PROTECTIVE INDUSTRIAL
POLYMERS

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Protective Industrial Polymers is a consultative manufacturer providing concrete protection systems to the industrial marketplace through its network of contractor partners to satisfy end user performance requirements.

CONCRETE PROTECTION | CONTRACTOR PARTNER | CUSTOMER COMMITTED

PROTECTIVE INDUSTRIAL
POLYMERS

PROTECT SYSTEMS OVERVIEW

PROTECT SYSTEMS
INDUSTRIAL FLOORING SOLUTIONS

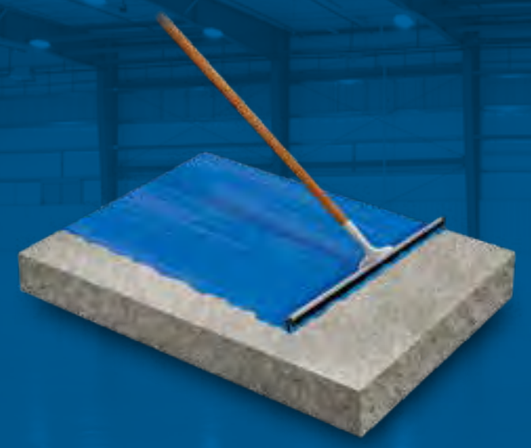
Systems vs. Products

Physical Properties of free standing individual products are not easily correlated with actual flooring needs. It is the time proven combination of products that forms actual solutions. Therefore PIP takes a system approach, which is a combination of PIP product technologies layered together as an extension of the concrete substrate to achieve unlimited performance or aesthetic results.

There are four main series within the Protect Systems lineup, each with their own unique attributes that drive the performance and determine the lifespan of the finished floor. Each system within a series can be custom-built to include enhanced structural performance, customer-specific attributes, personalized finish elements, and the appropriate bond approach.

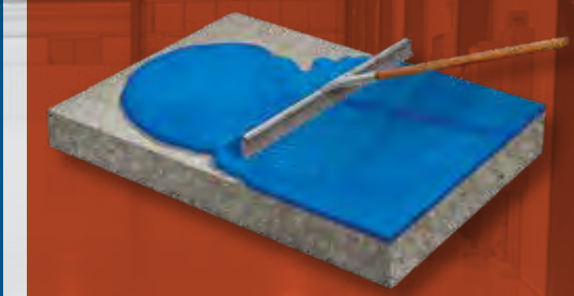
CT Series
FLOOR COATING SYSTEMS

A coating system is a protective film over the concrete that creates a durable, cleanable, stain resistant and aesthetically desirable finish.



SL Series
SLURRY FLOORING SYSTEMS

A slurry is comprised of a polymer resin filled with fine aggregate(s). When placed, the batter like substance self levels and cures, filling concrete voids and forming a shield over concrete.



BC Series
BROADCAST FLOORING SYSTEMS

A broadcast system is an aggregate enhanced coating system that provides increased durability, a built in texture, and improved impact characteristics.

MT Series
MORTAR FLOORING SYSTEMS

A mortar is an engineered mix of aggregate bound together with polymer resin and then compacted to form a very dense shield over concrete.

Better Bond = Better Floor

It does not matter what type of polymer flooring system you have, if it's poorly bonded to the concrete substrate it will fail.

Bond Approach

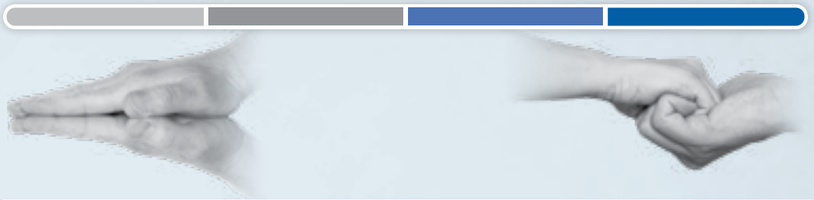
Bond pertains to the process of adhering an industrial flooring system to the concrete substrate. True bond is accomplished by utilizing the concrete surface profile (minimal to aggressive) and primer selection. With the correct combination, the selected Protect system becomes an actual extension of the concrete substrate allowing the system's intended performance to be fully realized.

Bonding Through Chemistry

A minimal profile requires an added emphasis on primer selection to ensure adequate chemical adhesion between flooring system and substrate.

Mechanical Bond

An aggressive profile creates greater substrate surface area for the flooring system to mechanically lock into.



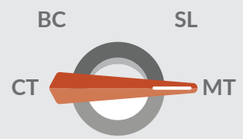
Imagine your **left hand** is the substrate and your **right hand** is the flooring system. The objective is to "glue" them together. The primer (glue) selection is critical when placing your hands flat together. Locked hands reduce reliance on primer (glue) selection as there is more of a physical (mechanical) grip holding them together.

Customized Flooring Systems to Meet Your Needs.

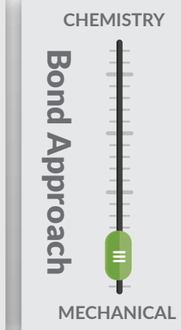
The customizable nature of the Protect Systems combined with a holistic understanding of how to adhere each system to the concrete substrate, allows these industrial flooring solutions to meet your facility's specific flooring needs.

System Design Options

System Series



Four main structural options, coatings (CT), broadcasts (BC), slurries (SL), and mortars (MT).



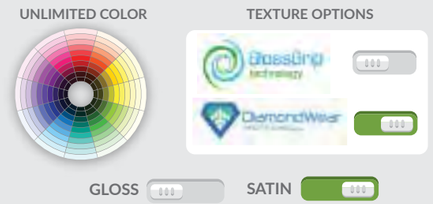
Added Performance Options

Utilized to enhance performance characteristics of the system structure. **These include:** enhanced impact and abrasion, chemical resistance, thermal shock resistance, speed, and flexibility.

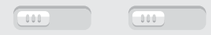
Custom Attributes

Additional options that can be incorporated into the design of your floor system.

Finish Elements



Specialty Technology



CT Series

FLOOR COATING SYSTEMS

It's More Than Paint

Paint dries but coatings cross-link to create a thermosetting durable protective film.

Cleanability

Impervious surface preventing soak in and concrete dusting to create a more cleanable surface.

Stain Resistant

Withstands a wide array of chemical contact including strong acids, caustics and solvents.

BOND LINE

CT Series systems rely primarily on chemical adhesion for bonding.

PROTECTIVE FILM

CT Series is a protective film placed over the structural cap of concrete.

Existing Structural Concrete Cap

The structural performance is based entirely on the existing concrete. If the cap still retains its original performance ratings and those align with your operational demands, the CT Series will create a high-wearing, cleanable, stain-resistant and aesthetically-desirable finish.

Coatings Often Get a Bad Wrap

When placed in environments where the structural cap of the concrete is damaged, contaminated, or lacking adequate performance characteristics, these structural **concrete** cap deficiencies will lead to bond related issues and cause premature system failure.

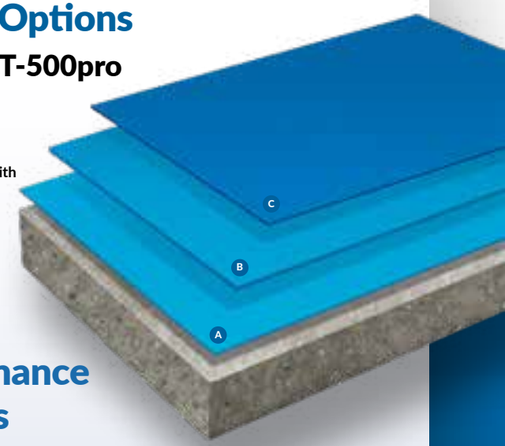
Structural Cap Performance Comparison

	CT Series *vs.* Concrete Cap
Point Load Deflection	N/A ★★☆☆☆
Compression Resistance	N/A ★★★☆☆
Gouge Resistance	N/A ★☆☆☆☆

Design Options

Protect CT-500pro

- A 1000 HB
- B 1000 HB
- C 2000 UR with DiamondWear



Performance Options

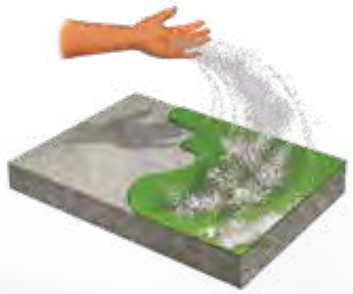
PRODUCT	DESCRIPTION	TECHNOLOGIES AVAILABLE
Xtreme	At least double wear and abrasion-resistance to repetitive, abusive activity	Urethane, Urea and Hybrid Polymers
Chem	Greater polymer cross-link density enhances penetrative resistance to many acids/solvents	Novalac, Ureas and Vinyl Esters
Shock	Resists cracking and de-bonding from thermal expansion stress (up to 50 Degree delta)	Cementitious Urethanes and Hybrid Polymers
Fast	Accelerated product technologies for faster return to service	Polyaspartics, Reactive Urethanes and Epoxies
Flex	Flexible, targeted modulus for enhanced protection against blunt impact	Elastomerics, Hybrid Polymers

Custom Attributes

Impact Resistance • Permeability • Vapor Mitigation
Oil Tolerance • Decorative Finish • Installation Speed
Added Stain Resistance • Moisture Tolerance

Bond Approach

CT Series Systems rely primarily on chemical adhesion for bonding.



BC Series

BROADCAST FLOORING SYSTEMS

SLIP RESISTANCE

IMPACT RESISTANCE

RESTORATION CAPABILITIES

Shop Floor Durability

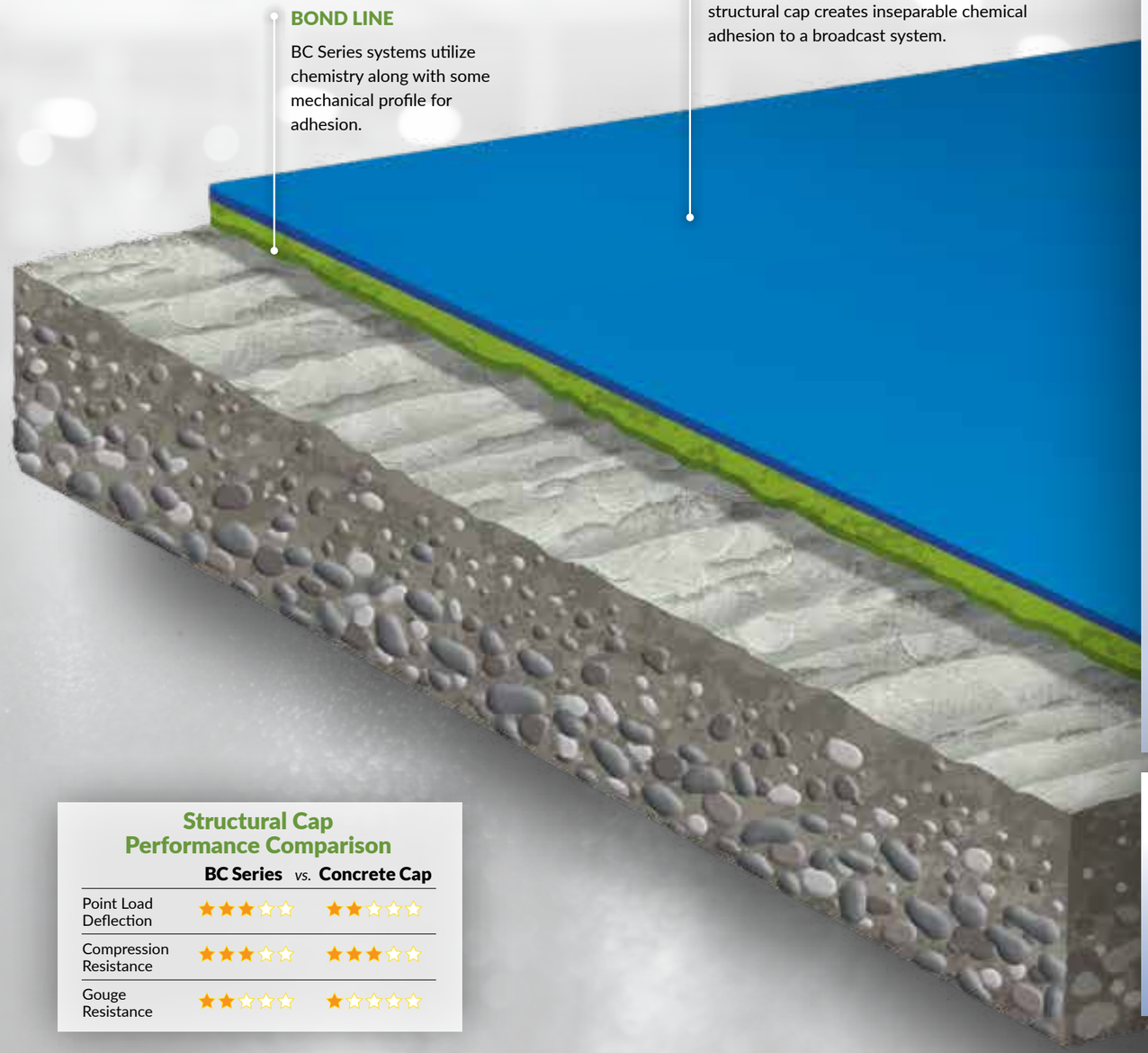
The design of the broadcast makes it ideal for basic industrial settings.

Slip Resistance

Broadcast aggregate is encapsulated into a polymer bed, creating a high friction surface.

Impact Deflection

Encapsulated aggregate acts as shock absorbers to prevent direct shock to the bond line, reducing chipping.



BOND LINE

BC Series systems utilize chemistry along with some mechanical profile for adhesion.

PROTECTIVE FILM

A finish coat placed over the improved structural cap creates inseparable chemical adhesion to a broadcast system.

Improved Structural Cap

Structural performance is improved by using the BC Series design of aggregate encapsulated in resin. This nested and bound aggregate improves point load and gouge resistance while relying on the existing concrete cap for the balance of physical properties.

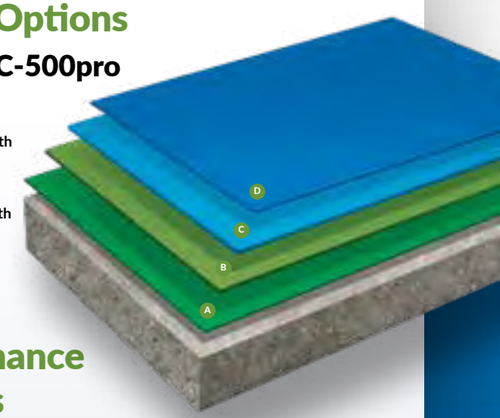
BC Series is an **improvement of,** but not a replacement for the concrete cap. If cap replacement is required for damage, contamination, or inadequate performance characteristics, SL or MT Series are required.

Structural Cap Performance Comparison

	BC Series *vs.* Concrete Cap
Point Load Deflection	★★★☆☆ ★★☆☆☆
Compression Resistance	★★★☆☆ ★★★☆☆
Gouge Resistance	★★☆☆☆ ★☆☆☆☆

Design Options

Protect BC-500pro



- A 1000 HB
- B 1000 HB with Silica Aggregate
- C 1000 HB
- D 2000 UR with DiamondWear

Performance Options

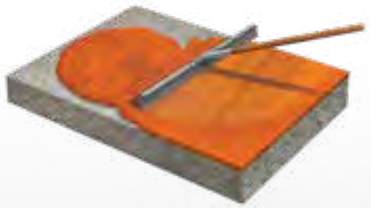
PRODUCT	DESCRIPTION	TECHNOLOGIES AVAILABLE
Xtreme	At least double wear and abrasion-resistance to repetitive, abusive activity	Carbide, Oxide and Ceramic
Chem	Greater polymer cross-link density enhances penetrative resistance to many acids/solvents	Specialty Mineral, Novalac, Ureas and Vinyl Esters
Shock	Resists cracking and de-bonding from thermal expansion stress (up to 100 Degree delta)	Insulating Fillers, Hybrid Polymers, Cementitious Urethanes
Fast	Accelerated product technologies for faster return to service	Polyaspartics, Accelerated Urethanes
Flex	Flexible, targeted modulus for enhanced protection against blunt impact	Elastomerics, Hybrid Polymers and Specialty Fibers

Custom Attributes

Impact Resistance • Permeability • Vapor Mitigation Oil Tolerance • Decorative Finish • Installation Speed Added Stain Resistance • Moisture Tolerance

Bond Approach

BC Series Systems utilize chemistry along with some mechanical profile for adhesion.



SL Series

SLURRY FLOORING SYSTEMS

Rapid Placement

A resin-rich aggregate blend allows for a self-priming, single step, high speed installation.

Variable Strength

The ability to control the amount and type of aggregate loaded into the resin allows for customized durability to match physical abuse.

Self-Leveling

As the suspended aggregate settles toward the substrate, the resin rises to the surface, to create a smooth surface–even in congested areas.

Better Structural Cap

The SL Series design allows structural cap restoration ranging from mild to moderate. The adjustable thickness, aggregate filled design can serve to selectively improve physical, chemical and thermal protection. The very nature of a resin/aggregate slurry surface helps to extend and maintain the structural integrity of the concrete substrate.

SL Series systems modify the structure cap to offer specific performance enhancements including chemical, thermal and surface travel.

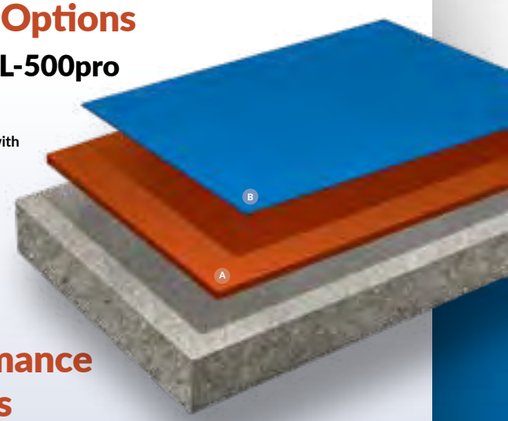
Structural Cap Performance Comparison

	SL Series *vs.*	Concrete Cap
Point Load Deflection	★★★☆☆	★★☆☆☆
Compression Resistance	★★★★☆	★★★☆☆
Gouge Resistance	★★★★☆	★☆☆☆☆

Design Options

Protect SL-500pro

- A UC-SL
- B 2000 UR with DiamondWear



Performance Options

PRODUCT	DESCRIPTION	TECHNOLOGIES AVAILABLE
Xtreme	At least double wear and abrasion-resistance to repetitive, abusive activity	Specialty Aggregates, Resin Rich, Hybrid Polymers
Chem	Greater polymer cross-link density enhances penetrative resistance to many acids/solvents	Novalacs, Ureas and Vinyl Esters
Shock	Resists cracking and de-bonding from thermal expansion stress (up to 150 Degree delta)	Cementitious Urethane and Hybrid Polymers
Fast	Accelerated product technologies for faster return to service	Polyaspartics, Reactive Urethanes and Epoxies
Flex	Flexible, targeted modulus for enhanced protection against blunt impact	Hybrid Polymers, Resilient Aggregates

Custom Attributes

Impact Resistance • Permeability • Vapor Mitigation
Oil Tolerance • Decorative Finish • Installation Speed
Added Stain Resistance • Moisture Tolerance

Bond Approach

SL Series Systems utilize chemistry and heavy mechanical profile for adhesion.

MT Series

MORTAR FLOORING SYSTEMS

THERMAL SHOCK RESISTANCE

IMPACT RESISTANCE

RESTORATION CAPABILITIES

Longest Lifespan

A full and integral upgrade of the subtstrate providing a maximum usable life.

Peace of Mind

The highest guarantee of adhesion creating the lowest risk of future business interruption from premature failure.

Toughest System

Chemically-fused, highly compacted aggregates that create the greatest physical properties available with unmatched durability.

BOND LINE

MT Series systems rely primarily on mechanical profile for adhesion.

PROTECTIVE FILM

A finish coat(s) placed over an improved structural cap creates inseparable chemical adhesion to an MT system.

Best Structural Cap

Restores and enhances all the physical properties of the concrete cap. By replacing a cement-based binder with a high strength polymer, the structural performance properties are greatly increased to form a dense shield.

This Mortar Shield greatly improves the cap of the concrete slab by diffusing surface abuse to protect the bond line to allow for a **maximum performance life.**

Structural Cap Performance Comparison

	MT Series *vs.* Concrete Cap
Point Load Deflection	★★★★★ vs ★★☆☆☆
Compression Resistance	★★★★★ vs ★★★☆☆
Gouge Resistance	★★★★★ vs ★☆☆☆☆

Design Options

Protect MT-500pro

- A 3600 Primer
- B 3600 EM
- C 1000 Grout
- D 2000 UR with DiamondWear

Performance Options

PRODUCT	DESCRIPTION	TECHNOLOGIES AVAILABLE
Xtreme	At least double wear and abrasion-resistance to repetitive, abusive activity	Steel Aggregates, Resin Rich Designs
Chem	Greater polymer cross-link density enhances penetrative resistance to many acids/solvents	Novalac, Vinyl Esters and Ureas
Shock	Resists cracking and de-bonding from thermal expansion stress (up to 200 Degree delta)	Cementitious Urethane, Specialty Aggregates and Hybrid Polymers
Fast	Accelerated product technologies for faster return to service	Polyaspartics, Accelerated Urethanes
Flex	Flexible, moderate modulus for enhanced protection against blunt impact	Resilient Aggregates, Hybrid Polymers, Elastomerics

Custom Attributes

Impact Resistance • Permeability • Vapor Mitigation
Oil Tolerance • Decorative Finish • Installation Speed
Added Stain Resistance • Moisture Tolerance

Bond Approach

MT Series systems rely primarily on mechanical profile for adhesion.

Common Problems

Custom Solutions