

# Deicing Winter Maintenance Strategies

## General Tips

**Deicing is the practice of applying products to melt snow or ice during or after the storm**

- For best results remove as much snow and ice as possible before applying deicers.
- Deicers are not intended to melt all of the snow or ice.
- Deicers are best used to reduce the bond of snow and ice to the pavement so that the surface can be mechanically cleared.
- Before reapplying deicer, make sure you have given it time to work.
- Granular salt can only melt in areas where the snow is touching the granule.
- Calibrate equipment to ensure accurate application rates.
- Deicers work slower when it is cold yet they retain the same ice melt capacity.

## How to Use the Chart

- For warming pavement temperatures use lower end of application rates
  - (i.e. as in the morning as the sun comes out for the day)
  - In March, the sun angle warms the pavement more, and less material may be needed to have the same effect.
- For cooling pavement temperatures use higher end of application rates
  - (i.e. as the sun sets in the late afternoon)
  - In December and January, the pavement temperatures typically do not warm up as much during the day with the sun at a lower angle in the sky, so more materials may be needed.
- For cold end of the pavement temperature range use the higher rates
- For warm end of the pavement temperature range use the lower rates
- If you have anti-iced, use the low end of the chart if more melting is needed.
- After your first pass, applications of less product are often effective, so try using somewhere between half and all of your initial application rate.

## Product Tips

All deicers have impacts. None are safe for the environment.

### Liquid

- Liquids melt faster than granular products. They also help jump-start the granular products if used in combination.
- Pre-wet rates assume 6-12 gallons per ton. If you apply liquid at a higher ratio you can further reduce your rates and increase your speed of melting.
- “Rock Salt wet with other liquids” column in the chart covers a range of products, thus producing a wide range of results. It is intended to be a column that provides ice melt capability at lower pavement temperatures than the “Rock Salt wet with Salt Brine” column.

### Granular

- Granular products have more melting power than liquids.
- Salt with a coarser gradation will penetrate compaction better than finer salt.
- Salt with a finer gradation will work faster than coarser salt.
- “Winter Sand” does not melt snow or ice.
- “Winter Sand” contains just enough salt to keep the pile from freezing.
- Stockpiles  $\geq$  1000 lbs of salt or salt/sand mix ( $>$  5% salt), see Trans 277 storage guidance.

### Other Chlorides

- Magnesium Chloride ( $MgCl_2$ ) and Calcium Chloride ( $CaCl_2$ ) do not melt as much snow and ice as rock salt, but melt faster than rock salt at colder temperatures.
- $MgCl_2$  and  $CaCl_2$  are hygroscopic. They pull moisture from the air to the pavement. If over-applied or applied in warm or humid conditions, they may create a slippery surface.
- Potassium Chloride (KCl) works at a similar temperatures as rock salt.

### For Compacted Snow and Ice

- For black ice, sleet, freezing drizzle, or freezing rain, use high end of recommended rates and apply more frequently.
- For frost or frost prevention, liquid applications are most efficient.
- If you have compacted surfaces you have lost the battle. Low rates will no longer work. Figure out what went wrong and adjust for the next event. Do not try to melt all of the compaction. Attempt to get melting under the compaction so that you can physically remove snow/ice.

This is an incomplete list of strategies. For more information visit: [www.wisaltwise.com](http://www.wisaltwise.com)

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Written by Fortin Consulting, Inc.

Dane County Department of Land and Water Resources (LWRD) has determined that 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.

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