FIELD EVALUATION OF A SUSTAINABLE ROAD STRUCTURE CONCEPT

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ABSTRACT
Circular economy principles and the use of renewable materials are innovations to increase the competitiveness of roads construction and reduce the associated environmental impact. This paper presents results of two full-scale case studies, one in Poland and the other in Spain, in which a new sustainable pavement concept developed in the APSE project, a FP7 project financed by the EC was implemented. The concept comprises of an innovation in each layer: a greener asphalt binder, including lignin in its composition, in the surface course, a mid-high content of Reclaimed Asphalt Pavement together with an innovative bio-fluxing agent in the binder and base courses and recycled aggregates from Construction and Demolition Waste as an alternative to the traditional granular sub-bases. The effectiveness of the asphalt was evaluated through all the phases, from early laboratory assessment to plant production, application and post-trial evaluation. A direct comparison was made to reference asphalt mixes.