

Improving the Performance of Road Salt on Anti-Icing

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Abstract : Maintenance and management of route and roads infrastructure is one of the most important and the most fundamental principles of the countries. Several methods have been under investigation as preventive proceedings for the maintenance of asphalt pavements for many years. Using a mixture of salt, sand and gravel is the most common method of deicing, which could have numerous harmful consequences. Icy or snow-covered road is one of the major reasons of accidents in rainy seasons, which causes substantial damages such as loss of time and energy, environmental pollution, destruction of buildings, traffic congestion and rising possibility of accidents. Regarding this, every year the government incurred enormous costs to secure traverses. In this study, asphalt pavements have been cured, in terms of compressive strength, tensile strength and resilient modulus of asphalt samples, under the influence of Magnesium Chloride, Calcium Chloride, Sodium Chloride, Urea and pure water; and showed that de-icing with the calcium chloride solution and urea have the minimum negative effect and de-icing with pure water has most negative effect on laboratory specimens. Hence some simple techniques and new equipment and less use of sand and salt, can reduce significantly the risks and harmful effects of excessive use of salt, sand and gravel and at the same time use the safer roads.

Keywords : maintenance, sodium chloride, icyroad, calcium chloride

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