

There are many known ways to remove snow and ice from your driveway, but the safest and most effective way is mechanically, whether it be a snow shovel, snow plow or snow blower. I know everyone is wanting some kind of magical potion and I will get to those, but unfortunately they are not as safe to use on your concrete and landscaping as the mechanically means of removal.

The secret to effective snow removal, for the most part, is limiting compaction and removing it as quickly as possible. Have you ever noticed once you get home from work, after you have driven up and down your driveway several times, the snow is much harder to remove where you drove on it. The reason is when you drive on snow you are compacting it creating friction, or heat, that initiates the melting process. Because the temperatures or ground temperatures are still below freezing, the snow refreezes and bonds to your driveway, thus making it more difficult to mechanically remove.

So, the easiest way to make mechanical snow removal effective is to limit the foot and vehicular traffic on the the areas you want to remove snow.

So let's be real! Most of us don't get a chance to remove any snow until after we have driven and walked on it. So now we need to mechanically remove all the snow we can. What is left is snow that has melted, refroze and bonded to your driveway or walkway. Now we use our magic potion, deicers. Apply an effective amount of deicer to only the snow packed and icy areas, let the magic potion work until it breaks the bond between the snow and your driveway. Once this bond is broken, immediately remove the snow pack and icy areas with a snow shovel. The key word is "immediately". You don't want these areas to start melting and then refreeze because you will be faced with the same problem tomorrow.



Effects of Deicers

This brings us to the big question, "What Are the Effects of Deicers on My Driveway"? Most of us think that deicers chemically cause our concrete to deteriorate. The truth is, the damage occurs when moisture saturates the upper layers of your concrete and goes thru freeze/thaw cycles. Because water expands approximately 9% when it freezes, it can cause concrete scaling to driveways and walkways that are not poured to withstand these freeze/thaw cycles. Scaling is where the surface of the concrete flakes off.

Deicers increase the frequency of the freeze/thaw cycles thus causing improperly poured concrete to scale.

Understanding Deicers

There are many types of deicers and each has a practical lowest temperature limit that it is effective at. This is important, the higher the practical temperature of the deicer, the more freeze/thaw cycles your concrete will potentially be exposed to. For example, if sodium chloride (salt or halite) has a practical temperature of 20 degrees Fahrenheit, meaning it is only effective above 20 degrees, and the temperature falls below 20 degrees, then the salt brine will freeze. On the other hand calcium chloride has a practical temperature of -25 degrees, so it is effective and the brine won't freeze until temperatures drops below -25 degrees reducing the odds of a freeze/thaw cycle.

Below is a table describing 3 of the most used deicers and their lowest practical temperature.

Practical Temperature of Common Deicers

- Sodium Chloride (Salt) = +20 degrees Fahrenheit
- Magnesium Chloride = +5 degrees Fahrenheit
- Calcium Chloride = -25 degrees Fahrenheit

It is important to note that these practical temperatures are only effective 30 minutes to an hour after application. As the snow and ice melt, the brine becomes weaker and weaker, increasing the practical temperature.

Remember....Limit the traffic on your driveway/walkway, mechanically remove all the snow you can, apply a deicer to snow packed/icy areas and clean these areas shortly thereafter. This will protect your driveway and keep everyone safe.