UTILIZATION OF RICE STRAW ASH AS FINE AGGREGATE IN MORTAR

SADO KHAN NAVEED¹ & TARUN SHARMA²

¹Research Scholar, Department of Civil Engineering, Chandigarh University, Gharuan, Mohali, Punjab, India
²Assistant Professor, Department of Civil Engineering, Chandigarh University, Gharuan, Mohali, Punjab, India

ABSTRACT

This paper high spot the possibility study on the utilization of rice Straw ash as a partial replacement of fine aggregate in mortar. The rice straw ash is locally available agricultural waste materials which could reduce disposal problems and also help to reduce the expenditures of natural resources in the world. In this experimental investigation, rice straw ash (RSA) replace fine aggregate (FA) in three different mix 1:2, 1:3 and 1:4 and for every mix there is 6 different mixes proportion M-1 (0 % RSA, 100 % FA) which is also known as conventional mortar, M-2 (20 % RSA, 80 % FA), M-3 (40 % RSA, 60 % FA), M-4 (60 % RSA, 40 % FA), M-5 (80%RSA,20%FA), and M-6 (100 % RSA, 0 %FA). The experiments like compressive strength, density, water absorption and porosity of mortar mixes were carried out and samples were cured for 7, 14 and 28 days. The consequence of this experimental investigation determine that compressive strength of specimen prepared with addition of 20 % rice straw ash as partial replacement of fine aggregate in mortar mix of 1:2 increased by 11.50 % as compared to conventional mortar. It was also found that with increase in rice straw ash content, workability and weight of specimens decreased at all curing ages.

KEYWORDS: Mortar, Waste, Rice Straw Ash, Compressive Strength, Water Absorption, Density & Porosity

Received: Jun 05, 2020; Accepted: Jun 25, 2020; Published: Aug 12, 2020; Paper Id.: IJMPERDJUN2020743