

Partial Replacement of Cement by Plant Solid Waste Ash in Concrete Production

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Abstract

Chemical analysis of saw dust ash (SDA), maize cob ash (MCA), and sugarcane bagasse ash (SCBA) was performed to verify their pozzolanic activity for use in concrete manufacture. The sum of SiO₂, Al₂O₃ and Fe₂O₃ was 75.39%, 77.64%, and 80.23% for SDA, MCA, and SCBA respectively, indicating pozzolanic activity. Cement replacement was done at 0%, 5%, 10%, 15%, 20%, 25%, and 30% by weight of cement. Workability decreased as cement replacement increases, but increased as cement replacement increases for SCBA. Absorption and compressive strength of 150mmx150mmx150mm cubes cured for 7.....

Keywords: Absorption, Compressive Strength, Concrete, Pozzolanic Cement, Workability

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