

SaltGuru Video Transcript

Episode: 8 – Coping with Winter

Date: July 12, 2010

Hi, I'm Mort Satin and I'm the SaltGuru.

*Oh! The snow, the beautiful snow,
Filling the sky and the earth below,
Over the housetops, over the street,
Over the heads of people you meet.*

This lovely poem by J. Warren Watson describes the feelings many of us have about the beauty of winter. And if a picture is worth a thousand words, then a video is worth a thousand pictures.

Yes, the reality is that winter weather can play havoc with our ability to enjoy a safe and productive life. In the U.S., more than [70% of the population \(and 70% of the roads\) are in snowy regions which receive more than 5-inches of snowfall annually](#). [Highways](#) play a vital role in assuring personal and [commercial mobility](#) and the productivity of the overall economy, as evidenced by the success of the [U.S. Interstate Highway Program](#).

With more than 260 million motor cars registered in the United States and over four million miles of roads and streets, Americans vehicles travel in excess of 3 trillion miles annually! During winter months, snow and ice-covered roads can pose a significant threat to public safety and paralyze the economic activities of a community. Hazardous driving conditions increase traffic deaths, injuries, and property damage. Snow and ice reduce the friction between the pavement and vehicle tires, making the control and maneuvering of vehicles very difficult and occasionally, as you have just seen, impossible. With mobility reduced, severe disruptions of important public emergency services, such as fire, police, and ambulance operations are real possibilities. Managing roads in winter is a critical function.

It boggles the mind to imagine the tremendous effort it takes to reduce the adverse impact of snow and ice on public safety and the economy, yet year after year that is exactly what is done. Long before winter actually arrives local, state and national government agencies must prepare to deal with the removal of snow and ice, providing citizens with an environment that is as safe and productive as the summer season.

How is it all done? Well, the fastest, least expensive and most effective method of coping with winter's ice and snow is road salt. More than 40 years ago, the Highway Research Board concluded that there were no

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reliable or economic substitutes for road salt.¹ Their study went on to say that environmental concerns at specific locations could be fully alleviated by proper management practices, including appropriate storage, handling, and, application of salt. Since that time, highway departments have addressed these areas, and possible detrimental effects of deicing salt on the environment have been significantly reduced.

The melting action of salt forms brine at the interface between ice and pavement and prevents or destroys the bond between them. If it isn't applied before the storm as an anti-icing treatment, salt is usually applied as a deicer because it penetrates the snow and ice left on the pavement. Often, salt is applied with liquid salt brine to make sure the salt sticks to the road surface and to speed up melting.

More than 20 years ago, the Technical University of Darmstadt, Germany completed a major research project to document what happens with roadway safety before and after winter road deicing. The analysis covered more than 4700 accidents on about 650 Kilometers (400 miles) of roads outside built-up areas. Salt was the only de-icing material used on these roads. The time when salt spreading took place was determined, then an hourly accident analysis was conducted for 12 hours before and 12 hours after.

As you can see, the results were dramatic. There was a immediate downward plummet in the number of accidents reaching the pre-storm levels within four hours of application. The results were so dramatic that Marquette University in Milwaukee, Wisconsin was approached to undertake a similar study, utilizing the same methodology.

The Marquette study was almost a carbon copy of the Darmstadt project. The results showed an incredible buildup of incidents following the onset of a storm and an immediate plunge in accidents as soon as the salt was applied. Aside from the number of accidents and fatalities that were experienced, there was also a tremendous impact on the economy. In a more [recent study](#) for example, a single day's snow paralysis would cost the state of New York 600 million dollars, in addition to the losses to life, limb and property. In coping with winter, salt is a strategic material.

So let's give a hand to all those involved in the snowfighting and deicing efforts that allow us to survive so well in winter, and let's not forget the salt.

¹ Highway Research Board 1970 - 49th Annual Meeting, Washington, D.C., January 12-16.

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Salt, sodium chloride, proves once again that it is truly nature's life-enhancing mineral.

This is the SaltGuru saying goodbye for now.



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