

The silica rich Rice Husk Ash (RHA) can be used in making cementitious material where the ash acts as a pozzolana. The pozzolanic properties of the RHA is governed by the reactivity of its silica content which is dependent on the temperatures at which the ash is produced. The amorphous ash, the reactive form, is produced at temperature below the critical temperature of 700°C. Above the critical temperature, the unreactive crystalline form is produced. A number of already developed technologies for production of RHA were considered and features envisaged to be essential for the production of reactive RHA incorporated in a single design of a fixed-bed Kiln. The ash produced from the Kiln was used to extend Ordinary Portland Cement (OPC) and the performance of the resulting material evaluated using mainly strength development tests. The results indicate that the kiln design developed can effectively be used to control the temperatures of combustion of rice husks. The ash produced from the kiln was found to be amorphous and of good pozzolanic value. It was noted that fixed-bed kilns which rely on natural ventilation, suitable for production of pozzolanic RHA need to have flexible ventilation system for good results. It was also found that 40% replacement of OPC by RHA produce material of strength development comparable to unblended OPC. Other replacements less than 40% and as low as 5% produce material of relatively superior cementitious properties especially strength development.