



**EXPERIMENTAL INVESTIGATION ON PARTIAL
REPLACEMENT FINE AGGREGATE BY GRANITE DUST
WITH COCONUTSHELL POWDER IN A CONCRETE
PAVER BLOCK**



A PROJECT REPORT

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in partial fulfillment for the award of the degree

Of

BACHOLAR OF ENGINERING

IN

CIVIL ENGINEERING

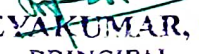
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MAY 2023

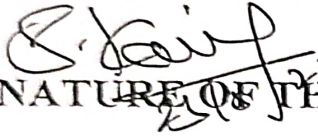



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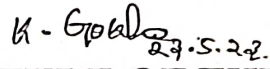
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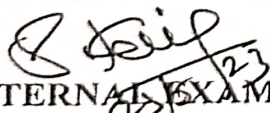

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INTERNAL EXAMINER



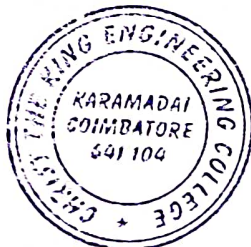

EXTERNAL EXAMINER


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ABSTRACT

The development of technologies requires the utilization of waste products from the industries. The cost of the conventional building materials is increasing day by day. So it is necessary to research for alternative construction materials. In this experimental investigation granite waste and coconut shell powder is used in the concrete paver blocks. Granite processing industries generates large amount of wastes. The granite waste is partially replaced with fine aggregate in a concrete paver block. India is the third largest coconut producing country in this world. Huge amount of waste is generated by coconut. Coconut shell powder is a potential construction material and it simultaneously reduces the environmental problem of solid waste. The paver block is manufactured by 0%, 15%, 25%, 35% and 45% replacement of fine aggregate by granite powder and 5% of coconut shell powder is added to each proportion. Compressive strength test were conducted on all the test specimens at 7 days, 14 days and 28 days' time period of curing. Based on the compressive strength test on specimens of various proportions with granite waste and coconut shell powder is compared with conventional paver blocks. It is concluded that the concrete with 25% replacements possess great strength. Hence granite and coconut shell powder are considered as a recycled materials.

Keywords: Granite powder, Coconut shell Powder, recycled material, compressive strength.

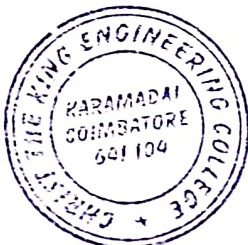




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CONCLUSION

Based on the experimental investigation the following conclusions are drawn.

- It was observed that the strength was increased with partial replacement of fine aggregate with granite powder and also it is feasible to replace into the concrete.
- According to the compressive strength test results, 7 days, 14 days and 28 days strength has been studied which increases gradually at replacement of granite powder up to 25% and slightly decreases at 45% than the conventional concrete.
- The optimum percentage of M-Sand replaced by Granite Powder was found and the optimum percentage was 25%.
- The compressive strength of paver blocks is 25.99 N/mm² for conventional concrete and 35.68 N/mm² for Granite Powder concrete which is 9.69% more.




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