



Experimental Investigation on Strength and Durability Characteristics of Concrete Developed by using Quarry Dust as Fine Aggregate

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Abstract: Concrete is the widely used building material in the world. River sand has been the most popular choice for the fine aggregate in concrete in the past, but over use of the material has led to environmental concerns, reduction of sources and an increase in price. Quarry dust has been proposed as an alternative to river sand that gives additional benefit to concrete.

Corrosion of reinforcing steel due to chloride ingress is one of the most common environmental attacks that lead to the deterioration of concrete structures. Corrosion related damage to concrete structures is a major problem. The concrete repair industry has developed novel techniques that are claimed to prevent the steel from corrosion and or to restore the protective character of the cover concrete by introducing corrosion inhibitors. The objective of this work is to study the strength and corrosion resistive properties of concrete containing quarry dust as fine aggregate along with organic inhibitors Methyl diethanolamine and monoethanol-amine is added.

The following tests shall be carried out to determine the strength of concrete such as compressive strength, split tensile strength, flexural strength. The resistance to corrosion is evaluated based on the performance of the concrete for the penetration of chloride ions by means of Rapid Chloride Penetration Test (RCPT), and Gravimetric weight loss method.

Key words: concrete, quarry dust, super plasticizer, corrosion resistance, inhibitors.

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