

COMPARISON OF ASPHALT MIXTURES MADE WITH NATURAL OR RECYCLED AGGREGATES USING LIFE CYCLE ANALYSIS

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ABSTRACT

Life Cycle Analysis is considered to provide a sound method for describing environmental impact of a product or activity. It is a tool for the analysis of the environmental burden of products at all stages in their life cycle-from the extraction of raw material, through the production of materials and the product itself and its use after it is discarded, either by reuse, recycling or final disposal.

Recycling is an issue of great interest nowadays. Solid wastes, such as recycled aggregates from C&D wastes, tire rubber, glass, slag etc, can alternatively be used in a variety of Civil Engineering applications (concrete or road production, geotechnical works etc). Those solid wastes, after being shredded to smaller particles, can substitute part of natural (virgin) aggregates with satisfactory results as far as mixtures' properties are concerned. This paper presents the results from the comparison of asphalt mixtures made with natural aggregates and with recycled ones in terms of environmental impacts, while indicative cost analysis of mixtures made with virgin and recycled aggregates is also presented.

KEY WORDS: Asphalt mixtures, recycled aggregates, life cycle analysis, environment.