

Manufacture of Concrete Paver Block Using Waste Materials and By-products: A Review

ABSTRACT

Flexible surface treatment for exterior pavement applications and the particular requirement to be specific pedestrian walkway design and parking areas are the fundamental feature of paver block identification. The use of conventional materials such as cement, aggregate, and sand is no longer such a priority. Under those circumstances, the production of research-based pavers block has been done to ensure the sustainability and usability of new building materials is expanded. Henceforth, this research is conducted to study and investigate the potential of using waste materials as a partial substitute for aggregate in producing concrete paving block (CPB). In essence, the application of waste materials in concrete paver blocks is highly potential. The innovations in recycling technologies expanded the usage of waste materials to produce paver block products. On the whole, in the manufacturing of concrete, the paper improves and enhances the usability of waste materials. The application of various waste materials such as plastic, steel slag, and crumb rubber is excellent. Compressive strength of paver blocks with different rates of waste steel aggregates and utilizing elastic cushions shows paver blocks give up to 50% more strength quality than customary paver blocks. In terms of the use of industrial waste materials, as a substitute material by reducing the percentage amount of the weight of the cement with the composition ratio varies based on the comparative volume category of the paving block aggregate such as 0%, 5%, 10%, 15%, 20%, and 25% are more applicable.