

## **EFFECT OF PARTIAL REPLACEMENT OF CEMENT BY RICE HUSK ASH IN FIBRE REINFORCED CONCRETE'S MECHANICAL AND TOUGHNESS PROPERTIES**

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### **ABSTRACT**

In present day constructions, usage of High Performance Concrete (HPC) is predominant. HPC can be a fibre-reinforced, super plasticized cement mixture with a very low water-cement ratio. Though it has superior mechanical and durability property, it contains large amount of cement resulting in high cost of powders and an irreparable snag when sustainable development is considered. In this respect, using mineral admixtures can be an attractive alternative, especially when an agro by-product can act as one. Recent studies have shown that, Rice Husk Ash (RHA) which is an agro waste fulfils the physical characteristics and chemical composition of mineral admixtures. In this paper the effect of partial replacement of cement by rice husk ash in fibre reinforced concrete's mechanical and toughness properties is studied. Fibre reinforced concrete with different replacement levels of RHA was prepared and these specimens were subjected to compression test, flexural strength test, split tensile strength test and impact test. The specimens with 5% replacement level of RHA gave maximum strength for all the tests.

**KEYWORDS:** Compressive Strength, Fibre Reinforced Concrete, Flexural Strength, Impact Resistance, Rice Husk Ash, Splitting Tensile Strength