



chemical solutions to [concrete](#) problems

Residential Concrete

Winter Protection Plan & Extended Warranty Application Worksheet

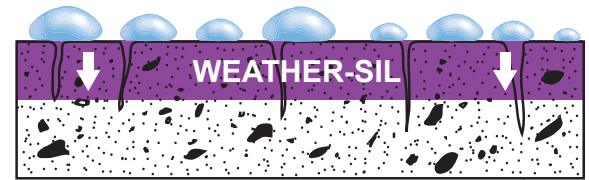




North America offers one of the harshest environments for residential concrete. This is particularly true in the Midwest, Great Lakes area, Upper East Coast and in Canada with exposure to high concentrations of corrosive road salts and more freeze/thaw cycles than anywhere else in the world. Residential concrete in these areas must be properly batched, placed and protected in order to withstand these destructive forces. Without these safeguards, it is almost assured that exposed concrete will succumb to the damaging effects of this environment.

UNDERSTANDING THE CAUSE

When water freezes, it increases in volume approximately 9%. Concrete surfaces which absorb water are subject to increased pressure from below the concrete surface, where the water changes to ice. When the forces exceed the tensile strength of the concrete, it fractures and this results in a small spall, which over time multiplies, eventually turning into scaling.



The use of calcium chloride and magnesium chloride in deicing salts creates additional problems when it reacts with calcium hydroxide in concrete to form calcium oxychloride, which upon drying is expansive and can also produce surface spalling or scaling of concrete surfaces.

With the application of more deicing salts combined with more freeze/thaw cycles, the process of freezing, expanding, thawing and drying repeats itself, ultimately resulting in more surface cracking, scaling and spalling. Over time, these cracks and spalls will continue to increase in size as water and deicing salts absorb deeper into the concrete surfaces.



Prevention is far more economical and efficient.



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CREATING DURABLE CONCRETE SURFACES

Sustainable exterior concrete that is both attractive and serviceable for many years after placement requires careful attention to detail from the very start. Substrate preparation, concrete mix design, finishing methods, curing and sealing all play a part in creating durable concrete. Industry resources such as the American Concrete Institute and your local ready mix supplier can provide guidance for placement methods, mix design and finishing/curing best practices.

LONG-LASTING PROTECTION

To provide concrete with the best protection against water and deicing salt absorption, a silane sealer should be applied before exposure to deicing salts and freeze/thaw conditions occur. As a leading manufacturer of quality concrete construction chemicals, Omaha-based Nox-Crete offers a full line of products backed by over 60 years of industry experience, including our WEATHER-SIL line of silane based water repellent sealers.

Traditional concrete protectants are simply surface coatings that offer only short term protection. Eventually these surface films are compromised by exposure to the sun, weather and traffic and concrete is again left unprotected. Unlike these coatings, WEATHER-SIL water repellent sealers incorporate a special silane that, because of its extremely small molecular size, allow it to deeply penetrate concrete substrates as much as a 1/2" inch in depth. Upon contact with the siliceous materials present, WEATHER-SIL reacts chemically with the surrounding concrete to form a long-lasting hydrophobic barrier. This barrier then protects treated surfaces from the absorption and damage caused by water, waterborne deicing salts and repeated freeze/thaw cycles. This protection is long-lasting to the depth of penetration, requiring reapplication only after many years of service.

Concrete surfaces treated with WEATHER-SIL will not look any different then they did prior to application. Texture, color, etc. will remain unchanged.

DURABILITY GUARANTEED

Nox-Crete offers residential contractors, subcontractors and homeowners a performance guarantee. By following the product application guidelines and applying one of the Weather-Sil water repellent sealers, contractors and homeowners can receive either a 3 – Year Extended Warranty for application of Weather-Sil or a 5 – Year Extended Warranty for application of Weather-Sil Extreme. This Extended Warranty gives additional assurance that concrete surfaces properly treated with Weather-Sil or Weather-Sil Extreme will maintain a water repellent effect that will minimize freeze/thaw related surface cracking, spalling and scaling.

To receive an Extended Warranty on your residential concrete project, read the enclosed information, follow the product application guidelines and complete and return the Extended Warranty Application Worksheet. Peace of mind couldn't be simpler!

