

LESS IS MORE

Oversalting culprits waste money, inflict damage



BY PHILL
SEXTON, CSP, ASM

➔ Chloride salts are pollutants that when applied on paved surfaces eventually enter the natural environment as non-point

source runoff. You may have heard the phrase “the solution to pollution is dilution.” Unlike most other pollutants, chlorides do not dilute or biodegrade; instead, they accumulate in surface waters (lakes, streams and ponds), groundwater and soils. Furthermore, chloride salts are corrosive to building and exterior infrastructures,

including doorways, elevators, escalators, flooring, mechanicals, structural metals/steel and landscape plantings.

Whether on purpose or because of a lack of appropriate training, over-application of deicing materials can generally be attributed to one of the following reasons:



Temperature / salt type

1 Over my 30 years of experience, I have witnessed thousands of salt applications significantly overapplied when surface temperatures were too low for the application to be effective. For example, when surface temperatures are below 15°F, applying more rock salt will not make it melt faster or more effectively.



Traction

2 If you are relying on salt to provide traction for foot or vehicle traffic, you are using too much and possibly shouldn't be using it at all. If needed, traction should be achieved with sand or grit (i.e., pickle in Canada!). Excess salt used for traction can behave like marbles on a gym floor. There is an equal risk of causing slip and falls from excess salt as there is from snowy conditions – particularly on stairways.



Visibility

3 Sometimes salt is visually applied because clients or contractors view it as proof of a perceived level of quality of service and safety. But visible salt, particularly piles and trails of salt, is a pure waste of money and pollution. If you can see excess salt after a snow event, reassess your application rate. Seeing the salt or feeling and hearing the “crunch” under your feet and tires is a waste.



Money

4 Revenue and profit are the top drivers of salt use, according to my salt use research. Time and material (T&M) and per-application contract models incentivize more salt to be applied. And it's cheaper and faster to salt away snow than to plow it away, depending on the amount of accumulation and surface temperatures. This is an interesting reality considering most applications are being performed without the means to accurately measure the amounts of salt being applied. Can you think of any other commodity you can purchase (e.g., fuel) without it being properly measured and verified? **SB**

Phill Sexton, CSP, ASM is managing director of WIT Advisers and an industry adviser for SIMA. Email him at psexton@witadvisers.com.

SALT TYPES AND HOW THEY WORK

Chloride salts are the most used category of all deicing products. Sodium Chloride (NaCl), better known as rock salt, is the most used salt for managing snow and ice conditions. Sodium Chloride produces an endothermic reaction when it converts to brine that effectively lowers the freeze point of water from 32°F (0°C) to approximately 15°F (-9°C).

The other two most-used salts are Magnesium Chloride (Mag) and Calcium Chloride (Calcium). These salts produce an exothermic reaction that creates heat and melts snow and ice effectively at approximately 5°F (-15°C) for Mag and -25°F (-32°C) for Calcium.

What's common about the three is they all are attached to a Chloride anion. For example: Rock salt is a Sodium (ion) attached to a Chloride (anion).

Other less environmentally corrosive salts to consider are attached to a different anion, including Acetate (i.e., Calcium Magnesium Acetate – CMA) and Formate (i.e., Potassium Formate).

