Deep Seal with Rust Guard

Environmentally Safe

AMERICAN MADE

SUMMARY INTRODUCTION

The most common and frequent forms of corrosion of Portland cement concrete imbedded steel is caused by a flow of electric current, usually, but not necessarily, generated within the concrete itself. Electrical potential differences can occur in various areas throughout a concrete containing imbedded metals for several diverse reasons such as variable moisture content, oxygen concentration, electrolyte concentration, or contact of dissimilar metals, etc. Inside reinforced concrete, prior to corroding, a corrosion cell may be formed along imbedded steel through the formation of an anode where corrosion occurs and a cathode where no corrosion occurs. However, for corrosion cells to become active, there has to be electrolyte present. Electrolyte can be any liquid which is capable of conducting electrical current through ionic flow, such as rain water, etc The electrolyte acts as a sink for steel electrons. Higher concentrations of ionized substances in the electrolyte, such as chlorides from salt or calcium, causes the electrolyte to be more potent, or stronger, allowing even more electron flow from the steel, further accelerating corrosive activity rates.

Electrolyte activated corrosion cells subsequently produce pits in the corroding imbedded steel; however, the integrity loss due to pitting / corrosion is of much greater consequence in concrete utilizing prestressing cables, than in concrete with reinforcing bars. A catastrophic failure may occur in stressed cables, as the cable cross section becomes reduced or weakened sufficiently by corrosion, or embrittlement due to hydrogen evolution, caused by the corrosive processes. On the other hand, concrete surrounding the imbedded steel reinforcement bar is often cracked, as a result of corrosion expansive forces long before the loss of steel integrity becomes critical, from a load bearing standpoint. In such cases, repairs are often necessary due to concrete bond loss, cracks, or spalling, making corrosion, in either instance, very costly.

Now there is an effective alternative to helplessly allowing this corrosive destruction to run rampant. The alternative is in the form of a non-toxic, user and environmentally friendly solution, **DEEP SEAL with RUST GUARD**. **DEEP SEAL with RUST GUARD** is spray-applied to the concrete's surface as a remedial (apparent corrosion taking place) treatment or as a preventative treatment (no visible signs of corrosion as yet), where it readily deeply penetrates into the concrete being treated. As a remedial treatment, **DEEP SEAL with RUST GUARD** arrests or greatly retards, destructive corrosion activity, through subsequent removal of electrolyte, oxide (scale) deaeration, and oxygen deprivation at the steel's surface. Also, as a side benefit, **DEEP SEAL with RUST GUARD** diminishes water soluble chloride content to varying degrees, depending on pore accessibility, permeability, chloride content, and etc. However, as a preventative, where imbedded steel is not yet corroding, **DEEP SEAL with RUST GUARD** works to prevent corrosive processes from commencing by neutralizing acids (if any) which are mainly responsible for pitting, oxygen deprivation, and conversion of steel protective oxide coating from a two valence oxide to a three valence one. Following an application of **DEEP SEAL with RUST GUARD**, **DEEP SEAL with RUST GUARD's** internally generated insoluble residue, subsequently left in **DEEP SEAL with RUST GUARD** reticulation route, while penetrating, permanently deprives treated areas of their main ingredient for corrosion, which is electrolyte.

Some Advantages of Deep Seal with Rust Guard:

- Significantly Densifies Concrete
- Internally Waterproofs Concrete
- Prevents Efflorescence Flotation
- Inhibits Vapor Transmission
- Makes Concrete More Durable
- Greatly Diminishes Permeability
- Enhances Surface Traction Quality
- Greater Surface bondability
- Provides Internal Humidity Stability
- Integrally Preserves Concrete's Integrity
- Resists Freeze-Thaw Damage
- Improves Thermal Resistance (R-Factor)
- Increases Acid / Chemical Resistance
- Lowers Chemical Reaction Potential
- Lowers Creep Deformation Potential

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ZERO VOC OR VOS CONTENT
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