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Room: C

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Presentation title:

EVALUATION OF DEICING PERFORMANCE FOR THE ECO-FRIENDLY DEICER

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Summary:

This paper describes the results of laboratory and full-scale performance tests for Eco-Friendly Deicer (EFD) applicable to the highway deicing action. The EFD was developed using an organic acid from wastewater sludge and food waste. Various performance tests were conducted on the EFD, and test results showed that the eutectic point of EFD is about 17oC lower than Pre-Wetted Salt (PWS) indicating that the EFD can be used in wider range of temperature. The melting performance of EFD is almost equal to PWS in the early stage of spreading indicating that the liquid spreading of EFD is capable of improving the melting performance. The optimum concentration of EFD was found to be 45wt%. Full-scale field skid resistance test results showed that the recovering time from snowed and icy condition to the original condition on the surface are almost same in both EFD and PWS.