

EXPERIENCE WITH DESIGNING AND IN-SITU VERIFICATION OF COLD EMULSIFIED MIXES IN THE CZECH REPUBLIC

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ABSTRACT

The presented paper summarizes results of experimental research done by the Czech Technical University in Prague in the field of developing design method and further assessment of designed and tested cold emulsified asphalt mixes. The objective of this research was to monitor and evaluate selected physical and mechanical properties of the mixes as well as performance-based tests, such as stiffness and rutting resistance, in relation to the methodology of specimens' preparation. Nevertheless the real behaviour of a mix in a pavement structure cannot be fully and exactly cut up by laboratory tests; therefore, to gain additional experimental data, more than 1.8 km long trial section was prepared. The aim of the project was to verify on a suitable road section within the road network in the Czech Republic cold emulsified mix technology as a part of a standard pavement structure. For this pavement original structure and dimensions were known, as well as its overall technical condition and real traffic loading. Therefore, it is possible for the near future to monitor the behaviour of this technology under real traffic and climatic conditions. The selected rural road was of low traffic category. Because of its bad service condition and necessary reconstruction, the base layer was firstly cold recycled in-situ. Aggregates for the emulsified mixes were taken from a local quarry and the used emulsion was designed exactly for this type of aggregates. Used emulsifier and its content were optimized with respect to final mix quality and good workability. Trial job site was divided in six sections with five different pavement structure compositions, which should check the designed cold emulsified mixes in wearing and binder courses. The analysis of laboratory results, and in-situ monitoring, and their possible relations are presented in the paper.