



H I G H P E R F O R M A N C E L I N I N G S Y S T E M S



Complete Corrosion Protection

The leader in seamless polymer protection for 90 years, Stonhard manufactures and installs a broad range of coatings and linings for harsh environments: secondary containment, processing areas, pits and trenches. We offer engineered solutions and a single source warranty on both products and workmanship. Working with you directly ensures complete satisfaction on every project.

100% customer satisfaction

STONHARD
single
source



Engineering Survey

Conducted by your local Stonhard Project Engineer.
Over 300 Project Engineers and Regional Lining Specialists.

Polymer Technology

A complete family of polymer solutions to solve the toughest corrosion problems.

System Options

A full range of lining configurations to meet your exact physical requirements.

Engineering Details

The difference between long-term, successful performance and early lining failure. Engineering drawings are available to assist you in design specifications.

Installation

Over 200 specially trained installation teams. Stonhard takes full responsibility for products and workmanship.

Post-Installation Services

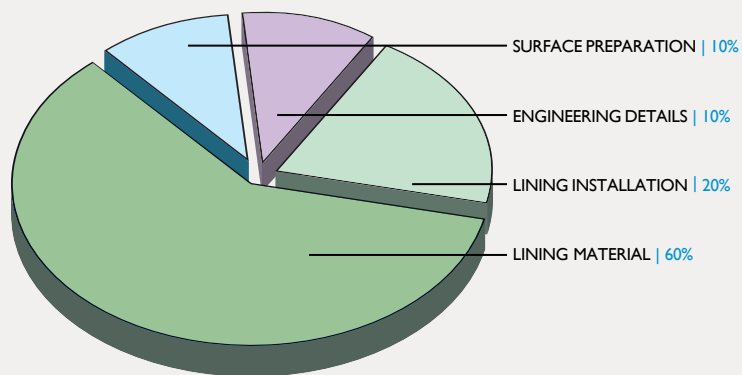
Detailed follow-up and inspection by your local Project Engineer.

Commitment to Customer Satisfaction

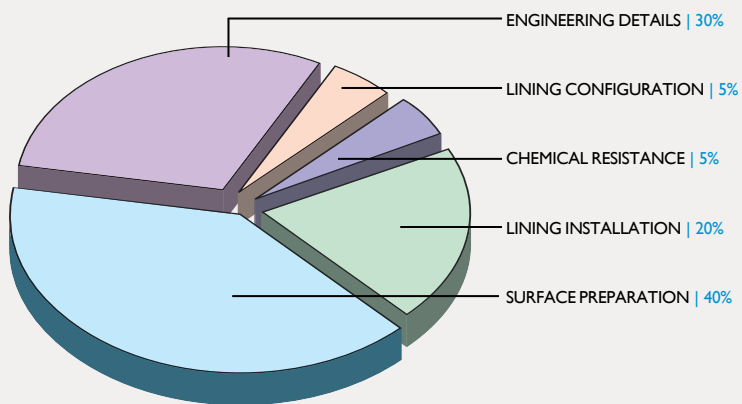
Stonhard's commitment to be your long-term partner in problem solving guarantees satisfaction beyond contractual and warranty terms.

Selecting the best lining system is only the beginning to solving your corrosion problems. Engineering details, surface preparation and installation are critical factors affecting the long-term performance of your lining system. While these elements represent only 40% of the cost of a typical lining system, lack of attention to or elimination of these details leads to 90% of all lining failures – 90%!

Stonhard's engineered solutions address all elements of your lining project. This approach minimizes your risk and provides maximum return on your investment.



INSTALLED LINING COST



LINING PERFORMANCE PROBLEMS

Consult your Stonhard Project Engineer for the high performance lining system that is right for you.





LINING SYSTEMS

Corrosive environments often require solutions for a variety of obstacles using a single system. A well designed lining must address two critical factors — chemical exposure and the physical demands of the application. An appropriate resin system ensures protection from and containment of the chemicals used in your application. Gathering information about the conditions of use (e.g. traffic conditions, exposure duration and frequency, maintenance procedures, thermal stresses, etc.) will ensure the best system is selected, guaranteeing long-term protection. Stonhard knows that superior solutions begin with state-of-the-art polymer technology and expert system engineering. Our complete line of resin chemistries is specifically formulated to meet the needs in any chemical environment — from mild splash and spill to severe immersion service.

POLYMER TECHNOLOGIES

300 Series

This general purpose series of products is based on a highly cross-linked Bisphenol A epoxy resin designed to protect concrete substrates against a broad range of chemicals in a wide variety of applications, including water and wastewater treatment facilities.

Best for exposure to low concentrations of inorganic acids and moderate concentrations of caustics.

400 Series

State-of-the-art polyurea-polyurethane hybrid technology shapes this series of coatings. This unique polymer is created by a nucleophilic addition reaction between an amine- and hydroxyl-terminated resin and an isocyanate. This reaction allows for the instant formation of a tough, flexible film.

Best for exposure to petroleum products, caustics and moderate concentrations of acids. Systems suitable for use in water and wastewater treatment facilities.

500 Series

This patented chemistry reacts a hybrid epoxy resin with a combination of modified cycloaliphatic and aliphatic amine hardeners. This unique blend creates a more resilient structure which optimizes the balance between chemical resistance, impact strength and thermal cycling resistance.

Best for exposure to alkalis, moderate acids and high molecular weight solvents.

600 Series

This novolac epoxy resin is used to shape our most advanced epoxy system. The novolac epoxy is synthesized by selective epoxidation of the multiple phenolic hydroxyls of the novolac resin. The resultant, compact structure exhibits elevated temperature and chemical resistance.

Best for exposure to inorganic acids, concentrated sulfuric acid, aggressive solvents and alkalis.

700 Series

This series is engineered with a chlorendic acid-based, unsaturated polyester resin. This dense polymer network is physically strong and resistant to most oxidizing chemicals.

Best for exposure to nitric acid, chromic acid and hydrogen peroxide.

800 Series

A highly cross-linked vinyl ester resin forms the basis of this series. The combination of a small number of ester groups and a high degree of branching results in excellent thermal stability and broad base chemical resistance.

Best for exposure to concentrated organic acids, inorganic acids, most solvents and alkalis.



After selecting the appropriate resin binder chemistry, the physical configuration of the system must be determined. The following chart provides an overview of Stonhard's standard system configurations, which are designed to address typical lining environments. After a thorough site survey, Stonhard will recommend a system or combination of systems customized to meet the specific requirements of every application.

The various resin chemistries described on Page 4 are identified in the system name by an **X**, with the last two numbers indicating the physical system configuration shown in the chart. All three numbers together designate a complete lining system. For example, Stonchem 601 indicates a 600 Series resin technology (novolac epoxy) with an X01 physical configuration.

| | Applications/Performance Characteristics | | | | | | | | | | Optional Properties | | Configurations | | | | | | | |
|------------------------------------|--|--------------|--------------------|-------------------|------------------|--------------|---------------|-----------------|------------------|-------------------------|---------------------|---|----------------|---|---|---|---|---|--|--|
| | OVER CRACKS | FOOT TRAFFIC | RUBBER WHEEL CARTS | STEEL WHEEL CARTS | FORKLIFT & TRUCK | GOLGE IMPACT | THERMAL SHOCK | THERMAL CYCLING | FLOURINE SERVICE | NON-SPARKING CONDUCTIVE | TEXTURE | | | | | | | | | |
| STONCHEM X01/X21 25 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | | | | | |
| STONCHEM X02/X22 40 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | | | | | |
| STONCHEM X10/620 135 mils | ○ | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | | | | | |
| STONCHEM X30 60-250 mils | ○ | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | | | | | | |
| STONCHEM X55 40 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | | | | | | |
| STONCHEM X56/X26 60 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | | | |
| STONCHEM X58/X58HD 125-160 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | | | |
| STONCHEM X77 120 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | | | | |
| STONCHEM X78/X28 140 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | | |
| STONCHEM 441/444 30-120 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | | |
| STONCHEM 457 80-120 mils | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ | | |

● = Recommended ○ = Recommended w/Limitations ○ = Not Recommended
 X2X = denotes carbon filled systems

ENGINEERING DETAILS

COMPLEMENTARY PRODUCTS

Grouts

Stonset CG4 – an ultra chemical resistant, castable, novolac epoxy grout designed for setting pads, machinery and column pads and for resurfacing and protecting eroded areas with quick turnaround.

Stonset CG5 – a castable epoxy grout designed for setting heavy equipment, machinery, pumps, etc.

Stonset CR5 – a fast-setting, non-porous epoxy grout used to repair voids and erosions in concrete that is ideal for use under epoxy lining systems.

Stonset HG5 – a fast-setting, non-porous epoxy grout used to repair voids and erosions in concrete.

Stonset TG4 – a large aggregate formulation of Stonset TG5 for application thicknesses of 1 in./2.5 cm or greater.

Stonset TG5 – a fast-setting, trowelable grout used to repair deep voids and erosions in concrete substrates.

Stonset TG8 – a quick-cure, vinyl ester grout used to repair deep voids and erosions in concrete substrates.

Stonset PM5 – a high-strength, epoxy patching material used to fill bug holes and voids on vertical surfaces.

Stonset PM8 – a high-strength, vinyl ester patching material used to fill bug holes and voids on vertical surfaces.

Stonset PC3 – an epoxy modified cementitious patching compound used for filling holes and form voids in vertical surfaces without adding significant thickness to the substrate.

Stonset NM4 – a novolac epoxy formulation that offers superior chemical resistance designed for patching and resurfacing or can be used as an underlayment.

Sealants/Elastomers

Stonflex MP7/MN7 – a polyurethane sealant for high-movement joints in horizontal and vertical surfaces.

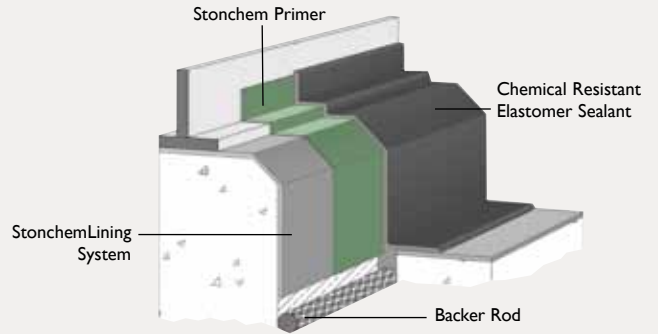
Stonflex CR9 – a two-component, fluoro-elastomeric joint sealer that exhibits exceptional chemical resistance to most acids, alkalis and solvents.

Stonproof CT5 – a two-component, fiberglass reinforced, flexible epoxy membrane designed for crack-bridging applications.

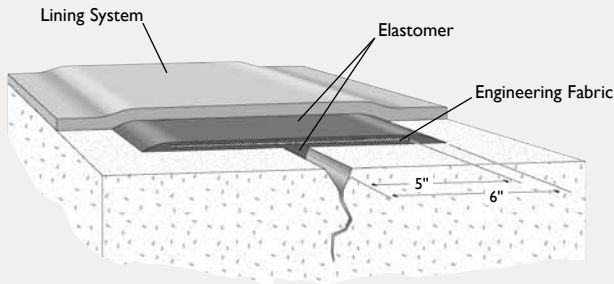


SEAMLESS LINING SYSTEMS

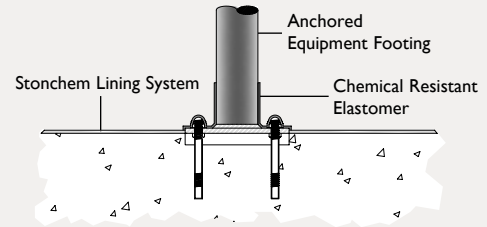
Stonhard's lining experts are devoted exclusively to concrete corrosion protection. And protection begins with proper design and engineering details. Our experience coating both primary and secondary containment areas gives us the ability to offer you the most safe, effective, long-term solutions, from products to installation. Stonhard also offers seamless floor protection to work in conjunction with your lining solutions. Proven performance for 90 years, Stonhard gives you a single source warranty on floor and lining systems.



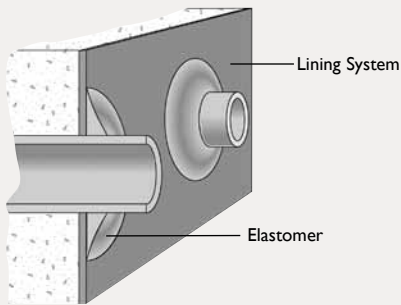
SEAL FOR TANK BOTTOM AND FOUNDATION TREATMENT



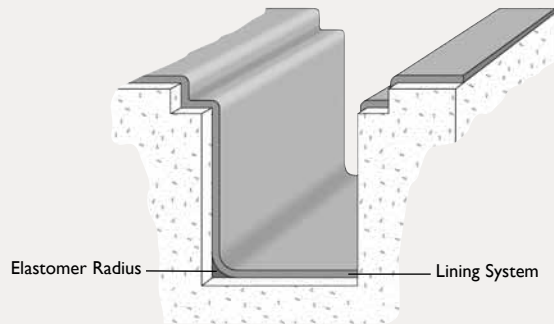
CRACK TREATMENT REINFORCED CRACK REPAIR



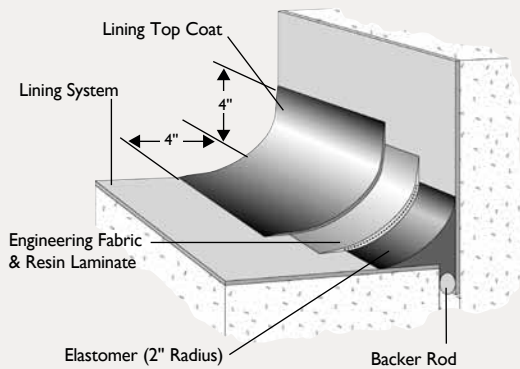
ANCHORED EQUIPMENT FOOTING



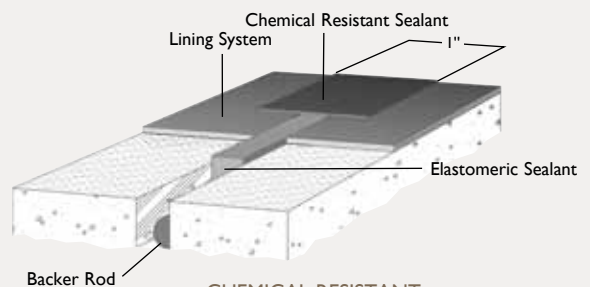
SEAL FOR PIPE PENETRATIONS



TREATMENT FOR SUMPS AND TRENCHES



JOINT TREATMENT HORIZONTAL - VERTICAL ISOLATION JOINT



CHEMICAL RESISTANT JOINT TREATMENT

CUSTOMER SATISFACTION FROM START TO FINISH

Stonhard is dedicated to complete customer satisfaction. We offer a single source warranty covering defects in materials and workmanship for a period of one full year from the date of installation. Our sales offices are located in principal cities throughout the world to assist you in product evaluation and material selection and to provide on-the-spot technical assistance.

The following literature and technical information is available upon request:

- Product Data Sheets
- Chemical Resistance Guides
- Installation Instructions
- Floor Maintenance Guide
- Material Safety Data Sheets
- References and Case Histories

For more information on Stonhard's complete line of high performance floor, lining and wall systems, call us at **800.257.7953** or visit us at **www.stonhard.com**.

STONHARD

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