Lightweight Loadbearing Concrete Hollow Block Made with Recycled Plastic Polyethylene

A Thesis Presented to the Faculty of Civil Engineering
College of Engineering, Architecture and Technology
De La Salle University – Dasmariñas
Dasmariñas, City

In Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Civil Engineering

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March 2014

ABSTRACT

This experimental research was conducted to study the effects of partially replacing sand with grinded recycled plastic polyethylene in the mixture of a load bearing concrete hollow block with respect to its compressive strength, unit weight, and cost difference. They investigated and conducted test to check standards on the effects of partially replacing sand with recycled plastic polyethylene and to know if it would be viable. The researchers gathered the materials needed and then measured the amount and percentage needed in each sample to proceed with the mixing. After curing and drying for 21 days, the researchers obtained the compressive strengths and unit weights which resulted positively that partially substituting sand with plastic polyethylene could be beneficial in many ways. The researchers found out that there was a significant increase in the compressive strength of the hollow blocks. Water absorption was also lesser which is also good for the said material. The cost of the CHB with PE was found to be 12% cheaper than the commercial standard.

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