

A REVIEW OF EXPERIMENTAL STUDY ON PROPERTIES OF PLASTER WITH REPLACEMENT OF CEMENT BY COWDUNG AND FLY ASH

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Abstract – This paper introduces an experimental study of the use of cow dung as a supporter of concrete production. The modern world has well-developed building materials and technologies. Focusing on common plaster research using cow dung, as well as fly ash is a complete replacement of our Vedic cement. Cow dung usually requires a lot of water but gypsum is used to reduce the laying time of concrete. So, in this project, we have chosen the economic downturn as much as possible things as cow dung and lime, and fly ash. We hope these items are of good quality and durability. The specialty of our project is self-adhesive concrete. To prevent cracking in cement cow dung is usually collected by excess water when we mix the ingredient after installing or finishing the process the water will react more slowly with concrete. The moderate effect of cow dung is its remarkable development of water resistance which absorbs cow dung stabilization suitable as a building material.

Index Terms – Plastering, Cement, Sand, Fly Ash, Cow dung.

I. INTRODUCTION

Nowadays the construction of houses, buildings, hospitals, and much more are the main features of this cement is the largest building. So, keeping this in mind the replacement of cement is otherwise a matter of time. Drs. Shiv Darshan Malik of Haryana Rohtak introduces Vedic concrete made using Cow dung, lime, and fly that produces good energy in homes. "Cow dung is very effective and durable. In India, every day 1 million tons of manure are found and this waste is not used properly. At that time the population is growing day by day, thus and the need for housing grew. This puts a lot of pressure on the construction industry to build houses faster and reduce the cost of building houses and maintaining the quality of housing. With population growth, the level of many types of waste disposal is also increasing. Nowadays great effort is being made to dump waste in building materials to reduce waste and reduce construction costs that make it more environmentally friendly. In the manufacture of basic building materials, many books are available such as cement that is environmentally friendly by reducing the area of carbon footprint and reducing energy consumption during its production. Farm It is the outer layer of material on the walls inside and outside buildings and houses. This is why this direct effect on the transfer of building heat from the walls of a building. In ancient times, buildings must have been in the construction of the Pyramid Gypsum plaster tower was used for about 1000 years. manure was concrete used for houses in the Indian subcontinent. This mud is a good thermal insulator that blocks sunlight and cow dung is very expensive as it is also easily available, The enzymes present in cow dung are good binders that prevent wall damage due to salt and moisture. The life of plaster is also higher than cement because gypsum is mixed in it. Gypsum and cow dung also improve the saline environment without the long-term effect of saline in homes.

II. LITERATURE SURVEY

G. Ajay Gopi, et al (2020), In this study, Vedic concrete is made of gypsum with cow dung which is a naturally occurring function. Vedic plaster material is resistant to noise, heat, and fire but cement is not resistant to those materials compared to Vedic plaster. In this study, they calculated the strong pressure, sound, and consistency of both groups. they tested the specific gravity of Vedic plaster.

Borode Mansi et al (2020) concluded in their research paper that according to research regarding Vedic plaster interior and exterior it is easy to use. It does not need treatment. Vedic plaster acts as a heat insulator. the strength of the inner and outer Vedic plaster is also comparable to that of conventional plaster. The farm gained 7mm of strength compared to standard 12mm thick concrete.

S. Sathis Kumar, et al 2018 In this paper instead of cement in concrete usually cow dung requires more water but in this cow dung, it reduces the time to put concrete with alumina. Material quality is low and economically very high so we hope this item is of excellent quality and cowdungis75% disease resistance reduced in our home this material is available at low cost.

Magudeaswaran, et al (2017), In this study, cow dung brick can be considered a sustainable building material for cow dung used in India for thousands of years in the agricultural field. This brick is lightweight and eco-friendly. the maximum is 28 days. These traditional brick-making methods are expensive and non-polluting. Bricks and concrete works were taught on cow dung.

Dr. Ajwang Patrick, et al (2017) In this study the paper presents the results of a study on the use of cow dung. It should be noted that humanity is locked in a very strong relationship with nature and both are very dependent on each other. Cement sand is a control that is more than the minimum required power which is why it demonstrates the ability to use cow dung as a cheap house plaster.

Drs. Sunil Bhimrao Thakre, et al, (2015) In this study he studied cow dung used to treat contaminated soils contaminated with sulfuric acid. Aluminum is the third most widely available element. He is in the crust of the earth. This soil is acidic with the help of sulfuric acid which increases the toxicity of aluminum but with the addition of cow dung the pH of the soil in the acidic acid increases and as a result, the aluminum toxicity decreases with the help of cow dung.

III. CONCLUSIONS

Vedic plaster is better than ordinary plaster in every way. First of all, it is self-repairing cement. It needs a little water to fix. It acts as a heat shield to stay warm in winter and cool in summer. as an air purifier. There is always fresh air in the room. Reduce global warming and save electricity and water. It protects against harmful radiation. Vedic plaster becomes a source of income for many of the former and saves the lives of many cattle as well. Vedic plaster creates a temperature difference of 10 ° to 15 °. Reduce air pollution.

IV. REFERENCES

Barode Mansi, et al, "Vedic internal and External Plaster" International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET) Volume 9, Issue 4, April 2020.

G.Ajay gopi, et al, "Experimental Study on Temperature Resistance Mortar by using Vedic Plaster in Place of Cement" International Journal for Modern Trends in Science and Technology Volume: 06, Issue No: 04, April 2020.

Vasu. K, et al, "Experimental Investigation On Partial Replacement Of Cement with Cow Dung Ash (IJARIE) Volume 5, Issue 3, April 2019.

Leopold Mbereyaho, et al, "Assessment of Cohesive Soil - Cow Dung Mortar Properties as Replacement of Cement Mortar for Simple Plastering Works" Rwanda Journal of Engineering, Science Technology and Environment (RJESTE), Volume 3, Issue 2, 2020.

DR. Sunil Bhimrao Thakre, et al, "Cow Dung for Reducing Aluminum Toxicity in Soil and Cow Importance from Vedic Scriptures" Engineering and Scientific International Journal (ESIJ) Volume 2, Issue 2, April - June 2015

Shelote Kunal et al, "Experimental and Computational Analysis of Energy Efficient Plaster" Proceedings of Sustainable Infrastructure Development & Management (SIDM) Volume 27, issue 1 (April 10, 2019).

S.Sathis Kumar, et al, "An Experimental study of fully replacement of cow dung ash (CDA), Alumina and lime for cement " International Research Journal Of Engineering And Technology (IRJET) Vol. 05, Issue – 05, may -2018

P. Magudeaswaran, et al, "Development of Eco Brick and Concrete with the partial replacement of Cow dung - A Review" International Journal of Science and Engineering Research (IJOSER), Vol 5 Issue 11 November -2017

Dr. Ajwang Patrick, et al, "Use of Cow Dung and Local Brewery Waste as a Partial Replacement of Cement for Plastering Low-Cost Houses" IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) Volume 14, Issue 3 Ver. II (May. - June. 2017)