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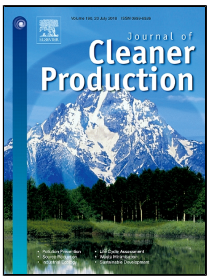

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Potential use of brick waste as alternate concrete-making materials: A review

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Abstract

Solid waste produced from construction and demolition activities amount to several million tons globally, and one of the prominent wastes is brick waste. In recent years, there have been increasing number of researches carried out on recycling brick wastes to produce a more eco-friendly concrete. This review summarizes the usage of brick waste as potential partial cement and aggregate replacement materials whereby the performance in terms of the mechanical strengths and some durability-related properties of the concrete were discussed. It was found that the most feasible usage of recycled brick is in the form of brick dust, whereby up to 20% cement replacement could enhance the strength and some durability properties of the concrete due to the potential pozzolanic reactivity of the brick dust particles. On the other hand, the inclusion of recycled brick as aggregate does not give profound improvement of the properties of concrete as it is governed by the inherent porous nature of the aggregate. Hence, the use of recycled brick as partial aggregate substitute should be confined to low volume replacement levels and when environmental consideration necessitates its usage.