

# A STUDY OF THE INFLUENCE ON COMPRESSIVE STRENGTH AND STRENGTH DEVELOPMENT DUE TO REPLACEMENT OF COARSE AGGREGATE WITH COCKLE SHELLS

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## ABSTRACT

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A study of the influence on compressive strength and strength development due to replacement of coarse aggregate with cockle shells is my project title.

Objectives of this project are:-

- ✓ To study the compressive strength and strength development of the concrete cubed due to replacement of coarse aggregate with cockle shells.
- ✓ Reuse of waste material (Cockle shells)
- ✓ To try to obtain a more higher strength concrete

This project is to study the influence on the compressive strength and strength development of the concrete cubes with characteristic strength  $30\text{N/mm}^2$  due to replacement of the coarse aggregate with 5%, 10%, 15% and 20% of cockle shells by weight and cure them in the water for 28 days. The concrete cubes are to be tested at 7 days, 14 days, 21 days and 28 days respectively to obtain the cube strength. Compressive strength of the control concrete and concrete which replace with cockle shells are compared.

The purpose of the project is to reuse of the waste material to avoid environmental pollution and also to obtain a more economical material compares to the ordinary one which can save cost in the construction. It is also to obtain a higher strength concrete compare to the ordinary one which uses less cost.

From BS 1881 : Part 127: 1990, 6 concrete cubes (150mm x 150mm x 150mm) of  $70\text{N/mm}^2$  to  $85\text{N/mm}^2$  mean strength are sufficient to provide an adequate test. In this project, I choose to test 3 concrete cubes for each case instead of 6 concrete cubes due to time consuming and the characteristic strength of the concrete cubes that I design is only  $30\text{N/mm}^2$ . 12 concrete cubes are to be tested for each case and total of the concrete cubes to be tested in this project is 60.