

MOISTURE DAMAGE AND LOW TEMPERATURE CRACKING OF BITUMINOUS MIXTURES MADE WITH RECYCLED AGGREGATES

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ABSTRACT

The paper presents the conclusions of an experimental evaluation of moisture damage and low temperature cracking behaviour of asphalt concretes, for road base courses, made with recycled aggregates, namely Reclaimed Asphalt Pavement (RAP) and steel slags, used at different proportions (up to 70% by weight of the aggregate), in partial substitution of limestone. The asphalt concretes were designed according to volumetric criteria, by means of the gyratory compactor. Indirect Tensile Tests were used in order to characterize the Stiffness and the Strength at failure of the mixes. The ageing effects have been investigated, performing the mechanical tests on the mixes under aged and unaged conditions. With respect to the control mixture, composed by a full natural aggregate skeleton, the asphalt concretes with recycled aggregates presented improved moisture damage, but a lower thermal cracking resistance, depending on the RAP and the steel slags contents, as well as on the ageing conditions.