



Exhibitor

Exhibitors

Showcase

Reducing Costs and Environmental Impact Through Technology and Education



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Overview

More technological advancements are becoming available to today's snow fighter that:

- Help lower the users costs
- Allow for more efficient operations
- Reduce environmental impact
- Increase safety
- Enhance commerce



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Snow and Ice Fighters

Treatments to prevent/eliminate dangerous conditions

- Anti-icing
- Treated salt
- Anti-icing systems



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Snow and Ice Fighters

Anti-icing

Growing in popularity each year

- Programs in the US almost doubled from 2008 to 2010
- Concern of the cost of start up significantly shrank

* Source: Cargill, Incorporated
Commissioned Market Research Study
2008 - 2010



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Snow and Ice Fighters

Treated Salt

Usage increases each year

- In 2000 there were only a few of vendors providing treated salt or salt treatments to the few customers that desired them
- Now there are many products to choose from



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Snow and Ice Fighters

Anti-icing Systems

Used in problem areas

- Designed available to help increase anti-icing effectiveness
- Multiple types to meet users needs



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Support Systems

Provide data that helps make better decisions

- RWIS
- MDSS
- Pavement Sensors
- Friction/Skid meters



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Support Systems

Information Technology

Road Weather Information Systems (RWIS)

- FHWA study show cost benefit ratios between 2:1 and 10:1

Maintenance Decision Support Systems (MDSS)

- Studies show \$1.34 in return for every \$1 spent on MDSS



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Support Systems

System Optimization Tools

Pavement temperature sensors

- On-board, embedded, non-invasive

Friction and skid meters

- Real-time and lock wheel



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All Provide Similar Benefits

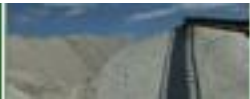
Cost Reduction

- Reduced product usage
- Lower fuel, labor and maintenance costs
- More efficient operations
- Reduced accidents

Environmental Improvement

- Fewer chlorides re-introduced back into the environment
- Lower local impact of winter maintenance operations

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Anti-icing

Benefits

- Helps prevents precipitation from bonding
- Reduces reactionary salt usage
- Fewer re-applications needed
- Lower effective melting temps (with additives)
- Lower equipment corrosion (with additives)
- Recycle water from waste streams



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Anti-icing

To consider when starting a program

- Production volumes
- Concentration accuracy
- Construction materials
- Cleanout method
- Total cost of ownership



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Treated Salt

Benefits

- Reduced product usage
- Fewer chlorides in the environment
- Lower effective melting temps
- Longer residual melting
- Better Handling
- Less corrosion to user equipment



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Treated Salt

To consider when starting a program

- Pre-blended versus mixing on your own
- Moisture content of salt
- Storage requirements
- Ingredient impact



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Anti-icing Systems

Benefits

- Helps prevent precipitation from bonding
- Reduces reactionary salt usage
- Fewer re-applications needed
- Helps reduce the number of call-outs
- Reduces local environmental impact



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Anti-icing Systems

To consider when starting a program

- Mechanical versus non-mechanical
- Installation, maintenance, operation costs
- Single purposed versus multi purposes
- Recommended liquids



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Education - Why it is important

Understanding the performance capabilities behind these products is critical to ensuring their proposed value is recognized.

Products and services can fail not because they don't add value, but because there is a misconception or misunderstanding as to the value they are supposed to provide.



Education - Questions about products

How do they work:

- Functionally?
- Compared to what I am currently using?
- Relative to competing products?
- In unison with my existing practices and procedures?
- To eliminate or reduce other products or practices used?

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Education - Questions about products

How do I:

- Formulate an accurate expectation on payback?
- Create a method to effectively measure performance?
- Train my employees on proper usage procedures?
- Build a consensus and obtain buy-in from decision makers?
- Educate the public as to how we are saving money and reducing environmental impact?

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Education – Questions about vendors

Are they:

- Proven, Reliable, Experienced?
- Specialized or a comprehensive provider?
- Resourceful?
- A producer or reliant on the open market?
- Able to provide post sale support?
- A partner or just a vendor?

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Education – Questions about Investment

Am I:

- Focused on price?
- Committed to cost?
- Looking at total spend or line items?

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Questions?

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