

## ABSTRACT

Natural sand is most commonly used fine aggregate in the production of concrete poses the problem of acute shortage in many areas. Scarcity of concrete due to high increase in constructions and importance of going for alternate materials. Now a day's various studies have been conducted to make concrete with waste material with the intention of reducing cost and unavailability of conventional materials. In the present investigation, an experimental program is carried out to study the compressive strength of Concrete of M25 grade was designed for a w/c ratio of 0.50 for the replacement of 20%, 40% and 60% of fine aggregate (sand) with Marble powder. Marble dust is obtained from marble factories as a by-product resulted from marble cutting and shaping process. During the cutting process, 20%-30% of a marble block becomes waste marble powder. Marble powder is a waste material generated in considerable amounts in the world. In India, marble dust is settled by sedimentation and then dumped away which results in environmental pollution. Hence the reuse of waste material has been emphasized. Marble powder can be an economic alternative to the sand. The aim of this study is to investigate the possibility of using Marble powder as partial replacement of fine aggregate. A total number of 36 concrete cube specimens as a group of nine cubes (3 cubes for 7 days, 3 cubes for 14 days and 3 cubes for 28 days' test) were cast with 0%, 20%, 40%, 60% replacement of sand with Marble Dust Powder and immersed fully in potable water for curing and tested for 7 days, 14 days and 28 days' compressive strength.

**Keywords:** Marble dust powder, Concrete, Compressive strength, Fine aggregate.