TABLE OF CONTENTS

SECTION 1 - CURE AND SEALS

TABLE OF CONTENTS
(continued)

SECTION 2 - WATERBASED ACRYLIC SEALERS

SECTION 3 BROOM FINISH CONCRETE SEALERS

SECTION 4 - POLISHING CONCRETE

SECTION 5 - HARDENER & DENSIFIER WITH STAIN RESISTANCE

SECTION 6 - SEALER FOR GYPSUM BASED UNDERLAYMENT

TABLE OF CONTENTS
(continued)

SECTION 7 - STUCCO AND STONE SEALER

SECTION 8 - NON-SLIP ADDITIVE

SECTION 9 - NYLON FIBER

SECTION 10 - CONCRETE SPLATTER PROTECTION

SECTION 11 - PRODUCT FINDER

SECTION 12- PRODUCT FINDER

Technical Data Sheet

LAST UPDATE: (January 2016)

PROTEC III LSF CHEM RX

The Original Chemical Cure, Hardener, and Densifier

Protec III LSF Chem RX is a waterbased highly reactive penetrating concrete treatment, which produce a permanent density change within the micro-structure of the concrete.

As a cure, Protec III penetrates and reacts with the poor bonds in the concrete called calcium hydroxide which make up approximately 25% of the cement paste. When Protec III Chem RX chemically reacts with these weak bonds the result is strong bonds called calcium silicate hydrate (CSH). This chemical cure process also fills the pours of the concrete holding moisture in the concrete.

The benefit of Protec III Chemical Cure over water curing and membrane cures is that the 25% weak bonds that were historically present in these methods of curing are not present with Protec III Chemical Curing. Overall hardening, tensile strength, low porosity and high chemical resistance is achieved.
Protec III Chem RX is a non-membrane forming cure, which is a major benefit where flooring is to be installed.

Protec III LSF Chem RX has no harmful vapors, and it is Agriculture Food Approved for Registered Establishments.
Protec III LSF Chem RX easily penetrates the concrete and is used to reduce vapor transmission in concrete. It is very effective in reducing radon gas by blocking the internal pores of the concrete.
Protec III Chem RX does not leave a membrane on the surface of the concrete, if additional stain resistance is required use Dual-Tech.

BENEFITS

Meets LEED Requirements

Compatible with flooring adhesives or sealants
ASTM C418 – 67% increase in hardness of the concrete wear surface

Curing Aid: 92 % greater moisture retention during critical 24 hour cure period.

Decreases permeability of the concrete
Restricts water migration through concrete
VOC's - Zero
Eliminates dusting of concrete
Reduces Tire Squeel
Compatible with dry shake hardeners
Increases chemical resistance
Environmentally Safe and Permanent
Produces a permanent shine with use
FOOD SAFE: APPROVED
Reduces Vapor Transmission
Reduces Radon Gas Emissions
More Effective Than Water Curing
Stops Concrete Popping and Shaling That is Associated with Membrane Cure and Seals

USES

All new and existing interior power trowel surfaces, pre-cast concrete, and poured in place walls

Exterior Broom Finish Concrete

Anywhere a non-toxic low odor cure is needed to meet LEED Requirements.
Compatible with flooring adhesives.

PHYSICAL CHARACTERISTICS

Dilution: None, use as supplied

Odor: Mild

VOC's: 0

Clean-up: Water

Freezing Point: -6C

SHELF LIFE: 3 yrs in original unopened container

PACKAGING

5 gallon (18.9 Litre) Pails
55 gallon (205 Litre Drums)
Totes (1000 Litres)

COVERAGE:
EXISTING BROOM FINISH – Approx. 200 ft^2/gal (4.9 m^2/litre)
CURE-BROOM FINISH - Approx. 300 ft^2/gal (7.4 m^2/litre)
EXISTING POWER TROWEL - Approx. 300 ft^2/gal (7.4 m^2/litre)

CURE-POWER TROWEL - Approx. 400 ft^2/ gal (9.8 m^2/litre)

CAUTIONS

Protect surrounding area from over-spray. In case of accidental contact, rinse thoroughly with water immediately.
Do not apply to frozen surfaces.
Do not apply to colored concrete for a minimum of 3 days after finishing operations.
For surfaces not specified, or where concrete may have been previously sealed, we recommend testing a small area to observe for possible adverse reactions.
Freeze Harm: 5 Cycles No Damage
For cool temperatures applications on power trowel surfaces, apply at 400 ft^2/gal (9.8 m^2/ litre) minimum, specifically take caution to roll out any puddles that form. Dry time is slower in cool temperatures, which may cause more puddling. If heavy puddles dry, they can leave a white residue on the surface of the concrete, which is very difficult to remove.

FOR HEAVY ABRASION FLOORS (ie.Tracked in gravel and dirt that is being ground into the floor by vehicles) FOLLOW THESE INSTRUCTIONS: Use 2 coats of Protec III LSF Chem RX making sure the 1st coat dries before applying the 2nd coat. Normal wear and tear does not include heavy abrasion from gravel and dirt, therefore it is highly recommended to keep your floors clean to avoid unnecessary excessive wear.

SURFACE PREPARATION

New and old dirty concrete should be cleaned and then rinsed with clean water if necessary. After washing allow the surface to dry before application of product.

APPLICATION

Apply one coat of Protec III Chem RX. Because concrete absorbs differently across the entire pad, we recommend a second coat for best results in order to properly coat more porous areas.

Apply product with a low pressure sprayer or roller.
Apply at recommended square foot coverage.
Saw cuts need to be coated thoroughly.
Apply 2-3 coats to high traffic floors or floors exposed to high corrosion. Apply the 2nd coat one hour after the 1st coat has dried.
Roll out any puddles that form.
For proper chemical resistance apply 3 to 4 coats depending on the porosity of the concrete.

CLEAN-UP: Water

FOR CURING CONCRETE: *see Protec III Chem RX Used as a Curing Aid*

FOR EXTERIOR BROOM FINISH CONCRETE

Apply once the bleed water has dissipated. For added chemical/freeze thaw resistance, apply a 2nd coat once the first coat is dry to touch.

FOR BADLY DUSTING/CARBONATED CONCRETE: *see Protec III Restore Strengthens and Hardens Concrete*

VAPOR TRANSMISSION/RADON GAS

Moisten the surface with Protec IIII Chem RX by sprayer or microfiber pad. When spraying use a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or by re-distributing the existing product using a micro-fiber pad. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed. After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX. Follow the same procedure as the 1st coat.
Typically 2 coats is all that is needed.

CURING CONCRETE

Apply one coat once the final trowel is done and before the pad sweats.

MAINTENANCE

For Exterior Broom Finish Concrete exposed to freeze thaw cycles, we recommend applying one coat at approximately 200 ft^2/gal (4.9 m^2/litre) every two years as part of your regular maintenance program.
For Interior Concrete, we recommend applying one coat in high traffic, high abrasion areas. For example, in front of overhead doors, apply at a rate of 300 ft^2/gal (7.4 m^2/litre) every 2 years as part of your regular maintenance program.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

March 29, 2017

RE: FLOORING ADHESIVES, OVERLAYS AND COATINGS

Protec III Chem-Rx is approved wherever flooring adhesives and overlays are installed.

Protec III Chem-Rx penetrates the concrete surface fully when applied and does not leave a surface membrane that could interfere with the adhesion of pressure sensitive glues, adhesives for carpet, VCT and vinyl, or concrete overlays, that are modified or unmodified.

Protec III Chem-Rx is highly recommended on all concrete that will be finished with flooring. Concrete has been changing drastically over a number of years now. Concerns typically expressed by the market place are a concrete surface that is softer, dustier, and drier that fails more than ever.

A number of industries are being affected by this quickly changing building material. It is vital to recognize the changes in order to respond positively to these changes.

Protec III Chem-Rx when applied as a cure, fully penetrates the concrete surface. When properly following the application instructions, a chemical reaction in the interior of the concrete results, creating a properly cured, dust resistant, stronger concrete floor.

Before installation of flooring adhesives, overlays or coatings, make sure to do proper testing for moisture content, floor profile and contaminants, so they met the requirements of the materials to be installed.

Best Regards,

Murray LeComte
Sales and Technical Support
Cornerstone Coatings International Inc.
www.cornerstonecoatings.com

CORNERSTONE COATINGS
INTERNATIONAL INC.
LEADING THE WAY

15 Year Warranty

Product Warranty

Cornerstone Coatings warrants to the owner that after the specified sealing and hardening period the treated surface will remain dustproof, hardened and abrasion resistant for a period of 15 years commencing on the date which the concrete surface is treated with Protec III LSF Chem RX. In the event any area of the treated surface fails to remain dustproof, hardened and abrasion resistant, Cornerstone Coatings will, at its own expense, supply sufficient Protec III LSF Chem RX to re-treat any such defective area.

Conditions

This product warranty is effective when Protec III LSF Chem RX is correctly applied to properly prepared and structurally sound interior concrete surfaces only, and the concrete is void of structural faults occurring due to faulty workmanship, improper design or cracking and failure of materials other than Protec III Chem RX. Upon notification by the owner of any failure of the surface to perform as warranted herein, the owner must grant Cornerstone Coatings access to the surface during normal business hours. This warranty agreement is void if the performance of the surface is impaired by any alterations made to the surface without warrantors written approval, if the maintenance program issued by the manufacture is not adhered to, or by any abnormal use or abuse of the surface.

Murray LeComte
Signature: _____
President and CEO
Cornerstone Coatings International Inc.
(not valid unless signed)

Owner:_____

Name of Building: _____

Location of Building: _____

Square feet: _____

Date Issued:_____

Toll Free: 1.866.878.7069 (tel) 306.369.2521 (fax) 306.369.2656 Box 479 Bruno, SK CANADA S0K 0S0
www.cornerstonecoatings.com

PROTEC III LSF CHEM RX

Maintenance Program

Use a neutral to high pH detergent with no sulfates and hydroxides (caustic soda) to clean the floor. Acidic cleaners or sweeping compounds will dull the appearance of the surface.

Scrub the floor often. The abrasion polishes the floor and enhances the shine. Ample water used with routine detergent and scrubbing will accelerate the process of getting a shine.

Use caution to protect the floor as stains may still occur during the first 6 to 12 months. Clean spills quickly. Highly concentrated acid may etch the surface if left in contact with the floor. Foods such as mustard and grape juice may leave a residual stain if not removed immediately.

Using a good maintenance program, after a year the floor should have an attractive low satin shine. The surface should be hardened and densified. Most foods and liquids should not penetrate the surface.

Areas with tracked in gravel and dirt will need to be kept clean, as forklift/equipment traffic in conjunction with gravel and dirt will produce heavy abrasion to the floor and may unnecessarily damage the floor.

Floors with broomed or rough textured finishes will not produce a shine due to the textured surface.

Use a good oil emulsifier to clean up oil, grease, or fats.

FOR PROTEC III CHEM RX - Painting the floor or striping of the floor can be done at any time. Consult the paint manufacturer or the recommended preparation of the floor.

Using waxes or other coatings on the floor is not necessary or recommended.

YEARLY MAINTENANCE

For Exterior Broom Finish Concrete exposed to freeze thaw cycles, we recommend applying one coat at approximately 200 ft^2/gallon (19 m^2/litre) every one to two years as part of your regular maintenance program.

For interior warehouse floors, we recommend applying one coat of Protec III Chem RX once a year to give longterm protection. Apply at a rate of 300-400 ft^2/gallon (28 m^2/litre) as part of your regular maintenance program.

For high traffic areas such as where overhead doors are, for the first 2 years it is advisable to apply one coat every 6 months.

POLISHED CONCRETE - In order to keep longerm protection and a continuous beautiful shine, apply one coat of Protec III Chem RX each year at a rate of 500-600 ft^2/gallon.

For high traffic areas, and areas exposed to salts being tracked in apply one coat every 6 months for the first 2 years. After the first 2 years apply one coat.

Follow application instructions for your type of concrete surface found in the maintenance sheet - application instructions.

PROTEC III LSF CHEM-RX

LETTER OF RECOMMENDATION FOR ARENAS

Protec III LSF Chem-RX has been used by PCL for arena slabs to harden and dustproof the concrete surface for a number of years.

I would recommend, especially for winter heat, that you do not use propane for heating. The gas given off causes the concrete to carbonate. Dusting of the concrete can be severe.

WHY USE PROTEC III LSF CHEM-RX ON ARENA CONCRETE SLABS?

1. Protec III LSF Chem-RX does not leave a surface membrane so it will not interfere with the adhesion of the ice.

2. Protec III LSF Chem-RX works as a secondary hydration product to increase abrasion resistance and dust proofs the concrete floor.

3. Protec III LSF Chem-RX will leave the concrete floor chemical resistant protecting the floor.

4. Protec III LSF Chem-RX is non toxic and safe to use, therefore protecting the health of your employees.

5. Protec III LSF Chem-RX is easy to use and does not require scrubbing, special handling, or expensive certified applicators.

Cornerstone Coatings

TESTIMONIALS

" I love this stuff...we have no shale pops or shrinkage cracks, not like we used to have with the curing compounds or cure and seals we used to use.
Harold's Concrete
Saskatchewan

... Protec III slows down the cure and increases the psi, and I don't have to worry about peeling.
LG Concrete
Saskatoon, SK

"... the concrete (warehouse floor) no longer dusts, the product makes the concrete reflect light extremely well, and it is easy to keep clean."
Isaac Hiebert
GrandWest Enterprises Inc.
Saskatoon, SK

..."We are pleased with the results, this is a very good product."
Doug Mitchell Vice President
The Rent-It Store
Saskatoon, SK

..." Protec III has been very successful in halting any further deterioration.."
Michele Cruise-Pratchler, R.M.A.
Administrator

Problem Free Concrete

Protec III LSF Chem-RX

With the rapid changes in mix designs of concrete, there isn't much predictability for the contractors from one pour to another. The equalizing factor that can ensure the contractors have problem-free concrete every time is by using Protec III LSF Chem-RX. It takes the guesswork out of concrete, and solves the problems before they even appear. Most issues are a result of weak bonds formed within the concrete during the curing process. When these weak bonds are strengthened by using Protec III LSF Chem-RX, high density problem-free concrete is the result.

If you could drastically reduce all the worries and problems of finishing concrete....would you?

Q&A

Protec III LSF Chem-RX

What type of concrete can I put this on?	Use Protec III Chem-RX on new or old concrete. You can apply Protec III Chem-RX to power trowel concrete for warehouse floors, parking aprons, garage pads, sidewalks, driveways, arena slabs, parkades and much more.
What can I do to dust-proof my concrete?	What you will use depends on how badly the concrete is dusting. For lightly dusting concrete, use Protec III Chem-RX. For severe carbonation or dusting, use Protec III Restore which is the ideal product for that application.
Will Protec III Chem-RX make my floor shiny?	Initially, on most concrete it will not. Protec III Chem-RX is a penetrable sealer and not a surface membrane like acrylics, urethanes or epoxies. For power trowel surfaces with wear from high traffic, the floor will polish up to a shine.
Can I seal my concrete without it being slippery when wet?	Yes, you can. Protec III Chem-RX will NOT make your floor slippery when wet. Protec III Chem-RX does not create a surface membrane like acrylics, floor paints, urethanes or epoxies which are definitely slippery when wet.
Curing of concrete is important to having good concrete, what is the best product to use?	Most contractors use Protec III Chem-RX as a curing aid because it does not form a membrane on the surface of the concrete which can cause concrete popping in bad aggregate locations. Using Protec III Chem-RX as a curing method slows down the moisture evaporation rate without locking too much moisture into the concrete. This produces stronger more durable concrete. Contractors find that using Protec III Chem-RX on freshly poured concrete will virtually eliminate the popping and surface shaling that used to happen when applying other forms of curing materials such as acrylic cure and seals or green cures. Protec III Chem-RX has 0 VOCs, and is safe to use for the contractors without having to deal with the dangerous, highly flammable fumes of the typical cure and seals. Health and safety inspectors have completely shut down projects because the contractors were not equipped properly when using the flammable cure and seals. This will never happen with Protec III Chem-RX.
I'm using dry shake hardeners now, and it is getting almost impossible to incorporate them properly into the concrete surface, is there anything better out there that is safe to use?	Protec III Chem-RX is proven to work with all types of concrete mix designs as a surface hardener. Other liquid hardeners and dry shake hardeners are labor intensive and more expensive not only in the initial cost of the product but with the associated costs of health and safety and the disposal of hazardous waste of the liquid hardeners. Contractors are finding that Protec III Chem-RX eliminates the problems they were having with surface delaminations when using dry shake hardeners.
Will Protec III Chem-RX work with colored concrete?	Yes, it will. We recommend waiting a minimum of 3 days before applying Protec III Chem-RX to colored concrete to harden and densify it.
What do I use to protect my broom finished driveway?	Protec III Chem-RX is recommended for all new driveways. Apply this product once the bleed water has evaporated for an effective curing aid and hardener. This will make your concrete more resistant to freeze thaw damage and concrete popping. Apply the 2nd coat once the first coat has soaked in.
What can I use to stop my concrete from popping?	We have seen a decrease of over 90% as a result with the simple use of one application of Protec III Chem-RX as a curing aid.

Q&A

Protec III LSF Chem-RX

Is Protec III Chem-RX compatible with flooring adhesives?	Yes, it is. The reason it is an ideal product for flooring adhesives is because it dust-proofs the surface and it does not leave a surface membrane. If you have a product that leaves a surface membrane, the surface membrane is what the flooring adhesive will adhere to - not the concrete. Once that surface membrane lets go, you are guaranteed to have problems with your flooring. By using Protec III Chem-RX you eliminate the high costs associated with the removal of surface membranes or coatings before the floor installation. Another common practice is not applying any product to the floor which commonly results in dusting problems for the flooring contractor. Protec III Chem-RX is the ideal product for remedying both flooring problems.
Can Protec III Chem-RX be applied over another coating?	No, it cannot. This product has to penetrate into the concrete so before application of Protec III Chem-RX you need to remove all coatings.
Why am I now having problems with dry shake hardeners?	With the increased use of super plasticizers (water reducers), fly ash, retarders and other additives, todays concrete has become increasingly incompatible with dry shake hardeners. Dry shake hardeners need moisture to work properly. The less moisture required in todays concrete inadvertantly affects the proper incorporation of dry shake hardeners into the surface creating havoc for the contractor.
Do I need certified installers or special equipment for Protec III Chem-RX?	No, you do not. We designed Protec III Chem-RX to be easy to apply without special equipment or training. Protec III Chem-RX keeps the cost down for installation and because it can be applied easily by the concrete contractor, it keeps the subcontractors (certified installers) off your concrete floor. This gives the contractor more control over their projects. If certified installers are required and they are not in your local area or available - project managers, engineers and architects are now dealing with time constraints and increased costs for the project to be completed properly.
I've been told that concrete doesn't need to be sealed, is this true?	All concrete must be sealed. We've heard this statement periodically over the years and then one year later these same people ask how can they fix their shaling and popping concrete. Back 40 to 50 years ago, when they had proper curing practices in place without any of the additives and admixtures currently being used in concrete mix designs, sealers were not as necessary. That was a generation ago and is not today's reality.
What will Protec III Chem-RX do for my garage floor?	Protec III Chem-RX will protect your floor from shaling and peeling from freeze thaw damage. Damage shows up where the overhead door comes down to the concrete pad and where you park your vehicles. Typically this takes only one winter of freeze thaw cycles to happen. Years ago when we used to apply the product on garage pads, we found where the overhead door was, Protec III Chem-RX would soak in immediately from the opening and back 5 to 6 feet. The rest of the concrete would take its normal time to soak in. This showed us how fast water and road salt could penetrate the concrete and cause damage and how important it was to apply the Protec III Chem-RX to protect the concrete floor from this environment.
Can I use Protec III Chem-RX on arena slabs?	Yes, all arena slabs should use Protec III Chem-RX. Protec III Chem-RX hardens and densifies the concrete and stops damage from freeze thaw cycles leaving you a nice smooth dust-free surface.

Q&A

Protec III LSF Chem-RX

Why do engineers specify Protec III Chem-RX into their projects?	Engineers specify Protec III Chem-RX into their projects because it is an economical trouble-free hardener and curing aid for warehouse floors that has extensive ASTM Test Results. This product meets the LEED requirements for a cure and seal and hardener.
Why do architects specify Protec III Chem-RX into their projects?	Architects specify Protec III Chem-RX into their projects to dust-proof and make the floor easy to clean. With wear and tear this product produces a shine which increases light reflection for warehouse floors. This product meets the LEED requirements.
Does Protec III Chem-RX meet the LEED requirements?	Yes, it does.
What can I do to make my concrete chemical resistant?	Apply one to two coats of Protec III Chem-RX to concrete for chemical resistance. Typical application for harsher environments require 3 coats.
Is Protec III Chem-RX VOC Compliant?	Yes, Protec III Chem-RX has no VOCs. A common assumption is that water based products are safe to use, but most water based products have VOCs. VOCs in most water based products are more unsafe to use than solvent based VOCs because they are water soluble and can enter the body more readily through handling.
How does Protec III Chem-RX compare to other liquid hardeners with ease of application?	Protec III Chem-RX was designed to be easy to apply without the need of certified installers. Other liquid hardeners tend to have a larger molecule size which requires scrubbing, re-emulsifying and removal of excess product which will not penetrate. This is a very costly procedure with labor and disposal of hazardous waste. Protec III Chem-RX has a very small molecule size which does not require scrubbing, re-emulsifying and removal of excess product because it has a high rate of penetration.
What is the price of Protec III Chem-RX per square foot?	Protec III Chem-RX is approximately 6 cents per square foot per coat.
Is Protec III Chem-RX food safe?	Yes, this product is approved food safe by Agriculture Canada.
How do I apply it?	Protec III Chem-RX requires no special equipment, you can either spray or roll the product on. If the product forms puddles, remove them by rolling the product to a dryer area. Concrete floors are not perfectly flat, puddles may form in uneven areas.
How do I maintain a floor treated with Protec III Chem-RX?	Use a neutral to high ph detergent to clean the floor. Clean spills immediately. See the Technical Data Sheet for complete maintenance program.
What is that white powdery stuff on my concrete?	It is likely efflorescence which is a salt which comes from ground water and migrates though the concrete and destroys it. Protec III Chem-RX will help reduce that. Efflorescence is usually associated with water problems.
What is your warranty?	Replacement of defective product.
How do I do a simple test to see how hard Protec III Chem-RX makes my concrete?	Apply two coats of Protec III Chem-RX to a 1 square foot area. Let this dry overnight. Use a file to abrade the treated and untreated concrete to compare the difference in hardness. This will be a quick indication in the increase of hardness.
Can I coat over a surface treated with Protec III Chem-RX or Protec III Restore?	Yes, you can apply Premium Acrylic and other floor coatings over top of Protec III Chem-RX and Protec III Restore. You should not apply any floor coating over Protec III LSF with Acrylic Membrane.

COMPARISON SHEET

For Protec III Chem RX/Protec III with Acrylic Membrane/Sodium Silicates

CHARACTERISTICS	SODIUM SILICATES	PROTEC III CHEM-RX	PROTEC III WITH ACYRLIC MEMBRANE
PARTICLE SIZE	LARGE	SMALL	SMALL
EASE OF PENETRATION	DIFFICULT	EASY	EASY
EASE IN APPLICATION	VERY DIFFICULT	EASY	VERY EASY
CERTIFIED INSTALLER REQUIRED	RECOMMENDED	NO	NO
LEAVES SURFACE MEMBRANE-SHINE	NO*	NO	YES
MEETS ASTM C309	NO	NO	YES
CURING AID	YES - only pourous concrete	YES- on all concrete	YES, MEETS ASTM C309
HARDENER/DENSIFIER	YES	YES	YES
COST PER SQUARE FOOT	.06 CENTS AND UP MATERIAL ONLY	.05-.07 MATERIAL ONLY	.10 MATERIAL ONLY
TIME TO TREAT 10,000 SQ. FT.	EXTREMELY DIFFICULT 2-4 HRS X 2 MEN	1.5 HR X 2 MEN	1 HR X 2 MEN
HAZARDOUS WASTE	YES	NO	NO
WASTE FROM APPLICATION	YES**	NO	NO
INSTALL ON YOUR TIMELINE	YES	YES	YES
FLOOR CLEANING REQUIRED	NO	NO	NO
QUALITY	GOOD	VERY GOOD	EXCELLENT
RESULTS	GOOD	VERY GOOD	EXCELLENT

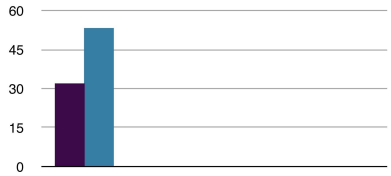
*Some penetrating hardeners and densifiers will sit on the surface if they have not properly penetrated the concrete and this will leave a temporary shine. This type of product will wear off with abrasion, the shine will disappear and the concrete will be left exposed. The ability of the hardener/densifier to penetrate fully into the concrete surface dramatically increases the hardness and chemical resistance of the concrete structure.

**Because of the type of resin being used, the competitor's product does not completely penetrate the concrete and will jell up as it sets. This jell has to be removed. It is considered hazardous waste and must be contained and dumped under the regulations in force. This hazardous waste should not be dumped on the ground at the job site.

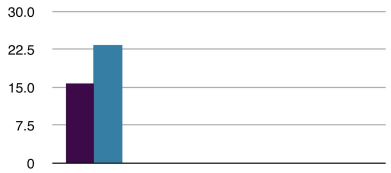
Comparison sheets is based on the information available at the time of printing.

ASTM Tests and Chemical Resistance Charts
Protec III Chem RX

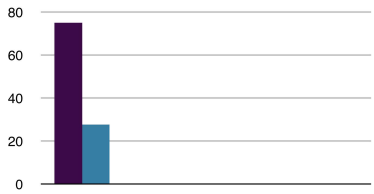
ASTM	USE OF TEST	RESULTS
ASTM C418	Increase in Hardness	67% Increase



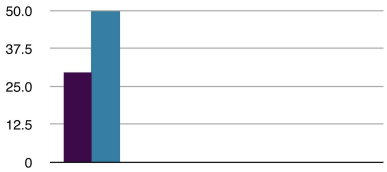
ASTM	USE OF TEST	RESULTS
ASTM C1353	Abrasion Resistance	46% Increase at 1000 Cycles



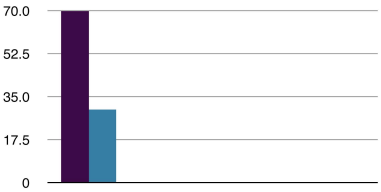
ASTM	USE OF TEST	RESULTS
ASTM C642	Ability to Reduce Absorption	Reduction of 72%



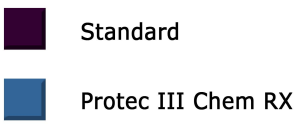
ASTM	USE OF TEST	RESULTS
ASTM C803	Hardness and Compression Values	Increase in 20 MPA



ASTM	USE OF TEST	RESULTS
ASTM B117	Salt Spray Test	57% decrease in Permeability



ASTM	USE OF TEST	RESULTS
ASTM G53	6000 Hours	No Effect



ASTM C309

Do Liquid Hardeners meet this standard?

This paper is written to clear up some confusion in the marketplace. A number of manufacturing companies have stated in their literature that their liquid hardeners meet ASTM C309. This paper will provide background information on what the ASTM C309 standard is, and how a product can meet or fail to meet that standard for curing concrete.

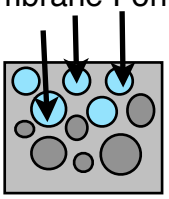
Do Silicates Meet ASTM C309

There are 2 things that have to be analyzed in order to determine if Silicates meet ASTM C309 as a cure and seal.

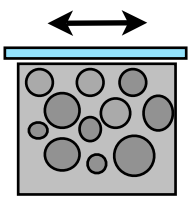
1. We need to have some background on silicates and liquid hardeners that are available in the market today.
2. What does ASTM C309 mean and the basic qualifiers of this standard.

1. Background on Silicates

Penetrating Liquid Hardeners
(No Membrane Formed)



Membrane Forming (Meets ASTM C309)



Non-penetrating product sits on top of concrete to form an external film on surface.

All silicates and liquid hardeners in the market place today are penetrating products. These products work by penetrating the concrete surface and chemically reacting with free lime. There is a number of terms used by the industry to say the same thing, such as alkali and calcium hydroxide. This reaction forms strong bonds in the concrete called CSH (Calcium Silicate Hydrate), also referred to in the industry as silica gel, colloidal gel, silicate hydrogel and insoluble precipitate.

All silicates and penetrating liquid hardeners in the market come from the following: Sodium Silicates, Potassium Silicates, Lithium Silicates, Colloidal Silicates, Lithium Polysilicates along with Protec III Chem RX and Protec III Restore. All of these products penetrate and react with the free lime to form CSH (Calcium Silicate Hydrate) within the concrete matrix. All liquid hardeners and densifiers are non-membrane forming.

If these products are forced to dry on the surface to try to create a membrane, the result will be an unsightly stained and very dusty concrete surface. This is very undesirable and visually unappealing and cannot be considered a surface membrane.

2. Qualifying for ASTM C309

The following is a quote from the ASTM C309 Standard

Note 2—Solutions of silicates are chemically reactive in concrete rather than membrane-forming; therefore, they do not meet the intent of this specification.

Definition of ASTM C309

ASTM C309 specification covers liquid membrane forming compounds suitable for application to concrete surfaces to reduce the loss of water during the early-hardening period.

Membrane Forming

The first and most important requirement in meeting ASTM C309 is the coatings needs to be able to make a membrane or even film over the concrete surface. All cure and seals, be it water based or solvent based are temporary membrane forming coatings, typically acrylics and hydrocarbon resins are highly desired for their ability to achieve and meet this standard.

Conclusion

If a product cannot leave a membrane on the surface of the concrete, then meeting ASTM C309 is impossible. Non membrane forming products made with sodium silicate, potassium silicate, lithium silicate, colloidal silicate or lithium polysilicate cannot and do not meet ASTM C309. Therefore none of these products should be used if the ASTM C309 specification is required. Using acrylics or hydrocarbon based products are the best choices.

PROTEC III CHEM-RX

The Original Chemical Cure

REDUCING VAPOR TRANSMISSION for the Flooring Industry

DESCRIPTION

Protec III Chem RX is a water-based penetrating concrete treatment. Protec III Chem RX concrete treatment is the permanent answer for the flooring industry. Protec III penetrates the concrete surface which chemically reacts with the free lime in the concrete and creates CSH (calcium silicate hydrate). This fills the pours in the concrete which locks in moisture, with the additional benefit of hardening and dust- proofing the concrete surface.

TYPICAL PROBLEMS PROTEC III CHEM RX SOLVES

- Carbonation
- Dusting
- Moisture/Vapor Pressures
- PH Fluctuations

Protec III Chem-RX once installed properly will reduce moisture readings from as high as 8 lb per 1000 sq. feet per 24 hours to the recommended maximum installation level for carpet, wood and resilient flooring of 3 lbs. per 1000 square feet per 24 hours within 72 hours. Protec III Chem-RX has the additional benefit of hindering bacteria and fungi (mildew) growth.

CARBONATION AND DUSTING

Up till now, dusting or carbonated concrete required expensive grinding and removal of the affected area. With Protec III Chem- RX those days are over. With the application of Protec III Chem-RX the concrete surface is now hard, strong and dust free. For heavily dusting concrete use **Protec III Restore see: Section 3** for information and application instructions.

PH FLUCTUATIONS

Protec III Chem-RX neutralizes contaminants and alkalinity and controls pH levels in the concrete indefinitely.

Protec III Chem RX is not a colloidal silicate. Colloidals tend to naturally leave a dusty concrete surface. This dust has to be thoroughly removed otherwise adhesion of flooring materials could be compromised.

BONDING

On poor concrete Protec III Chem RX increases bond strength by up to 300%.

BENEFITS

- Leaves no surface membrane
- Dust-proofs
- Moisture Retarder
- Dramatically hardens carbonated concrete.
- Increases the life of the treated surface
- Compatible with all glues and adhesives
- Leaves an ideal surface for flooring and coatings

USES

Warehouse floors, hospitals, commercial buildings, parkades.

COVERAGE

Vapor Pressure: approximately 250 ft^2/gallon (6.1 m^2/litre)
Dusting and Carbonated Concrete: approximately 125-150 ft^2/gallon (3.1-3.7 m^2/litre)

LIMITATIONS

Concrete must be 28 days old minimum.

PHYSICAL CHARACTERISTICS

Physical State: Liquid
Color: Opaque
Odor: Mild
Toxicity: None
Cleanup: Water
Flash Point: None
Freezing Point: 0°C
Cure: 72 Hours
Recoatability: After 4 hours
VOC Compliant: Yes - 0 g/litre

CAUTIONS

- Apply product at room temperature.
- Check for evidence of curing compounds and surface porosity by pouring a little water on the concrete and watch for penetration. If there is no sign of penetration within 90 seconds, then the concrete should be mechanically prepared by sanding, grinding etc.
- Make sure all paint, plaster, dust and latiance is removed to allow full efficient penetration.
- For spills, dilute and flush with water.

APPLICABLE STANDARDS

ASTM C418 - Abrasion 67% Decrease
ASTM 642-90 - Porosity 18% Reduction
ASTM 642-90-Water Absorption 30%
Decrease Water Permeability - 50% to 70%
Decrease depending on concrete quality and porosity

SURFACE PREPARATION

- Old dirty concrete should be cleaned thoroughly removing all old glue and adhesives, oils, and any other contaminants. After cleaning, rinse surface thoroughly with water.
- Allow 12 hours for the surface to dry before application of Protec III Chem- RX.
- If concrete is clean, thoroughly sweep area of dust and debris.
- Apply Protec III Chem-RX before repairing cracks in the sub-floor or applying patching or floor-leveling compounds.
- Protec III Chem-RX will not prevent water from coming up through cracks in the concrete floor.
- Follow manufacturer's directions for waterproofing concrete crack sealers and cementitious patching and leveling compounds.

APPLICATION

CARBONATED AND DUSTING CONCRETE

Apply Protec III Chem-RX at a rate of 125- 150 ft^2/gallon (3.1-3.7 m^2/litre) making sure to thoroughly saturate the concrete surface. If dusting is severe we recommend Protec III Restore.
Apply Protec III Chem RX by sprayer or microfiber pad. When spraying, a spray nozzle that produces a flow of 1/2 gallon per minute under 40 psi is recommended.
Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or by re-distributing the existing product using a micro-fiber pad.
Do not allow the product to form puddles.
After 30 minutes let the surface dry, no water flushing is needed.
After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX.
Follow the same procedure as the 1st coat. Two to 3 coats are required. Once floor has dried for 24 hours, sweep floor clean.

VAPOUR PRESSURE AND PH CONTROL

Apply Protec III Chem-RX at a rate of 250 ft^2/gallon (6.1 m^2/litre) making sure to thoroughly saturate the concrete surface. Moisten the surface with Protec Chem RX by sprayer or microfiber pad. When spraying, a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended. Spray in a fine fog pattern.
Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or by re-distributing the existing product using a micro-fiber pad.
Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed. After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX if required. Follow the same procedure as the 1st coat.

Conduct moisture testing using an anhydrous calcium chloride test kit according to ASTM F-1869 test method, and in accordance with the floor manufacturer's recommendations for acceptable sub-floor moisture, after 72 hours and before the flooring installation begins.

If the test results are within the recommendation, proceed with the flooring installation. If the initial 72-hour moisture reading is not within the recommendations, wait an additional 72 hours and retest. A third application of sealer is rarely needed, but may be necessary in severe cases. If the retest moisture reading is within recommendations, proceed with the flooring installation. If the retest reading indicates the moisture is still too high, call Technical Support for assistance. Protec III Chem-RX is not recommended or warranted for below grade concrete floors if they are to be covered with flooring or paint.

CLEAN-UP: water

SHELF-LIFE: 3 years in unopened original container

PACKAGING
5 gallon (18.9 Litre) Pails
55 gallon (205 Litre) Drums
1000 Litre Totes

WARRANTY
We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

Protec III Chem-RX

The Original Chemical Cure

The Process of Curing Concrete

Quote

Portland Cement Association

"The need for adequate curing of concrete cannot be overemphasized. Curing has a strong influence on the properties of hardened concrete such as durability, strength, water-tightness, abrasion resistance, volume stability, and resistance to freezing and thawing and deicer salts. Exposed slab surfaces are especially sensitive to curing as the top surface strength development and free-thaw resistance can be reduced significantly when curing is defective."

Cured Concrete is typically consisting of the following:
Strong Bonds - 50% tri calcium silicates (Alite)
Strong Bond - 10% di calcium silicates (Belite)
Strong Bonds - 15% calcium alumina silicates and ferrites (aluminate and Ferrite) Weak Bonds - 25% calcium hydroxide (lime)

There are 3 practical ways to cure concrete. We will look at each one, from very expensive to very inexpensive processes and disclose their advantages and disadvantages of each.

Water Cure - Requires the forming and ability to hold water over the entire surface of the poured concrete. The use of burlap or tarps to cover the entire area is required to help keep the water from evaporating too quickly. Addition of water to the concrete surface is required periodically. This is all done in order to hold moisture in the concrete to help the hydration process.

Advantages - Allows concrete to hydrate over a long period of time. In a 100% humid environment.

Disadvantages - Extremely labor intensive and expensive. Shuts down the work site during this process. Water Cure is a process that takes about 7 days to complete, making projects take longer to complete, and costing more money. Clean-up is very labor intensive and expensive, and you will still need to treat the concrete afterward to dustproof and to protect it from freeze thaw damage because the concrete still has the 25% weak bonds in the concrete surface.

Acrylic Cure and Seals, Hydrocarbon Resin Cures - This is the process to hold moisture in the concrete in order to complete the hydration process. Two coat are required.

Advantages - Very inexpensive compared to water curing, both in labor and materials. This process allows the concrete to hydrate properly when 2 coats are applied.

Disadvantages - In places where flooring is to be applied, the membrane cure must be removed, and that removal of the membrane cure is very expensive.

In areas where poor aggregate is present, even in interior applications, where there is no exposure to freeze thaw cycles, acrylic cure and seals tend to cause the concrete to pop. In areas where poor aggregate is present, these acrylics and hydrocarbon cures speed up the popping and shaling of the concrete surface where freeze thaw conditions are present. Membrane forming cures do not breathe which traps too much moisture over a long period of time, the poor aggregates absorb this moisture and expands, causing surface popping.

There are a number of other points to consider when using these products:

1. Most membrane forming cures contain VOC's and some are extremely flammable and can be dangerous to work with.
2. Once the membrane has wore off, you still need to apply a chemical hardener to protect concrete from freeze thaw problems.

Acrylic cure and seals and hydrocarbon cures usually take a season to start to break down, in order to allow the concrete to breathe.

NOTE: Resin Cures in Canada, before the VOC laws changed, were effective in protecting the concrete surface because they broke down in 30 days, which allowed the concrete to breathe. That has all changed. The problem being, the Resin Cures are not failing like the solvent based ones did. They are tenatious in their adhesion and tend to not break down for at least 12 months.

Chemical Curing

Chemical curing transforms the poor bonds in the concrete, called calcium hydroxide, approximately 25% (the results of hydration) and converts them into strong bonds in the matrix of the concrete called CSH (calcium silicate hydrate). This process can take place as soon as the bleed water has evaporated from the finished concrete surface. This chemical reaction also blocks moisture from escaping the concrete, allowing the concrete to hydrate properly.

Advantages - Easily the least expensive option. Not only blocks moisture to hydrate the concrete, but also adds the additional hydration processes in the surface of the concrete which converts weak bonds into strong ones making the concrete more durable against popping and shaling. These weak bonds are still present under water cure and membrane cure methods, which still leaves the concrete surface exposed to the elements. With Protec III Chem RX the original chemical cure, the weak bonds are virtually eliminated. This is especially obvious in freeze thaw environments. Another advantage is where flooring is to be installed or other coatings applied, there is no membrane to strip. Protec III Chem RX has 0 VOC's, is nontoxic and dust-proofs the concrete surface. This product can be used on interior or exterior concrete.

Disadvantages - Protec III Chem RX is waterbased so care should be taken when transporting the product in below freezing environments.

Conclusion

Chemical curing concrete is becoming more important in this ever changing world of concrete. Chemical curing concrete holds moisture in the concrete during curing as other methods of curing do, however, there are two major advantages over the other methods when Protec III chemical curing is used. Protec III has the ability to let the concrete breathe and the ability to increase the hydration process, converting the weak bonds in the concrete to strong bonds and increasing resistance to concrete popping, shaling and dusting.

PROTEC III OVERCOMES COMMON PROBLEMS

The Ability of the Liquid Hardener to Penetrate Is What Determines It's Effectiveness

Liquid hardeners and densifiers are now a big part of the marketplace due to the unavoidable problems that dry shake hardeners are having. The main reason is today's concrete mix designs have changed, causing incompatibility issues with the dry shake hardeners. Today, less companies still manufacture dry shake hardeners compared to even five years ago, and it is projected in the next five to ten years that dry shake hardener will virtually disappear from the market place. According to contractors the two main complaints are the surface delaminations of the dry shake hardener and the high expense to repair the problem. The second is having to use a known carcinogen and the health hazards and liability issues associated with their use. Liquid hardeners and densifiers are water based and safe to use. They were introduced to the market at least 30 years ago.

In 1999, Cornerstone Coatings started to manufacture and install sodium silicate hardener and densifiers. The obstacles they saw and experienced first hand with the installation of sodium silicates was the very reason they spent two years developing and designing what is now called Protec III Chem-RX. As a sales company they wanted to avoid at all costs the problems they were experiencing with the sodium silicates such as:

1. Poor penetration
2. Required a lot of labor to use the product.
3. Required scrubbing and wetting with water to try to get the product to penetrate into the concrete surface.
4. You have to remove what did not penetrate the concrete and dispose of it properly.

This was troubling to us, because what were you really giving the customer when you have to throw away the product. Just how much of the product was actually going in, and was the customer really getting their money's worth.

5. Disposal of waste. This by-product of scrubbing and rinsing with water by industry standards is now considered hazardous waste, so dumping on the ground or washing down the drain is not allowed.

Protec III Overcomes The Common Problems of other Liquid Hardeners

Protec III is a water-based formulation that has a very small molecular size (approximately .001 microns) which makes it one of the smallest and easiest liquid hardeners for penetrating concrete surfaces. Protec III overcame the previous problems of sodium silicates by:

1. Having a very small molecular size, easy penetration
2. No scrubbing and wetting down with water
3. No hazardous waste to remove and dispose of.
4. Minimal labor costs

Plus the version of Protec III with Acrylic Membrane is the only liquid hardener that meets ASTM C309 as a cure and seal with the benefit of a liquid hardener and densifier.

When Cornerstone Coatings was doing research the one product that stood out in regard to penetration of the concrete surface was the lithium based products. The one draw back was the cost of the products. Lithiums are very expensive, usually triple the price. To keep costs down, some lithium based products are diluted down with sodium silicates which can lead to the penetration issues stated above. After thorough testing, the benefits of the very expensive lithiums did not show any noticeable advantages over the product Protec III. If a lithium based hardener is required, use Pro-Pel manufactured by Cornerstone Coatings.

The Chemistry Behind The Product

The basic chemistry in Protec III and all silicates, be it sodium, potassium, lithium, collodial is they all need to penetrate the concrete in order to work. These products all need calcium hydroxide

(free lime) which is present in concrete, approximately 25%. These are considered the weak bonds of the concrete structure, and are present in the concrete top wear layer. These weak bonds cause concrete to dust. For exterior concrete exposed to freeze thaw cycles these weak bonds leave the concrete surface susceptible to concrete popping and shaling. Liquid hardeners penetrate the concrete surface (if they can) and chemically react with the calcium hydroxide creating tri-calcium silicate crystals. The old weak bonds are now changed to strong bonds through this chemical reaction.

This makes your concrete floor harder and more dense. The result is a dust-free concrete surface with added benefits of being resistant to concrete popping and shaling.

Conclusion

The results show that liquid hardeners and densifiers work very well for hardening and protecting the concrete floor as long as they can penetrate the concrete. The effectiveness of the liquid hardener will always rely on its ability to penetrate and that is where Protec III excels.

REPORT

LAST UPDATE: (January 2016)

Protec III LSF Chem RX - Used as a Curing Aid

The Original Chemical Cure

DESCRIPTION

Protec III LSF Chem RX controls hairline checking and temperature cracking on new concrete slabs. Protec III LSF Chem RX should be applied to concrete that is properly placed and structurally sound. Protec III LSF Chem RX works as a curing aid through a combined chemical and moisture retention reaction aiding the complete hydration process.

This curing process does not leave a surface membrane across the concrete surface but allows the concrete to still breathe, eliminating concrete popping in areas that have poor aggregate and where membrane forming products accelerate concrete popping. When Protec III LSF Chem RX is applied, 92% greater moisture retention is achieved during the critical 24 hour cure period compared to untreated concrete. In the western Canadian provinces using membrane forming curing products such as acrylics or hydrocarbon resin cures are now causing more problems than fixing. Because of their membrane, concrete is not allowed to breathe. The result is a lot of concrete popping and shaling. Protec III Chem RX still allows the concrete to breath.

Protec IIII LSF Chem RX does not leave a surface membrane like an acrylic or chlorinated rubber products. This makes Protec III LSF Chem RX the choice because it is compatible with all flooring adhesives and does not require stripping of cure and seals that leave membranes.

APPLICATION

- As a cure, apply the product with a low pressure sprayer or roller at a rate of approximately 400 ft^2/gallon (9.8 m^2/litre) on power trowel concrete. On broom finish concrete expect 300 ft^2/ gallon (7.4 m^2/litre).
- Be careful not to leave puddles. If puddles do form, they should be broomed or rolled out. In cooler temperatures greater care has to be taken in regard to puddling.
- All saw cuts need to be coated thoroughly.
- If the product is not applied properly there is the possibility of staining on colored concrete where the product puddles.
- Special care should be taken on colored concrete floors, do not apply for 3 days after colored concrete has been poured.

CAUTIONS

- Note: In winter applications, concrete is colder and moisture dew points are higher so dry times will take longer.
- Take special care when applying product in cold temperature applications. Dry times is slowed and puddling can form, therefore all puddles need to be brushed out.
- Special care is required for colored concrete, do not apply for 3 days.

CAUTIONS (continued)

- Protect surrounding area from over-spray. In case of accidental contact, rinse thoroughly with water immediately.
- Do not apply to frozen surfaces.
- For surfaces not specified or where concrete may have been previously sealed, and for colored concrete, we recommend testing a small area to observe for possible adverse reactions before applying the product.
- Freeze Harm – 5 Cycles No Damage
- Special care should be taken to use de-icing materials that are compatible with concrete.

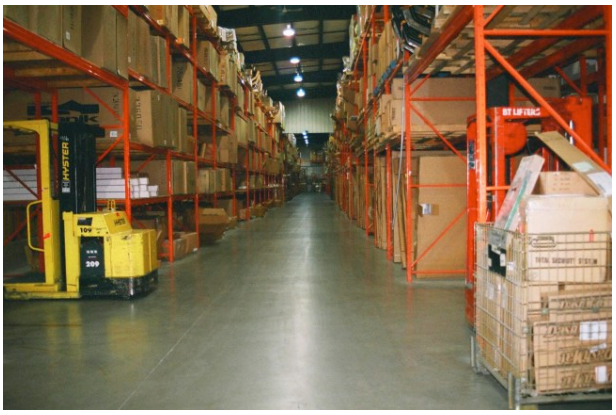
WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

PROTEC III CHEM RX

Photo Gallery
(more photos at www.cornerstonecoatings.com)



CURES CONCRETE
HARDENS CONCRETE
STOPS DUSTING
INCREASES CHEMICAL RESISTANCE
USE INSTEAD OF DRY SHAKE HARDENERS
USED TO POLISH CONCRETE
PERMANENT PROTECTION THAT NATURALLY DEVELOPS A SHINE WITH ABRASION
ENVIRONMENTALLY SAFE

Spec Data

Concrete Finishing

LAST UPDATE: (January 2016)

1. PRODUCT NAME

   Protec III LSF Chem RX

2. MANUFACTURER

Cornerstone Coatings International Inc.
Box 479
1 M North
Bruno, SK S0K 0S0
Phone: 306.369.2521
Toll Free: 1.866.878.7069
Fax: 306.369.2656
Website: www.cornerstonecoatings.com

3. PRODUCT DESCRIPTION

Protec III LSF Chem RX is a hardener and densifier that goes into the concrete and chemically penetrates and reacts with the top wear surface, producing strong bonds in the concrete called Calcium silicate Hydrate (CHS). These strong bonds permanently change the density of the concrete whereby making it harder, denser and stronger. This stronger concrete resists shaling, pitting, dusting, abrasion, and many corrosive chemicals.

- Curing - Protec III LSF Chem RX is vital to achieve the complete hydration process of curing concrete. When applied to properly placed, structurally sound, freshly finished concrete, Protec III Chem RX will uniformly cure the concrete through a chemical cure and moisture retention process. Protec III Chem RX is a chemical reaction within the concrete that changes the weak bonds (calcium hydroxide) into the strong bonds called calcium silicate hydrate (CSH). This process aids in retaining the necessary moisture to ensure a proper cure. The result is less hairline checking on new concrete because the cure process has been slowed right down. Visually you can see how much longer Protec III Chem RX treated concrete stays darker (retaining that critical moisture for a proper cure) than untreated concrete.
  **TESTING 92% greater moisture retention during the critical 24 hour cure period.

- Sealing - Protec III LSF Chem RX does not leave a membrane on the surface of the concrete, if you want the concrete surface to be sealed apply Dual-Tech or Advance C15 Acrylic.

- Hardening - Protec III LSF Chem RX increases the hardness and abrasion resistance of new and existing concrete.
  ASTM C418 - 67% increase in the hardness of concrete wear surface.
  ASTM C1353 - 46% increase of abrasion resistance, Taber Abrasion Resistance Test 1000 cycles.
  ASTM C803 - In various tests compression of the top wear layer has been measured and calculated to be up to 50 mpa from a 30 mpa mix design. ASTM C803 is a determination of the hardness and compression values.

- Dustproofing - Concrete dusting appears on the surface of the concrete as dust or powdery-chalk. This dust can easily be removed with a broom, but it is a perpetual problem that will not resolve itself. It is actually the top wear layer of the concrete turning to dust. The presence is often indicative of a weakness of the wearing surface. Dusting can be caused by poor finishing techniques used while bleed water is still on the surface, improper curing, excess amount of clay in the concrete or exposure to elements before the concrete was fully cured. Inadequate ventilation can also be a culprit particularly in closed quarters like basements. This environment allows carbon dioxide to build up and create a chemical reaction that affects the surface strength o the concrete called carbonation. Concrete dusting rarely indicates a structural problem with the concrete, but it can be a troublesome problem. Using Protec III Chem RX will substantially strengthen the concrete and virtually eliminate dusting.
  ASTM C1353 - 46% increase in abrasion resistance at 1000 cycles

- Bonding - Protec III Chem RX is the ideal product to cure concrete before the installation of flooring adhesives because it eliminates the dusting and efflorescence problems that commonly cause delamination problems with flooring. Surface membranes can interfere with the proper bonding of the adhesive, and must be removed prior to application of the adhesive. Protec III Chem RX does not leave a surface membrane as all other cure and seals do, so there is no costly expense and time intensive labor to remove a surface membrane. Protec III Chem RX prepares the treated surfaces for paints, caulking compounds, adhesives and floor coverings. This product does not contain silicone and is coatable and compatible with any type of covering when standard surface preparation guidelines are followed.
  ASTM D3359 testing shows at least 22% increase in epoxy adhesion. This test evaluations products ability for flooring adhesives, glues, paints, caulking to adhere to concrete.

- Neutralizing the Effects of Alkali - Alkali is often referred to in the industry as salts or efflorescence. It is a white powder that will show up on the surface of the concrete that is unsightly. It is brought up to the surface from the ground water by hydrostatic pressure and will migrate through the concrete and destroy it if it sits on the surface because of its alkaline properties.

- Protec III Chem RX will help reduce or completely stop the efflorescence from being carried to the surface because it fills in the pores of the concrete by changing the poor bonds of calcium hydroxide which is the alkali into the strong bonds of calcium silicate hydrate or CSH. It is this process that fills in the voids in the top wear layer and stops the migration of water which also stops the migration of the salt or efflorescence from appearing on the surface.
  ASTM C642 - 72% reduction. This test evaluates products ability to reduce absorption.

4. USES

- Use on new or existing interior power trowel concrete, pre-cast concrete, poured in place walls, heavyweight concrete block, exterior broom finish, mortar, plaster, exposed aggregate and any sand aggregate portland cement combination.
- Product is compatible with flooring adhesives, paints, and caulking
- Anywhere a non-toxic low odor cure is needed to meet LEED requirement
- Ideal applications include warehousing, distribution facilities, aviation hangars, office buildings, hospitals, schools, manufacturing plants, food processing and distribution buildings, pulp and paper mills or other type of facilities.

5. COMPOSITION & MATERIALS

- Protec III Chem RX complies with all USDA regulations and is nontoxic, noncombustible and nonflammable. When applied properly it is not harmful to lungs or hands. It contains no volatile organic compounds (VOCs).

6. PACKAGING

- Protec III Chem RX is available in 55 US gallon (205 Litre) Drums and 5 US gallon (18.9 Litre) Pails and Totes (1000 Litre)

7. COLOR AND FINISH

- Protec III Chem RX is transparent and will not change the natural appearance of masonry or concrete. On smooth steel-trowelled concrete surfaces, a natural shine will appear between 6-12 months after treatment. This can be accelerated by burnishing after curing. The shine is caused by the hardening and densifying effects of Protec III as well as by the abrasion from cleaning and use of the floor. A routine cleaning program using a floor scrubber with abrasive type brushes will accelerate and enhance the shine. The shine will last the lifetime of the surface.

8. PHYSICAL CHARACTERISTICS

- Dilution: None, use as supplied
- Odor: Mild
- VOC's: 0

- Clean-up: Water
- Freezing Point: -6C

9. SHELF LIFE: 3 yrs in original unopened container

10. CLEAN-UP: water

11. BENEFITS

- Reduces or eliminates hairline cracking in new concrete.
- Stops concrete popping and shaling that is associated with membrane cure and seals
- Hardens and strengthens within the concrete top wear layer, protects against deterioration and produces a floor that is resistant to traffic. Rather than eroding, the floor surface actually polishes with use. ASTM C418 - 67% Increase in Hardness of the Concrete Wear Surface
- Treated surface resists dust, oils, greases and other surface contaminants, such as tire marks. Reduces tire squeel.
- More Effective than Water Curing when applied immediately after the finishing operation; stabilizes and significantly enhances abrasion resistance and durability of surface. Tested to have a 92% greater moisture retention during the critical 24 hour cure period.
- Eliminates dusting which enhances surface bonding of adhesives and floor coverings, also paints and caulking compounds. Compatible with any type of covering and flooring adhesives when standard surface preparation guidelines are followed.
- Restricts water migration through the concrete eliminating efflorescence problems
- Reduces Vapor Transmission and Reduces Radon Gas Emissions
- Compatible with Dry Shake Hardeners
- VOC's - Zero
- Environmentally Safe and Permanent
- Food Safe Approved
- Equipment is cleaned using water only.

12. LIMITATIONS

- Additional yearly maintenance of this product is required where heavy use of de-icer/road salts are allowed to accumulate.
- All curing agents and sealers must be removed before the application of Protec III Chem RX.
- Where the concrete is abnormally soft and porous, pre-treatment with Protec III Restore is required before the application of Protec III Chem RX. Numerous coats of Protec III Chem RX may be required in poorly finished, poorly cured, broom finish, or scarified floors.

- In cases of excessive moisture, and/or extremely hydrostatic pressure from beneath the slab, this reaction does not prevent excessive salt migration.
- Protec III Chem RX is not to be used to seal lightweight block or other extremely porous masonry that contains actual holes and air pockets.

13. ASTM TESTING

ASTM	Name of Test	Uses of Test	Results
ASTM C418	Standard Test Method for Abrasion Resistance of Concrete	Increase in hardness	67% increase
ASTM C1353	Taber Abrasion	Abrasion Resistance	46% increase abrasion resistance at 1000 cycles
ASTM C642	Test Method for Density Absorption and Voids in Hardened Concrete	Evaluate products ability to reduce absorption	72% reduction
ASTM C803	Penetration Resistance	Determination of hardness and compression values	Increase from 30 mpa to 50 mpa in compression strength
ASTM B117	Standard Method of Salt Spray	Used as a chloride ion permeability test	57% decrease in permeability to Salt Spray
ASTM D3359	Surface Adhesion	Evaluates products ability for flooring adhesives, glues, paints, caulking to adhere to concrete.	At least 22% increase in epoxy adhesion; no change to polyurethane adhesion
ASTM G23	Weathering Treated Samples		Ultraviolet light and water spray exposure had no adverse effect on treated samples

14. CHEMICAL RESISTANCE TESTS

Acids	Salts	Miscellaneous
Acetic Acid <10%	Bromid	Buttermilk
Acid Waters	sodium	Chlorine gas
pH<6.5 Boric Acid	Dichromate	Cider
Carbolic	sodium	Coal
Carbonic	Potassium	Coke
Chromic 5%	Nitrate	Cold Ashes
Formic 10% & 90%Humic	Nitrite	Corn Syrup
Hydrochloric 10%	Persulfate	Fermenting Fruits
Phosphoric 10%&85%Tannic	Sulfite, sodium	Formaldehyde
	Thiosulfate, sodium	Hydrogen sulfide
Solvents and Alcohols		Iodine
Carbon tetrachloride	Petroleum Oils	Lignite Oils
Ethyl alcohol	35 Baume	Manure
Methyl alcohol	Gasoline	Mine water, waste
t-Butyl alcohol	Light oil above	Molasses
Trichloroethylene Acetone		Nickel plating solutions
Carbon disulfide		Ores
Glycerin		Sauerkraut
Ethylene glycol		Sea water
		Silage
		Sugar
		Sulfite Liquor
		Sulfur Dioxide
		Tanning Bark
		Tanning Liquor
		Water
		(soft <75 ppm carbonate)
		Wine

15. COVERAGE:

- EXISTING BROOM FINISH – Approx. 200 ft^2/gal (4.9 m^2/litre)
- CURE-BROOM FINISH - Approx. 300 ft^2/gal (7.4 m^2/litre)
- EXISTING POWER TROWEL - Approx. 300 ft^2/gal (7.4 m^2/litre)
- CURE-POWER TROWEL - Approx. 400 ft^2/gal (9.8 m^2/litre)

16. SURFACE PREPARATION

- New and old dirty concrete should be cleaned and then rinsed with clean water if necessary. After washing allow the surface to dry before application of product.

17. CAUTIONS

- Protect surrounding area from over-spray. In case of accidental contact, rinse thoroughly with water immediately.
- Do not apply to frozen surfaces.
- Do not apply to colored concrete for a minimum of 3 days after finishing operations
- For surfaces not specified or where concrete may have been previously sealed, we recommend testing a small area to observe for possible adverse reactions.
- Freeze Harm: 5 Cycles No Damage
- For cool temperatures applications on power trowel surfaces, apply at 400 ft^2/gal (9.8 m^2/ litre) minimum, specifically take caution to roll out any puddles that form. Dry time is slower in cool temperatures, which may cause more puddling. If heavy puddles dry, they can leave a white residue on the surface of the concrete, which is very difficult to remove.
- FOR HEAVY ABRASION FLOORS (ie.Tracked in gravel and dirt that is being ground into the floor by vehicles) FOLLOW THESE INSTRUCTIONS: Use 2 coats of Protec III LSF Chem RX making sure the 1st coat dries before applying the 2nd coat. Normal wear and tear does not include heavy abrasion from gravel and dirt, therefore it is highly recommended to keep your floors clean to avoid unnecessary excessive wear.

18. APPLICATION

- For concrete exposed to freeze-thaw cycles 2 coats are required.
- Apply product with a low pressure sprayer or roller.
- Apply at recommended square foot coverage.
- Saw cuts need to be coated thoroughly.
- Apply 2-3 coats to high traffic floors or floors exposed to high corrosion.
- Apply the 2nd concrete one hour after the 1st coat has dried.
- Roll out any puddles that form.
- For concrete that will be exposed to a variety of harsh chemicals, you will need to apply 3 to 4 coats depending on the porosity of the concrete.

19. MAINTENANCE

Use a neutral to high pH detergent with no sulfates and hydroxides (caustic soda) to clean the floor. Acidic cleaners or sweeping compounds will dull the appearance of the surface.
Scrub the floor often. The abrasion polishes the floor and enhances the shine. Ample water used with routine detergent and scrubbing will accelerate the process of getting a shine.
Use caution to protect the floor as stains may still occur during the first 6 to 12 months. Clean spills quickly. Highly concentrated acid may etch the surface if left in contact with the floor. Foods such as mustard and grape juice may leave a residual stain if not removed immediately.
Using a good maintenance program, after a year the floor should have an attractive low satin shine. The surface should be hardened and densified. Most foods and liquids should not penetrate the surface.
Areas with tracked in gravel and dirt will need to be kept clean, as forklift/equipment traffic in conjunction with gravel and dirt will produce heavy abrasion to the floor and may unnecessarily damage the floor.
Floors with broomed or rough textured finishes will not produce a shine due to the textured surface.
Use a good oil emulsifier to clean up oil, grease, or fats.
FOR PROTEC III CHEM RX - Painting the floor or striping of the floor can be done at any time. Consult the paint manufacturer or the recommended preparation of the floor.
Using waxes or other coatings on the floor is not necessary or recommended.

YEARLY MAINTENANCE

For Exterior Broom Finish Concrete exposed to freeze thaw cycles, we recommend applying one coat at approximately 200 ft^2/gallon (19 m^2/litre) every one to two years as part of your regular maintenance program.

For interior concrete, we recommend applying one coat in high traffic, high abrasion areas. For example, in front of overhead doors, apply at a rate of 300 ft^2/gallon (28 m^2/litre) every one to two years as part of your regular maintenance program.

20. APPLICATION FOR CURING CONCRETE

- As a cure, apply the product with a low pressure sprayer or roller at a rate of approximately 400 ft^2/gallon (9.8 m^2/litre) right after the final pass of the power trowel.
- On broom finish concrete expect 300 ft^2/ gallon (7.4 m^2/litre).
- Be careful not to leave puddles. If puddles do form, they should be broomed or rolled out. In cooler temperatures greater care has to be taken in regard to puddling.
- All saw cuts need to be coated thoroughly.
- If the product is not applied properly there is the possibility of staining on colored concrete where the product puddles.
- Special care should be taken on colored concrete floors. If product is applied to plain grey concrete this is not a problem.

CAUTIONS

- Take special care when applying product in cold temperature applications. Dry times is slowed and puddling can form, therefore all puddles need to be brushed out.
- Special care is required for colored concrete, do not let the product puddle.

for more information see: Protec III Chem RX Used as a Curing Aid

21. APPLICATION FOR BROOM FINISH CONCRETE EXTERIOR

- Apply once the bleed water has dissipated.
- Apply a 2nd coat after the 1st coat has dried.

FOR BADLY DUSTING/CARBONATED CONCRETE: *see Protec III Restore Strengthens and Hardens Concrete - Section 4 (8-9)*

22. APPLICATION FOR FLOORING INDUSTRY/VAPOR TRANSMISSION/RADON GAS

- Moisten the surface with Protec IIII Chem RX by sprayer or microfiber pad. When spraying use a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended.
- Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or by re-distributing the existing product using a micro-fiber pad.
- Do not allow the product to form puddles.
- After 30 minutes let the surface dry, no water flushing is needed.
- After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX. Follow the same procedure as the 1st coat.
- Typically 2 coats is all that is needed.

23. MAINTENANCE

- For Exterior Broom Finish Concrete exposed to freeze thaw cycles, we recommend applying one coat at approximately 200 ft^2/gal (4.9 m^2/litre) every two years as part of your regular maintenance program.
- For Interior Concrete, we recommend applying one coat in high traffic, high abrasion areas. For example, in front of overhead doors, apply at a rate of 300 ft^2/gal (7.4 m^2/litre) every 2 years as part of your regular maintenance program.

24. WARRANTY

- We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

PROTEC III CHEM RX CUSTOMER TESTIMONIALS

RE: NEWLY POURED CONCRETE IS PROTECTED FROM PHYSICAL DAMAGE

"Protec III Chem RX is a high quality densifier/sealer.

I use it on most concrete slabs I do. It hardens the surface to a high degree, so much so, that when we sealed a floor with Chem RX it actually wore steel off the corner of a beam that had been dragged across it (newly poured concrete) and it didn't gouge the concrete!

Economical way to harden and protect your floor!"

Rick Cole, General Contracting
Williams and Associates
Calgary, AB
2015

RE: GREATLY REDUCES CALLBACKS FROM CONCRETE POPPING AND SHALING

"We Promote and sell Cornerstone Coating's Protec III Chem Rx and
Protec III (with Acrylic Membrane) because it greatly reduces problems and call backs associated with concrete popping and shaling.

Protec III Chem Rx works very good as a cure and hardener for all of our concrete.

We are very happy to recommend these products to all of our customers"

LAFARGE

Terry Peterson
Grande Prairie
2015

RE: PRODUCT WORKS GREAT FOR 5 YEARS NOW

"I like the Protec III Chem Rx, It works great on the concrete we have sealed. I like how your product line is very versatile.
The Advance Acrylic sealer for decorative concrete works great as well.

We have been using your sealers for 5 years now with no problems."

Carbrook Concrete
Kevin Rye
Grande Prairie, AB
2015

RE: WE LIKE THAT WE CAN APPLY THIS RIGHT AWAY - AS SOON AS THE BLEED WATER IS OFF

"We have been selling and using Protec III Chem RX since 2002 and we love this product. Protec III Chem RX is very versatile, we can use it on new concrete, old concrete, broom finish and power trowel. We like that it is Water-Based and very safe to use.

We find that it is very easy to use on new concrete, you simply apply it after the bleed water is off. We like that we don't have to come back after 28 days of curing to apply a sealer compared to other products. This product is excellent for reducing salt and freeze thaw damage to concrete.

We have 10 year old concrete driveways side to side, one with nothing on it and the other with Protec III Chem RX. The driveway with Protec III Chem RX is easily twice as good as the non-sealed driveway.
We have one customer who applies a coat of this sealer every 2 years and after 8 years the driveway is in perfect condition. This sealer is affordable and we recommend it to all of our customers."

Littles Redi Mix
Tisdale, SK 2015

RE: PRESSURE SENSITIVE GLUES AND ADHESIVES WORK PERFECT ON PROTEC III CURED CONCRETE

We love Protec III ChemRx as a cure for all of our concrete slabs, I recommend it to everyone. The product is easy to apply and very economical, it is nice to see it soak into the concrete, not like some of the other products that leave a mess.
We love the curing properties of Protec III ChemRx. The product is applied right after power troweling, it soaks in nicely, darkens the concrete, the concrete stays dark for a long time, making a great cure.
Flooring adhesives have no problem adhering to the concrete that have been treated with Protec III ChemRx, the beauty of the product is that it cures the concrete while leaving no surface membrane. Because its penetrates the concrete fully, pressure sensitive glues and adhesives work perfect on concrete that has been cured with Protec III ChemRx.
From our many years of experience Protec III cures concrete better than water curing, and at the fraction of the cost, plus we can get a project completed sooner over water curing. In fact, we did a field test on a project with seven engineers, comparing water curing to Protec III ChemRx on its own. The test was to pour two concrete pads with thermometers imbedded into the concrete, the concrete pads were in the direct sun, one pad water cured and the other pad treated with Protec III. The result was significant, the temperature of the pad treated with Protec III was on average 2 degrees lower than the water cured pad. Protec III was slowing down the cure better than water curing, needless to say we cure everything now with Protec III. Like I said Protec III is a great product, you have a winner here.

LEDCOR GROUP
Ryan Cox **2016**

RE: DOES NOT PLUG THE SPRAYERS - APRIL 2016

What we like about Protec III is it doesn't plug up the sprayers, a super treat to push through the sprayer.

We have used the product for one year now so we don't know how good it works, but the indications are good so far, it is spring and we have had no call backs with the driveways we treated with Protec III, so very good news.

We like the concept of the product and how it strengthens the surface of the concrete while still letting it breathe, which is very important for our concrete nowadays.

We have used everything out there, and this is the most user friendly product by far and we have been doing concrete since 1972.

Rubicon Construction Ltd.

Edmonton Area 2016

RE: USE AS A CURE ON ALL FLATWORK INSIDE AND OUT APRIL 2016

We have been using Protec III Chem RX on all our design build projects to cure all of our flat work for the past 5 years without issues. It's a great product for curing concrete and leaves a great looking floor.

Miners CONSTRUCTION

Saskatoon, SK 2016

RE: CARPET, VCT, VINYL, JUST AS EFFECTIVE AS WATERCURING APRIL 2016

We have been using Protec III Chem RX for at least 8 years now as a cure for all of our concrete, including office space areas, warehouse floors and exterior concrete sidewalks and aprons.

We have treated over 1 million ft^2 of concrete with no issues. This product has met all of our needs over the years and we are pleased with the results. We are known for doing quality work and with Protec III ChemRX it fits in perfectly.

Historically, where we would have water cured the concrete in the past, we now use Protec III ChemRX instead, because it works, we see no advantage to water curing anymore compared to using Protec III ChemRX. Using Protec III does not slow down the project like water curing, it is very inexpensive and easy to use.

We have had no problems in areas of flooring where Protec III has been used as a cure. Flooring such as carpet, VCT or vinyl have no problems adhering to the concrete, because Protec III ChemRX does not leave a membrane when curing. We are very happy with your product.

CONTECH GENERAL CONTRACTORS

Saskatoon, SK 2016

RE: WORKS GREAT WHERE FLOORING GOES DOWN - APRIL 2016

We have been using Protec III ChemRX for over 4 years now as a cure and we love it! We put it on right after we do our final trowel so we don't have to come back later. If we cut, we do it the next morning. We will first chalk our lines, spray on the Protec III and let it dry. Usually one hour later we will cut the lines.

We have treated over 1 million ft^2 so far in the last 4 years with no problems. When we use Protec III we have never had a call back or deficiency because of the product, for this reason we push this product everywhere we can, this product should be used everywhere.

Protec III works great where flooring goes down because it is a penetrant and leaves no membrane.

CONCRETE IMAGE

Regina, SK 2016

RE: NO CRAZE OR SPIDER CRACKING WHEN USING PROTEC III - APRIL 2016

What we like about Protec III ChemRX is the ease of application, not like other cures on the market. We apply the product and leave, very simple.

We have been using Protec III ChemRX as a cure for over 2 years now, we have never had a problem, and no call backs when using Protec III Chem RX.

When we apply the Protec III after the final trowel we have no craze or spider cracking. We use Protec for areas where flooring is to be installed, because it leaves no membrane. The product does not interfere with the adhesion of the flooring. Great Product!

BRY SAND ICE ARENA LTD BRY SAND CONCRETE LTD

Nathan Calvert
BRY SAND
Edmonton, AB 2016

RE: SHOP FLOOR LOOKS BRAND NEW

I treated my shop floor with Protec III Chem RX when it was newly poured. I have had no chipping, no cracking, no spalling. It looks brand new! Protec III did a really great job. When snow melts on the concrete, I can just sweep it away and the concrete lightens up right away. Great product!

Reliable Excavating

2017

RE: FLOOR REMAINS NON-SLIP WHEN WET

"Protec III Chem RX was used to polish our concrete floor at the Rent-it Store in Saskatoon, SK. We are pleased with the results, this is a very good product. The floor was polished to a 1500 grit and it still remained non-slip when wet. The floor is also very easy to keep clean."

Doug Mitchell
Vice President
The Rent-It Store
Saskatoon, SK
2006

RE: WE HALTED ANY FURTHER DETERIORATION OF OUR CONCRETE WITH PROTEC III CHEM RX

"Our sidewalks in the town of Govan have been poured in 1999 and due to a number of factors, had rapidly deteriorated. The application of Protec III has been very successful in halting any further deterioration of the sidewalks. Since this sealant has been applied, the condition of the sidewalks have not gotten any worse, even following the winter months during which a significant amount of ice melting products were required to be applied due to freezing rain and other environmental conditions that caused extremely icy conditions. We are very pleased with the results of Protec III. The investment in the application of this sealant has proven to save us a great expense that would have incurred had the sidewalks continued to deteriorate and required replacement."

Michele Cruise-Pratchler, R.M.A.
Administrator
2001

RE: RESULTS ARE ALWAYS BETTER WHEN OUR CUSTOMERS USE PROTEC III CHEM RX

We have been selling and promoting Protec III Chem RX for over 7 years now for concrete. Results are always better when our customers use Protec III. We recommend Protec III for all our Agriculture projects.

N&R Concrete Ltd.
Melville, SK. 728-5433

Logan
N & R Concrete
Melville, SK
2016

RE: BEEN USING THIS PRODUCT SINCE 2001 AND WE RECOMMEND IT TO EVERYONE

"We have been selling Protec III Chem RX since 2001 and all of the contractors who use this product say it works great for protecting their concrete.
Our contractors keep coming back to get this product.

We recommend everyone to use Protec III Chem RX on all of their concrete."

Watrous Concrete
Watrous, SK
2016

RE: NO SHALE POPS OR SHRINKAGE CRACKS WHEN WE USE PROTEC III CHEM RX

" I love this stuff, Protec III Chem RX. We have no shale pops or shrinkage cracks, not like we used to have with the curing compounds or cure and seals we used to use. It also give the concrete that blue-grey look when it is curing, like it is supposed to be.

Harold's Concrete
Saskatchewan
2010

RE: PROTEC III SLOWS DOWN THE CURE AND INCREASES ITS PSI

"Protec III Chem RX is a really good product, it gives me peace of mind. I have no problems with my driveways. Protec III slows down the cure and increases the psi, and I don't have to worry about peeling.

LG Concrete
Saskatoon, SK 2010

RE: ABSOLUTELY NO MAINTENANCE ON THESE FLOORS

"We will definitely look at using Protec III Chem RX again on our next expansion. Protec III Chem-RX has absolutely no maintenance to the finish, only periodic sweeping to keep it clean. The floor is shiny, the concrete no longer dusts, the product makes the concrete reflect light extremely well, and it is easy to keep clean."

Isaac Hiebert
Warehouse Manager
GrandWest Enterprises Inc. 2010

RE: YOU CANNOT USE CURE AND SEALS ON GREEN CONCRETE WITHOUT THE CONCRETE POPPING IN OUR AREA

"We have had very good resuts with Protec III Chem RX. You cannot use Acrylic Cure and Seals on green concrete in our area without the concrete popping. With Protec III we do not have this problem. We have been selling this product for 14 years and we have had no complaints from our customers.

Holmes Redi-mix
Nipawin, SK 2011

RE: NO CONCRETE POPS OR CALL BACKS

We have been using your Protec III Chem Rx for 2 years now and we love it! We have had no concrete pops or call backs on our Broom Finish Concrete since using Protec III Chem RX.

Cory Penner
Sunset Concrete
2017

RE: USED AS A CURE FOR 9 YEARS NOW – NO CHIPPED EDGES ON OUR SAW CUTS

We always apply Protec III Chem RX as a cure on our warehouse floors. Since we started doing this, our saw cuts have nice, clean edges. Before we always had chipped edges. We have been using Protec III Chem RX for 9 years now as a cure and we have never had any issues from any of our floors, great product.

Anderson Construction
Saskatoon, Sk
2017

RE: WE'VE CUT OUR CALLBACK DOWN TO ZERO

We have been using Protec III Chem RX on all of our broom finish driveways and garage pads for the last 2 years, and we are glad to say that we have cut our call backs down to zero, in regards to peeling and shaling issues. It's a great product and is very convenient to use.

GBC GERANSKY BROS CONSTRUCTION

Ryan Geranski
Geranski Brothers
2017

RE: WE USE IT ON ALL OUR POWER TROWEL CONCRETE

We have been using Protec III Chem RX as a cure for 8 years now, on all our Power Trowel concrete. Compared to acrylic cure and seals, we virtually have no issues with the concrete surface. Since using Protec III Chem RX, we could not say the same thing with cure and seals. There are a lot of benefits to using Protec III Chem RX, it's food safe, has no smell, you don't have to come back 28 days later and best of all, it works.

Dave
Royal Concrete
2017

RE: WE WON'T WARRANTY OUR CONCRETE UNLESS PROTEC III CHEM-RX IS USED AS A CURE

We are a Redi-Mix supply company in Kindersley, Sk.
Protec III is a great product, in fact we will not warranty our concrete unless Protec III Chem RX is used as a cure. We have been in business for 50 years now and we can say that Protec III Chem RX is one of the best products in the market place. Protect III Chem RX works great when its windy out, it stops the concrete surface from developing shrinkage cracks from drying out too fast. Protect III Chem RX has cut down concrete problems dramatically, membrane cures are a terrible idea for concrete, Protec III is the answer.

Rob
Concrete Construction Corp
Kindersley, SK
2017

RE: 15 YEARS WE HAVE USED PROTEC III CHEM-RX TO CURE ALL OUR CONCRETE – LIFE IS GOOD!

It's been 15 years since we first started using Protec III Chem RX to cure all of our broom finish and power trowel concrete. Before Protec III Chem RX, we used to use membrane forming cure and seals. It was very frustrating, because of all the concrete popping and shaling issues. Since we have changed over to Protec III Chem RX, everything has changed, life is good.

Dan General Contractor
Boehr Construction
Watrous, SK
2017

RE: WE CURE ALL OUR FLOORS WITH PROTEC III CHEM-RX

Pro-Bilt is a design build company in the commercial light industrial area. We have been using Protec III Chem RX as a cure on our concrete floors for over 3 years now. We previously used Vo Comp 20 but we changed over because the cure and seal would stay cloudy and discolored for a long time and that did not make our floors look good. We do not have any of these issues with Protec III Chem RX, this product is nice to work with and the concrete even shines up with cleaning and use.

Jeff
Pro-Bilt Structures Ltd.
2017

RE: WE RECOMMEND IT TO EVERYONE WHO WANTS A GREAT LOOKING INEXPENSIVE POLISHED CONCRETE FLOOR

Protec III Chem RX was used as a cure by Royal Concrete when they placed and finished our floor for our new building in our retail space. We wanted a polished concrete floor without paying the high cost of the concrete polishing people. Murray from Cornerstone Coatings said that if we applied one coat of the Protec III Chem RX for polishing concrete, with use and cleaning with our floor scrubbers, that the floor would polish up without all the expense. It has been 10 months since our grand opening and the floor looks beautiful, it was a short time before a shine started to develop. Normally we have the floor cleaned one or twice a week, using water and a little soap and a standard red pad on the walk behind scrubber and we now have this beautiful polished concrete floor. Great Product, we recommend it to everyone who wants a great looking inexpensive polished concrete floor. This floor is easy to take care of and looks great.

Melody
Castle Building Centre
Kindersley, SK
2017

CORNERSTONE COATINGS INTERNATIONAL INC.
LEADING THE WAY

Technical Data Sheet

LAST UPDATE (January 2016)

Protec III (LSF)
With Acrylic Membrane

The Complete Strength Gain Material
for New Concrete Floors

DESCRIPTION

Protec III with Acrylic Membrane is a high-end densifier with Acrylic Membrane used on existing interior concrete to dustproof and to give the concrete an attractive semi-gloss finish.

Protec III LSF with Acrylic membrane works on 3 levels, which give it the clear and distinct advantage for concrete floors. Protec III LSF with Acrylic Membrane is easy to apply, because we use Liquid Silica Fume Technology and not silicates or siliconates, which are highly temperamental and difficult to work with. Protec III LSF with Acrylic Membrane is easily incorporated into the surface to increase the strength, hardness and micro-density of the concrete.

Protec III LSF with Acrylic Membrane incorporates a high-end acrylic component to give a proper cure, virtually eliminating warping and topical cracking. Other products do not have this full cure capability, and the slab will show the tell-tale damaging signs of topical shrinkage cracking and warping. Winter heating environments often produce dusting of the concrete, using Protec III LSF with Acrylic Membrane will protect the surface from exposure to achieve a proper cure and eliminate dusting.

Protec III LSF with Acrylic Membrane is less costly because the easy to use formulation eliminates the need for expensive and overpriced certified installers.

BENEFITS

Cures concrete to help stop shrinkage cracking and curling.
Helps eliminate dusting and stops carbonation of concrete.
Increases the chemical resistance and hardness of concrete.
Environmentally Safe and Permanent
Meets LEED Requirements
Abrasion Resistant (ASTM C418 Increased resistance to abrasion by 67%)
ASTM C309 Curing Type I Class A
FOOD SAFE – APPROVED
Non-Toxic

USES

For Interior Use Only
Use on all new power trowel concrete floors.
Use on interior existing concrete as a hardener and sealer.
Not compatible with flooring adhesives.

PHYSICAL CHARACTERISTICS

Physical State: Liquid
Color: White
Odor: Slight Odor
VOC's: 9.5 grams/litre

SAFETY

Protec III LSF With Acrylic Membrane is not toxic or dangerous to the health of installers or surrounding workers unlike solvent based cures or the carcinogenic dust from dry shake hardeners.

CAUTION

Protect surrounding area from over-spray. In case of accidental contact, rinse thoroughly with water immediately.
Do not apply to frozen surfaces. For best results apply when the substrate and ambient air temperature is above 53°F (12°C). For surfaces not specified, we recommend testing a small area to observe for possible adverse reactions.
DO NOT FREEZE Product.

PACKAGING

18.9 Litre Pail
205 Litre Drum

SHELF LIFE: 2 years in original unopened container.

CAUTION: FOR HEAVY ABRASION FLOORS (ie. Tracked in gravel and dirt that is being ground into the floor by forklifts)

FOLLOW THESE INSTRUCTIONS: Using Protec III Chem RX apply one coat to the areas that will be affected, let product dry. For 2nd coat apply Protec III with Acrylic Membrane using the normal application procedure. Normal wear and tear does not include heavy abrasion from gravel and dirt, therefore it is highly recommended to keep your floors clean to avoid unnecessary excessive wear.

STANDARDS
ASTM C418 Abrasion – 67% increase in hardness of the concrete wear surface.
ASTM C309 Curing, Type I, Class A
FLOOR CLASSIFICATIONS ACI 302, Class Numbers (1,3,4,5,6,7,8,9) floors
Exceptions: #3 second course only, #3,4, no if covered surface, #7 second course only, #8 second course only, #9 if topping please consult Technical Support. Works well for super flat floors.
ASTM C642 –72% decrease in absorption.

SURFACE PREPARATION
New or existing concrete should be clean.

APPLICATION
Apply product with a low pressure sprayer or roller within 4 - 8 hours once finishing operations are done.
Apply at recommended square foot coverage.
Saw cuts need to be coated thoroughly.
Apply 1 coat at the recommended rate.
Roll out any puddles that form.
Drytime: 4 hours at 68°F (20°C)
Either roll or spray.
Roll out any puddles that form.

WARRANTY
We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

PROTEC III LSF With Acrylic Membrane
Maintenance Sheet

Use a neutral to high pH detergent with no sulfates and hydroxides (caustic soda) to clean the floor. Acidic cleaners or sweeping compounds will dull the appearance of the surface.

Scrub the floor often. The abrasion polishes the floor and enhances the shine. Ample water used with routine detergent and scrubbing will accelerate the process of getting a shine.

Use caution to protect the floor as stains may still occur during the first 6 to 12 months. Clean spills quickly. Highly concentrated acid may etch the surface if left in contact with the floor. Foods such as mustard and grape juice may leave a residual stain if not removed immediately.

Using a good maintenance program, after a year the floor should have an attractive low satin shine. The surface should be hardened and densified. Most foods and liquids should not penetrate the surface.

Areas with tracked in gravel and dirt will need to be kept clean, as forklift/equipment traffic in conjunction with gravel and dirt will produce heavy abrasion to the floor and may unnecessarily damage the floor.

It is always recommended to do an application once a year with Protec III Chem RX to ensure longterm protection and durability in high traffic areas.

Floors with broomed or rough textured finishes will not produce a shine due to the textured surface.

Use a good oil emulsifier to clean up oil, grease, or fats.

Using waxes or other coatings on the floor is not necessary or recommended.

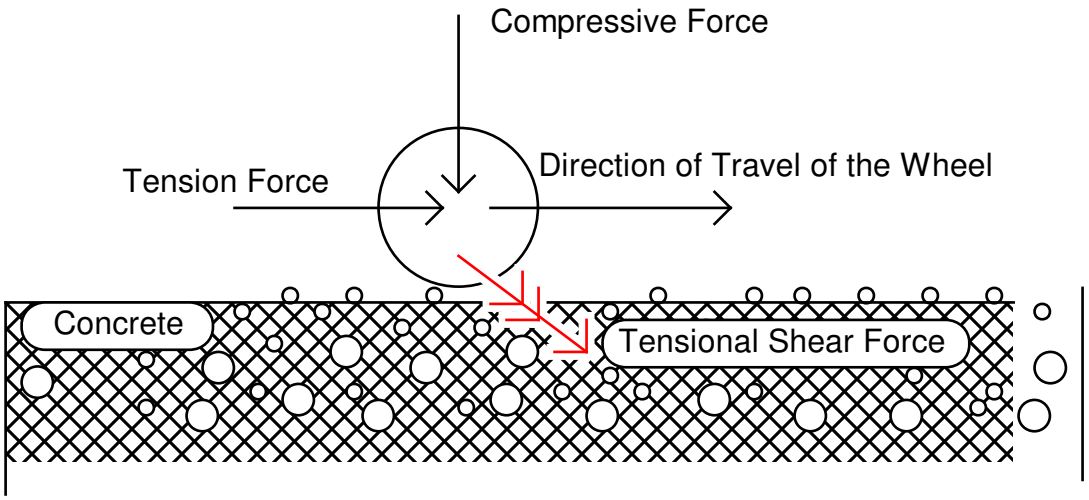
HARDENING, DENSIFYING, CURING, SEALING

Protec III LSF with Acrylic Membrane

The Complete Strength Gain Material for Concrete Floors

Protec III LSF with acrylic membrane is the highest performing curing compound, hardener, shrinkage controller and overall strength gain material on the market today for new concrete floors. Overall strength is a combination of compressive strength, hardness, elimination of shrinkage to its lowest degree and the often overlooked, tensional strength.

ABRASION AS A FORCE



Abrasion resistance in simplified form is a combination of compressive force and tension force. Together these two forces produce a third force, tensional shear (or shear). Tensional shear is a force measured by movement of an object over a stationary (unmovable) object (ie. a wheel moving over a concrete surface). Together the downward force or compression and the horizontal force, tension, create a third force which is not horizontal or vertical, but diagonal and is a combination of these two forces. Tensile strength unlike compressive strength is highly influenced by curing and hydration levels. Plastic shrinkage cracking is a sign that some tensional strength has been lowered and commonly occurs on untreated or ineffectively cured concrete surfaces.

Protec III LSF with Acrylic Membrane increases strengths, especially tensile with its Liquid Silica Fume Technology. This Technology produces very high hydration densities in the top wear layer of a concrete floor.

It is generally known in the industry due to the number of increasing failures that dry shake hardeners are essentially incompatible with modern mix designs. They still produce higher compressive strengths and hardness but now with low water to cement ratios and fly ash they generally do not chemically (and mechanically) combine properly. Tensile strength is often lowered dramatically by using dry-shake hardeners in modern mix designs. This is due to the fact that dry shake hardeners have never increased micro density but used hardness only to increase strength. De-laminations are typically the result of almost total loss of tensile strength (peeling of concrete floors).

Concrete containing fly ash or silica fume requires proper curing, along with the secondary hydration product (Protec III's Liquid Silica Fume Technology), so that its low shrinkage and strength producing properties are fully utilized.

Penetrating sealers that react with the concrete such as silicates, siliconates, and the special formula products that are marketed as liquid hardeners have also been used for curing. Although these products produce denser surfaces, they generally will not eliminate dry shrinkage and plastic shrinkage cracking because of their inability to effectively retain sufficient moisture when curing. This may result in decreased tensile strength and in some instances carbonation, dusting and curling of the concrete.
Acrylic cure and seals do retain moisture adequately, but they do not have strength (either compression or tensile) enhancing properties.

ASTM C157 Shrinkage Test Comparison (by curing type)

Curing Type	% of shrinkage from Control (28 days)	3000 mm Beam Shrinkage
Protec III LSF w/membrane	0 - 8%	1.235 mm
Water (ponded)	0 - 8%	1.286 mm
Acrylic Cure and Seals	30 - 46%	1.732 mm
Silicate and Siliconate Sealers	54 - 72%	1.97 mm
Air (non-cured)	200 - 340%	3.25 mm

Protec III LSF with acrylic membrane when properly applied (within 4 - 8 hours after the new concrete floor has set) can eliminate plastic shrinkage cracking, carbonation, and dusting.

In ASTM C157 Protec III LSF with acrylic membrane has been found to reduce shrinkage cracks equal to that of water curing. Water curing in many instances can carbonate the new slab because water easily takes on carbon dioxide from the environment. Carbon dioxide levels are much higher indoors and in winter heating conditions. Carbonation, caused by the acidic reaction of fresh concrete and C02, breaks down the chemical bonds of the hydrated cement resulting in dusting and an unsound, weak concrete surface. Protec III LSF with acrylic membrane when properly applied virtually eliminates carbonation.

Protec III LSF with acrylic membrane is overall the highest performing strength enhancing material for concrete floors. In fact it can help eliminate the problems that are often experienced in new concrete floors and produces greater chemical resistance. Protec III LSF with acrylic membrane works by retaining moisture to the highest level along with adding an extra hydration product using liquid silica fume technology. This allows for a more controlled cure of the concrete, increases the micro density and produces higher strength concrete with the lowest level of shrinkage.

ASTM TESTS

ASTM	NAME OF TEST	USES OF TEST	RESULTS
ASTM C157	Length Change of Hardened Hydraulic Cement Mortar or Concrete Beam	Determination of length change by curing type.	Shrinkage decrease of 30% - 60% from other curing types. See chart on page 2
	Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.	Evaluates membrane forming compounds for use as curing compounds for fresh concrete. These membranes also have special properties.	In compliance with ASTM specifications with exception to slower drying time in cold temperatures
ASTM C309	Liquid Membrane Forming Compounds for Curing Concrete	This specification evaluates membrane forming compounds for use as curing compounds for fresh concrete. Results include retention properties reflectance, drying time, non-volatile content, flashpoint, and VOC content.	Type I, Class A. In compliance with ASTM specifications
ASTM C418	Standard Test Method for Abrasion Resistance of Concrete.	Increase hardness	67% increase in hardness
ASTM C1353	Taber Abrasion	Abrasion resistance	Increase of abrasion resistance by 46% at 1000 cycles
ASTM C642	Test Method for Density Absorption and Voids in Hardened Concrete	Evaluate products ability to reduce absorption	Reduction of 72%
ASTM C1583 (modified)	Standard Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength Concrete Repair and Overlay Materials by Direct Tension (Pull off Method)	Evaluates tensile and bond strength	55 - 68% increase in Tensile Strength
ASTM C803	Penetration Resistance	Determination of hardness and compression values	In various tests compression of the top wear layer has been measured and calculated to be up to 65 mpa from a 30 mpa mix design.
ASTM B117	Standard Method of Salt Spray	Used as a chloride ion permeability test	57% decrease in permeability to Salt Spray.

Certified Installers

Comparison Sheet

CHARACTERISTICS	CERTIFIED INSTALLERS	PROTEC III CHEM-RX	PROTEC III WITH ACYRLIC MEMBRANE
PARTICLE SIZE	LARGE	SMALL	SMALL
EASE OF PENETRATION	DIFFICULT	EASY	EASY
EASE IN APPLICATION	DIFFICULT	EASY	VERY EASY
CERTIFIED INSTALLER REQUIRED	YES	NO	NO
LEAVES SURFACE MEMBRANE-SHINE	NO*	NO	YES
MEETS ASTM C309	NO	NO	YES
CURING AID	YES	YES	YES, MEETS ASTM C309
HARDENER/DENSIFIER	YES	YES	YES
COST PER SQUARE FOOT	16 - 28 CENTS	.06 MATERIAL ONLY	.10 MATERIAL ONLY
TIME TO TREAT 10,000 SQ. FT.	TIME DETERMINED BY THE AVAILABILITY OF INSTALLERS	1.5 HR X 2 MEN	1 HR X 2 MEN
HAZARDOUS WASTE	YES	NO	NO
WASTE FROM APPLICATION	YES**	NO	NO
INSTALL ON YOUR TIMELINE	NO	YES	YES
FLOOR CLEANING REQUIRED	YES***	NO	NO
QUALITY	GOOD	VERY GOOD	EXCELLENT
RESULTS	GOOD	VERY GOOD	EXCELLENT

*Some penetrating hardeners and densifiers will sit on the surface if they have not properly penetrated the concrete and this will leave a temporary shine. This type of product will wear off with abrasion, the shine will disappear and the concrete will be left exposed. The ability of the hardener/densifier to penetrate fully into the concrete surface dramatically increases the hardness and chemical resistance of the concrete structure.

**Because of the type of resin being used, the competitor's product does not completely penetrate the concrete and will jell up as it sets. This jell has to be removed. It is considered hazardous waste and must be contained and dumped under the regulations in force. This hazardous waste should not be dumped on the ground at job sites.

***If the floor is not sealed immediately after it has been finished, the installers can require that it be cleaned thoroughly before application of their product adding extra costs to the square foot price.

Comparison sheets is based on the information available at the time of printing.

REPORT

Protec III LSF with Acrylic Membrane

Understanding More About: Membrane Cure, Hardener & Densifier

Protec III LSF with acrylic membrane is two products in one and works on two different levels. First the acrylic component is integral to ensuring that new power trowel surfaces are cured properly. Protec III LSF with Acrylic Membrane is the only hardener and densifier on the market that meets ASTM C309, the rest are considered curing aids. What usually happens when using the typical liquid hardener is that you will end up with plastic shrinkage cracking on the surface of the concrete, which lessens the integrity of the concrete surface. This is the main reason Cornerstone Coatings spent over three years designing and field testing Protec III with Acrylic Membrane. When using Protec III with Acrylic Membrane, plastic shrinkage cracking of the surface is virtually eliminated, increasing the durability of the concrete surface, as where a standard liquid hardener will not prevent these problems. The exception would be Protec III Chem RX, if applied as soon as the concrete is power trowelled there is no plastic shrinkage cracks.

On the second level the hardening and densifying component of Protec III with Acrylic Membrane is one of the smallest on the market (0.001 microns) and penetrates and chemically reacts with the weak bonds in the concrete surface, these weak bonds are called calcium hydroxide or free lime. These weak bonds make up 25% of the concrete paste. When this reaction is complete the weak bonds are now turned into strong bonds called tri-calcium silicate crystals. The result is a dust free, hardened concrete surface.

Very Easy To Apply

Applying Protec III with Acrylic Membrane is the easiest product to apply. Spray the product down at 300ft^2/gallon (7.4 m^2/litre) and walk away, you are done. There is no scrubbing and no wetting down with water and scrubbing the floor again, like you find when applying the

typical liquid hardener. What applicators tend to notice when using other liquid hardeners is when they apply the product at the recommended rate, they will also have to scrub and wet down the concrete with water and then still have to squeegy the excess product off and dispose of the remaining residue. This residue is considered hazardous waste by the industry and has to be disposed of according to local regulations, which does not include dumping on the ground or washing down the drain.
Note: Protec III Chem RX has a very small molecular size that does not need to be scrubbed and wet down with water, simply apply and roll out any puddles that form.

The one draw back of Protec III with Acrylic Membrane is that when the product is applied in high wind conditions it dries out too fast. We feel in these conditions, the product is not as effective as it should be and therefore isn't recommended in high wind environments.

What To Expect When The Floor Is In Use

When the floor has been treated with Protec III with Acrylic Membrane and is now in use, the acrylic component does wear away over time, how fast it wears away depends on the amount of use on the floor. The acrylic component is a high-end resin and is resistant to hot tire pick up during this time. As the acrylic is worn away, the hardener component is polished by this same wearing process leaving the floor with a even shine. Sometimes it can be hard to see where the acrylic ends and the bare concrete starts, unless it is closely inspected.

What Is Happening To Dry Shake Hardeners

Protec III LSF with Acrylic Membrane is compatible with dry shake hardeners and is highly recommended over dry shake hardeners. Using Protec III LSF with Acrylic Membrane will not guarantee that the dry shake hardener will not delaminate, but will greatly reduce delaminations of dry shake hardeners. With all the changes in the concrete industry in the last number of years, dry shake hardeners are having a lot of problems with their ability to be effective with today's mix designs.

The Incompatibility of Dry Shake Hardeners and Today's Mix Designs

Dry shake hardeners are typically made up of aggregates, integral color, portland cement and some incorporate plasticizers. In today's concrete mix designs, the need for water reducers is what is causing the problems for dry shake hardeners, they need water to work. When there is not enough water for dry shake hardeners, two typical problems happen. The first is the inability to pound in the specified amount of dry shake hardener into the concrete surface, and the second is not having a proper reaction needed to make the dry shake hardener work properly. Concrete companies do not make their mix designs thinking, what would be best for the dry shake hardener industry. The dry shake hardener industry is one of the fastest changing industries we've seen in the last 19 years, as far as a product being discontinued. Today, the number of manufactures of dry shake hardeners has decreased dramatically. In the last two years most distributors will not sell dry shake hardeners and it is predicted in the next 5 to 10 years that the dry shake hardener industry will be virtually non-existent.

Conclusion - Liquid Hardeners Are Filling the Void

Liquid hardeners are filling this void in the market with mixed results. The key to a good liquid hardener and densifier is the ability to penetrate the concrete surface. All liquid hardeners have to penetrate the concrete surface to work and be effective. This is where Protec III LSF with Acrylic Membrane excels in the market place and is leading the way in the hardening and densifying of concrete.

PROTEC III CHEM-RX with ACRYLIC MEMBRANE - CUSTOMER TESTIMONIALS

RE: NO CONCRETE POPS, SHALING OR CALL BACKS

"We promote and sell Cornerstone Coating's Protec III (with Acrylic Membrane) because it greatly reduces problems and call backs associated with concrete popping and shaling.

Protec III Chem Rx with Acrylic Membrane works very good as a cure and hardener for all of our concrete.

We are very happy to recommend these products to all of our customers"

LAFARGE
Building better cities™

Terry Peterson Grande Prairie, 2015

Technical Data Sheet

LAST UPDATE: (January 2016)

CORNERSTONE C309

Water-based Acrylic Cure and Seal

DESCRIPTION

Cornerstone C309 is an economical All-Acrylic Polymer which is superior to the Copolymer Resins used in other cure and seal products. Cornerstone C309 is used on interior and exterior freshly finished concrete surfaces. It has a VOC content of 70 g/l, is non-yellowing, low odor, and surpasses ASTM C309 as a cure and seal. Cornerstone C309 can be applied to existing concrete surfaces to give shine and stain resistance.

BENEFITS

Cures, Seals, Dustproofs
Cure: ASTM C309 Type 1, Class B
VOC Compliant in all regions
Moisture Retention: ASTM C156 pass
VOC'S: 70 grams/litre
Only one coat required to meet ASTM C309 Dries quickly and ready for next day use
Goes on white and dries clear for easy coverage.
Contributes to LEED Credits
Low Odor
Non yellowing/UV Stable
Non-Flammable
Safe to Use
Increase in Hot Tire Resistance

USES

Cure and Seal for new interior or exterior concrete such as: Commercial and Industrial Floors, Sidewalks, Basements, Garage Floors, Parking Decks, Patios, Driveways

PHYSICAL CHARACTERISTICS

Recommended Coats: 1 coat as a cure
2 coats for a sealer
Color: Milky White dries clear

PACKAGING: 18.9 Litre Pails (5 gallons)
205 Litre Drums (55 gallons)

COVERAGE:
Approximately 200 ft^2/gallon (4.9 m^2/litre)

SHELF LIFE: 1 yr in original, properly stored, unopened container

CAUTIONS

This product should not be used at temperatures below 40°F (4°C)
Avoid spraying Cornerstone C309 into joint prior to installation of sealer.
Do not apply concrete or mortar toppings over sealed surfaces.

APPLICATION

Mixing: Stir thoroughly prior to use. Do not use high speed mixing equipment. Do not thin or dilute.
Placement: Apply Cornerstone C309 immediately after all the surface water has disappeared and the surface can be walked on without scuffing the surface. Applying the product too early or too late can affect the overall curing performance. Use a low pressure sprayer, roller or brush. Apply uniformly without puddles. A second coat can be applied after the 1st coat has dried at a rate of 400-600 ft^2/gal (9.8-14.7 m^2/litre) for a longer lasting higher gloss finish with improved durability and abrasion resistance.

CLEAN-UP

Clean tools and equipment with clean water and soap while the products is still wet.

DRY TIME

Re-coating or light foot traffic: Approximately 2-3 hrs at 70°F (20°C)
Heavy traffic or Cold temperatures: Approximately 12 hours
Dry-time is affected by temperature, wind and humidity.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon
many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

CORNERSTONE COATINGS INTERNATIONAL INC.
LEADING THE WAY

TECHNICAL DATA SHEET

LAST UPDATE: (January 2016)

CORNERSTONE R20

Waterbased Acrylic Cure and Seal

DESCRIPTION

Cornerstone R20 is a Thermoplastic All-Acrylic Polymer which is superior to the Copolymer Resins used in other cure and seal products. Cornerstone R20 resists yellowing, provides a durable, long lasting shine, and minimizes hair-checking, premature cracking, dusting and spalling.

BENEFITS

Cure: Exceeds the requirements of ASTM C309
Abrasion: ASTM D65-44 225-350 g/mil
Moisture Retention: ASTM C156 - pass
VOC Compliant in all regions
Cures, Seals, Dust-proofs
Contributes to LEED Credits
Only one coat required to meet ASTM C309
Goes on white and dries clear for easy coverage.
Dries quickly and ready for next day use
Non yellowing/UV Stable
Low Odor
Safe to Use
VOC'S: 70 grams/litre

USES

Cure and Seal for new interior or exterior concrete such as: Commercial and Industrial Floors, Sidewalks, Basements, Garage Floors, Parking Decks, Patios, Driveways.

PHYSICAL CHARACTERISTICS

Density: (25°C), lbs/gal –8.4 lbs/gal
Safety Data: Non-Flammable
Recommended Coats:
As a Cure - 1 Coat
As a Sealer – 2 Coats
Color: Milky White dries clear
Cleaning Equipment: Water and Soap

PACKAGING:

3.78 Litre Pail (1 gallon)
18.9 Litre Pail (5 gallons)
205 Litre Drums (55 gallons)

STORAGE

Cornerstone R20 should be stored in tightly sealed original factory containers. DO NOT allow the product to Freeze.

SHELF LIFE: 1 year in properly stored, original, unopened container.

COVERAGE: Approximately 200 ft^2/gal (4.9 m^2/litre

CAUTIONS

Do not apply this product when air, material, or surface temperatures are expected to fall below 40° F (4°C) within 4 hours of completed application.
Do not apply concrete or mortar toppings over sealed surfaces.
May show rubber tire marks.
Avoid spraying Cornerstone R20 into joint prior to installation of sealant.

APPLICATION

Mixing: Stir thoroughly prior to use. Do not use high speed mixing equipment.
Do not thin or dilute. Apply at temperatures above 5°C or 41°F.

Placement: Apply Cornerstone R20 immediately after all the surface water has disappeared and the surface can be walked on without marring the surface. Applying the product too early or too late can affect the overall curing performance. Use a low pressure sprayer, roller or brush. Apply uniformly without puddles. A second coat can be applied after the 1st coat has dried
at a rate of 400-600 ft2/gal (9.8-14.7 m2/litre) for a longer lasting higher gloss finish with improved durability and abrasion resistance.

CLEAN-UP

Clean tools and equipment with clean water and soap while the products is still wet.

DRY-TIME
Re-coating or light foot traffic: Approximately 2-3 hrs at 70°F (20°C)
Heavy traffic or Cold temperatures: Approximately 12 hours.
Dry-time is affected by temperature, wind and humidity

SPECIFICATIONS
ASTM C309, Type 1, Class B
Meets Canada VOC Concentration Limits for Architectural Coatings.
Meets ASTM C1315
Abrasion Resistance Test ASTM D65-44
225–350 g/mil on glass – pass

***PERFORMANCE TESTING**
1 Hour Exposure Limit
Ketchup: Excellent (no effect)
Mustard: Excellent (no effect)
Coffee: Excellent (no effect)
Used Motor Oil: Excellent (no effect)
3% Trisodium Phosphate: Excellent (no effect)
10% Ammonia: Fair
10% Hydrochloric Acid: Poor
10% Brake Fluid: Poor

*2 coats at 200 ft^2/gallon (4.9 m^2/litre)

HEALTH AND SAFETY
Use with adequate ventilation.
Wear protective clothing, gloves and eye protection. Keep out of reach of children.
Do Not take internally.
In case of ingestion, seek medical help immediately. May cause skin irritation, especially prolonged or repeated contact. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
If eye contact occurs, flush immediately with clean water and seek medical help as needed.
Dispose of waste material in accordance with federal, state and local requirements.

WARRANTY
We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

Technical Data Sheet

LAST UPDATE: (January 2016)

AQUATEK

Waterbased High Sheen Sealer

DESCRIPTION

AQUATEK is one of the most advanced formulation water-based acrylic sealers in the market. Aquatek was designed to create a high gloss finish with excellent exterior durability properties. Aquatek is easily applied with a brush and roller, or sprayer. It has no harsh smell, and dries quickly. Aquatek goes on white for ease of application and dries clear.

BENEFITS

Meets LEED Requirements.
Seals and Dust-proofs Concrete
High Gloss Finish
Excellent Resistance to Water Blushing
Non-Yellowing and UV Stable
Low VOC content - 70 grams/litre
Excellent Stain Resistance
Excellent Adhesion
Very Good Abrasion Resistance
Good Chemical Resistance
Excellent Anti-spalling Material
Solvent Free
Dries Quickly
Ready to Use

USES

Broom Finish and Power Trowel Concrete, Stamped Concrete, Exposed Aggregate, Acid Stained Concrete and Overlays, Horizontal or Vertical Concrete Surfaces, Interior or Exterior

PHYSICAL CHARACTERISTICS

VOC: 70 grams/Litre
Sealing Concrete Recommended Coats: 2
Dilution: None, use as supplied
Physical State: Liquid
Color: Pale White
Weight: 8.5 lbs
Skinning: None
Cleaning Equipment: Water
Food Safe: Approved
Drytime: 30 to 60 minutes 70°F (21°C)
ASTM D-658-44 - Abrasion Resistance 250g/mil

DRYING TIME
At 70°F (21°C) with 50% R.H.
Dry to touch - 30 to 60 minutes
Re-Coat - 2 to 4 hours
Light foot traffic - 8 hours Normal traffic – 24 hours Maximum hardness - 7 days

PACKAGING

1 gallon/ 3.78 litre pails
5 gallon/ 18.9 litre pails
55 gallon/205 litre Drum

SHELF LIFE

1 years in unopened original container.

COVERAGE

250 ft^2/gallon (6.1 m^2/litre)
(depending on porosity of surface)

CAUTIONS

DO NOT FREEZE
DO NOT DILUTE PRODUCT OR ALTER IN ANY WAY.
Do not apply to temperatures below 41°F (5°C)

SURFACE PREPARATION

Area to be sealed must be cleaned and free of all foreign matter such as dirt, rubber marks, paint, oil etc.

APPLICATION

Stir or mix product before use.
Apply at 250 ft^2/gallon (6.1 m^2/litre), on dry surface.
Apply with spray, brush, or roller. Apply AquaTek uniformly to form a continuous film.
Minimum of 2 coats required for long-term durability and shine.
Product goes on white and dries clear.
Apply second coat 2 -4 hours after first or when dry.
Roll out any puddles that form.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supercedes all other warranties express or implied.

Technical Data Sheet

LAST UPDATE: (January 2016)

PROTEC III LSF RESTORE

Hardener and Cure

DESCRIPTION

Protec III Restore is a waterbased highly reactive penetrating concrete treatment which produces a permanent density change within the micro-structure of the concrete. Protec III Restore is the same version of Protec III Chem RX but more concentrated.

Protec III Restore is also used for polishing concrete. Protec III Restore is chemically activated by the alkali in the concrete to fill the voids and solidify. This chemical reaction produces a smooth, dense surface for easy grinding and polishing techniques.

* See Protec III Restore Polishing Concrete for more information on this process.

For highly porous surfaces such as pre-cast concrete and concrete slats that are exposed to harsh environments in hog barns, silage pits, and fertilizer facilities, the use of Protec III Restore will dramatically lengthen the service life of the facility by increasing chemical and abrasion resistance and thereby reducing renovation costs and down time. Protec III LSF Restore produces a non-slip, natural looking surface. It is easy to apply and economical.

USES

Broom Finish Concrete/Driveways/Hog Barns/ Dairy Barns/Driveways/Sidewalks/ Walkways/Curbing/Silage Pits

BENEFITS

Meets LEED Requirements.
Increases Surface Hardness and Strength
Dust-proofs
Increases Chemical and Abrasion Resistance
Increases Freeze/Thaw Resistance
Leaves a Natural Non-slip Surface
Environmentally Safe with Zero VOC's
Does not Leave a Surface Membrane
Helps prevent New Barn Syndrome

TESTING

Increases hardness of badly dusting/carbonated concrete by up to 300%

PHYSICAL CHARACTERISTICS

Dilution: None, use as supplied
Odor: Mild
VOC's: Zero
Cleanup: Water
Freeze Harm: 5 Cycles No Damage
Dry To Touch: 15 min - 1 hour
Cure: 24 Hours
Re-coat: After 4 hour
Application Temperature: 50–72°F (10-22°C)
Clean up equipment: Use soap and water immediately after use.

PACKAGING

5 gallon (18.9 Litre)
55 gallon (205 Litre)

SHELF LIFE: 3 yr in original unopened container

COVERAGE: Approximately 300 ft^2/gallon (28 m^2/litre) on normal concrete surfaces

CAUTIONS

Protect all surrounding area from over- spray.
Wash all over-spray off immediately with water.
Do not apply when temperature falls below freezing or to surfaces that are frozen.
We always recommend testing a small area to observe for possible adverse reactions.

SURFACE PREPARATION

Old dirty concrete should be cleaned and then rinsed with clean water. After washing allow to dry before sealing.
Apply product before repairing cracks in the sub-floor or applying patching or floor-leveling compounds.

APPLICATION

Normal Concrete

Shake the container well before using.
Apply by roller or sprayer.
Apply liberally and saturate all areas.
Vertical surfaces, apply from the bottom up.
Apply at approximately 300 ft^2/gallon (7.4 m^2/litre)
If puddles form and are present 30 minutes after application, roll or brush out.
Let Protec III LSF Restore dry 4 hours between coats.

Old Concrete, Slats, Precast Walls/Hog and Dairy Barns, Fertilizer Facilities:

Minimum of 2 coats are recommended.

Hog and Dairy Barns and Silage Pits:

Use at approximately 200 ft^2/gallon (4.9 m^2/litre) depending on the porosity of the concrete being treated.

ALSO SEE:
Protec III Restore
STRENGTHENS AND HARDENS POOR CONCRETE for information and application instructions.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

PROTEC III LSF RESTORE

Applications for Badly Dusting or Carbonated Concrete

Q & A

What does concrete dusting look like? Concrete dusting appears on the surface of the concrete as dust or powdery-chalk. This dust can easily be removed with a broom, but it is a perpetual problem that will not resolve itself. It is actually the top wear layer of the concrete turning to dust. It is most often seen on surfaces like driveways or warehouse floors.

Why does concrete dusting occur?
The presence is often indicative of a weakness of the wearing surface. Dusting can be caused by poor finishing technique used while water bleed is still on the surface, improper curing, excess amounts of clay in the concrete or exposure to elements before the concrete was fully cured. Inadequate ventilation can also be a culprit, particularly in closed quarters like basements. This environment allows carbon dioxide to build up and create a chemical reaction that affects the surface strength of the concrete called carbonation.

How can you fix concrete dusting?
Concrete dusting rarely indicates a structural problem with the concrete, but it can be a troublesome problem, nevertheless. Badly dusting or carbonated concrete can be strengthened substantially and the dusting virtually eliminated by using Protec III Restore.

Application Method for Badly Dusting/Carbonated Concrete

TESTING
Increases the hardness of badly dusting/carbonated concrete by up to 300%.

CAUTIONS
Protect all surrounding area from over-spray. Wash all over-spray off immediately with water.
Do not apply when temperature falls below freezing or to surfaces that are frozen.
We always recommend testing a small area to observe for possible adverse reactions.

COVERAGE
Dusting and Carbonated Concrete use at approximately 100 ft^2/gallon (2.5 m^2/litre).

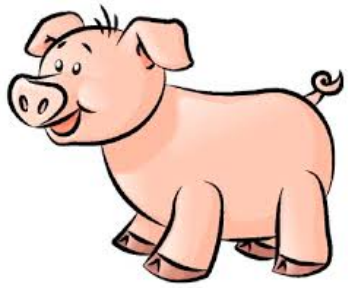
SURFACE PREPARATION
Sweep surface clean, this will not remove all the dust, but because the surface is prone to damage it is the best way to prep the surface.
Do not pressure wash, this only damages the surface.
If cleaning needs to be done with water, use a mop and a pail. After washing allow to dry completely before sealing.

APPLICATION
Shake the container well before using. Apply by roller or sprayer.
Apply liberally and saturate all areas.
Vertical surfaces, apply from the bottom up.
Apply Protec III Restore at maximum 125 ft^2/gallon (3.1 m^2/litre).
Make sure to keep the concrete surface wet for 30 minutes either by re-distributing the product that has puddled or by adding more product. The idea is to saturate the concrete surface thoroughly.

APPLICATION (continued)

Use clean work footwear to walk on the concrete that is still wet with Protec III in order to redistribute or add more Protec III Restore.
After 1 hour, if there are any puddles remaining redistribute products and allow to dry 4 hours.
Apply the 2nd coat, same as the first and let dry overnight.
Test the concrete after the 2nd coat of Protec Protec III Restore has dried 24 hours to see if the concrete surface is satisfactory.
In most cases 2 applications is all that is needed.
In the odd, periodic case where more is needed, apply the 3rd coat of Protec III Restore according to the application instructions.

Preventing New Barn Syndrome



Protec III Restore

Prevents Tail Biting, Ear Biting, and Lameness

Veterinarians describe New Barn Syndrome as affecting the sows, growers, and finishers.

SOWS: Hip, ankle, and hoof problems

When concrete is wet, the hydrated lime in the concrete dissolves and is brought to the surface. This creates caustic concrete and causes a skin reaction on the bottom of the foot pads.
As the hydrated lime dissolves it opens the pours of the concrete, and creates ideal conditions for bacterial growth.
Small cracks in the foot pad occur, allowing bacteria to enter into the animal's body causing joint infection in the knees, ankles, and hips.
With this lameness, producers suffer losses in terms of increased sow culling rate, breeding problems, and other management difficulties.

GROWING AND FINISHING HOGS:

New Barn Syndrome has been reported to also cause tail biting, and ear biting in growing and finishing hogs. Producers suffer losses from New Barn Syndrome in the growing and finishing stages due to increase culling of animals because of:
Tail Biting
Ear Biting
Lameness
Experts agree that the chemicals in new concrete may cause ear biting and tail biting in growing pigs. This lameness in growing pigs is caused by the same reason as mentioned earlier with the sows.
New and existing gestation barns sealed with Protec III Restore will help prevent bacteria buildup in the pores of the concrete. Protec III Restore reacts and neutralizes hydrated lime forming a glass membrane inside the concrete.
By filling the pores, bacteria have nowhere to grow inside the concrete.
Because the foot pad skin is protected from the caustic effects of the concrete, lameness problems can be prevented.
Protec III Restore hardens the concrete making it more durable for this environment.
Protec III Restore leaves a non-slip surface for further protection of the animal.

REPORT

SHALING AND POPPING

BROOM FINISH CONCRETE

Pressures on the Concrete Industry

With the concrete industry being under siege from government regulations over the last 10 years and especially over the last 5 years from the green house and global warming lobby, concrete mix designs have been going through some big changes. The days of pouring and placing concrete and putting a curing aid or cure and seal on and thinking that was all you had to do, if you even had to do that for your concrete, are over. There may have been the odd concrete pop after a year or two, which was pretty acceptable and normal. Can we still say that today? The problem is not the pouring and placing practices, the problem is the government regulation pressures that have been put on the Portland cement industry.

Where is the Problem Showing Up?

Overall concrete compression strengths are just fine. Where the problem is showing up is in the finished concrete surface in the form of concrete shaling on broom finish concrete. This is more specifically showing up in climates that are exposed to cold weather in winter and freeze thaw cycles. In the worst case scenarios, even with the use of curing aids and acrylic cure and seals, the benefits of using these products is starting to be minimal and sometimes no benefit at all. These government regulations are resulting in a weak concrete surface resulting in concrete popping and surface shaling and delaminations. Even with cure and seals, these problems are showing up in the spring.

Protec III Replacing Cure and Seals

Using Protec III Chem-Rx or Protec III Restore will greatly strengthen the surface of the concrete. Protec III works as a curing agent, but where it excels is in the ability to penetrate the concrete surface easily and chemically react with the weak bonds in the concrete paste. Once this reaction has completed the concrete surface in now highly resistant to concrete popping and surface shaling. Applications typically for broom finish concrete is to pour and place the concrete, if this occurs in the morning, come back in the afternoon and apply two coats of Protec III.

If you pour and place the concrete in the afternoon, return the next morning and apply two coats of Protec III. Making the concrete surface strong using Protec III gives peace of mind from call-backs.

Conclusion

Protec III is an inexpensive solution to a huge problem for the concrete industry. When pouring and placing concrete with a water curing method, concrete will still leave up to 25% weak bonds in the concrete, called calcium hydroxide. Today's concrete has considerably more weak bonds because of the changing regulations put on the concrete industry, fortunately this is where Protec III can help. Protec III is an inexpensive solution. In areas where climate does not include freezing and thawing, this is not much of an issue, but if you are in Canada and the Northern US states this is a problem. The freeze thaw cycles place all kinds of pressure on the concrete surface and if the concrete is not treated correctly with Protec III, the results will show up after only one winter.

PROTEC III LSF RESTORE

Strengthens and Hardens Poor or Dusting Concrete

DESCRIPTION
Heavily dusting or carbonated concrete used to require expensive grinding and removal of the affected area, until Protec III LSF Restore was introduced to the market.

Protec III LSF Restore chemically changes the micro-density of the poor concrete at the molecular level producing increased strength and durability in the top wear layer of the concrete surface. Dusting of concrete floors from carbonation and poor finishing practices can be restored to its original condition with very little down time and expense.

Protec III LSF Restore is compatible with flooring adhesives. For highly porous surfaces such as pre-cast concrete and concrete slats that are exposed to harsh environments in hog barns, silage pits, and fertilizer facilities, the use of Protec III Restore will dramatically lengthen the service life of the facility by increasing chemical and abrasion resistance and thereby reducing renovation costs and down time.

Protec III LSF Restore produces a non-slip, natural looking surface. It is easy to apply and economical.

BENEFITS
Meets LEED Requirements.
Increases Surface Hardness and Strength
Dust-proofs
Increases Chemical and
Abrasion Resistance
Increases Freeze/Thaw Resistance
Leaves a Natural Non-slip Surface
Environmentally Safe with Zero VOC's
Does not Leave a Surface Membrane
Helps prevent New Barn Syndrome

USES
Warehouse Floors/Hog Barns/Dairy Barns/
Driveways/Sidewalks/Walkways/
Curbing/Silage Pits

PHYSICAL CHARACTERISTICS
Dilution: None, use as supplied
Odor: Mild
VOC's: Zero
Cleanup: Water
Freezing Point: 21°F (-6°C)
Freeze Harm: 5 Cycles No Damage
Dry To Touch: 15 min - 1 hour
Cure: 24 Hours
Re-coat: After 4 hour
Application Temp.: 50–72°F (10-22°C)

TESTING
Increases hardness of badly
dusting/carbonated concrete by up to 300%

CAUTIONS
Protect all surrounding area from over- spray. Wash all over-spray off immediately with water.
Do not apply when temperature falls below freezing or to surfaces that are frozen.
We always recommend testing a small area to observe for possible adverse reactions.

SURFACE PREPARATION
Old dirty concrete should be cleaned and then rinsed with clean water. After washing allow to dry before sealing.
Apply product before repairing cracks in the sub-floor or applying patching or floor-leveling compounds.

APPLICATION

Old Concrete, Slats, Precast Walls, Hog & Dairy Barns, Fertilizer Facilities:
Minimum of 2 coats are recommended.

Hog and Dairy Barns and Silage Pits: Use at approximately 200 ft^2/ gallon (4.9 m^2/litre) depending on the porosity of the concrete being treated.

Carbonated and Dusting Concrete:
Use at approximately 125 ft^2/gallon (3.1 m^2/litre). Make sure to keep the concrete surface wet for 30 minutes either by re-distributing the product that has puddled or by adding more product. The idea is to saturate the concrete surface thoroughly. Use clean work footwear to walk on the concrete that is still wet with Protec III Restore in order to redistribute or add more product.
After 1 hour, if there are any puddles remaining redistribute products and allow to dry 4 hours.

Apply the 2nd coat, same as the first and let dry overnight.

Test the concrete after the 2nd coat of Protec III Restore has dried 24 hours to see if the concrete surface is satisfactory. In most cases 2 applications is all that is needed. In the odd, periodic case where more is needed, apply the 3rd coat of Protec III Restore according to the application instructions.

CLEANUP

Clean up equipment with soap and water immediately after use.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

Pro-Pel

Technical Data Sheet

DESCRIPTION

Pro-Pel is a VOC-free Lithium Silicate densifier and chemical hardener used for polishing concrete. Pro-Pel Lithium is chemically activated by the alkali in concrete to solidify and fill the voids. This chemical reaction produces a smooth, denser surface for easy grinding and polishing techniques. Pro-Pel easily penetrates the concrete and is used to reduce vapor transmission in concrete. It is very effective in reducing radon gas by blocking the internal pores of the concrete.

Pro-Pel works as a curing aid through a combined chemical and moisture retention reaction aiding the complete hydration process.
Pro-Pel controls hairline checking and temperature cracking on new concrete slabs. Pro-Pel should be applied to concrete that is properly placed and structurally sound.

Pro-Pel does not leave a surface membrane like an acrylic or chlorinated rubber clear products. This makes Pro-Pel the choice because it is compatible with all flooring adhesives and does not require stripping before applying floor adhesives or paints.

FEATURES/BENEFITS

Hardens and Densifies Concrete
Curing Aid for Green Concrete
No flushing or rinsing required
Does not yellow or discolor
Hardens the surface against damage
Easy Penetration for ease of application
Improves Light Reflectivity
Reduces Hairline Checking
Environmentally Safe and non-hazardous
VOC Content - 0.00 g/L
Produces surface gloss that improves with abrasion
Reduces vapor transmission
Reduces Radon Gas emissions
Improves Freeze Thaw Resistance

TECHNICAL INFORMATION

VOC Content - 0 g/L
Type Solids - Lithium Silicate
Flashpoint - none
Viscosity - water thin
pH - 10.9
Specific Gravity - 1.10
Color - Clear
Odor - None
Surface Breathable - Yes
Skid Resistance - Fair
Drying Time at 70F (21C)
Light Foot Traffic - 2 to 3 hrs
Wheel Traffic - 24 hours
Physical State: Liquid

Lithium Densifier

COVERAGE

Typical rate on ground concrete is 400-600 ft^2/gal (9.8-14.7 m^2/litre)

Typical rate for hard trowelled concrete is 300-400 ft^2/gal (7.4-9.8 m^2/litre)

Typical Rate on broom finish concrete is 300 ft^2/gal (7.4 m^2/litre)
For best results we recommend 2 coats.

SHELF LIFE

3 Years in original, unopened container.

Protect from Freezing.

PACKAGING

55 gallon drums (205 Litre)

5 gallon pails (18.9 Litre)

10 Litre Jugs

*Product comes in Concentrate and Ready to Use Formulations

WARRANTY

We warrant our products to be of good quality and free of defects in material and workmanship. See full warranty upon request.

MIXING INSTRUCTIONS

Concentrated Formulation - Dilute 1 part potable water to 1 part Pro-Pel. Stir for 1 minute. Product is now ready to use.

Ready to Use Formulation - no dilution is required.

PRIMARY APPLICATIONS

Warehousing/ Distribution Centres/ Malls/ Commercial and Retail Stores/Parkades/ Arenas/Broom Finish Concrete

SURFACE PREPARATION

Protect surrounding areas from overspray, spills, tracking and equipment contact. In case of accidental contact, rinse thoroughly with water immediately.

Old Concrete/Existing Concrete Ensure all surfaces are structurally sound and free of all contaminants such as oil, contaminants and any film forming curing compounds and sealers.

Fill and repair all holes, cracks and deteriorated areas before application.

All Concrete should be thoroughly cleaned and rinsed with clean water. After washing allow the concrete to dry completely before application.

New Concrete/Concrete Polishing Ensure surfaces are clean and free of all contaminants, and any film forming curing compounds or sealers.

Ensure the concrete has been cured for a minimum of 3 days before application.

During cooler temperatures or higher relative humidity conditions, the drying interval should be increased to achieve the level of dryness necessary for good penetration.

Green Concrete Ensure surfaces are clean and free of all contaminants, and any film forming curing compounds or sealers.

On colored concrete, wait 3 days before applying Pro-Pel.

Lithium Densifier

INITIAL GRINDING - for salt & pepper look

Grinding the concrete to an initial surface profile (200-400 grit) is an option if you would like the salt and pepper look of the concrete. Grinding must occur prior to the application of Pro-Pel. Concrete substrates that are contaminated with oil, grease or other substances after grinding to the initial surface profile should be thoroughly cleaned and dried before continuing.

Apply first coat at approximately 400-600 ft^2/gal (9.8-14.7 m^2/litre) using a low pressure sprayer or by spreading evenly with a micro fiber pad. A micro fiber pad gives better even distribution of the product and will minimize puddling. Keep the surface wet for 30 minutes by applying more product where the surface has dried or by redistributing the product with a micro-fiber pad.

Do not allow material to form puddles on the surface as this may cause white residue to form and stain.

When dry, proceed with additional required polishing steps. After the 800 grit level and before the final polishing steps, uniformly apply the 2nd coat at 600-800 ft^2/ gal (14.7-19.63 m^2/litre) spread with micro-fiber pad, keep the surface wet for 30 minutes by re-dispersing product with micro-fiber pad. Do not puddle.

Allow to dry and remove any residue with polishing diamonds. No water-flush is required.

POLISHING CONCRETE / HARDEN AND DUSTPROOF

If you want to polish concrete without the salt and pepper look, use the following procedure.

Apply Pro-Pel to the surface of concrete at a rate of 300-400 ft^2/gal (7.4-9.8 m^2/litre) using a sprayer or micro-fiber pad. Make sure concrete stays wet for 30 minutes by re-applying more Pro-Pel or by re-distributing the existing product using a micro-fiber pad. Do not puddle the product. No rinsing of Pro-Pel is needed. Let Pro-Pel dry before polishing the concrete.

If you are looking to harden and dust-proof the concrete, no other steps are required.

VAPOR TRANSMISSION / RADON GAS

Moisten the surface with Pro-Pel by sprayer or microfiber pad. When spraying a spray nozzle that produces a flow of 1/4 gallon per minute under 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more Pro-Pel or by re-distributing the existing product using a micro-fiber pad. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed.

After 1st coat has dried for 4 hours apply the 2nd coat of Pro-Pel. Follow the same procedure as the 1st coat.

Typically 2 coats is all that is needed.

FINAL STEPS

POLISHING

After treatment, continue honing, burnishing, and polishing the treated concrete to the intended final finish profile. Use anywhere from 400-1500 grit using progressively finer polishing disks.

If wet polishing, remove the slurry residue between diamond changes using a wet vacuum or squeegee and rinse thoroughly removing excess water and slurry. After the final finish profile is achieved, allow the polished concrete to dry completely prior to any further surface treatment.

For increased stain resistance and water repellency, apply one coat of Repel after the concrete has completely dried.

BURNISHING

Pro-Pel Lithium can be burnished to a high sheen on steel trowel concrete floors. A high-speed burnisher (2000-2200 rpm) with appropriate maintenance pad is needed.

MAINTENANCE

Pro-Pel Lithium polished floors require very little maintenance other than scheduled scrubbing with water and a neutral or alkaline cleaner. All spills should be cleaned immediately.
No waxes or subsequent surface treatments are necessary.
Periodic applications of Repel should be applied as required.
Refer to maintenance sheet for full recommendations.

CLEAN-UP

Clean up equipment and tools with a mild soap and water.

CAUTIONS

Immediately wash off over-spray from glass, aluminum, or highly polished surfaces with water to avoid etching. Product is slippery when wet.
Do not apply product if the temperature of the concrete is less than 40° F (4°C) or above 135°F (57°C)
Keep the product from freezing. Do not allow Pro-Pel to form puddles, remove puddles by moving the product around with a microfibre pad or broom puddles out before they dry as staining may occur.
Wear skin and eye protection. Wash throughly after handling. See MSDS for complete precautions.

TESTING

For Concrete Polished to 800 Grit
Red Wine - 10 minutes - Good
Mustard - Poor
Used Motor Oil - 1 Hour - Very Good

Lithium Densifier

Updated January 2016

PRO-PEL

FLOOR MAINTENANCE INSTRUCTIONS

SPILLS: When they occur, clean with a neutral cleaner and water on a daily basis or as needed.
GENERAL CLEANING: Use a vacuum, broom or walk behind scrubber.
MAINTENACE CLEANING: perform when a more thorough cleaning is desired. This should be based on individual traffic and cleanliness of the facility.

1. Heavily soiled areas should be spot cleaned prior to the overall area being cleaned.
2. Use a mop (making sure it is clean and that a clean mop bucket is used each time) add a neutral floor cleaner to the mop water as directed in the manufacturers instructions OR
3. Use a walk behind or ride-on scrubber. Make sure that the brushes and or pads are clean and not aggressive. The scrubber should be clean including the a) clean water tank b) dirty water tank c) blade of the squeegee. Add a neutral floor cleaner to the water as directed in the manufacturer's instructions. By using clean equipment each time you will maintain a clean floor.
4. Whether you choose procedure number 3 or 4, the most important process is the rinsing of the floor after the cleaning is completed. Use clean water and a clean mop head or soft brush on scrubber to thoroughly rinse the floor. Leave no puddles behind.
5. If a specific area needs additional cleaning, use a heavy duty cleaner. Scrub with a nylon bristle brush. Let sit 5 minutes. Scrub one more time and then rinse with warm water.
6. Buffing to desired shine or high speed burnishing can be done with a hog's hair or diamond impregnated pad.
7. It is always highly recommended to apply one coat every year in high traffic areas to maintain durability and protection to the concrete floor.

ROAD SALT PROTECTION

In areas that are exposed to road salts that have been tracked in through footwear.

Road salts are very corrosive to concrete and extra care needs to be taken to protect the concrete surface from breaking down. On a yearly basis these areas need to be cleaned and the road salts neutralized before applying Pro-Pel. Keep the concrete surface wet with Pro-Pel for 20 minutes by either applying more product or by re-distributing the product with a microfiber pad. Let the surface dry, then burnish the treated area. Apply Pro-Pel at a rate of approximately 600 ft^2/gallon (14.7 m^2/litre).
For aisleways: Every 2 years clean the floors then apply one coat of Pro-Pel at a rate of 500 ft^2/ gallon (12.3 m^2/litre) and let dry. After one hour, if puddles have formed, use a mirofiber pad to re- distribute the product and let the floor dry.

Protec III Restore

Polishing Concrete

DESCRIPTION

Protec III Restore is a VOC-free densifier and chemical hardener used for polishing concrete. Protec III Restore is chemically activated by the alkali in concrete to solidify and fill the voids. This chemical reaction produces a smooth, denser surface for easy grinding and polishing techniques.

PRIMARY APPLICATIONS

Warehousing / Distribution Centres / Malls / Commercial and Retail Stores / Arenas / Parkades

FEATURES/BENEFITS

Hardens and Densifies Concrete
No flushing or rinsing required
Does not yellow or discolor
Hardens the surface against damage
Easy Penetration for ease of application
Improves Light Reflectivity
Environmentally Safe and non-hazardous
VOC Content - 0.00 g/L
Produces surface gloss that improves with abrasion
Improves Freeze Thaw Resistance

TECHNICAL INFORMATION

VOC Content - 0 g/L
Flashpoint - none
Viscosity - water thin
pH - 10.9
Specific Gravity - 1.10
Color - Amber
Odor - None
Surface Breathable - Yes
Skid Resistance - Fair
Drying Time at 70°F (21°C)
Light Foot Traffic - 2 to 3 hrs
Wheel Traffic - 24 hours
Physical State: Liquid

COVERAGE

Typical rate on hard troweled dense concrete is 300 - 400 ft^2/gal (7.4-9.8 m^2/litre)
On ground concrete use at a rate of 400-600 ft^2/gallon (9.8-14.7 m^2/litre)
For best results we recommend 2 coats.

SHELF LIFE

3 Years in original, unopened container.

Protect from Freezing.

PACKAGING

55 gallon drums (205 Litre)

5 gallon pails (18.9 Litre)

WARRANTY

We warrant our products to be of good quality and free of defects in material and workmanship. See full warranty upon request.

MIXING INSTRUCTIONS

Product is Ready to Use - do not dilute.

SURFACE PREPARATION

Protect surrounding areas from overspray, spills, tracking and equipment contact. In case of accidental contact, rinse thoroughly with water immediately.

Old Concrete/Existing Concrete

Ensure all surfaces are structurally sound and free of all contaminants such as oil, contaminants and any film forming curing compounds and sealers.

Fill and repair all holes, cracks and deteriorated areas before application.

All Concrete should be thoroughly cleaned and rinsed with clean water. After washing allow the concrete to dry completely before application.

New Concrete

Ensure surfaces are clean and free of all contaminants, and any film forming curing compounds or sealers.

Ensure the concrete has been cured for a minimum of 3 days before application.

On colored concrete, Protec III Restore must be applied to fully cured concrete that is a minimum of 28 days old to allow for adequate penetration of the surface.

During cooler temperatures or higher relative humidity conditions, the drying interval should be increased to achieve the level of dryness necessary for good penetration.

INITIAL GRINDING - for salt & pepper look

Grinding the concrete to an initial surface profile (200-400 grit) is an option if you would like the salt and pepper look of the concrete. Grinding must occur prior to the application of Protec III Restore. Concrete substrates that are contaminated with oil, grease or other substances after grinding to the initial surface profile should be thoroughly cleaned and dried before application of Protec III Restore.

Apply first coat at approximately 400-600 ft^2/gal (9.8-14.7 m^2/litre) using a low pressure sprayer or by spreading evenly with a micro fiber pad. A micro fiber pad gives better even distribution of the product and will minimize puddling. Keep the surface wet for 30 minutes by applying more product where the surface has dried or redistribute product with micro-fiber pad.

Do not allow material to form puddles on the surface as this may cause white residue to form and stain.

When dry, proceed with additional required polishing steps. After the 800 grit level and before the final polishing steps, uniformly apply the 2nd coat at 600-800 ft^2/gallon (14.7-19.6 m^2/litre) and spread with a micro-fiber pad. Keep the surface wet for 30 minutes by re-dispersing product with micro-fiber pad. Do not allow product to puddle.

Allow to dry and remove any residue with polishing diamonds. No water-flush is required.

POLISHING CONCRETE / HARDEN AND DUSTPROOF

If you want to polish concrete without the salt and pepper look, use the following procedure.

Apply Protec III Restore at a rate of 300 - 400 ft^2/gallon (7.4-9.8 m^2/litre) by sprayer or micro-fiber pad. Make sure concrete stays wet for 30 minutes by re-applying more Protec III Restore or by re-distributing the existing product using a micro-fiber pad. Do not puddle the product. No rinsing of Protec III Restore is needed. Let Protec III Restore dry before polishing the concrete.

FINAL STEPS

POLISHING

After treatment, continue honing, burnishing, and polishing the treated concrete to the intended final finish profile. Use anywhere from 400-1500 grit using progressively finer polishing disks.

If wet polishing, remove the slurry residue between diamond changes using a wet vacuum or squeegee and rinse thoroughly removing excess water and slurry. After the final finish profile is achieved, allow the polished concrete to dry completely prior to any further surface treatment.

For increased stain resistance and water repellency, apply one coat of Repel after the concrete has completely dried.

BURNISHING

Protec III Restore can be burnished to a high sheen on steel trowel concrete floors. A high-speed burnisher (2000-2200 rpm) with appropriate maintenance pad is needed.

MAINTENANCE

Protec III Restore polished floors require very little maintenance other than scheduled scrubbing with water and a neutral or alkaline cleaner. All spills should be cleaned up in a timely manner. No waxes or subsequent surface treatments are necessary.
It is always recommended to apply one coat yearly to maintain durability and protection.

CLEAN-UP

Clean up equipment and tools with a mild soap and water.

CAUTIONS

Immediately wash off over-spray from glass, aluminum, or highly polished surfaces with water to avoid etching. Product is slippery when wet.
Do not apply product if the temperature of the concrete is less than 40°F (4°C) or above 135°F (57°C)
Keep the product from freezing. Do not allow Protec III Restore to form puddles, remove puddles by moving the product around with a microfibre pad or broom puddles out before they dry as staining may occur.
Wear skin and eye protection. Wash throughly after handling. See MSDS for complete precautions.

Polishing Concrete

Updated January 2016

PROTEC III RESTORE

FLOOR MAINTENANCE INSTRUCTIONS

SPILLS: When they occur, clean with a neutral cleaner and water on a daily basis or as needed.
GENERAL CLEANING: Use a vacuum, broom or walk behind scrubber.
MAINTENACE CLEANING: perform when a more thorough cleaning is desired. This should be based on individual traffic and cleanliness of the facility.

1. Heavily soiled areas should be spot cleaned prior to the overall area being cleaned.
2. Use a mop (making sure it is clean and that a clean mop bucket is used each time) add a neutral floor cleaner to the mop water as directed in the manufacturers instructions OR
3. Use a walk behind or ride-on scrubber. Make sure that the brushes and or pads are clean and not aggressive. The scrubber should be clean including the a) clean water tank b) dirty water tank c) blade of the squeegee. Add a neutral floor cleaner to the water as directed in the manufacturer's instructions. By using clean equipment each time you will maintain a clean floor.
4. Whether you choose procedure number 3 or 4, the most important process is the rinsing of the floor after the cleaning is completed. Use clean water and a clean mop head or soft brush on scrubber to thoroughly rinse the floor. Leave no puddles behind.
5. If a specific area needs additional cleaning, use a heavy duty cleaner. Scrub with a nylon bristle brush. Let sit 5 minutes. Scrub one more time and then rinse with warm water.
6. Buffing to desired shine or high speed burnishing can be done with a hog's hair or diamond impregnated pad.
7. It is always recommended to apply one coat to high traffic areas to maintain longterm protection and durability.

ROAD SALT PROTECTION
In areas that are exposed to road salts that have been tracked in through footwear.

Road salts are very corrosive to concrete and extra care needs to be taken to protect the concrete surface from breaking down. On a yearly basis these areas need to be cleaned and the road salts neutralized before applying Protec III Restore. Keep the concrete surface wet with Protec III Restore for 20 minutes by either applying more product or by re-distributing the product with a microfiber pad. Let the surface dry, then burnish the treated area. Apply Protec III Restore at a rate of approximately 600 ft^2/gallon (14.7 m^2/ litre).
For aisleways: Every 2 years clean the floors then apply one coat of Protec III Restore at a rate of 500 ft^2/ gallon (12.3 m^2/litre) and let dry. After one hour, if puddles have formed, use a mirofiber pad to re- distribute the product and let the floor dry.

Dual-Tech

Technical Data Sheet

DESCRIPTION

Dual-Tech is a chemically engineered blend of water-based siliconate and hardener/densifier polymers. Dual-Tech has a two-fold process in one product - it chemically reacts within the the top wear layer of concrete to densify and harden the surface and it produces a surface membrane that seals the surface against spills and stains.

PRIMARY APPLICATIONS

Warehousing, Distribution Centers, Malls, Manufacturing Plants, Parkades.

FEATURES/BENEFITS

Seals and strengthens concrete
Reduces tire marks
Dustproofs the surface
Hardens the concrete
Repels liquids such as water, oil and many chemicals
Excellent freeze/thaw resistance
Environmentally Safe and non-hazardous
Easy Penetration for Ease of Application
No rinsing required
VOC Content - 0.00 g/L
Produces surface gloss with abrasion
Can be Polished

TECHNICAL INFORMATION

VOC Content - 0 g/L
Flashpoint - none
Viscosity - water thin
pH - 11
Color - auburn
Skid Resistance - good Drying
Time at 70°F (21°C) - 1 hr Light
Foot Traffic - 1 to 2 hours
Wheel Traffic - 24 hours
Physical State: Liquid
Odor - None

Densifier / Water Repellent

COVERAGE

Hard Troweled dense concrete 300 ft^2/gal (7.4 m^2/litre)
Broom Finish - 250 ft^2/gal (6.1 m^2/litre)

POLISHING CONCRETE COVERAGE

Typical rate on ground concrete is 400-600 ft^2/gal (9.8-14.7 m^2/litre)
Typical rate for hard trowelled concrete is 300 ft^2/gal (7.4 m^2/litre)

CAUTION

Do Not Freeze.

PACKAGING

55 gallon drums (205 Litre)

5 gallon pails (18.9 Litre)

WARRANTY

We warrant our products to be of good quality and free of defects in material and workmanship. See full warranty upon request.

SHELF LIFE

2 Years in original, unopened container.

SURFACE PREPARATION

Not recommended for colored concrete, unless you are grinding and polishing.
Protect surrounding areas from overspray, spills, tracking and equipment contact. In case of accidental contact, rinse thoroughly with water immediately.

Old Concrete/Existing Concrete

Ensure all surfaces are structurally sound and free of all contaminants such as oil, contaminants and any film forming curing compounds and sealers. Fill and repair all holes, cracks and deteriorated areas before application.

All Concrete should be thoroughly cleaned and rinsed with clean water. After washing allow the concrete to dry completely before application.

New Concrete

Ensure surfaces are clean and free of all contaminants, and any film forming curing compounds or sealers.

Ensure the concrete has been cured for a minimum of 28 days before application.

During cooler temperatures or higher relative humidity conditions, dry times will be increased.

Densifier / Water Repellent

INITIAL GRINDING - for salt & pepper look

Grinding the concrete to an initial surface profile (200-400 grit) is an option if you would like the salt and pepper look of the concrete. Grinding must occur prior to the application of Dual-Tech. Concrete substrates that are contaminated with oil, grease or other substances after grinding to the initial surface profile should be thoroughly cleaned and dried before continuing.

Apply first coat at approximately 400-600 ft^2/ gal (9.8-14.7 m^2/litre) using a low pressure sprayer or by spreading evenly with a micro fiber pad. A micro fiber pad gives better even distribution of the product and will minimize puddling. Keep the surface wet for 30 minutes by applying more product where the surface has dried or by redistributing the product with a micro-fiber pad.

Do not allow material to form puddles on the surface as this may cause white residue to form and stain.

When dry, proceed with additional required polishing steps. After the 800 grit level and before the final polishing steps, uniformly apply the 2nd coat at 600-800 ft^2/ gal (14.7 - 19.6 m^2/litre) spread with micro-fiber pad, keep the surface wet for 30 minutes by re-dispersing product with micro-fiber pad. Do not puddle.

Allow to dry and remove any residue with polishing diamonds. No water-flush is required.

POLISHING CONCRETE / HARDEN AND DUSTPROOF

If you want to polish concrete without the salt and pepper look, use the following procedure.

Apply Dual-Tech to the surface of concrete at a rate of 300-400 ft^2/gal (7.4-9.8 m^2/litre) using a sprayer or micro-fiber pad. Make sure concrete stays wet for 30 minutes by re-applying more Dual-Tech or by re-distributing the existing product using a micro-fiber pad. Do not puddle the product. No rinsing of Dual-Tech is needed. Let Dual-Tech dry before polishing the concrete.

If you are looking to harden and dust-proof the concrete, no other steps are required.

POLISHING FINAL STEPS

POLISHING

After treatment, continue honing, burnishing, and polishing the treated concrete to the intended final finish profile. Use anywhere from 400-1500 grit using progressively finer polishing disks.

If wet polishing, remove the slurry residue between diamond changes using a wet vacuum or squeegee and rinse thoroughly removing excess water and slurry. After the final finish profile is achieved, allow the polished concrete to dry completely prior to any further surface treatment.

BURNISHING

Dual-Tech can be burnished to a high sheen on steel trowel concrete floors. A high-speed burnisher (2000-2200 rpm) with appropriate maintenance pad is needed.

MAINTENANCE

Dual-Tech polished floors require very little maintenance other than scheduled scrubbing with water and a neutral or alkaline cleaner. All spills should be cleaned immediately.
No waxes or subsequent surface treatments are necessary.
Periodic applications of Repel should be applied as required.
Refer to maintenance sheet for full recommendations.

Testing
ASTM C666 - Resistance to Freeze/Thaw - Excellent

Stain Resistance - After 12 Hours
Coffee - Fair
Beet Juice - Good
Ketchup - Fair
Kerosene - Good
Used Motor Oil - Good
Red Wine - 10 minutes - Good

APPLICATION PROCEDURES

Old Concrete/Existing Concrete

Not recommended for colored concrete, unless grinding and polishing.
Product is ready to use, no dilution is needed. Apply at approximately 250 ft^2/gallon (6.1 m^2/litre) Moisten the surface with product by sprayer or microfiber applicator. When spraying a spray nozzle that produces of flow of 1/4 gallon per minute under 40 psi is recommended. Keep surface moist with product for 20 minutes do not let material stand and puddle. If excess material is still on the surface after 20 minutes, use a microfiber applicator to even out excess material.

New Concrete

Not recommended for colored concrete unless grinding and polishing.
Product is ready to use, no dilution is needed. Apply at approximately 300 ft^2/gal (7.4 m^2/ litre) using a low pressure sprayer or by spreading evenly using a microfiber pad. Do not allow material to form puddles on the surface as this may cause white residue to form and stain. If excess material is still on the surface after 20 minutes, use a microfiber applicator to even out excess material.

FINAL STEPS

MAINTENANCE

Dual-Tech floors require very little maintenance other than scheduled scrubbing with water and a neutral or alkaline cleaner. All spills should be cleaned immediately. No waxes or subsequent surface treatments are necessary.

CLEAN-UP

Clean up equipment and tools with a mild soap and water.

CAUTIONS

Immediately wash off over-spray from glass, aluminum, or highly polished surfaces with water to avoid etching. Product is slippery when wet.
Do not apply product if the temperature of the concrete is less than 40°F (4°C) or above 135°F (57°C)
Keep the product from freezing. Do not allow Dual-Tech to form puddles, broom puddles out before they dry or staining may occur.
Wear skin and eye protection. Wash hands thoroughly after handling.
Do Not apply to colored concrete.
See SDS for complete precautions.

Technical Data Sheet

LAST UPDATE: (January 2016)

GYPLOCK SEALER

Hardens Gypsum With No Surface Membrane

DESCRIPTION
Gyp-Lock Sealer was engineered to work with the special chemical properties of Gypsum based cements. Gyp-Lock penetrates the Gypsum and strengthens the top wear layer producing a hard, dust free and abrasion resistant surface that adhesive glues easily bond to. Gyp-Lock seals and strengthens, yet does not create a surface membrane that would interfere with bonding of glues which is vitally important.

The benefits of Gyp-Lock are not only important in the initial phase of floor installations, but are also important after years of wear and tear on the floor. High traffic areas create abrasion and abrasion causes irreparable damage to the Gypsum below. Literally Gypsum can turn to dust from years of foot traffic and this will subsequently causes major de-lamination problems for the flooring.

BENEFITS
Compatible with all glues and adhesives
Leaves no surface membrane
Leaves an ideal surface for flooring
Dust-proofs and hardens

USES
Gypsum based concrete.
Meets LEED Requirements

PHYSICAL CHARACTERISTICS
Physical State: Liquid
Concentrate: Yes
Color: brown
Odor: slight
Flash Point: None
VOC'S: Zero
Dilution: 1:1 with potable water

TESTING
ASTM C418 - Abrasion Resistance 62% Increase in Hardness

PACKAGING: 5 gallon or 18.9 Litre Pail

SHELF LIFE: 3 yrs in original unopened container

COVERAGE: Maximum 250 ft^2/gallon (6.1 m^2/litre) once diluted.

CAUTIONS
Do not apply to frozen surfaces.

SURFACE PREPARATION
Old dirty gypsum based concrete should be cleaned thoroughly removing all old glue and adhesives, oils, and any other contaminants. After cleaning, rinse surface thoroughly with water if needed.
Allow 6 hours for the surface to dry at 68°F (20°C) before application of Gyp-Lock.
If gypsum floor is clean, thoroughly sweep area of dust and debris.

APPLICATION
Dilute Gyp-Lock 1 part concentrate to 1 part potable water. Stir before using.
Apply Gyp-Lock at a rate of 250 ft^2/gallon (6.1 m^2/litre) maximum per gallon making sure to thoroughly saturate the surface. If floor quickly soaks in Gyp-Lock, apply at 150 ft^2/gallon (3.7 m^2/litre).
If puddling occurs move product to areas where there are no puddles.
Distribute Gyp-Lock evenly with a roller applying little to no pressure to roller.
Allow 1st coat to dry 2 hours.
Apply 2nd coat using the same instructions
Once the floor has thoroughly dried, sweep floor clean.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

Technical Data Sheet

LAST UPDATE: (January 2016)

REPEL

Water Repellent for Concrete, Stone, and Stucco

DESCRIPTION

Repel is a water-based clear, highly reactive micro-emulsion silicone that works specifically with the properties of concrete, stucco and manufactured natural stone.

Repel is ready to use, has no VOC's and when applied, leaves the coated surface looking natural. Repel's ability to prevent water and waterborne contaminates from entering the substrate reduces problems such as efflorescence, scaling, dirt buildup, alkali attack, and freeze thaw damage. Repel allows the treated surface to breathe allowing natural moisture vapor transmission.

Repel can be used as additional protection on polished concrete to increase stain resistance. Simply spray Repel on existing substrate and allow to dry. Repel will not change the color or texture of the surface and will remain effective.

BENEFITS

ASTM C-67: Reduces water absorption
Maintaining greater than 50% breathability
Increased stain resistance
Will not alter color, texture, or any other physical characteristic of sealed surfaces
Improves resistance to freeze/thaw exposure
Reduces penetration of grease, oils, acids, and salts
Protects reinforcing steel
VOC'S - ZERO
Only one coat needed
Water clean-up
Meets LEED Requirements

USES

To reduce efflorescence and improve resistance to effects of weathering on concrete, manufactured and natural stone, and stucco surfaces.

PHYSICAL CHARACTERISTICS

Physical State: Liquid
Color: Clear
Odor: None
Flash Point: None
VOC's: 0
Breathable: Yes - 50%

PACKAGING: 15 gallon or 18.9 Litre Pails

SHELF LIFE: 2 year in unopened original container.

COVERAGE (dependent on porosity of surface)
Stucco: Approximately 100 ft^2/gallon (2.5 m^2/litre)
Concrete: 250 ft^2/gallon (6.1 m^2/litre)
Polished Concrete: 500 ft^2/gallon (12.3 m^2/litre)

CAUTIONS

Due to Repel's properties, adhesives or other coating will not bond sufficiently.
Protect surrounding area from over- spray, in case of accidental contact rinse thoroughly with water immediately.
Care should be taken to protect nearby vegetation.
DO NOT apply to frozen surfaces.
Only **ONE** Coat is possible.
This product is not meant to fill or seal visible cracks.

CAUTIONS (continued)

For surfaces not specified in this Technical Data, or where surface may have been previously sealed, we recommend that Repel be applied to a small test area first, and observed for possible adverse reactions. Under certain conditions a precipitate of sodium carbonate may be deposited as Repel dries.

To avoid this white precipitate which is especially noticeable on old or dark surfaces observe the following precautions: Always test Repel on a small area to determine if these conditions exist. Substrates with a high acid level will more readily neutralize Repel before it is absorbed into the brick, leaving the residue on the surface.

Do not use on acrylic stucco or painted stucco.

SURFACE PREPARATION

Make sure surface is clean, free of dirt, oil and other contaminants. Let surface dry 3 to 4 hours after cleaning before applying Repel.

Patching and caulking must be done before applying Repel.

Plastic or paper all glass and windows before applying Repel. Do NOT spray directly on the plastic or paper during application to avoid leaking or soaking through. Remove plastic or paper immediately after each side of the structure is complete.

Concrete should be cured 28 days before the application of Repel.

APPLICATION

For best results, spray Repel using a pump up sprayer, this will ensure proper coverage of joints, laps, butts, etc.

Shake the container well before using.

If the product has been frozen, thaw completely and shake well.

Use Repel right out of the container. DO NOT dilute or mix with other liquids.

Stucco should be lightly dampened with clean water immediately prior to application.

Apply Repel with a sprayer (20 to 30 psi). Apply liberally and saturate all areas.

On vertical surfaces, avoid run-down, overlapping, or second coating.

On vertical surfaces, apply starting from the top and working down the surface, keeping a wet edge. If Repel dries between passes "water spotting" may result.

Only one application is possible.

Repel sets within 2 to 4 hours.

Full protection will be achieved within 24 hours.

Clean up equipment with mild soap and water.

POLISHED CONCRETE APPLICATION

After the concrete has been polished to the desired finish, apply one coat at a rate of 400-500 ft^2/gallon (9.8-12.3 m^2/litre). Spread the product out using a micro-fiber pad, do not let the product puddle and do not over apply. Coverage will be determined by the absorption of the concrete. Repel should be dry to touch in 5 to 10 minutes. If white residue is present after drying it is easily buffed out or wiped up.

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings respect thereto. This warranty supersedes all other warranties express or implied.

Technical Data Sheet

LAST UPDATE: (January 2016)

SUPERGRIP

Non-slip Additive

DESCRIPTION

Supergrip is clear non-slip additive that will take on the color of the sealer and the color of the concrete underneath unlike other materials in the market that leave a white or brown color.

Supergrip is harder than sand and will not crush easily, therefore it doesn't compromise the coating.

The unique light reflecting qualities of Supergrip adds a bit of sparkle to your surface, without changing the color of the coating. Use as much or as little as desired to create the perfect non-slip surface and effect.

Simply broadcast Supergrip onto your wet coating to provide excellent traction to any surface. Supergrip is desirable for any location in which a non-slip surface is required, such as pools, steps, decks or ramps.

Supergrip is available in #15, #17, #20, and #25 sizes. Supergrip is economically priced and available in 3 lb bottles and 50 lb pails. Meets LEED Requirements.

BENEFITS

Superior traction
Adds sparkle (reflects light)
Clear (transparent)
Economical
Easy to apply
VOCs – 0
Does not discolor decorative concrete

USES

Non-slip additive for any coating
Using Supergrip with any clear coating will give the coating sparkle
Can be used directly in concrete

EPOXY INSTRUCTIONS

Apply the 1st coat of Epoxy. While still wet, broadcast Supergrip evenly over the entire surface. Once dry, apply the 2nd coat of Epoxy.
Or add 1 litre of Supergrip to a 4 litre kit of Epoxy, and mix thoroughly before applying.

ACRYLIC INSTRUCTIONS

Apply first coat of Premium Acrylic. Broadcast Supergrip evenly over entire surface while the acrylic is still wet. Apply a second coat of Premium Acrylic once the first coat is dry. This will lock in the Supergrip. Supergrip will take on the color of the concrete and is transparent.

MESH SIZES

Supergrip #30 (20-30)
Supergrip #20 (30-80)
Supergrip #15 (40-50)
Supergrip #17 (70-100)

WARRANTY

We warrant our products to be of good quality and will replace any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. The user shall determine the suitability of the product for the intended use and assume all risks and liability in connection therewith. Therefore, except for such replacement of product, Cornerstone Coatings makes no warranty or guarantee express or implied including warranties of fitness for a particular purpose or merchantability, respecting its products, and Cornerstone Coatings shall have no other liability with respect thereto. This warranty supersedes all other warranties express or implied.

TECHNICAL DATA SHEET

LAST UPDATE: (January 2016)

Fiber-Link

Nylon Fibre

DESCRIPTION

Fiber-Link Nylon Fiber is specifically designed and manufactured for internal reinforcement in patterned concrete. Stamped concrete must perform like regular concrete while exhibiting a delicate appearance of fine detail and texture.
Fiber- Link seems to disappear, but they stand as silent sentinels protecting and reinforcing even the finest surface detail.

Fiber-Link added to concrete is a secondary reinforcement that offers a superior alternative to wire mesh. Fiber-Link provides protection against plastic shrinkage cracking in fresh concrete by entraining millions of evenly distributed independent fibers that block the creation and growth of micro cracks that can develop into macro cracks. When regular concrete is poured all the aggregate, fines and cement begin to settle downward because of gravity. As the solids continue downward, water is displaced and forced to the surface in the form of bleed water. Plastic shrinkage cracking occurs when the rate of evaporation exceeds the rate of replacement. This early volume change accounts for the majority of all non-structural cracks in concrete. Additionally uncontrolled settling can cause plastic settlement cavitation below embedded rebar, thus reducing the surface area in contact with the matrix. Rapid settlement can also cause an excessive amount of water on concrete surfaces that can produce an unfavorable water/cement ratio. This condition can lead to spalling, dusting and other surface problems. When Fiber- Link is added to a mix, the process of material settlement is altered. Millions of evenly dispersed fibers produce an internal support system that prevents or slows solids from sinking. This results in slower, more uniform bleeding and a reduction in concentrated internal tensile stresses that lead to plastic shrinkage cracking during early volume

The stress-induced micro cracks that do start are bridged and intersected by Fiber-Link, and crack propagation is stopped. Fiber-Link greatly reduce plastic shrinkage cracking and allows concrete to reach its designed strength and integrity without the use of welded wire fabric. Fiber-Link Fibers are made of 100% pure Nylon. Fiber-Link Fibers meet ASTM C-1116-89 “Specifications for Fiber reinforced concrete and Shotcrete” classification 4.1.3 Type III

BENEFITS

- Inhibits plastic shrinkage cracking.
- Inhibits plastic settlements.
- Provides 3 dimensional rather than single plane secondary reinforcement.
- Provides unobstructed access to sub-base.
- Provides secondary reinforcement that is always positioned in compliance with building codes.
- Saves time and money be eliminating the purchase, storage, handling, cutting, and placing of wire mesh.
- Pumps easily.
- Finishes like regular concrete.
- Compatible with all other admixtures and surface treatments.
- Comes in pre-measured mixer disintegrating bags.
- May be added at job site.

PHYSICAL PROPERTIES

Use	1 Bag/Yard Concrete
Material	100% Virgin Nylon
Tensile Strength	130-140 Ksi
Modulus (Young’s)	750 Ksi
Melt Point	435F
(225C) Chemical Resistance	Good
Alkali Resistance	Excellent
Acids & Salt Resistance	Good
Ultraviolet Resistance	Excellent
Electrical/Thermal Conductivity	Low
Absorption	4-5%
Specific Gravity	1.16
Denier	6
Fiber Length	¾”
Form	Monofilament Fiber
Color	White

»Liquid Poly:

> Description:

Liquid Poly is a water-based temporary protective coating that forms a membrane to protect surfaces from concrete splatter and staining.

During concrete pumping and placing/finishing operations, concrete is normally splattered on the surrounding areas. This is a major problem because the concrete is not easily removed once dried. The resulting damage is difficult and expensive to remove. These difficulties are virtually eliminated by using Liquid Poly.

Liquid Poly is easily removed with a pressure washer using cold water. The coating will easily soften and melt, and the concrete splatter washes away easily without leaving concrete stains. Concrete can be painted after thoroughly removing the Liquid Poly.

> HIGHLIGHTS

- Enables easy removal of concrete splatter
- Stops concrete staining
- Easy to Use
- Reduces labor costs
- Can be applied in hot or cold weather
- Can be Rolled, Sprayed, or Brushed
- Does not require any degreasers
- VOC Compliant: <30g per Litre
- Water-based
- Environmentally Safe
- 1 coat application in most cases
- Use cold water to remove

> Uses:

Liquid Poly can be used on a wide variety of surfaces such as: glass, faced metal building insulation, insulated metal wall panels, pre-painted metal wall panels, structural steel, wood, stamped concrete, pre-cast concrete, acrylic stucco, parging, tools and equipment. On textured or uneven surfaces 2 coats are required.

> Application Instructions:

It is very important to **saturate** the area that is to be protected from concrete splatter with Liquid Poly. If you do this right, it is a dream to remove. If in doubt, a second coat of Liquid Poly will ensure proper coverage. Make sure the Liquid Poly is completely dry to give proper protection.

Use an industrial pump sprayer to apply Liquid Poly. Recommended tip size is .5 gpm. Apply evenly from the bottom up with good product coverage at a rate of approximately 200 ft^2/gallon (4.9 m^2/ litre). Concrete can splatter up to 8 feet high, so apply Liquid Poly up to that height.

> Removal Instructions:

Typically you will use a pressure washer and cold water. Wet down the area and let it sit a minimum of one minute. In this state the Liquid Poly will start to soften and melt, making it much easier to remove. Start washing the area down to remove the Liquid Poly along with all the concrete splatter. Simple and easy.

> Does not contain any:

Wax, Soy, Mineral Oils, or Silicone.

> Cautions:

Do Not Freeze product.
We recommend testing a small area to observe possible adverse reactions before applying.
Apply at suitable application rates for the type of surface being treated.
When pressure washing acrylic stucco take care not to damage the acrylic stucco.
Darker colored tin may show spotting, use soap and water to clean spots if necessary.

> Manufacturers Warranty:

We warrant our products to be of good quality and will replace any products proven defective. The user shall determine the suitability of the product for the intended use, and assume all risks and liability of the application and use of the product. Akkeri products does not make any warranties or guarantees of product fitness for a particular purpose or merchantability. This warranty supercedes all other warranties express or implied.

LIQUID POLY

CUSTOMER TESTIMONIALS

March 2016

We started using your product called Liquid Poly to protect surrounding work areas from concrete splatter.

The key to the product is that when you spray, make sure to properly coat the surface according to the instructions, when you do, the products is a dream to work with.

Surfaces that the product works great for us so far have been: steel buildings, acrylic stucco, parging, existing concrete we are pouring up to, pre-coating our power trowels and tools. It makes clean up a lot easier and our equipment stays nicer for longer.

One area that requires a little extra washing is on Vinyl Siding, but otherwise it is a great product. Using Liquid Poly saves a lot of time in our preparation and afterwards we don't have the headache of cleaning up concrete splatter. Just remember, don't skimp on the product and you will love it.

We spray everything now with Liquid Poly.

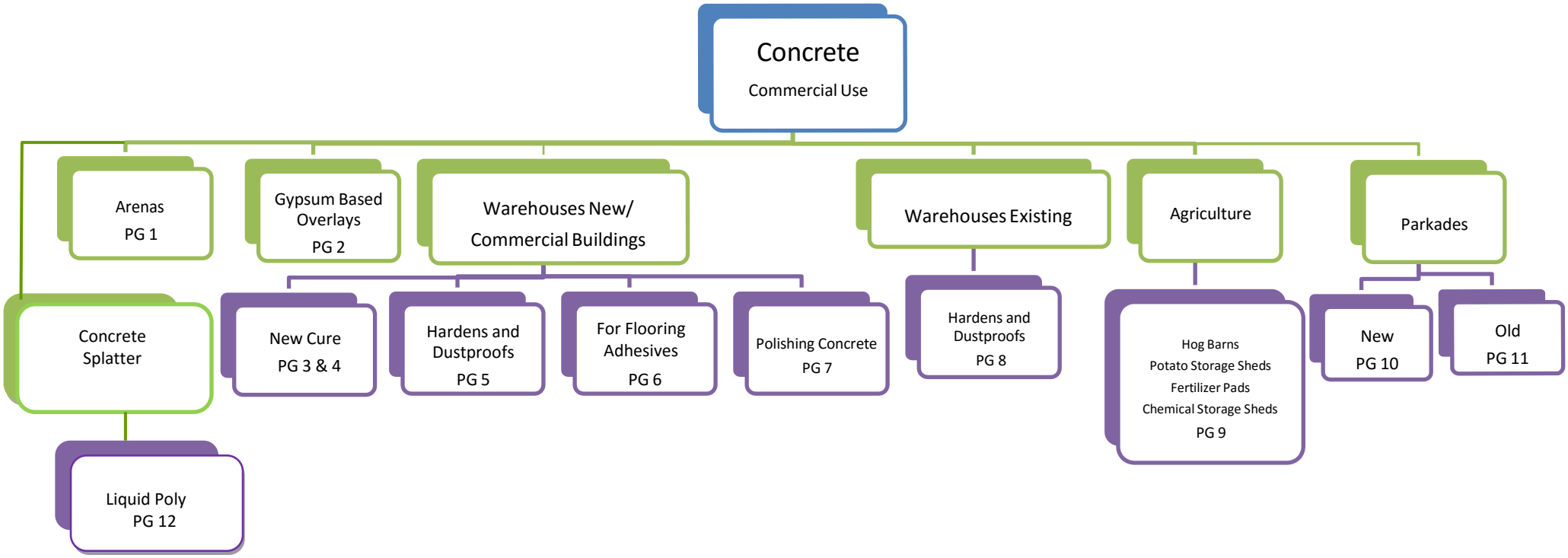
CMN Construction
Clay Nelson
Swift Current, SK

April 2016

We have been using Liquid Poly on glass, windows and aluminum glazing, to protect from concrete splatter, and it works perfectly, it saves us a lot of time and headaches. We cannot wait to try it out on our ride on trowels.

CONTECH
GENERAL CONTRACTORS

Saskatoon, SK

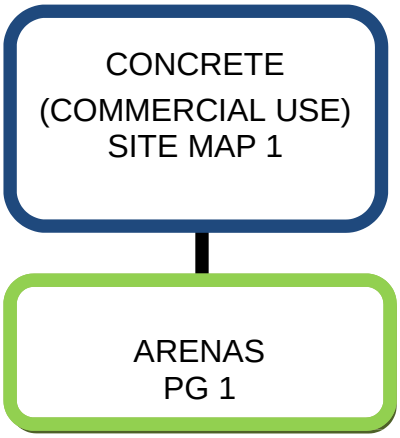


Instructions

This is a map that covers most of the areas that Cornerstone Coatings products are used in. Find the area on the map that defines what you are looking for, and go to the page number listed on this page. There will be a number of options for you to choose from on that page depending on what your need is. On these pages are the page numbers for the products named to get you to where that Technical Data Sheet is in the binder.

Note: For Parkades and the Apron Areas in Warehouses In Western Provinces of Canada we do not recommend membrane forming cures. The concrete tends to pop and shale badly when using membrane forming cures such as acrylics or hydrocarbon resin cures. This concrete popping and shaling is minimized greatly with Protec III.

Note: These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



ARENAS - NEW

Apply 1 coat of Protec III Chem RX pg 1a (4-6) for hardening and dust-proofing concrete. Applying 2 coats of Protec III Chem RX will give a better result because concrete does not absorb penetrating hardeners evenly. The second coat takes care of these areas. With use, the concrete will polish up to a shine. Apply 2nd coat after most of the first coat has soaked in. Application rate is approximately 300 ft^2/ gallon (7.4 m^2/litre) on 1st coat, 500 ft^2/gallon (12.3 m^2/litre) on 2nd coat.

If concrete is water-cured, wash floors thoroughly and let dry before applying Protec III Chem RX. If puddles form after 1 hour, roll out the puddles or use a micro-fiber pad to redistribute product.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

CONCRETE
(COMMERCIAL USE)
SITE MAP 1

GYPSUM BASED
OVERLAYS
PG 2

GYPSUM BASED OVERLAYS - Use Gyplock pg 6 (1-2)

To dustproof and harden gypsum based underlayments. Two coats are required. Depending on how absorbant the gypsum is, expect between 150-250 ft^2/gallon (3.7-6.1 m^2/litre).

CONCRETE
(COMMERCIAL USE)
SITE MAP 1

WAREHOUSES NEW
Commercial Buildings

New Cure
PG 3 & 4

WAREHOUSE - NEW CURE - Cure and Seal Plus Hardener

Use one coat with Protec III with Acrylic Membrane pg 1b(1-2) at a rate of 300 ft^2/ gallon (7.4 m^2/litre). Meets ASTM C309. Use within 6 hours of finishing.
Note: In winter allow more time, the concrete is cold, moisture dew point is high, so you need to wait longer for application. Usually 6 - 12 hours after finishing.

Apply 1 coat of Protec III Chem RX pg 1a(4-6) as a curing aid plus hardener next day after finishing concrete. Applying 2 coats of Protec III Chem RX will give a better result because concrete does not absorb penetrating hardeners evenly. The second coat takes care of these areas. Application rate is approximately 400-500 ft^2/ gallon (9.8-12.3 m^2/litre).
Note: In winter applications, concrete is colder and moisture dew points are higher, so dry times will take longer, possible have to wait an additional 1/2 day before applying Protec III Chem RX.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

WAREHOUSES - NEW - CURE AND SEAL only

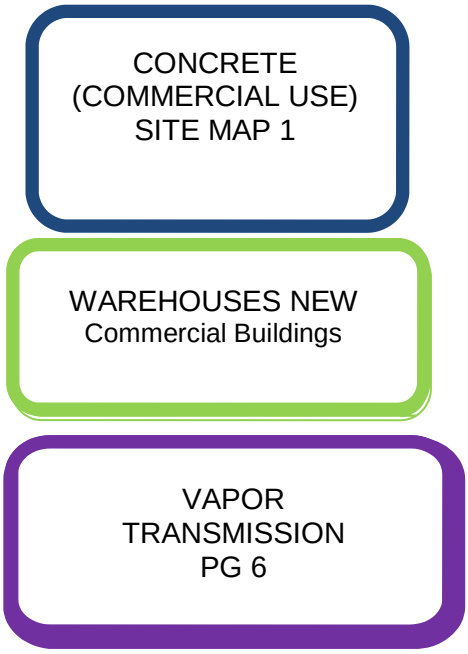
WAREHOUSES - NEW - WATERBASED ACRYLIC CURE AND SEAL only Apply one coat of Cornerstone C309 pg 1c (1) or Cornerstone R20 pg 1d (1-2) at a rate of 250 ft^2/gallon (6.1 m^2/litre). In winter concrete is colder and the dew point is low, so you have to wait longer for the bleed water to evaporate properly before applying these cure and seals.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

WAREHOUSES NEW - HARDENER PLUS INCREASED STAIN RESISTANCE
Apply one coat Dual-Tech pg 5 (1-5) after concrete has cured for a minimum of 28 days apply at a rate approximately 300 ft^2/gallon (7.4 m^2/litre). If you need a curing aid apply Protec III Chem RX pg 1a (4-6) then after a minimum of 28 days apply Dual-Tech pg 5 (1-5). The longer that the concrete is allowed to cure, the better the water repellent in Dual-Tech will perform.

WAREHOUSE APRONS - NEW
To cure apply 2 coats of either Protec III Chem RX pg 1a (4-6) or Protec III Restore pg 3 (1-2).
Note: In western provinces of Canada we do not recommend membrane forming cures on exterior concrete. The concrete tends to pop and shale badly when using membrane forming cures such as acrylics or hydrocarbon resin cures. This concrete popping and shaling is minimized greatly with Protec III Chem RX pg 1a (4-6).

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



VAPOR TRANSMISSION
Apply 2 coats of either Protec III Chem RX pg 1a (4-6) or Pro-Pel pg 4 (1-4)
Wet down the surface with the product by sprayer. When spraying, a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more product or by re-distributing the existing product using a micro-fiber pad or roller. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed.
After 1st coat has dried for 4 hours apply the 2nd coat of Pro-Pel or Protec III Chem RX. Follow the same procedure as the 1st coat. Typically 2 coats is all that is needed.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

WAREHOUSES NEW - POLISHING

Use either Protec III Restore pg 3 (1-2) for a less expensive option to Lithiums. Coverage for Dense Concrete is 300-400 ft^2/gallon (7.4-9.8 m^2/litre). Coverage for Ground Concrete is 400-600 ft^2/gallon (9.8-14.7 m^2/litre).

If you require a Lithium, use Pro-Pel pg 4 (1-4) which is a pure Lithium Silicate which does not contain sodium silicates or colloidal silicates.

Coverage for Ground Concrete is 400-600 ft^2/gallon (9.8-14.7 m^2/litre). Coverage for Power Trowel Concrete is 300-400 ft^2/gallon (7.4-9.8 m^2/litre).

For added stain resistance apply one coat of Repel pg 7 (1-2). Coverage on Polished Concrete is 500 ft^2/gallon (12.3 m^2/litre).

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

CONCRETE
(COMMERCIAL USE)
SITE MAP 1

WAREHOUSES
EXISTING

Harden &
Dustproof
PG 8

WAREHOUSE EXISTING - HARDEN AND DUSTPROOF

To dustproof use 2 coats of Protec III Chem RX pg 1a (4-6) at a rate of 300 ft^2/ gallon (7.4 m^2/litre). If heavy dusting exists, use 2 coats of Protec III Restore Strengthens and Hardens Poor Concrete pg 3 (8-9) at 125 ft^2/gallon (3.1 m^2/litre) making sure to follow instructions. If you want to dustproof and give a non-slip stain resistant floor use 1 coat of Protec III Chem RX pg 1a (4-6) plus 1 coat of Dual-Tech pg 5 (1-5)

WAREHOUSE APRONS - EXISTING

On existing use 2 coats Protec III Chem RX pg 1a (4-6) or Protec III Restore pg 3 (1-2). If you want a non-slip stain resistant surface as well, apply one coat of Dual- Tech pg 5 (1-5). If you want a shine to the surface, use Cornerstone R20 pg 1d (1-2) or Cornerstone C309 pg 1c (1) for a water-based alternative. If you want a clear water-repellent that does not have a hardener in it like Dual-Tech pg 5 (1-5) use Repel pg 7 (1-2).

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

CONCRETE
(COMMERCIAL USE)
SITE MAP 1

AGRICULTURE
PG 9

AGRICULTURE

HOG/DAIRY/CHICKEN BARNS

Use 2 coats Protec III Chem RX pg 1a (4-6) For slats use 2 coats Protec III Restore pg 3 (1-2).

POTATOE SHED

Apply 2 coats of either Protec III Chem RX pg 1a (4-6). Wet down the surface with product by sprayer or microfiber pad. When spraying, a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more product or by re- distributing the existing product using a micro-fiber pad. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed.
After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX. Follow the same procedure as the 1st coat.
Protec III Chem RX is food safe. Typically 2 coats is all that is needed.

FERTILIZER PADS

Use 3 coats Protec III Chem RX pg 1a (4-6). Wet down the surface with Protec III Chem RX by sprayer or microfiber pad. When spraying, a spray nozzle that produces a flow of .25 gpm under 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or by re-distributing the existing product using a micro-fiber pad. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed.
After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX. Follow the same procedure as the 1st coat. After 2nd coat has dried for 4 hours follow the same procedure as the first coat to apply the final coat.

CHEMICAL STORAGE

Use 2 coats Protec III Chem RX pg 1a (4-6).

CONCRETE
COMMERCIAL USE
SITE MAP 1

PARKADES

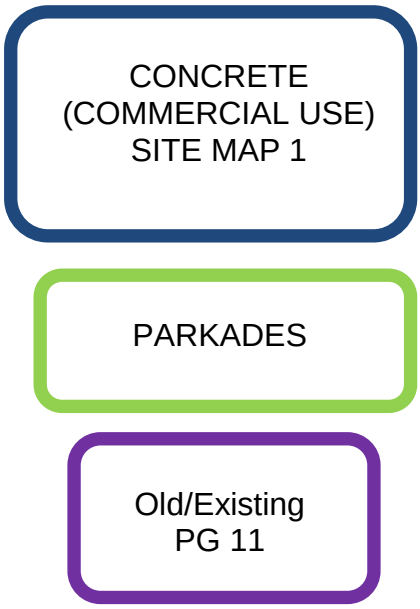
New
PG 10

PARKADES - NEW

Use 2 coats Protec III Chem RX pg 1a (4-6) as a curing aid plus hardener next day after finishing concrete. Apply 2nd coat after most of the first coat has soaked in. Application rate is approximately 300-400 ft^2/gallon (7.4-9.8 m^2/litre).
Note: In winter applications, concrete is colder and moisture due points are higher, so dry times will take longer, possible have to wait an additional 1/2 day before applying Protec III Chem RX.

Apply one coat Dual-Tech pg 5 (1-5) after concrete has cured for a minimum of 28 days apply at a rate approximately 300 ft^2/gallon (7.4 m^2/litre). If you need a curing aid apply Protec III Chem RX pg 1a (4-6) then after a minimum of 28 days apply Dual-Tech pg 5 (1-5). The longer that the concrete is allowed to cure, the better the water repellent in Dual-Tech will perform.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.

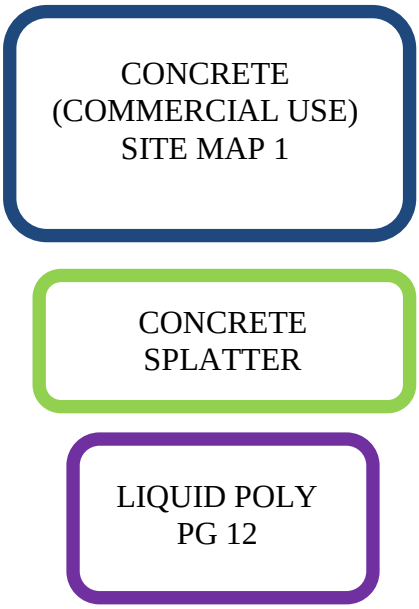


PARKADES - OLD

Make sure to thoroughly clean and de-salt the concrete. If there is a lot of road salt in the concrete, Protec III can push contaminants out of the concrete, which can cause staining.

To dustproof use 2 coats of Protec III Chem RX pg 1a (4-6) at a rate of 300 ft^2/ gallon (7.4 m^2/litre). If heavy dusting exists, use 2 coats of Protec III Restore Strengthens and Hardens Poor Concrete pg 3 (8-9) at 125 ft^2/gallon (3.1 m^2/litre) making sure to follow instructions. If you want to dustproof and give a non-slip stain resistant floor use 1 coat of Protec III Chem RX pg 1a (4-6) plus 1 coat of Dual-Tech pg 5 (1-5).

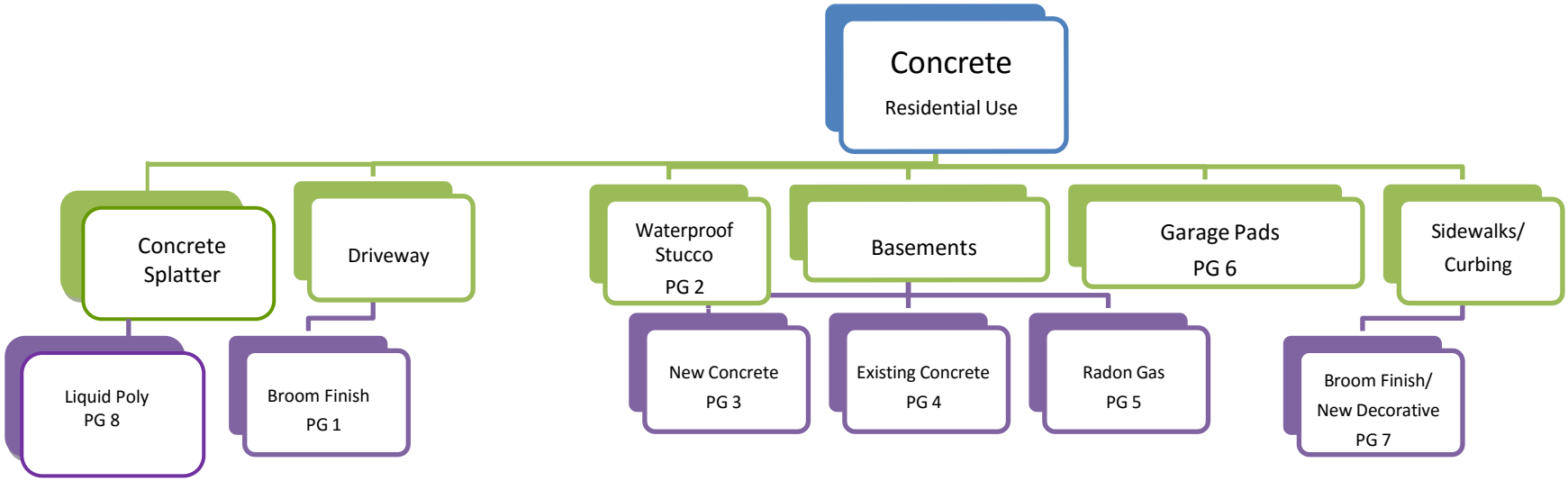
These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



Smooth Surfaces
Apply one heavy coat to protect surrounding areas from concrete splatter. You can also protect from splatter or drips from other materials such as dry wall mud, paint etc. On horizontal surfaces apply until the product shows signs of sagging.

Rough Surfaces
Apply two heavy coats at opposite directions to make sure you have proper protection from splatter.

NOTE:
The key to this product is to apply enough product to make a proper barrier. If you use enough, it is a dream. Best to use a .5 gpm tip on the sprayer. You can use the cheap garden type sprayer, just make sure to apply enough product.

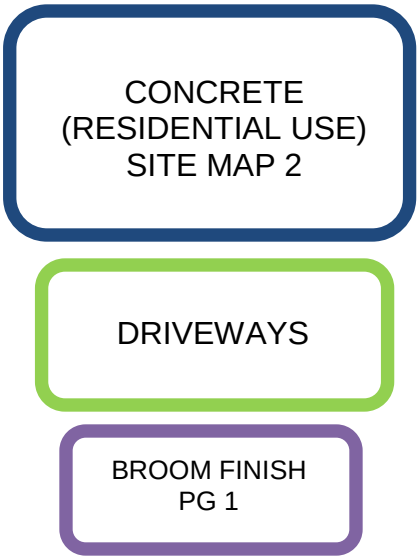


Instructions

This is a map that covers most of the areas that Cornerstone Coatings products are used in. Find the area on the map that defines what you are looking for, and go to the page number listed on this page. There will be a number of options for you to choose from on that page depending on what your need is. On these pages are the page numbers for the products named to get you to where that Technical Data Sheet is in the binder.

Note: For Exterior Broom Finish Concrete In Western Provinces of Canada we do not recommend membrane forming cures. The concrete tends to pop and shale badly when using membrane forming cures such as acrylics or hydrocarbon resin cures. This concrete popping and shaling is minimized greatly with Protec III.

Note: These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



DRIVEWAYS - BROOM FINISH (NEW CHEMICAL CURE)

To reduce concrete popping and shaling as a chemical cure apply two coats Protec III Chem RX pg 1a (4-6). In areas that have more concrete popping problems and where concrete absorbs water quickly, use 2 coats of Protec III Restore pg 3 (1-2). Coverage rate 300 ft^2/gallon (7.4 m^2/litre). Apply product after bleed water has evaporated, typically 4 hours after brooming. Spring and Fall season wait 6-8 hours. You can also wait until the next day because of the cooler conditions or if the pour is at the end of the day.

DRIVEWAYS - BROOM FINISH (OLD CONCRETE/EXISTING CONCRETE)

To help stop concrete popping and shaling. Wash concrete and let dry. Apply two coats of Protec III Chem RX pg 1a (4-6) or Protec III Restore pg 3 (1-2) at a rate of 200 ft^2/gallon (4.9 m^2/litre).

DRIVEWAYS - BROOM FINISH (TO GIVE ADDITIONAL STAIN RESISTANCE)

If you want additional protection to bead water and increased stain resistance, apply over the Protec III any of the following:

- one coat of Dual-Tech pg 5 (1-5) a water-based hardener and water repellent that leaves a natural color. For best results wait a minimum of 14 days.

-one coat Repel pg 7 (1-2) a waterbased Silicone water repellent that leaves concrete a natural color.

Approximately 250 ft^2/gallon (6.1 m^2/litre) these products, except Repel apply at 250 ft^2/gallon (6.1 m^2/litre).

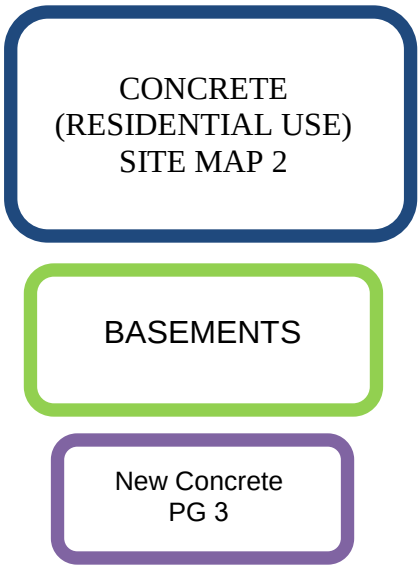
-one to 2 coats of Cornerstone C309 pg 1c (1).

CONCRETE
(RESIDENTIAL USE)
SITE MAP 2

WATERPROOF
STUCCO
PG 2

Apply one coat of Repel 7 (1-2) at a rate of 125 ft^2/gallon (3.1 m^2/litre). Do not use on Acrylic Stucco.

Note: Plastic or paper all glass and windows before applying Repel. Do NOT spray directly on the plastic or paper during application to avoid leaking or soaking through. Remove plastic or paper immediately after each side of the structure is complete and clean up any drips on glass.



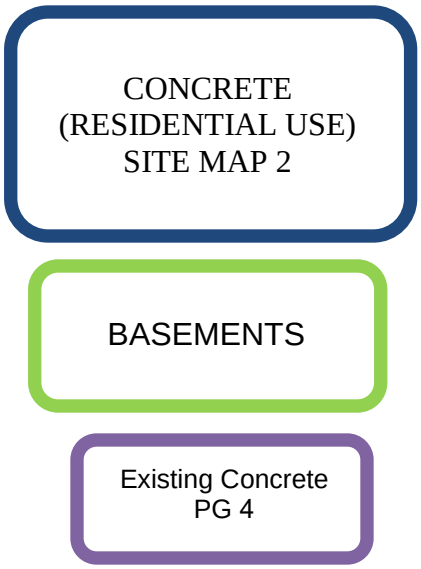
BASEMENTS - NEW CONCRETE AS A CHEMICAL CURE/CURE AID

Apply 2 coats of Protec III Chem RX pg 1a (4-6) next day after finishing at a rate of 300 - 400 ft^2/gallon (7.4-9.8 m^2/litre). During colder temperatures use less product and allow product extra time to penetrate the concrete. Do not puddle. Either roll or use a lint free pad to move product that is puddling to other areas.

To add a shine to concrete apply 2 coats of either Cornerstone C309 pg 1c (1) or Cornerstone R20 pg 1d (1-2) waterbased acrylic pg 2 (1-2). Apply once the concrete has cured 7 days.

If you want a natural finish with increased stain resistance, use either one coat of Dual- Tech pg 5 (1-5) at a rate of 250 ft^2 /gallon (6.1 m^2/litre) or Repel pg 7 (1-2) at a rate of 200 ft^2/gallon (4.9 m^2/litre). Apply once the concrete has cured a minimum of 14 days.

These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



BASEMENTS - EXISTING CONCRETE

For the Basement floor apply 2 coats of Protec III Chem-RX pg 1a (4-6) at a rate of 300 ft^2/gallon (7.4 m^2/litre).

BASEMENTS - DUSTING CONCRETE

Apply 2 coats of Protec III Restore pg 3 (1-2) at a rate of 125 ft^2/gallon (3.1 m^2/litre). Also see Protec III Restore Strengthens and Hardens Poor Concrete pg 3 (8-9)

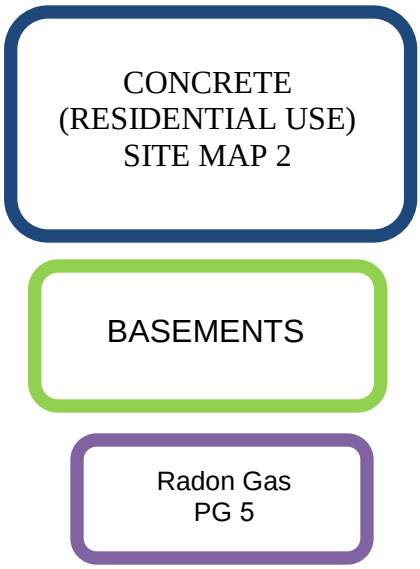
Make sure to keep the concrete surface wet for 30 minutes either by re-distributing the product that has puddled or by adding more product. The idea is to saturate the concrete surface thoroughly.

Use clean work footwear to walk on the concrete that is still wet with Protec III in order to redistribute or add more Protec III Restore.

After 1 hour, if there are any puddles remaining redistribute products and allow to dry 4 hours.

Apply the 2nd coat, same as the first and let dry overnight.

Test the concrete after the 2nd coat of Protec III Restore has dried 24 hours to see if the concrete surface is satisfactory. In most cases 2 applications is all that is needed. In the odd case where more is needed, apply the 3rd coat of Protec III Restore according to the application instructions above.



BASEMENT - RADON GAS

Apply 2 coats of either Protec III Chem RX pg 1a (4-6) or Pro-Pel pg 4 (1-4) following application instructions for Radon Gas. Moisten the surface with Protec III Chem RX or Pro-Pel by sprayer or microfiber pad. When spraying a spray nozzle that produces a flow of .25 gpm at 40 psi is recommended. Spray in a fine fog pattern. Make sure concrete stays wet for 30 minutes by re-applying more Protec III Chem RX or Pro-Pel or by re-distributing the existing product using a micro-fiber pad. Do not allow the product to form puddles. After 30 minutes let the surface dry, no water flushing is needed.

After 1st coat has dried for 4 hours apply the 2nd coat of Protec III Chem RX or Pro-Pel. Follow the same procedure as the 1st coat. Typically 2 coats is all that is needed.

*Fix cracks after the application of Protec III Chem RX or Pro-Pel.

CONCRETE
(RESIDENTIAL USE)
SITE MAP 2

GARAGE PADS
PG 6

GARAGE PADS - NEW CHEMICAL CURE/CURING AID

Apply 2 coats Protec III Chem-RX pg 1a (4-6) approximately 4 to 6 hours after finishing operations. Next day is also fine. Apply 2nd coat 30 minutes after 1st coat. Keep in mind colder temperatures will slow down dry time and time between coats. Roll out puddles using 10 mil (1/4 inch) roller or lint free pad after each coat.

Special Note: What you will generally find is where the overhead door and main door are located, a third coat will be needed. Concrete dries out faster here and tends to be highly absorbent. When starting your application, always start in these areas. If you notice the Protec III soaking in fast, within 30 seconds, apply additional product here before moving to rest of garage, this additional products is still considered the 1st coat.

GARAGE PADS - EXISTING

Make sure floor is clean and dry. Apply 2 coats Protec III Chem-RX pg 1a (4-6). Apply 2nd coat 30 minutes after 1st coat. Keep in mind colder temperatures will slow down dry time and time between coats. Roll out puddles using 10 mil (1/4 inch) roller or lint pad after each coat.

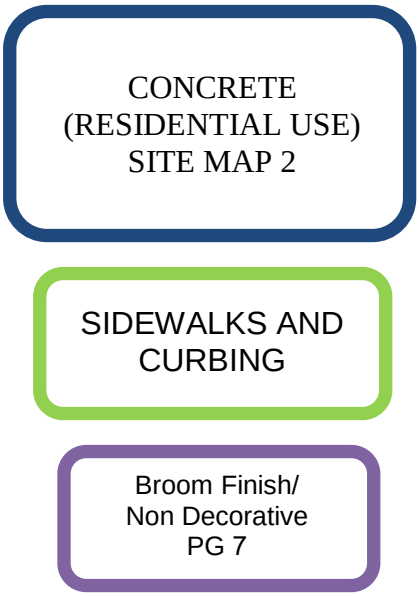
ADDITIONAL WATER AND STAIN RESISTANCE/CURED CONCRETE

For additional water resistance and stain resistance, use either one of the following options: Best option is to apply one coat of Dual-Tech pg 5 (1-5) after 2nd coat of Protec III Chem RX pg 1a (4-6) has dried at a rate of 250 ft^2/gallon (6.1 m^2/litre). Second option is to apply either one coat Cornerstone C309 pg 1c (1) or Cornerstone R20 pg 1d (1-2), 24 hours after the 2nd coat of Protec III Chem RX has dried at a rate of 250 ft^2/gallon (6.1 m^2/litre). **Note Acrylic will leave the concrete surface slippery when wet, Dual-Tech does not make the surface slippery.

POLISHING

Use either Protec III Restore pg 4 (6-9) for a less expensive option to Lithiums. If you require a Lithium, use Pro-Pel pg 4 (1-4) which is a pure Lithium silicate. Pro-Pel does not contain sodium silicates or colloidal silicates. To give additional stain resistance use Repel pg 7 (1-2).

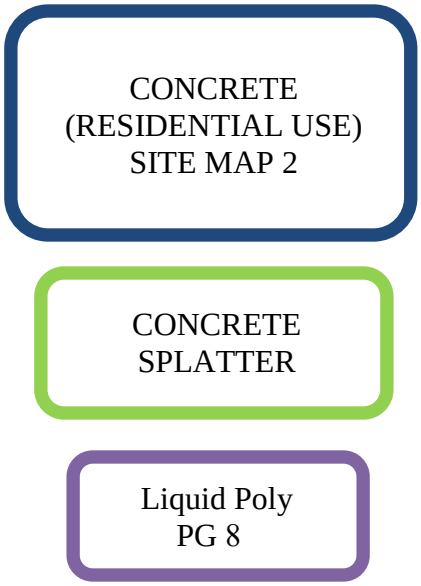
**These are estimated rates of application. The person applying the product will have to be responsible to pay attention to make sure coverage rates are appropriate for their particular concrete slab.



NEW SIDEWALKS/CURBING/GREY/ - NONDECORATIVE

To reduce concrete popping and shaling as a curing aid apply two coats Protec III Chem RX pg 1a (4-6) in areas that have more concrete popping problems use 2 coats of Protec III Restore pg 3 (1-2). Coverage rate 300 ft^2/gallon (7.4 m^2/litre). Apply product after bleed water has evaporated, typically 4 hours after brooming. Spring and Fall season wait 6-8 hours or next day because of the cooler conditions.

Note: In western provinces of Canada we do not recommend membrane forming cure and seals. The concrete tends to pop and shale badly when using membrane forming cures such as acrylics or hydrocarbon resin cures. This concrete popping and shaling is minimized greatly with Protec III.



Smooth Surfaces

Apply one heavy coat to protect surrounding areas from concrete splatter. You can also protect from splatter or drips from other materials such as dry wall mud, paint etc. On horizontal surfaces apply until the product shows signs of sagging.

Rough Surfaces

Apply two heavy coats at opposite directions to make sure you have proper protection from splatter.

NOTE:

The key to this product is to apply enough product to make a proper barrier. If you use enough, it is a dream. Best to use a .5 gpm tip on the sprayer. You can use the cheap garden type sprayer, just make sure to apply enough product.