

## **A Study on The Properties of Aerated Concrete -Fine Aggregate Partially Replaced with Marble Powder**

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### **ABSTRACT**

Aerated concrete is a homogeneous material when compared to normal conventional concrete as its density is relatively low and shows vast variations in properties. The properties of aerated concrete depend upon its microstructure composition, which are influenced by the types of binders and materials used, curing methods. The past research investigated results showed that, how far the concrete can be made into a light weight material by reducing the density of the concrete, which ranges from 300 kg/m<sup>3</sup> to 1850 kg/m<sup>3</sup>. The main aim of the work is to increase the strength of the lightweight aerated concrete and to examine its physical and mechanical properties. The results of the various trail mixes with me use of materials like gypsum, lime, marble powder and fly ash at proportions are listed. Aluminium powder is used as the aerating agent. The proper mix of the above mentioned materials in concrete is cast in the cubes of standard size 100 mm x 100 mm x 100 mm and steam cured at 100 degrees for 8 hours. The results showed the specimen designed with 0.45& water to cement ratio and 0.15& conplast mixed with 10& of lime, gypsum and marble powder plays an enhanced performance in the all aspects of mechanical property .

**Keywords:** Aerated concrete, gypsum, lime, marble powder, Aluminium powder, mechanical properties.