

Field Test Program of Stabilization on a Principal Forest Road

Poster Topic : 1 . Environmental Impacts of Dust Suppressants
3. Soil Stabilization

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As part of a larger research project for the design, the rehabilitation and the construction of unpaved roads in the Canadian northern context, the laboratory study objective was to compare the relative performance of granular materials stabilized with different stabilization agents to an untreated granular material commonly used as base and wear course on unpaved roads. The results show that these variables have a significant impact on the performance measured and it was possible to identify peak performance dosages and performing products for the conditions tested. These optimal formulations are then tested in field conditions in order to validate the laboratory conclusions. Part of a major rehabilitation work (resurfacing) on a principal forest road, a field test program is designed to study the mechanical and climatic behaviour of granular materials stabilized with polymeric and resin modified emulsions. The mechanical behaviour and its evolution with time are measured using four parameters frequently considered in this type of study, which are cohesion degree, mechanical resistance, bearing capacity and elastic modulus of pavement layers (particularly for the stabilized layer). These parameters are measured using Dynamic Cone Penetrometer (DCP) and portable Light Weight Deflectometer (LWD) tests (the portable LWD being more adapted for unpaved roads). These tests allow following sections evolution when submitted to traffic (forest heavy trucks) and climatic factors. Conclusions obtained from this field test program allow the establishment of unpaved roads rehabilitation and construction guidelines in a northern context.