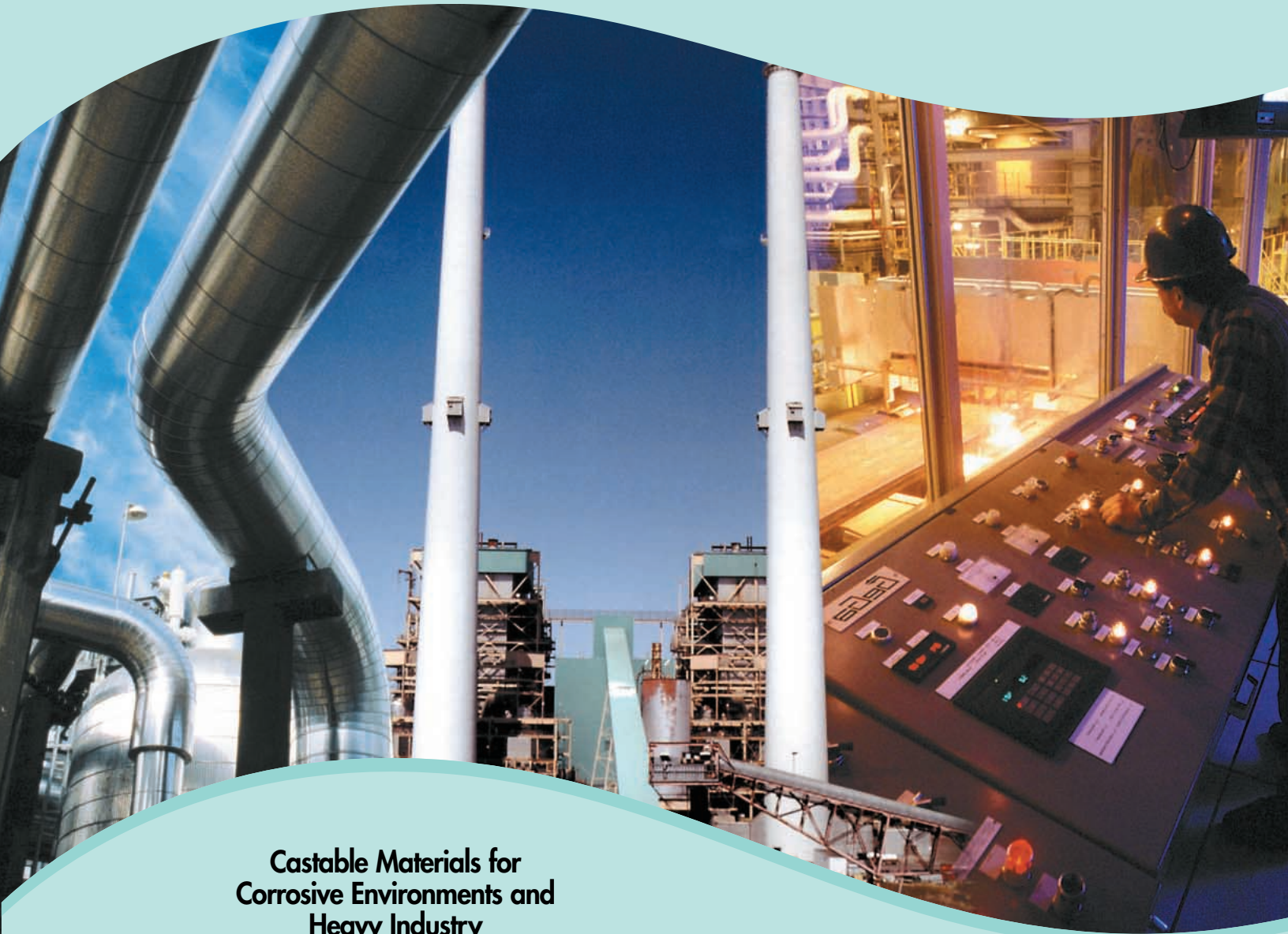




Chemical Resistant Polymer Concretes



**Castable Materials for
Corrosive Environments and
Heavy Industry**

EXTREME PERFORMANCE

Sauereisen has come a long way since 1899. Our original products were high temperature cements. These ceramic materials offered remarkable resistance to acids, too. The chemical-resistant nature of Sauereisen products has been expanded upon through decades of research and development. Over time, Sauereisen has earned the reputation as a leading manufacturer of corrosion-resistant refractories, coatings and linings. One of our newer technologies is polymer concrete...a castable material with chemical resistance.

STRENGTH AND CHEMICAL RESISTANCE PROLONG SERVICE LIFE

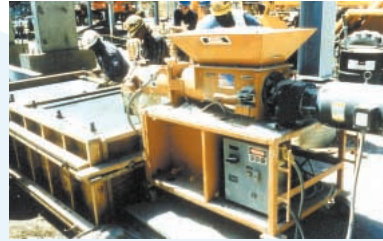
Polymer concrete is among the most durable of Sauereisen engineered systems. Imagine a material with five times the physical strength of standard Portland-based concrete. What if this material was castable like concrete but resistant to corrosive chemicals throughout its entire matrix? This is what Sauereisen offers.

Our heavy-duty castable materials combine the working properties of concrete with the durability of chemical-resistant polymers. The end product is a monolithic providing effective corrosion protection without being vulnerable to physical abuse. Perhaps the greatest benefit of polymer concrete is long-term performance comparable to that of a brick lining.



Polymer concretes exhibit working properties and application methods similar to standard Portland-based materials.

EASY INSTALLATION



Continuous mixing of polymer concretes accelerates production.

Standard mortar mixers and tools are used for mixing and placing Sauereisen polymer concrete. A familiarity with the working properties of basic concrete is all that is required.

Typical reinforcement is incorporated where appropriate. Pencil vibrators can aid consolidation of the material. Minimal finishing is required. The workability of polymer concrete makes it a good choice for the construction of sumps, trenches, floors, walls and structural supports.

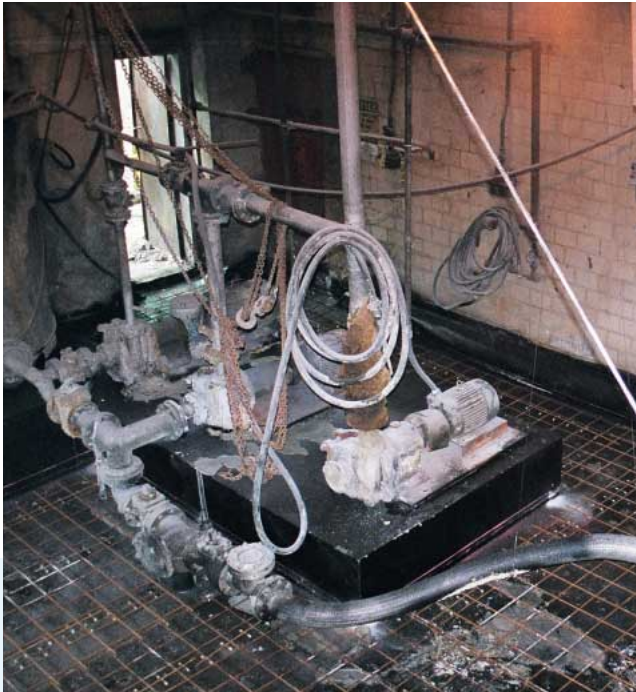
WHEN THERE'S NO TIME FOR DELAY

Sauereisen Polymer Concrete sets by a catalyzed reaction. The brief cure time allows for industrial infrastructure to be serviceable much sooner than the case where new concrete must hydrate and then be topcoated. Likewise, the labor-intensive construction of masonry systems beckons the need for expediency. Since extensive downtime translates to substantial costs, this makes polymer concrete a top choice where rapid turnaround is mandatory.



Tanks and trench sections can be pre-cast with polymer concrete.

Continuous mixing is often utilized to complete the placement of material even quicker. Mixing by this method delivers up to 20,000 pounds or 5 cubic yards of material per hour. For projects on an extra fast track, polymer concrete offers the versatility of being formed into pre-cast structures, too.



A foundation installation in an acid transfer facility illustrates reinforcement.

PRODUCT VERSATILITY & CHEMISTRIES

Sauereisen offers a variety of polymer concrete formulations. Whether the service environment includes full concentrations of sulfuric acid or immersion in strong caustic solutions, Sauereisen likely has an appropriate material. In addition, these products are engineered to withstand a broad spectrum of temperature thresholds.

Epoxies

As a group, the epoxy products offer low permeability and broad chemical resistance. Sauereisen epoxies exhibit strong bond strength and are comprised of 100% solids materials.

- *Epoxy Polymer Concrete No. 165* – A general purpose epoxy with excellent physical properties.
- *Epoxy NovolaK Polymer Concrete No. 265* – Popular for foundation construction, a novolac resin makes this our best epoxy for exceptional physical strength and resistance to a wide range of chemicals.

Vinyl Esters

In many cases, vinyl esters offer an upgrade to epoxy resins, particularly in the presence of bleaches and oxidizing solutions. Vinyl esters tend to be selected where specific chemicals exist and higher temperature resistance is required.

- *Vinyl Ester Polymer Concrete No. 410* – This economical vinyl ester provides additional resistance to heat and chemicals.
- *NovolaK Vinyl Ester Polymer Concrete No. 465* – An impermeable, fast-setting concrete offering superior heat and chemical resistance among organic materials.

Silicates

Sauereisen has modified its traditional potassium silicate refractories to provide the optimum acidproof concrete for castable applications.

- *Acidproof Concrete – Structural Grade No. 54SG* – Like its gunite-applied predecessor, this modified castable material withstands the highest temperature ranges and acid concentrations.



Pump pads exposed to acidic conditions are ideal for polymer concrete.

DEMANDING APPLICATIONS

The following structures frequently benefit from the durable protection of Polymer Concrete.

- Pump Pads • Trenches • Chimney Foundations
- Process Floors • Loading/Unloading Areas • Sumps
- Support Columns • Walls • Piers

Selection Guidelines

Chemical Resistance	Epoxies		Vinyl Esters		Silicates
	#165	#265	#410	#465	#54SG
Benezene, Benzol	NR	NR	R80	R100	R
Methyl Ethyl Ketone	NR	NR	NR	NR	R
Acetone	S80	S80	NR	NR	R
Sulfuric Acid 40%	S80	R180	R180	R200	R
Sulfuric Acid 60%	NR	R180	R180	NR	R
Sulfuric Acid 98%	NR	S180	NR	NR	R
Water	R	R	R220	R220	R
Sodium Hydroxide, Saturated	R	R	R180	R180	NR
Sodium Hypochlorite	NR	R80	R150	R150	NR
Hydrochloric acid 37.5%	R100	R150	R110	R100	R
Nitric acid 5%	CM	R80	R160	R160	R

Temperature Resistance	Epoxies		Vinyl Esters		Silicates
	150°F (65°C)	180°F (74°C)	220°F (104°C)	250°F (121°C)	1400°F (760°C)

Physical Properties	Epoxies		Vinyl Esters		Silicates
	E	E	E	E	M
Flexural Strength	E	E	E	E	M
Absorption	N	N	N	N	M
Compressive strength @ 7 days (results reported as psi)	12,000	21,425	16,000	17,700	4,100

Symbol Identification: E – Excellent R – Recommended NR – Not Recommended M - Moderate S – Splash and Spillage N – Nil

NOTE: Where chemical concentrations are shown, recommended products are satisfactory for all concentrations up to percentage shown. Temperatures, where indicated, are the maximum recommended for a given chemical.

Credibility and Confidence

By providing engineered systems to our customers, Sauereisen offers a high standard of quality. Part of this commitment is to supplement our applications from start to finish with a broad range of primers, expansion joints, and concrete repair materials to meet the needs of your specific

application. We also offer machinery-setting grouts.

Consult Sauereisen for recommendations or specification assistance. Our network of representatives and distributors spans the globe.



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