

“UTILIZATION OF PLASTIC WASTE FOR MAKING PLASTIC BRICKS”

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Abstract -Disposal of plastic it is the biggest problem and we cannot have any proper method for disposal .that why for minimize the plastic waste it is necessary to replace it by natural resource by plastic. Such as we can replace water and soil by plastic. Plastic is used for manufacturing construction material like bricks, plastic bricks give higher strength as compare to ordinary bricks. For making ordinary bricks large amount of natural resources are required such as soil, water, bagasse etc. We can reduce consumption of such natural resources by replacing it with plastic . Plastic give better strength and also helps to reduce environment problem

Key Words: Disposal, manufacturing, strength, ordinary, sources, environment.

1. INTRODUCTION

Plastic is a non-bio-degradable substance which takes thousands of year to decompose that creates land as well as water pollution to the environment. The quantity of plastic waste in Municipal solid waste (MSW) is expanding rapidly .It is estimated that the rate of usage is double for every 10year.The plastic usage is large in consumption and one of the largest plastic wastes is polyethylene (PE).The utilization of earth based clay material resulted in resource depletion and environmental degradation .As amount of clay required for brick is huge, in this project these waste plastic are effectively utilized in order to reduce the land space required to dump these wastes. This creates the prevention from various harmful diseases. Polyethylene (PE)bags are cleaned and added with fine aggregate at various rations to obtain high strength bricks that possess thermal and sound insulation properties. This is one of best ways to avoid the accumulation of plastic waste. It also helps to conserve energy, reduce the overall cost of construction and hence in this project ,an attempts made to manufacture the plastic sand bricks by utilizing the waste plastics.

By definition, plastics can be made to different shapes when they are heated. It exists in the different forms such as cups, furniture, basins, plastic bags, food and drinking containers and they become waste material. Accumulation of such wastes can result into hazardous effects to both human and plant life. Therefore, need for proper disposal, and if possible, use of these wastes in their recycled forms arises.

Now days, human apply all of its potentiality to consume more. The result of this high consumption is nothing unless reducing the initial resources and increasing the landfill. In recent times, human from the one hand is always seeking broader sources with lower price ultimate pressure at which brick is crushed is taken into account. All four brick specimens are tested one by one the load at crushing was noted.

Now days, human apply all of its potentiality to consume more. The result of this high consumption is nothing unless reducing the initial resources and increasing the landfill .In recent times, human from the one hand is always seeking broader sources with lower price and from the other hand is following the way to get rid of wastes. The waste today can be produced wherever humans footprints be existed, and remind him that they have not chosen the appropriate method for exploitation of the nature .This paper introduces the development and low cost housing in India plastic have become an essential part of our day to day life since their introduction over hundred year ago.

2. OBJECTIVES:

- ☐ To find effective alternatives for conventional brick.
- ☐ To propose mix design for bricks using material.
- ☐ To test the strength and physical properties of bricks with waste material a and compare it with conventional bricks.
- ☐ To conduct cost analysis and find cost effectiveness to any structure by bricks with waste material

3. SELECTION OF THE MATERIAL -:

i) For Ordinary bricks use for material -:

1) Clay: clay is finely-grained natural rock or soil material that combines one more clay minerals with possible trace of quartz, metal oxides and organic matter. clays are plastic due to particle size and geometry as well as water content and become hard, brittle and non-plastic upon drying or firing.

2) Water: water is an important ingredient of brick as it actually used for manufacturing of brick. Since it helps to bind all the raw materials for giving proper mix. Water used for making brick should be free from impurities. The common specifications regarding quality of mixing water is water should be fit for drinking

3) Bagasse:

The burning of bagasse which a waste of sugarcane produces bagasse ash. presently in sugar factories bagasse is burnt as a fuel so as to run their boilers. India alone generates 90 million tone of bagasse as a waste material, from sugarcane industry. Bagasse is a residue obtained from the burning of bagasse in sugar producing factory.

ii) Materials For plastic bricks-:

1) Plastics

2) Sand

2) Batching of Plastic

3) Burning of Waste Plastic

4) Mixing

5) Moulding

6) Curing

1) Collection of Material -: Collect plastic bags, food bags, and sand

2) Batching Of Plastics -:

3) Crushed sand

1) Plastics: plastic is material consisting of any of a wide range of synthetic or semi-synthetic organic compounds that are malleable and so can be moulded into solid objects.

2) Sand: sand is granular material composed of finely divided rock and mineral particles. It is defined by size, being finer than gravel and

4) Mixing -:

Measurement of material for making brick is called batching

3) Burning Of Waste Plastic -:

Plastic can be melt at 200c temperature coarser than silt.

3) Crushed sand: Is a fine aggregate that is produced or manufactured by crushing huge suitable boulders and rocks. Crushed sand is also known as M_sand or manufactured sand, since it is manufactured artificially.

4. METHODOLOGY:

1) Collection of Material:

In this process one kg plastic is melted and after melting of plastic we can add 3kg of fine sand and again up to semi liquid state

5) Moulding -:

After making proper mix we place that mix in mould. For two hours after two hours we can remove brick from and done curing

6) Curing -:

Brick can be allowed to dry period of 24 hours. Brick kept in water for 72 hours for curing

5. REFERENCES:

Plastic is very hazardous material and this is commonly used in the world. The research show that the study of the plastic and the solution to overcome

1. In the "manufacturing and experimental investigation of bricks with plastic and M-Sand" research paper conclude that plastic soil bricks possess more advantages than burnt clay bricks and it is cost effective.

2. The "production of plastic bricks" it was observed that the compressive strength of the bricks is more than that of the standard brick.

3. In this paper "Manufacturing bricks from sand and waste plastic" making bricks from sand and waste plastic can be an alternative to the available traditional clay bricks. And also sand plastic bricks can help reduce the environmental pollution their by making the environment clean and healthy.

4. This paper says that "experimental study on partial replacement of plastic waste in bricks" The waste like LDPE which are only

5.9% recyclable as per environmental protection agency (EPA), so replacing it in manufacturing of bricks is better way to reuse that plastic and its properties help to attain strength more than clay bricks.

6. Conclusion:

The plastic gives the various good advantages as well as the dangerous disadvantages effect to the environment, living life and the animal. The research gives the method to overcome the plastic issues very effectively. And also to give the ecofriendly bricks as the construction material. By using this method gives better option for plastic waste management.