



“Development of Rammed Earth Wall Panels”

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Abstract: Cutting edge engineers commit cautious consideration to the environment of a extend and think about authentic building strategies they can make more feasible structures. Rammed-earth development is a warm mass structure which cools the internal spaces of house amid hot, summers and keeps warm amid winters. It is a noteworthy building strategy ancient of approximately 2,000 a long time, and the strategies of local specialists offer recommendations as to how cutting edge engineers can effectively apply the method.

Keywords: Rammed earth construction, Fly Ash, Agricultural waste (rice straw, rice husk), natural materials (soil, sand), Sustainability

I. INTRODUCTION

All six continents of the world have utilized the thousands-year-old natural building technique known as rammed earth (pise). There are numerous advantages to rammed earth constructions. They are inexpensive to produce and use a low-tech building approach. Both hot and cold climates can use them, and they require little upkeep. This method uses natural raw materials like dirt, chalk, lime, or gravel to build floors, walls, and foundations.

This is an old technique that has been resurrected as a sustainable building technique. All continents, with the exception of Antarctica, are home to rammed earth buildings, which can be found in a variety of settings such as tropical, semiarid, wet, and temperate deserts. Having appropriate soil and designing a house that fits the area.

II. LITERATURE REVIEW

The advantages of rammed earth construction, such as its ability to save energy and water, make it a promising material for many applications.

However, the proliferation of these techniques is being hindered by a drop in research. The necessity to continue the optimization research of rammed earth walls using modern technology, from its prescription and mix proportion additive and construction tools, etc., is brought up based on the review of Revolution history and contemporary practice. This will help to achieve its reactivation and promote low-tech green buildings.

Which consistently promotes the rejection of this method. While many writers have offered advice on how to create rammed earth walls safely in the literature, very few have discussed quality control both before and throughout the building process.

- 1) There are very few worldwide norms or laws governing the use of rammed earth in construction, in contrast to other prevalent modern building materials like concrete, mortars, or burned clay bricks.
- 2) In scenarios involving both samples and walls, this study presents a basic methodology and defines unified criteria for the production and quality control of this constructive technique, based on statistical analysis.
- 3) To create a uniform, mixture soil, sand, fly ash are thoroughly mixed
- 4) To increase its solidity, this moist earth is put into a shape in thin layers and rammed. Together with compressive strength and water resistance, density increases.

III. MATERIALS AND METHODS

The goal of the current project is to develop sustainable building techniques for rammed earth wall panels by utilizing naturally occurring materials such fly ash, gravel, sand, and soil.

It is made of materials derived from natural resources that are renewable.

Table 1 enumerates the different materials and notes where local sources can obtain them.