

Development and Practical Use of a Real-time Deicer Application System Based on Slip Resistance Values Determined During Spreader Vehicle Operation

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ABSTRACT

Measures against frozen road surfaces in winter are important in cold snowy regions. However, excessive deicer application results in high maintenance costs and places a burden on the environment. Against this background, the Civil Engineering Research Institute for Cold Region (CERI) installed a CFT-UT (continuous friction tester – under truck) on a spreader vehicle to develop a technique for timely application of deicing and anti-slip agents to areas where they are needed. Measurements of slip resistance (HFN: Halliday Friction Number) taken during deicer application operations revealed that spot application was generally practiced in designated application areas. However, in some places, application was conducted based on operator experience, and deicer was occasionally applied to areas with high HFNs and vice versa. CERI also developed a GPS-based deicer application data collection and management system, and confirmed that detailed application data checking and efficient data management were enabled through automatic collection and management of information set on spreader vehicle operation panels and location data.

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