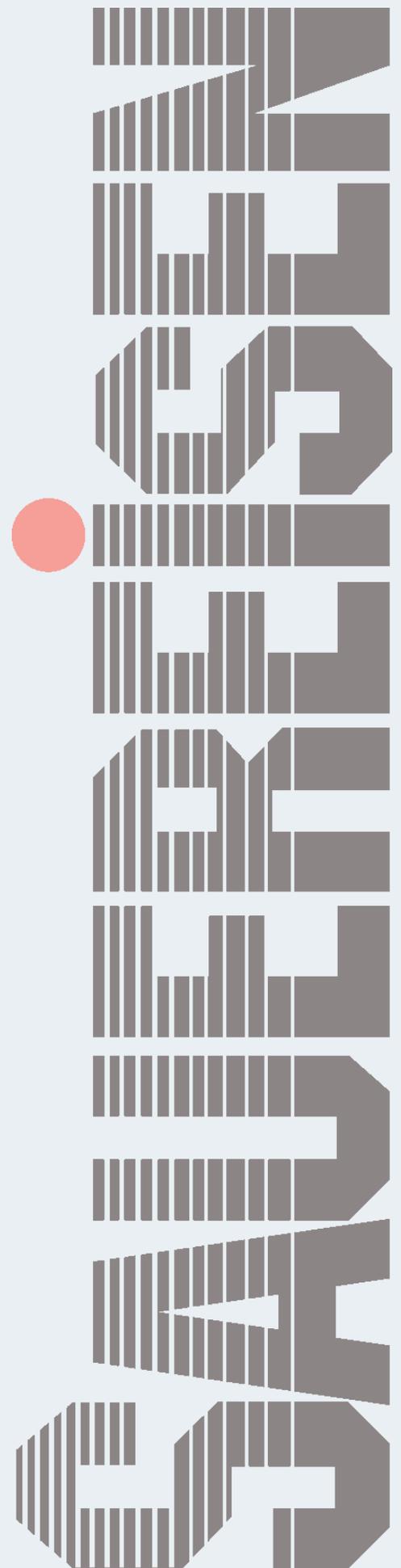


Engineered Solutions for the Restoration and Corrosion Protection of Wastewater Structures



Wastewater

Infrastructure
Rehabilitation &
Protection



We Have Solutions for...

Corrosion and Inflow & Infiltration

Sauereisen understands corrosion. Our history of success in providing protective lining systems in aggressive chemical environments throughout diverse industries transferred to wastewater. The SewerGard® family of products was developed specifically to withstand the hydrogen sulfide and sulfuric acid common to microbiologically induced corrosion. Our SewerGard® formulations offer the chemical resistance, low permeability and strength necessary to meet the demands of wastewater infrastructure corrosion and I&I challenges

Likewise, our expertise in concrete and substrate repair has served our customers well in addressing the problems of water inflow and infiltration (I&I). To prevent the costly effects of I&I, Sauereisen offers cementitious and epoxy materials for spot repairs and full surface rehabilitation and sealing.



SewerGard® 210S in an influent channel

Collection Systems and Treatment Plants

Sauereisen materials are frequently specified throughout both wastewater collection systems and treatment plants. In collection systems, common applications are found in manholes, lift stations, interceptors and medium to large diameter tunnels and pipe.

In sewage treatment plants, Sauereisen products protect the surfaces of wet wells, headworks, aeration basins, digesters, grit chambers, sedimentation tanks, clarifiers and any other structure that comes in contact with the wastewater stream. Sauereisen products are also used in chemical containment, secondary containment and process areas.



SewerGard® 210S applied in a tunnel

Restoration and New Construction

Whether your project is new construction or rehabilitation, Sauereisen materials are available in various application grades and thicknesses to meet or exceed project demands. Methods of installation include trowel, spray (both conventional airless and plural component), spincast or roller.

Sauereisen's diversity of knowledge in both cementitious and organic polymers lends itself to understanding the properties required for those products used in concrete surface restoration. Consequently, we offer products to enable a return of structural integrity that are formulated for compatibility with our SewerGard® corrosion resistant epoxy lining materials. Sauereisen's engineered systems are key to a successful installation, providing maximum service life.



SewerGard® 210X applied in a digester

Corrosion Experts

SEWERGARD®

ULTIMATE CORROSION PROTECTION

210

Specialized Corrosion-Resistant Lining

Sauereisen's renowned SewerGuard® 210 lining systems are unique polymer lining systems that have over 30+ years of success in municipal wastewater environments preventing infrastructure failures and maximizing asset service life. It is specifically formulated for municipal wastewater environments and offers an economical solution to Microbiologically Induced Corrosion (MIC). SewerGuard® resists high concentrations of sulfuric acid and other treatment chemicals common to municipal wastewater systems. It exhibits moisture tolerance allowing it to bond directly to damp concrete. SewerGuard® 210 systems are 100% solids and environmentally compliant - with no VOC's.

SewerGuard® is available in multiple formulations to meet any project demand; Trowelable, Sprayable (including Plural Component), Rotary Spray, Glaze, Fast-Set, High Strength and High Build. Each variation is engineered specifically to maximize the most current application methodology.

SewerGuard® 210XHB - High Build, High Strength formulation is a fast setting, high-strength lining that enables highbuild capabilities from 10 to 300 mils per coat. Applications range from manholes and lift stations to tankage, structural steel, digesters, clarifiers, and secondary containment. Installation of SewerGuard® 210XHB is completed using plural component spray equipment.

SewerGuard® 210X - High-Strength formulation is a high-strength lining that enables high-build capabilities wherever extreme corrosion conditions exist. It is easily applied by plural-component or conventional airless spray equipment up to 65 mils per coat, or greater depending upon surface conditions, application technique, application equipment and exposure.

SewerGuard® 210T - Trowelable formulation is an aggregate-filled epoxy. Its nonsagging consistency makes it the material of choice for vertical and overhead surfaces or where access is limited. Standard application thickness is 1/8 inch.

SewerGuard® 210S - Sprayable formulation is fiber-reinforced for a high degree of durability. 210S allows quick installation in a single 60 mil coat when applied by standard airless equipment. It is ideal for large-scale applications.

SewerGuard® 210RS - Rotary Spray formulation is a pumpable grade of SewerGuard® specifically designed to line the interior of an 8' deep manhole from street level in less than 20 minutes. 210RS is applied up to 125 mils using typical rotary application equipment.

SewerGuard® 210GL - Glaze formulation is a two-component, chemical resistant epoxy for use as a (20 mil) topcoat or a stand-alone lining up to 60 mils per coat. This coating forms a smooth surface that is easy to maintain and cosmetically appealing. Easily applied by plural-component, conventional airless spray equipment or hand-applied by roller.

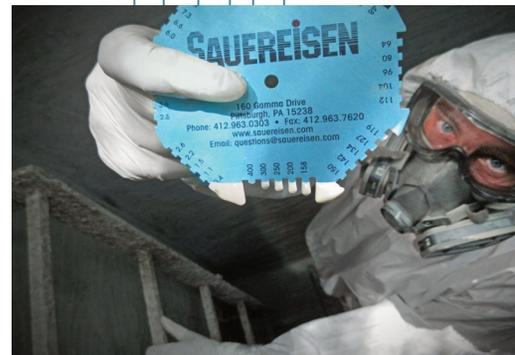
SewerGuard® 210FS - Fast-Set formulation is a fast-setting epoxy material engineered for use in municipal wastewater environments. It is particularly useful for the protection of manhole benches, inverts and other structures which are subject to very little maintenance downtime.



SewerGuard® 210T



SewerGuard® 210S



SewerGuard® 210XHB applied up to 300+ mils

Due to the nature of Microbiologically Influenced Corrosion, deterioration in manholes tends to be greater in the vapor zone. SewerGuard® is typically specified along with compatible Sauereisen underlayments where rough surfaces and open mortar joints are prevalent.



Substrate Repair Materials and Filler Compounds

Where concrete deterioration is severe, structural integrity may need to be restored prior to the application of a Sauereisen SewerGard® lining system. Sauereisen's full line of underlayments are the ideal substrate repair materials for the job.

RestoKrete® Substrate Resurfacer® F-121 is a Portland-based cementitious repair material that is pumpable for a wet spray application and may be applied at a thickness of greater than one-inch (1,000 mils) without deformation or sagging. F-121 may be applied by traditional straight-shot method, or in manholes from street level utilizing standard rotary application equipment. If equipment is not available, the material can be applied with a standard mason's trowel to desired thickness. F-121 may be top coated after 8 hours at 70°F.

RestoKrete® Underlayment F-120 is a fast-setting, high early strength resurfacing material. It is composed of a Portland cement and modified calcium aluminate blend. Applied by gunite, trowel or cast-in-place, its benefit is a quick cure devoid of out-gassing, which permits a topcoat of SewerGard® after 5 hours. Material selection is made to accommodate depth and extent of repairs, contractor equipment and access to the job site. The F-120 is available in unique gunite, troweable, and castable formulations to meet jobsite requirements.

RestoKrete® Underlayment F-120FS (Fast-Set) is a Portland-based resurfacing material that develops strength very rapidly and is ideal for rebuilding deteriorated or missing manhole benches and inverts.



RestoKrete® Resurfacer



RestoKrete® F-121 applied by shotcrete



RestoKrete® 208 applied by trowel



Bughole filling with RestoKrete® 209

RestoKrete® Epoxy Mortar 208 is a substrate repair material and waterproofing barrier for the prevention of inflow and infiltration in concrete or brick substrates. As an epoxy-based mortar, it is used specifically for resurfacing applications requiring a heavier material thickness with tenacious bonding properties. The 208 is specifically recommended as the underlayment for those acid environments where a cementitious material is difficult to use. 208 is applied by spray equipment or hand-applied by trowel and it is designed to be compatible with Sauereisen's epoxy and urethane topcoats.

RestoKrete® Epoxy Filler Compound 209 is an epoxy formulation specifically designed to fill bug holes, minor voids, irregularities and air pockets in concrete and steel. The filler compound provides a smooth surface for the application of Sauereisen SewerGard® linings and coatings. 209 is suitable for application over damp or dry concrete surfaces, it is easy to apply and can be top coated in 3 hours.

RestoKrete® Filler Compound 209HB (High-Build) is an epoxy material specifically designed to refinish large surfaces and open joints within concrete. 209HB is for filling voids larger than typical concrete bug-holes. It's high-build formulation allows for thicker applications up to one inch, including bolt pockets and segment seams. 209HB provides a smooth finish and appropriate bonding surface for SewerGard® epoxy topcoats.

RestoKrete® Epoxy Filler Compound 209FS (Fast-Set) is a quick-setting formulation for filling bug holes, voids, irregularities and air pockets in concrete and steel. 209FS may be top-coated with a SewerGard® lining after only 1 hour.

Preventing Inflow and Infiltration

Wastewater collection systems do not have to be compromised by corrosion to require attention. The costs associated with treating the inflow and infiltration (I&I) of groundwater can be staggering. Sauereisen offers several products to eliminate I&I.

SewerSeal™ F-170 is a high-strength, 100% calcium aluminate bonded product to be used as a waterproofing and corrosion-resistant lining for sewage collection structures. This material prevents infiltration and resists mild acids and alkalis common to concrete or brick manhole structures. F170 is designed for rotary and straight hot spray or trowel applications, and can be applied at various thicknesses in a single pass.

SewerSeal™ F-170FS (Fast-Set) is a rapid-setting variation of the original F-170 formula that is ideal for quickly repairing damaged concrete, filling voids, and patching manhole benches and inverts while minimizing or eliminating costly bypass pumping.

InstaPlug™ F-180 is a rapid-setting, hand-applied hydraulic water plug material for sealing active water leaks and filling small voids prior to the application of additional structural repair materials or corrosion-resistant barrier.

H2OPruf™ F-190 is a spray- or brush-applied two component crystalline cementitious waterproofing lining that prevents moisture seepage into below-grade surfaces. Two 1/16-inch coats will withstand water pressure up to 62 feet of water head pressure, while three coats will seal a substrate exposed to 100 feet of water head pressure.

Hydroactive Polyurethane Grout F-370 is an injection-applied chemical grout material that expands when it meets any source of moisture before it cures. F-370 bonds tenaciously to wet/dry concrete (substrate), effectively sealing cracks or voids and stabilizing soil erosion. F-370 is pumped through pre-placed injection packers (available from Sauereisen). The F-370 cartridge materials are also provided by Sauereisen in an easy-to-use, 22-ounce dual-packaging system for use in standard dual-cartridge guns.

Manhole ChimneySeal™ F-88 is an elastomeric lining composed of fiber-reinforced, asphalt-modified urethane. It is applied by hand to the chimney sections of manholes to prevent water inflow. As a high solids elastomeric, ChimneySeal™ maintains excellent elasticity and adhesion over a temperature range of -30°F to 250°F. It accommodates the environmental stresses and thermal movement of nearly all climates common to manhole chimneys or risers constructed with brick and mortar or concrete segments.



H2OPruf™ F-190 applied with brush finish

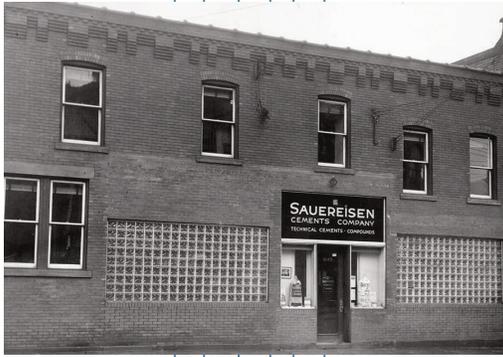


Dual-cartridge F-370



Application of F-88 ChimneySeal™

Material Specialists



Advanced Material Specialists Since 1899

Sauereisen's roots run deep in the field of protective linings and restorative materials. We bring decades of experience to preserving the assets of the wastewater industry. Our tradition of innovation, dating to 1899, continues today.

Our mission is to deliver quality products and services that add value to the stakeholders of municipal and industrial infrastructure. In doing so, we serve facility owners, engineers and contractors that rely on dependable solutions for aggressive environments. Ultimately, this benefits both taxpayers and the environment.

At Sauereisen, our engineered-systems approach to each project has proven successful in both the collections realm and the treatment arena. Where there are aggressive conditions that threaten the longevity of concrete, brick or steel infrastructure, there is at least one Sauereisen system to offer protection...and peace of mind.



SAUEREISEN

We've Got You Covered

Sauereisen brings decades of experience in developing and manufacturing corrosion protection and specialty materials for the Wastewater Industry.

We continue our tradition of innovation ...**Since 1899**

Contact us for a copy of our SewerGard® and SewerGard® Industrial Chemical Resistance Charts. Our Chemical Charts indicate the general resistance of specific materials to a wide range of chemicals based on testing and experience. Specific recommendations based on individual circumstances though, should be obtained from your Sauereisen representative.

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