

THE IMPORTANCE OF THE ASPHALT OVERLAY TO THE STRUCTURAL CONDITION OF COLD IN-PLACE RECYCLED PAVEMENTS

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ABSTRACT

The Cold In-place Recycling (CIR) technique with foamed asphalt as stabilization agent was utilized for the rehabilitation of a severely damaged heavily trafficked highway asphalt pavement.

Based on a trial section, the importance of the asphalt overlay in the structural condition of the recycled pavement was investigated by the NTUA Laboratory of Highway Engineering.

The in-situ field investigation was based primarily on Non-Destructive Tests (NDT) performed with a Falling Weight Deflectometer (FWD) and Ground Penetrating Radar (GPR) geophysical methods. For the measured deflections, a backanalysis was performed in order to assess the elastic modulus values of the foamed asphalt material as well as the stiffness modulus of the asphalt overlay. The composite modulus (i.e. the combined asphalt layers and recycled layer modulus) was also calculated.

Following the results of the field data analysis, during the early life of the pavement, the asphalt overlay is the most critical layer for the structural adequacy of the recycled pavement.

KEY WORDS: CIR, pavement, foamed asphalt, NDT, FWD.