

AN EXPERIMENTAL STUDY TO PRODUCE GREEN HIGH EARLY STRENGTH SELF CONSOLIDATION SUSTAINABLE CONCRETE

Abstract:

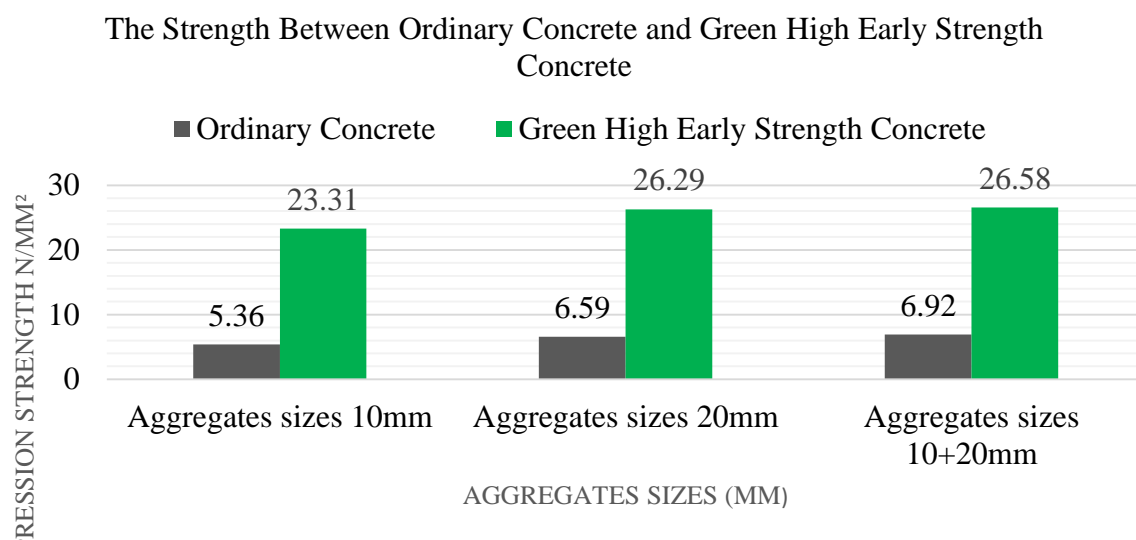
Polyethylene Terephthalate (PET) are recyclable materials and calcium carbide (CaC_2) are waste from landfills which can be recycled in Malaysia. However, PET and calcium carbide has not been used in producing the Green High Early Strength Self Consolidation Sustainable Concrete (GHESSCSC). The present study deal with the development of GHESSCSC incorporating with PET as additive in the concrete and calcium carbide as a concrete binder. GHESSCSC were prepared with PET, calcium carbide and two different type of high range water reducer (HRWR) that called plasticizer and superplasticizer. In this study, concrete have been mixed with 0.5% PET by weight of concrete, 50% calcium carbide and 1.5% high range water reducer (HRWR) by weight of cement to the concrete mixture. For this study, cube compression test and flowability test was done. Size mould cube which are used is $150\text{mm} \times 150\text{mm} \times 150\text{mm}$ and the cube compressive strength was tested at aged one day. Revenue from tests make have pointed out that PET and calcium carbide is successfully to achieve the green high early strength of the concrete value on grades 20 that is 26.58 N/mm^2 at the age one day. For the flowability test, the diameter for GHESSCSC is 630 mm, while for ordinary plain concrete is 440mm. Diameter 630mm shows the condition of the concrete is workable and according to specifications.

Keyword: Polyethylene Terephthalate PET, calcium carbide, green high early self consolidation sustainable concrete and superplasticizer.

IP no:

Finding:

The Compression Strength between Ordinary Concrete and Green High Early Strength Concrete



Suggestion for future work

Quality control is very important in the design of green high early strength concrete mixture, starting from the purchase of materials to the final mix of test samples. Because of that, those who are experts in this field must be assigned to conduct this study because every little mistake made in this study state has a significant influence on the results obtained.

Picture related to project**Name of student & registration no:**

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