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(57) Abstract :

Concrete is a widely used construction material in developing and developed countries in a structure. After several research results across different countries, the growth of concrete is eyed forward towards the growth of its performance. This high-performance concrete holds the different enhanced properties in it, such as durability by proving resistive to chemically varying atmosphere, reduction of CO₂ by reducing the amount of cement, increased Ecology balance by balancing natural resources consumption. The vision of this invention extends towards the effect of mineral admixtures on the durability properties of high-performance concrete. To attend effective results such as low porosity, low water absorption, sorptivity, and proportioning of materials has always been the key parameters. M60 grade of concrete used in this experimental work. Curing is done to 3, 7, 14, 28, 56, and 90 days with 3 sample blocks for each curing period. This different mixture of concrete preferred upon further tests where the durability is determined cautiously. The durability properties of partially replaced cement are studied based on compressive strength, water absorption, porosity, and sorptivity. From the studies conducted, it observed that metakaolin and rice husk ash play a vital role in improving the durability of concrete at a later stage and improving the compressive strength at an early age.

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