

PRELIMINARY ASSESSMENT ON THE USE OF SCRAP GLASS TO PRODUCE ASPHALT MIXTURES

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ABSTRACT

Nowadays, increasing pressures to preserve natural aggregates and to minimize the amount of materials landfilled are forcing consideration of potential uses of waste materials in road construction and maintenance operations. This paper focuses attention on possibility to use scrap glass as an aggregate in hot mix asphalt (namely "glassphalt"). The influence of glass on volumetric characteristics and resistance of HMA mixtures was analyzed through Marshall and gyratory compaction and indirect tensile tests. Glass is brittle, rich in silicon and have a smooth surface, so the key performance parameters of glassphalt concrete are resistance to raveling and to water damage: the bottle-rolling test, the indirect tensile strength ratio (ITSR) and the Cantabro test were used to evaluate them. Based on the results obtained it was possible to define the particularities of glassphalt concerning mix design and laboratory tests, as well as the effects induced in the mixture by different percentage of glass.