

## **Strength Characteristics of M40 Grade Concrete with Partial Replacement of Cement by Nano Silica, Granite Powder and Glass Powder**

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**Abstract :** The main aim of this investigation is to compare the influence of nano silica on the strength properties of cement concrete. The concrete was made by using Ordinary Portland Cement<sup>2,11</sup>. Glass is used in many forms in day-to-day life. Today many researches are going into the use of Portland cement replacements, using many waste materials like pulverized fly ash, ground granulated blast furnace slag (GGBS) etc . Like ways a waste glass powder (GLP) is also used as a binder with partial replacement of cement which take some part of reaction at the time of hydration, also acts as a filler material Here the nano silica is replaced with cement at constant percentage (5%).And along with this Granite powder and Glass powder are replaced with cement by 10% , 20% , 30%, 40% ,50%,60%.. In this study, mechanical properties like compressive strength and split tensile strength at 7 days, 28 days are measured for various combinations of Granite powder, Glass powder with Nano silica.

**Keywords :** Nano silica, Granite powder, Glass powder, compressive strength, and partial replacement.

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