

Project Title:-

Performance of bamboo reinforced interlocking hollow concrete block as load bearing wall.

Abstract

To avoid depletion of natural resources and to protect our environment for our future stay, it is necessary to introduce new innovative construction materials. In this study, we are replacing the steel with bamboo as a construction materials. Bamboo is one of the oldest traditional building materials used by mankind.

The diminishing wood resource and restrictions imposed on felling in natural forests, have focused world attention on the need to identify a substitute building material that should be renewable, eco-friendly and widely available. In view of its rapid growth, a ready adaptability to most climatic conditions and properties, bamboo emerges as a very suitable alternative.

Bamboo has a long and well-established tradition as a building material and It is widely used for many forms of construction, in particular for housing in rural areas. Bamboo is a renewable and versatile resource, characterized by high strength and low weight, and is easily worked using simple tools.

The main aim of the work is to design bamboo reinforced concrete hollow block as a load bearing wall and to determine a suitable mix that provides workability, strength, suitable surface finish and economy. To investigate the load carrying capacity of the wall made with the interlocking hollow blocks strengthened with bamboo.

The key points of the study are

1. Fixing the dimension of the block.
2. Various tests should be conducted on hollow block to determine its physical properties.
3. Mix design of concrete by trial and error method.
4. Casting of cubes, cylinders and beams with and without bamboo.
5. Compressive strength test of cubes, splitting tensile strength test of cylinders and flexural strength test are to be conducted.
6. Casting of hollow block with bamboo.
7. Construction of sample wall using bamboo reinforced hollow block.