

# Investigation of Lightweight Cellular Concrete using recycled Glass and Plastic waste

Dipeeka B Firake<sup>1</sup> and Gayatri C. Sherkar<sup>2</sup>

Assistant Professor, PCCOER Ravet, Pune<sup>1</sup>

Assistant Professor, MMIT Lohgaon<sup>2</sup>

**Abstract:** Cellular Lightweight Concrete is one of the most significant type of concrete used for construction. Cellular Lightweight Concrete is also known as foamed concrete. This have many advantages and usages than traditionally produced concrete. The rapid urbanization has leads to increase in wastes & it is difficult task to dispose it. This paper identifying the possibility of using recycled materials of crushed glass and plastic wastes. In foam concrete, this recycled material use as a substitute filler.

A protein based foaming agent was used for this study. The workability and strength of different mixes using powdered glass and plastic wastes were investigated. In this research foam concrete blocks were prepared according to the designed proportions to attain the maximum density of 1900 kg/m<sup>3</sup>. In this work, the mixing of recycled glass wastes 5%, 10%, 15% and recycled plastic wastes 1%, 3% & 5% were added as a filler in foam concrete. The 7, 14 and 28 days compressive strength, flexural strength, split tensile strength of each batch of concrete were studied and compared with conventional foam concrete. The study showed that the incorporation of recycled glass and plastic waste in conventional foam concrete is effective and it will be useful for load bearing wall applications...

**Keywords:** Cellular Lightweight Concrete