

**WORKABILITY AND MECHANICAL PROPERTIES OF CRUSHED
CONCRETE WASTE AGGREGATE (CCWA) DEBRIS GROUTING
MATERIAL**

By

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DECLARATION BY THE CANDIDATE

I Muhammad Johari Mohd Sedik, 2010663314 confirm that the work in this report is my own work and the appropriate credit has been given where references have been made to the work of other researchers.

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ABSTRACT

Construction waste contributes 40% of waste sent to landfill. This will cause the lack of land to be as landfill. Moreover, the lack of natural resource also can cause environmental problems. As solutions, this experiment was conducted to reuse and recycle the construction waste as materials in grouting. The experiment was conducted by crushing the concrete waste, sieving and use only the Crushed Concrete Waste Aggregate (CCwA) debris only as fine aggregate replacement. The 36 of cubes and 24 beams were prepared to be tested on 7 days and 28 days under compression and flexural load. The objective of this research was to determine the optimum workability, compressive strength and flexural strength of grouting and compared it with control sample which used Natural Sand. The research was conducted by using 0.5, 0.6, 0.7, 0.8 and 0.9 water cement ratio to find the optimum workability, compressive and flexural strength. Then, 0.7 water cement ratio samples were compared with control sample. As a result, the workability of the CCwA debris has greater self-compaction and better fluidity. Despite, the compressive and flexural strength of CCwA debris has slightly lesser than control sample. However, the different was not significant since the difference was 4.5% and 1.49 % only for compressive and flexural strength respectively. So, the CCwA debris can replace natural sand to solve environmental problems but it must be modified first such as add up admixture or super plasticizers so that it can increase the strength. Last but not least, the objective to get grade 30 grouting by using CCwA debris does not achieve.

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