

THE EFFECT OF MONTAN WAXES ON THE MECHANICAL PERFORMANCE OF AN ASPHALT RUBBER MIXTURE

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ABSTRACT

In recent years, Warm Mix Asphalt (WMA) has become an important new research topic in the field of pavement materials due to a growing concern over global warming. Though this technology is being incorporated to reduce energy consumption and greenhouse gases (GHG) emissions by lowering the manufacturing and compaction temperatures of asphalt mixtures without significantly affecting their mechanical properties, the influence of WMA additives on the properties of asphalt rubber mixtures has not yet been clearly identified. In this study the performance of the asphalt rubber (AR) mixtures with Montan waxes were evaluated and compared through several laboratory tests regarding their water sensitivity and resistance to permanent deformation and fatigue. The results of this study indicate that the waxes slightly worsened the water sensitivity but fulfilled the Spanish requirement, that the additives improved the resistance to permanent deformation and that only one of the waxes improved the fatigue life compared with the control mixture.