ROAD POLISHING: STUDYING THE EFFECTS OF TRAFFIC LOAD, OPERATING VELOCITY AND AGGREGATE TYPES

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ABSTRACT

Skid resistance, which is related to the friction generated between road surface and tire tread, is necessary for good road safety. The main road surface parameter that controls this friction level is the texture which itself depends on the used particle size distribution, bitumen and aggregate proportioning, shape and angularity of aggregates … But due to the traffic which affects the aggregate microtexture by polishing, this texture changes continuously. The maintaining of that texture depends mostly on the type of aggregates which is used when building the road, the level of normal pressure subjected to the road surface by the vehicle tires and the velocities with which the cars travel on that surface.

On previous experimental studies, it was found that the aggregates became the main factor controlling the evolution of the road skid resistance after the binder is removed from the tips of the aggregates. Based on the above experimental studies, a model was developed to quantify the evolution of skid resistance. This present work is a continuation of the previous ones. It tries to include the effects of load, velocity and aggregate type in the above model from analysis of experimental test results. An updated model of evolution of skid resistance including this latter effect is proposed.

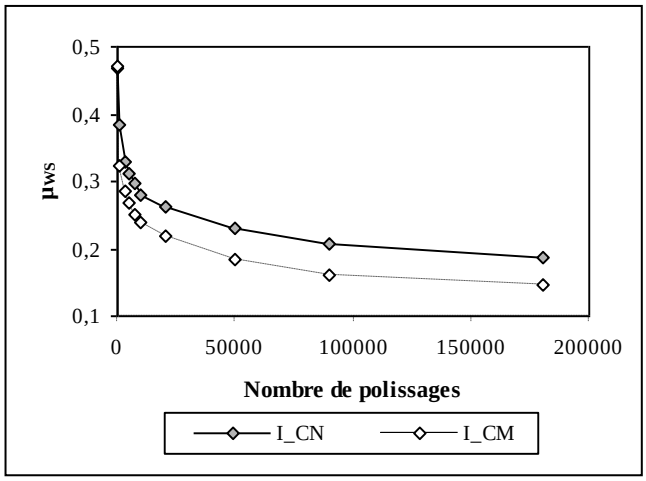

Fig.1 Evolution of the skid resistance versus the number of polishing cycles and load

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