

Chloride Penetrability of Concrete Composites Made with Illinois PCC Bottom Ash

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ABSTRACT

Within the past decade, several studies related to the use of coal combustion products (CCPs) from burning of pulverized coal have been completed. These studies have shown promising results for the construction of several value added products. Ability of concretes to resist chloride ion penetration is considered an important property of the concrete for comparing its quality with other equivalent concretes. An experimental study was recently completed to evaluate chloride ion penetration of concrete composites made by replacing all or part of the natural fine aggregate with Illinois PCC bottom ash. The results from the tests on concrete composites were compared with those from an equivalent conventional concrete. The tests were performed using rapid test for the penetrability of concretes to chloride ions prescribed by ASTM C1202-94. The proposed paper will present testing procedures used in the investigation, and detailed results obtained from laboratory tests performed on concrete composites and an equivalent conventional concrete. The results obtained so far show that resistance to chloride ion penetrability of concrete composites is similar to that of an equivalent conventional concrete.

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