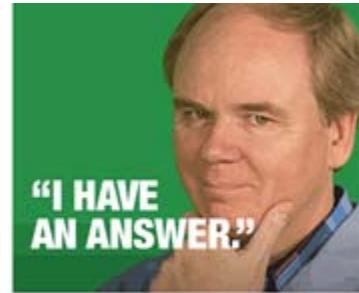


THANK YOU FOR SUBMITTING YOUR QUESTION...



Your question:

Dr. Scott do you have a product the can be used on new concrete pavement (1-2 months old) without affecting any warranty issues?

My answer:

Without knowing the specific wording of your concrete warranty, I can't say which deicers, if any, could be used in the first 1-2 months without violating the warranty. I'd suggest you review the terms of the warranty to see if they provide any limitations on the use of deicers. But perhaps I can give you some general information that will be helpful. The operative phrase in your question is "new concrete," and that's what throws a bit of a monkey wrench into things. Our deicer products are primarily based upon sodium chloride as the main component. It is generally accepted that properly specified, produced, finished, and cured quality concrete is very resistant to damage by sodium chloride. The main mechanism by which sodium chloride can damage marginal quality or incompletely cured concrete is through exacerbation of freeze-thaw scaling. Concrete is a porous material, and when the temperature drops low enough, water within the concrete pores will freeze and expand and exert pressure on the concrete matrix. The presence of deicer chemicals in the concrete increases the damage caused by freeze-thaw cycles and can result in cracking, flaking, and scaling of the surface. Proper air-entrainment has been shown to be highly effective in preventing the freeze-thaw damage caused by sodium chloride. However, concrete requires time to cure and reach its full durability, and this is where your question becomes difficult. The Portland Cement Association recommends that deicers not be applied to concrete for at least 3 months after it has been placed and longer if it was placed during the fall or winter. I am afraid I do not know of any deicers I would recommend that you use on concrete that is only 1-2 months old. Non-chloride deicers such as acetates, formates, and glycols can also exacerbate the freeze-thaw scaling of marginal concrete.

In laboratory tests, magnesium based deicers such as calcium magnesium acetate and magnesium chloride appear to cause significantly less freeze thaw scaling damage to marginal concrete than sodium chloride (for example, see the article written by Dr. Xianming Shi et. al., "Deicer Impacts on Pavement Materials: Introduction and Recent Developments," which you can find online here: <http://www.coe.montana.edu/me/faculty/Shi/DeicerPavementReview.pdf>). I have observed the same behavior from magnesium chloride in tests I have run. So CMA and magnesium chloride may have less tendency to cause freeze-thaw scaling on marginal quality concrete than salt, but I don't think there is enough data available to guarantee that there would be no detrimental effects on new concrete. I think the most prudent approach is to follow the Portland Cement Association recommendations and avoid any deicer application to new concrete if you don't want to risk any damage.

Providing customers with deicing solutions that save lives, enhance commerce and reduce environmental impact.



A Cargill Deicing Technology Product