

Sulfuric Acid Today *Sulfuric Acid Exposure*

A major steel processing facility in West Virginia recently faced a significant challenge of rehabilitating its sulfuric acid production area used in the steel finishing operation. This 34' x 28' (952 sq.ft.) acid production area required rehabilitation due to corrosive acids and by-products attacking the concrete containment substrate.

A solution was sought for a protective system, which would combine the needed corrosion protection from an acidic environment and withstand physical abuse from continuous truck traffic during the unloading and distribution of raw materials. Conventional coating materials would not provide the service life expected. Sauereisen, Inc. of Pittsburgh, PA provided a solution that meets the demanding requirements. Sauereisen recommended a 100% Potassium Silicate Polymer Concrete applied at 3" to protect the floors, curbs, pump-pads and one foot up the side walls.

Sauereisen Acidproof Concrete No. 54 SG – Structural Grade is a potassium silicate castable refractory that provides outstanding performance in the most severe acidic environments and will withstand the physical abuse of continuous truck traffic with little maintenance.

After restoration of the foundation and structural concrete in this area, the contractor installed a suitable leak-proof, plastic, composite liner. A 125-mil thickness of Sauereisen No. 89 Membrane was sprayed over the area, including all rebar reinforcement used to secure the polymer concrete. No. 89 is single-component asphaltic mastic recommended as an impervious membrane under corrosion-resistant monolithic linings or acid-resistant brick masonry for the protection of metal or concrete substrates. Spray application with airless equipment results in a flexible coating resistant to acids, alkalies and salts.

After the membrane cured 24 hours, 60,000 lbs. of Sauereisen 54 SG - Structural Grade was installed by utilizing a continuous mixer. This enabled completion of the final stage of the project in less than a day. A continuous mixer allows for up to 20,000 lbs. of material to be mixed and applied in an hour provided access to the area is not limited.

With over 100 years in business, Sauereisen has provided corrosion-resistance solutions for diverse applications in many markets. The Company's polymer concretes, refractories, and protective coatings are regularly specified in the chemical, petrochemical, and power industries.

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