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# Investigation on Strength Properties of Concrete with Partial Replacement of Cement by Marble Powder and Fine Aggregate by Granite Powder

**R.Anuradha*, C.Arulprakash**

**Department of Civil Engineering, SNS College of Technology, Coimbatore, Tamilnadu, India.**

**Abstract :** The advancement of concrete technology can reduce the consumption of natural resources and energy sources and lessen the burden of pollutants on environment. Presently large number of marble dust and granite powder is generated in natural stone processing plants with an important impact on environment and humans. This project describes the feasibility of using the marble sludge and granite powder in concrete production as partial replacement of cement and fine aggregate. It should be designed to have a higher workability, high mechanical properties and greater durability than those of traditional concrete.

Marble powder and granite powder is one of the waste materials obtained during extraction, cutting and polishing granite stones from the quarries and commercial industries. The main objective of this project is to study the mechanical properties of concrete mixtures in which fine aggregate (sand) and cement were partially replaced with Granite powder and marble powder. The replacement is done by 5%, 10%, 15%, 20%, 25% of cement by marble powder and 5%, 10%, 15%, 20%, 25% of fine aggregate by granite powder to evaluate the effect of presence of these replacement materials on the strength of specimens.

**Keywords :** Concrete, Compressive strength, Industrial waste, Low cost, Marble powder, Granite powder, OPC cement.

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