

# The Effects Of De-icers On Concrete

The effectiveness of various chemicals such as magnesium chloride, sodium chloride and calcium chloride in maintaining safe driving surfaces during the winter months is well documented with some chemicals proving to be superior to others. What is not so conclusive is the effect these chemicals have on concrete, but we can dispel at least one misconception.

One deterioration process often associated with deicing chemicals is called spalling. Spalling is the local flaking or peeling away of the near surface portion of hardened concrete. The peeling away of the surface area results from a number of processes which include the expansion of the reinforcement bars within the concrete, concrete that is not air-entrained to properly improve durability during freezing conditions, too much water used when mixing the concrete, poor workmanship & installation errors, physical damage, improper use of de-icing chemicals as well as the expanding/contracting effects of the freeze-thaw cycle. The proper deicing applications can actually mitigate the effects of spalling by reducing the amount of freeze/thaw cycles. This is achieved by using high performance deicers such as magnesium chloride which will significantly reduce freeze points and prolong the refreeze period and subsequently reduce the expanding/contracting effects of the freeze/thaw process.



# RoadWatch

Keeping you up to speed when nature strikes

Summer 2011

## Focus Is On High Performance In North America And Europe

Snow management professionals on the other side of the Atlantic have had to re-think their reactive approach to maintaining safer roads in Europe. Their winters are becoming more severe drawing parallels to those at similar latitudes on the western shores of the Atlantic with consistently colder temperatures and significant wintry precipitation. Interestingly enough, their long

And, have long adopted these techniques to answer salt shortages and environmental concerns. The three most used liquids for pre-wetting are Salt Brine, Magnesium Chloride and Calcium Chloride. In the areas with lower temperatures, high performance liquids such as Magnesium & Calcium are preferred. Not only are they hygroscopic, attracting moisture from the air, but they prevent the salt from

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adopted practices of pre-wetting salt and anti-icing with pre-wetted salt are not dissimilar to the practices being championed in the west. Does that mean that we on the right track?



drying off and blowing away practically eliminating those harmful dust clouds associated with salt brine applications.

Their answer to weather change is to intensify their existing application methods, increasing the use of high performance liquids to maintain service levels. Years of experience and a close respect for the environment dictate the appropriate solutions to winter road safety application methods. Looks like we are on the right track!

See full report on our website [www.innovativecompany.com/blog/road-watch](http://www.innovativecompany.com/blog/road-watch)

Comparison Of Concrete Damage (Grams of lost cement) (SHRP H-205.8 test method)			
	5 Freeze / Thaw Cycles	10 Freeze / Thaw Cycles	15 Freeze / Thaw Cycles
Sodium Chloride	-25	-120	-200
Calcium Chloride	-15	-40	-75
Magnesium Chloride	-3	-5	-8

### SAFETY • ENVIRONMENT • COST

Europeans know first hand the ultimate savings in time, money and lives that anti-icing and the pre-wetting of salt with high performance liquids provides them.



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SURFACE SOLUTIONS

Innovative Municipal Products (US),  
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CELEBRATING **25** YEARS

# Testimonials

- Jim Powers, Highway & Water Superintendent for the Town of West Bloomfield states "We are very pleased with the performance of the MeltDown 30 and will continue to use it in our arsenal of snow fighting techniques."
- Jason from District 8 of the Vermont DOT shares, "that of all the product trials that they have been doing this year, IBG II is "BY FAR" the best salt brine enhancer and there is obviously a major difference in the carbohydrates and performance in colder temperatures."
- Gene Redman, Deputy Highway Superintendent of the Town of Ithaca, has been using our liquid Magic Minus Zero for many years and writes, "that the direct impact using Magic Minus Zero has had in their Town is that the roads stay free of snow and ice at any temperature and for longer durations so that their residents can more safely travel to their destinations."



- Timothy Alimossy of the Watkins Glen DOT forwards this note regarding our High Performance Cold Mix, ProPatch; "The new cold patch material is far better than the material replaced. Employees and supervisors report complete satisfaction and they tell me that performance is what is needed – the material stays in place once applied."

**Sales Person of the Season** - Champion Liquid Magnesium Chloride Territory Manager for Eastern New York State and Eastern Pennsylvania – **Jon Veeder**:

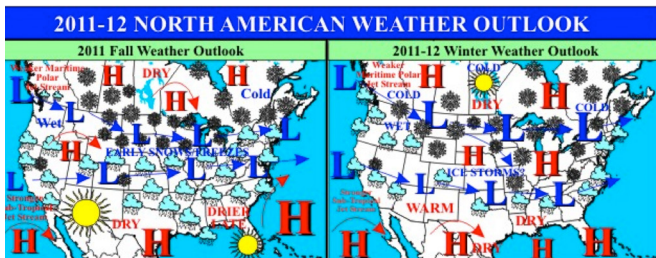
Jon Veeder is not only a veteran that has served in the United States Air Force for 29 years and has obtained the prestigious rank of Chief Master Sergeant (E9), but is a well respected Snow & Ice management expert. His extensive knowledge within this industry developed through 15 years of sales, marketing, testing, and product development have made it easy for Jon to develop solid end-user and distributor relationships. He travels extensively throughout the Mid-Atlantic States and New England providing clients with leading edge ice melting concepts, materials and equipment for snow fighting and dust suppressant technology.

Jon personifies Innovative's vision to be *Ready when Nature Strikes. Guaranteed.*

## Did You Know

Innovative has launched a new website. Check us out at [www.innovativecompany.com](http://www.innovativecompany.com).

## Be Prepared This Winter



US Famer's Almanac Winter Outlook for 2011-2012 – No "snowmageddon" forecasted this season, but another cold & snowy winter predicted for the eastern third of the country with three major weather tracks coming in from across the Gulf Coast, Southwestern Canada and the Atlantic Coast bringing in that extra precipitation. Start planning your winter strategies today.



For More Info Call  
**1-800-257-5808**  
[innovativecompany.com](http://innovativecompany.com)



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## Nitrous 1-2-3

Nitrous 1-2-3 is a process that involves the addition of liquid to solid based products to increase ice melting performance. The results produce safer road conditions at lower costs with less sand and salt usage.



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