



## Salt and Freeze/Thaw Cycles

OUTDOOR APPLICATION FOR SALT RESISTANCE

### WHY DO DE-ICERS CAUSE DAMAGE TO THE CONCRETE

Although Concrete looks and feels hard, it's actually extremely porous and absorbent. In colder climates the removing of snow and ice is a must. In winter, snow and ice gets packed onto the concrete from road and foot traffic. Many places around the world experience **100+ freeze/thaw cycles a year.**

A mixture of Salt and Gravel is put on the concrete during the day, melting the snow and ice, allowing it to run off and dry the roads and sidewalks.

Salt is damaging for concrete because it causes the concrete to go through a stressful freeze/thaw cycle that is harsh for the surface of the concrete. Salt is also extremely corrosive.

What is the solution? We still need roads cleared off, dry and safe. The answer we think, is to chemically strengthen the concrete itself, making it more resilient to freeze/thaw cycles and the corrosive nature of de-icing salts.

#### Common Salts and De-Icers

##### *Inorganic Salts*

*Sodium Chloride*  
*Magnesium Chloride*  
*Calcium Chloride*  
*Potassium Chloride*

##### *Organic Compounds*

*Calcium Magnesium Chloride*  
*Potassium Acetate*  
*Potassium Formate*  
*Sodium Formate*  
*Calcium Formate*  
*Urea*  
*Fly Ash*  
*Beet Sugar*  
*Potash Tailing*

## SALT DAMAGE DOES NOT NEED TO HAPPEN

Although De-icers will always be extremely corrosive, and concrete should be protected from it. Damage from winter does not need to happen and is totally avoidable.

## PROPER CURE

The best way to protect concrete from winter conditions is to start with a proper concrete cure. If the concrete is not properly cured, it will be more porous and the bonds in the concrete will be weak and hollow.

Protec III Chem Rx chemically cures and fills the hollow pores of the concrete, curing concrete with Protec III Chem Rx is critical for a strong concrete surface.

We also recommend working the product into the concrete during placing and finishing operations. This application works great to close the surface off tighter.

When used as a Finishing aid, the cure is in one application. Apply one coat of Protec III Chem Rx after placing concrete just before bull floating concrete at a rate of 400 Square feet per gallon.

For freeze thaw resistance a second coat is recommended next day at 500 Square feet per gallon after the saw cuts have been placed.

Protec III Chem RX is non-staining and will not yellow or discolor the surface.



## WHY PROTEC III CHEM RX WORKS

Protec III Chem RX works by chemically turning the weak bonds in the concrete called calcium hydroxide to strong bonds called calcium silicate hydrate. This is a chemical process that densifies the surface, making it resistant to freeze/thaw cycles and salt damage.

Protec III Chem RX also internally fills the pores of the concrete. This helps to keep ice and salt out of the concrete surface.

Protec III Chem RX protects the concrete, densifies the surface and internally seals off the surface, leaving a natural, non-slip finish to the concrete.

## A PROPER CURE PREVENTS PROBLEMS

The problems that will appear when concrete is not properly cured are shaling of the surface, spalling, shrinkage cracks and a weak surface that does not stand up to traffic or winter conditions such as freeze/thaw cycles and Di-icing salts.

Protec III Chem RX works and prevents these issues in the first place by curing it properly and strengthening the concrete surface.

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*All Concrete exposed to the elements  
must be Cured. - Portland Cement Association*



### BENEFITS:

- Densifies
- Natural non-slip finish
- Chemically Cures
- Over 20 years of proven marketplace experience
- Finishing Aid
- Freeze/thaw resistance
- Salt resistance
- Meets LEED Requirements
- VOC Free
- Certified Food Safe
- ASTM C418 – 67% increase in hardness of the concrete wear surface
- CURING AID: 92% greater moisture retention during critical 24 hour cure period.





## **CUSTOMER REVIEWS**

### **ELIMINATES CALL BACKS**

We have been using Protec III for 3 to 4 years, used it and it eliminated a lot of our call back for driveways, garage pads. It is great! The proof is in the pudding when you do not get call backs over winter. We love it, it has no VOC's and does not wreck our sprayers, excellent product. It is great because it reacts with the concrete and becomes part of the concrete.

**Con-Tile - 2019**

**Edmonton, AB**

### **CUSTOMER FOR 15 YEARS**

"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**

### **EASY TO USE AND IT WORKS**

"We haven't had any complaints since we started using Protec III Chem RX and it has been 2 years now. We wanted a better product and we are very particular with what we use. Protec III Chem RX does the job, we always carry Protec III with us. We look at it this way, it is a good insurance program. It is easier to do something easy, such as use Protec III Chem RX as a cure, than having to deal with wrecked concrete if it isn't used."

**Brian - Western Foundations**

**Medicine Hat, AB - April 2017**

### **AMAZING PRODUCT**

"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."

**Ryan Geransky**

**Geransky Brothers - 2017**