

Use of Recycled Aggregate in Construction

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Abstract: *The use of waste materials in building is being progressively promoted to lessen environmental effect because sustainability is now a necessity for the construction sector globally. Many new materials and technologies have been developed for the purpose of testing their suitability for the design, construction, and upkeep of these pavements in the highway system. Concrete scraps are one of them. The primary goal of this study is to utilise the readily accessible waste and recycled concrete that may be utilised in a cost-effective and practical manner. These materials are inexpensive and environmentally benign when used in proper proportions in building. Waste concrete can be utilised as aggregate in the construction of buildings and pavements, taking the place of natural aggregate.*

Keywords: Sustainability, pavement, recycled concrete, aggregate.

REFERENCES

- [1]. Barbudo, J.R. Jiménez, J. Ayuso, A.P. Galvín, F. Agrela, Catalogue of pavements with recycled aggregates from construction and demolition waste, Proceedings of the Environment, Green Technology, and Engineering international conference 2 (20) (2018) 1282
- [2]. R. Kurda, J. de Brito, J. Silvestre, Influence of recycled aggregates and high contents of fly ash on concrete properties, Cem. Concr. Compos. 84 (2017) 198–213
- [3]. Zega CJ, Di Maio AA. Recycled concretes made with waste ready-mix concrete as coarse aggregate. J Mater Civ Eng 2010;23(3):281–6.
- [4]. Meyer C. The greening of the concrete industry. CemConcr Compos 2009;31(8):601–5.
- [5]. s. Chung and C. W. H. Lo, "Evaluating sustainability in waste management: the case of construction and demolition, chemical and clinical wastes in Hong Kong," Resources, Conservation and Recycling, vol. 37, pp. 119-145, 1// 2003.
- A. D. Basiago, "METHODS OF DEFINING 'SUSTAINABILITY'," Sustainable Development, vol. 3, pp. 109-119, 1995.
- [6]. M. Yeheyis, K. Hewage, M. Alam, C. Eskicioglu, and R. Sadiq, "An overview of construction and demolition waste management in Canada: a lifecycle analysis approach to sustainability," Clean Technologies and Environmental Policy, vol. 15, pp. 81-91, Feb 2013 2013-09-25 2013.
- [7]. Marinkovic S, Radonjanin V, Malesev M, Ignjatovic I. Comparative environmental assessment of natural and recycled aggregate concrete. Waste Manage 2010;30(11):2255–64.
- [8]. Poon CS, Shui ZH, Lam L. Effect of microstructure of ITZ on compressive strength of concrete prepared with recycled aggregates. Constr Build Mater 2004;18(6):461–8.
- [9]. Cabral AEB, Schalch V, Molin DCCD, Ribeiro JLD. Mechanical properties modeling of recycled aggregate concrete. Constr Build Mater 2010;24(4):421–30.
- [10]. Grdic ZJ, Toplicic-Curcic GA, Despotovic IM, Ristic NS. Properties of selfcompacting concrete prepared with coarse recycled concrete aggregate. Constr Build Mater 2010;24(7):1129–33
- [11]. Xiao JZ. Recycled concrete. Beijing: Chinese Building Construction Publishing Press; 2008 [only available in Chinese].