New Materials for Preserving Infrastructure from Sauereisen

Introduction – Suppliers of restorative products for water and wastewater infrastructure continue to proliferate. The experience and credibility of new entrants varies. Sauereisen, Inc. of Pittsburgh, PA has been supplying specialty materials to industry since 1899. The municipal wastewater sector emerged as a primary market for Sauereisen cements and polymer linings in the 1980's. The company's expertise in corrosion lent itself to applications withstanding hydrogen sulfide and sulfuric acid common to the wastewater environment.

Today, Sauereisen is preparing an unprecedented round of product introductions to occur in the second half of 2011. The new offerings include substrate repair materials used to restore corroded concrete and specialized protective barriers designed to resist aggressive chemicals.

The new solutions from Sauereisen include the following:

SewerGard 210X – Case histories of the original Sauereisen 210 corrosion-clad polymer lining span 20+ years. One of the first significant applications occurred in the Jefferson Parish Lift Station in New Orleans, LA. The epoxy polymer lining lasted as long as the structure itself, eventually completing its service life upon the aftermath of Hurricane Katrina.

A new version of SewerGard, Sauereisen's 210X, exhibits compressive strength exceeding 15,000 psi. This attribute appeals to specifying engineers seeking to draw direct comparisons among a myriad of protective linings. Manholes subjected to heavy stress represent a typical area where SewerGard 210X would be used. Sauereisen's 210X is also intended for preserving the concrete and steel infrastructure of wastewater treatment plants. In either area, the environmentally friendly nature of the product (100% Solids, Zero VOC's) offers additional benefit.

SewerGard 210G – Sauereisen's improved 210G is the next generation 'Glaze' version of SewerGard. It is one that may be applied via plural-component spray equipment to facilitate

rapid installation. Applicators appreciate the ability to forgo batch mixing of the 2-component product so that jobsite labor is reduced.

Another enhancement is the ability to build greater thickness. The prior version was specified strictly at 20 mils thick, typically for applications seeking a glossy topcoat over troweled or fiber-reinforced linings. The new SewerGard 210G is able to be sprayed at double the thickness for added durability when used as a stand-alone lining.

By combining the formula's greater thickness with the added convenience of plural component spraying, SewerGard 210G an attractive option for clarifiers, tanks, and structural steel at wastewater treatment plants.

RestoKrete 208 – Consistent with Sauereisen's expertise in combining organic and inorganic chemistries, this hybrid underlayment blends the bond strength of epoxy with the economy of cement. RestoKrete is a substrate repair material used in the process of restoring structural integrity to underground concrete. It would be installed prior to the application of a corrosion resistant topping such as Sauereisen SewerGard.

The high bond strength (withstanding over 1,000 psi by slant shear per ASTM C-882) and 800+psi tensile strength of RestoKrete 208 represents a significant upgrade from strictly cementitious underlayments. The epoxy element of the formulation makes it a strong option for the repair of brick or concrete surfaces found in tunnels or manholes. Since it offers benefit in restricting water infiltration as well, RestoKrete aids in the prevention of blisters that might otherwise occur in a protective topcoat.

SewerSeal F170 – Where a cement-based material is desired to serve as a stand-alone lining, many municipalities opt for calcium aluminates. SewerSeal F170 is a modification of Sauereisen's calcium aluminate lining that prevents negative-side water pressure from infiltrating underground infrastructure. The new formulation affords lower permeability and improved handling characteristics. Contractors appreciate the material's ability to be pumped and spincasted at greater thickness upon the walls of wet wells and manholes. SewerSeal withstands chemical-resistant service in areas subject to mild acids and alkalies.

ConoFlex 381 – Through a proprietary technology partnership, Sauereisen has introduced a new polyurethane lining with an impressive combination of elasticity and chemical resistance. ConoFlex 381 exhibits 40% elongation and very low water vapor transmission (0.012 grams per 100 in^2 at 35-40 mils thick). Due to the lining's flexibility and impermeability, it is recommended for use at treatment plants in containment areas and structural locations subject to corrosion. A variation of the product, No. 381.61, is NSF-approved for exposure to potable water. ConoFlex also carries a *BioPreferred* designation by the USDA based on the formulation's high content of renewable materials.

Conclusion – All together, these new materials by Sauereisen represent the expansion of its water/wastewater and underlayment product lines by roughly 25%. The company distributed a comprehensive internal launch package in July 2011 for the purpose of educating its representatives. In addition, continuing education of qualified applicators is on-going by the Sauereisen tech service team.