RESISTANCE TO THE EFFECTS OF WATER AND FROST OF THE RECYCLED BASE REHABILITATED WITH THE FOAMED BITUMEN TECHNOLOGY

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ABSTRACT
Due to the climatic conditions in the Central European countries road pavement structure, apart from having the required load capacity, should be water and frost resistant. This problem is especially important for pavements rehabilitated with the cold recycling technology. Determining the mechanical properties as well as water and frost resistance depending on the binder and filler contents is an essential element before its introduction to road building.

The tests were performed on mineral recycled base mixes with foamed bitumen, in which the material from the existing layers was used. The bitumen binder was added to the recycled material in the amount of 2,0% to 3,5 %, and hydraulic binder (cement) of 1,0% to 2,5% with changes every 0,5% at variable. The measurements of resistance to the effects of water and frost according to the AASHTO T283 method and the resistance to low temperature cracking according to the PANK 4302 methods confirmed that used foamed bitumen in the cold recycling technology is resistant to these climatic factors. The results obtained were subjected to the optimization process, which allowed to state that with the application of 2,5 % foamed bitumen and 2,0 % of cement the base has the required mechanical properties as well as water and frost resistance according to the applied criteria.

KEY WORDS: Foamed bitumen, cold recycling technology, pavement.