

بجث رقم (٦)

عنوان البجث (باللغة التي نشر بها) :

Effect Of Eggshell Powder on The Behavior of Axially and Eccentrically Loaded Columns

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The content of Eggshell powder were similar as cement content. Eggshells from poultry farms are usually thrown away as a waste. Such a renewable waste is collected and used in this research to reduce environmental problems. This research work investigates the effect of using eggshell powder (ESP) as partial replacement for ordinary Portland cement in the concrete mix of Grade 25 and reinforced concrete columns. The eggshell powder, sieved to 100 μ m. The concrete mix proportion is 1:2:3.7 in which cement is partially replaced with egg-shell powder. The egg-shell powder are 5%, 10% and 15% by weight of cement. The main purpose of this study is to compare between the behaviors of using different ratios of Egg Shell Powder in concrete with normal concrete under different types of loading of reinforced concrete columns. Twelve reinforced concrete columns were cast in four groups, each group contains three columns. The first group was a control group and the other groups the percentage of ESP were varied as 5%, 10% and 15%. All specimens divided into three types of loading, axial load, eccentricity load with $e/t=0.5$ and 0.75. Based on the results of this research, it was observed that 5% ESP gives close results to the results of normal concrete at compressive strength, tensile strength, flexural strength and load of reinforced concrete columns. Finally, Egg Shell Powder (ESP) can be used by 5% as a replacement of cement in concrete.