

## ISSUE: 05. OPERATIONAL APPROACHES, EQUIPMENT AND PRODUCTS FOR WINTER CONDITIONS

SUB-ISSUE: Deicing products and testing

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#### Presentation title:

NEW TEST PROCEDURES FOR SOLID AND LIQUID DEICER

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#### Summary:

On roads with medium to high traffic volume abrasive gritting materials do often not perform as well as chemical de-icers due to a faster material loss in the wheel tracks. Furthermore a passing of vehicles at high speeds causes damages to following vehicles making chemical de-icers the weapon of choice in winter maintenance. Due to its good cost-benefit ratio sodium chloride from mainly three origins namely vacuum salt, rock salt or sea salt is used as the major deicing material. While pure sodium chloride behaves the same from all sources, the practical delivered salt from these sources show variations of considerable impact regarding grain size, purity, sulphate concentration, humidity among others. For winter maintenance thawing capacity and thawing speed are the most important parameters together with the resulting costs in the selection of de-icers. With other deicers on the market as well it is necessary to provide universal testing procedures which cover the entire product range. With the use of a special designed climate chamber allowing manual testing procedures inside without opening the chamber door, a series of new test methods meeting these requirements have been developed. As a result time- and temperature - dependent thawing capacity curves have been conducted for all common solid and liquid de-icers. Also freezing point curves have been validated for typical mixtures of de-icers used in Austria. The paper gives an overview of these new testing procedures allowing a determination of all necessary de-icing parameters with moderate effort. Furthermore the results of these test are given as well allowing a comparison of already existing products regarding performance and costs with any new de-icing product which may appear on the market in the future.

