

Deicing

Overview

Using chemicals during or after a storm is considered deicing. Deicing is often necessary to loosen the bond between ice or snow and the pavement. Aggressive mechanical removal before applying deicers will reduce salt use.

Deicing materials are not intended to melt all of the snow on a surface.

Spread Pattern

When applying granular materials, leave space between the grains. Deicers should not be spread on thick or in clumps. Any spilled or excess salt should be cleaned up.

Correct:
Spaces between granules



Spacing between granules, as seen above, will vary with rate.

Incorrect:
Thick spread of salt



Piles of salt, shown in the photo above, are an example of a wasteful practice

When deciding where to apply salt, consider how salt moves. Foot traffic will spread deicer to the edges of sidewalks and into building entrances. Sidewalks spread with a narrow-spread pattern will allow for salt to stay on the sidewalk for more melting, less wasted product and less damage to plants and soil next to the sidewalk. If a broadcast spreader is too wide for the sidewalk, add a shield for an easy fix. Drop spreaders have been shown to be effective in reducing salt use.



Example of a shield for a spreader to create a narrower spread pattern

Speed and Control

When using a vehicle to apply deicer, drive at slower speeds to keep salt on target. Granular products bounce off target at higher speeds.

Rates

Your equipment should be calibrated before using a rate chart. See Chapter 3.

Using the Rate Chart

You will need to know: type of material and the **pavement** temperature.

The steps to using the application rate chart:

- Determine the pavement temperature. (Chapter 6)
- Determine the product to use. (Chapters 7 and 8)
- Where the pavement temperature (left) and material (top) intersect equals application rate

**40, 5x5
sidewalk
squares =
1,000 sq. ft.**

The chart will give a range for application rate. If pavement is warming or cooling, determine what end of the range is appropriate (warming = less, cooling = more).

Note: Gray areas mean the product is not recommended for the temperature range.

To use an interactive version of the chart, go to the [Salt Wise application calculator](#).

De-icing Application Rate Guidelines for Parking Lots, Sidewalks and Trails						
For best results remove as much snow and ice as possible before applying deicers						
Pavement Temp. (°F)	Application Rate in lbs./per 1000 square foot area Apply with calibrated equipment					
	Rock Salt*	Bagged Blend Mostly Sodium Chloride	Bagged MgCl ₂ or CaCl ₂	Wet at 6-12 gal/ton		Winter Sand**
				Rock Salt wet with Salt Brine	Rock Salt wet with other liquids	
28 ° to 32 °	2.3	2.3		1.6		
23 ° to 28 °	2.3-4.5	2.3-4.5		1.6-3.2		
15 ° to 23 °	2.3-6.8	2.3-6.8		1.6-4.8		
0 ° to 15 °			2.3-6.8	3.2-4.8	3.2-4.8	Spot treat as needed
-5° to 0°			6.8		4.8	
< -5°	Plow Only					
SPEED of melting	AVERAGE The colder it is the slower it works	Faster than rock salt if gradation is finer	ABOVE AVERAGE	FAST	FAST	NONE

* Dry rock salt is not recommended in cold temps. It is slow to melt and leads to over application.

**Winter sand contains ≤ 5% salt. It will not melt snow or ice. It is used for traction only.

For subsequent passes use ½ rate to the full initial rate.

Dane County Department of Land and Water Resources (LWRD) has determined these guidelines establish a best maintenance practice for those fighting winter storms so they can provide high quality service and a lower impact on our environment. By issuing these guidelines, LWRD does not intend to extend its liability beyond that imposed by state statutes.

Figure 9: Deicing application rate guidelines for parking lots sidewalks and trails

Evaluation

Document the conditions and strategies for every storm. A post-storm debriefing form may be helpful for documentation (see Chapter 12). If salt is found on dry pavement after a storm, too much was applied. Granular salt found on dry pavement should be swept up.

Direct Liquid Application

Direct Liquid Application (DLA) is applying a straight liquid product before, during or after the storm. When used before the storm it is commonly called anti-icing. See Chapter 9 for more information on anti-icing.

When used during or after a storm, the liquid is sprayed at a high pressure with streamer nozzles through the snow and ice. This penetrates the snow and ice and creates a layer of melting between the snow and the pavement. This strategy is not intended to melt all of the snow or ice on the pavement.

- DLA is an advanced technique and should not be attempted unless you are familiar with using liquids.
- DLA requires penetration through the ice and snow to melt from the bottom up. Otherwise you will create a slippery surface.
- If liquids do not penetrate, but spread on top of snow and ice, a dangerous situation may be created.

Good situations to try DLA include:

- Micro layer of ice
- Warm or warming pavements

Since DLA is a new strategy, there is limited information available about rates. Most use application rates equal to or greater than anti-icing rates.

