

عنوان مقاله:

Effect of Rice Husk Ash and Water-Cement Ratio on Strength of Concrete

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خلاصه مقاله:

In present status quo, number of researcher are working on waste materials as potential supplement for any of the constituent of concrete to cope with sustainable development. As, the ingredients which constitute the body and give strength to concrete are natural available limited material and has to deplete one day. Thus, there is desperately need of alternate that may replace the limited natural resources. In this regard, this study focuses the rice husk ash (waste stuff) as partial replacement of cement and its possible impact on strength of concrete. In addition, this research work also this research work is conducted to investigate the effect of water-cement ratio on the strength of concrete at ۱۰% partially replacement of Rice husk ash (RHA) by the weight of cement. RHA is a mineral admixture obtained by burning husk at certain temperature. Since as per pervious researches, the physical and chemical properties of RHA are very reactive Pozzolans and possess binding properties so can be used as cement supplement. Therefore, for laboratory experimental work, total ۱۴۴ cubical and ۷۲ cylindrical. In this research, number of concrete specimens were cast and tested at ۱:۲:۴ mix ratio with various w/c ratios i.e. ۰.۴۵, ۰.۵۰ and ۰.۶۰. Further, at each specified water-cement ratio, two mechanical properties (compressive and splitting tensile strength) were determined in Universal Testing Machine (UTM). These physical properties of concrete were investigated at ۷, ۱۴, ۲۸ and ۵۶ days curing period. The experimental results show that the compressive strength gets increased up to ۱۴.۵۱% and tensile splitting test strength increased up to ۱۰.۷۱% at the w/c ratio of ۰.۴۵. The workability of plain fresh concrete at all w/c ratios is slightly greater than the workability of concrete blended with ۱۰% RHA. Thus, RHA improves the properties of concrete when used in

specific amount. As a result, it can reduce the overall cost of construction and it will reduce the adverse environmental effect.

کلمات کلیدی:

RHA; W/C Ratio; Strength of Concrete; Environmental Pollution

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