Abstract

The incorporation of copper slag (CS) in asphalt pavements proves to be a good substitute in replacing the natural aggregates. This reduces pavement construction cost and plays a key role in protecting the environment. The CS can be used with recycled asphalt pavement (RAP) material especially in warm mix asphalt pavements. The use of RAP not only leads to environmental benefits but also considerably saves natural resources and decreases the requirement to use virgin bitumen. The use of CS in pavement construction sector eliminates the disposal as well as leaching problems associated with it. This paper focuses on the review of studies carried out on the use of CS along with RAP in road construction. It presents and discusses the work done on the use of CS in the pavement construction sector and the use of RAP in providing the necessary stiffening effect to the asphalt pavements. It analyzes the requirement and advantage of using CS with RAP in asphalt pavements in light of previous research findings and its influence on various engineering properties in pavements. This paper also reviews the work done to study the environmental impact of using CS in asphalt mixes.

Résumé

L'incorporation de laitier de cuivre (LC) dans les revêtements d'asphalte s'avère un bon moyen de substitution pour remplacer les granulats naturels. Cela réduit les coûts de construction de la chaussée et joue un rôle clé dans la protection de l'environnement. Le LC peut être utilisé avec des revêtements d'asphalte recyclé (RAR), en particulier dans les revêtements d'asphalte mélangé à chaud. L'utilisation de RAR permet non seulement d'obtenir des avantages au niveau de l'environnement, mais aussi de préserver de façon considérable les ressources naturelles et de réduire l'utilisation du bitume vierge. L'utilisation de LC dans le secteur de la construction des chaussées élimine les problèmes d'élimination et de lixiviation associés au LC. Le présent document est axé sur l'examen des études réalisées au sujet de l'utilisation du LC avec le RAR dans la construction routière. On y présente et traite du travail effectué sur l'utilisation du LC dans le secteur de la construction des chaussées et de l'utilisation de RAR afin de procurer l'effet de raidissement nécessaire aux chaussées d'asphalte. Le document analyse les exigences et les avantages de l'utilisation de LC avec le RAR dans les chaussées asphaltées à la lumière des résultats de recherches antérieures et de ses effets sur diverses propriétés techniques des chaussées. Ce document passe également en revue le travail effectué pour étudier l'impact environnemental de l'utilisation de LC dans les mélanges d'asphalte. [Colour online.]

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