

## Abstract

The global construction industry is heading toward the innovative betterments rapidly. The concept of "Green" has spread all over the globe. Masonry blocks are one of the main component of about every building. Conventional masonry blocks are strong but they are expensive & have too much weight. All the weight of masonry blocks are useless because this weight unnecessarily acts upon the structural members of building & results in the higher cost & in case of any disaster, if building collapses, there is much higher risk of fatality. Conventional masonry blocks are made by the utilization of natural resources & with time, deficiency of natural resources can be happen.

The purpose of this study is to analyze various types of masonry blocks made up of innovative materials & to find out the best of them having appropriate strength, optimized cost & weight. Weight of the masonry blocks matters when it comes to RCC frame structures. Because, in frame structure masonry blocks are not used to take the load of slab. So, lighter the masonry blocks the less will be the load acts upon the structure & thus less steel or concrete will be required to fulfil the purpose of carrying load of the structure.

In this study the efforts are made to investigate different blocks in order to optimize the strength weight and cost. Materials used in these masonry blocks are: sawdust, fly ash, light-weight aggregates, foaming agent, plastic waste, cement, fine aggregate, coarse aggregates and polystyrene.

Total 6 types of blocks are investigated and total number of samples are 24. Once blocks were casted & cured they brought to laboratory for compression test & results were plotted in the form of column chart. Result shows that among all of the masonry blocks, the plastic blocks are very cheap as compare to others. While in terms of strength sawdust concrete blocks has more compressive strength as compared to others and in terms of weight, cellular lightweight concrete blocks are very lightweight as compared to other masonry blocks. Conventional masonry blocks has also very good compressive strength but it is costly and heavyweight as compared to other. Lightweight aggregate concrete blocks has also good strength, but it is little bit costly as compared to plastic blocks.