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Abate The Atmospheric Dissipate Materials Used In Construction Materials

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Abstract:- We all know that wastes are major problem facing in our daily life. Problems increasing day by day. It must be addressed in order to solve the world's resource and energy challenges. Mainly plastics destroy and pollute our earth in major parts. to resolve it our is helpful. Generally plastics are non-bio degradable, being the technologies improved to recycle the plastics in certain stage it cannot be recycled. In other side natural resource like soil are decreasing in the manufacture of bricks. To overcome this problem a new trend is needed. Our project is about recycling of plastic waste. The idea of this project originally arose when we saw the disposal of waste in many places and dumping them in land due to this the level of the clay-brick houses were almost washed away during the monsoon season, if this brick introduced then we can solve two problems mentioned above. After studying the whole scenario, we developed an effective way of utilizing the soft plastic waste and recycling it into plastic bricks which are very light in weight and can withstand high amount of pressures compared to standard modular bricks. This work uses waste plastics and convert them to building materials by reducing the environmental pollution. Presently waste plastics are converted into Bricks, interlocks, roof tiles retaining blocks etc., using only plastic or by a mixture of other waste materials. In our project we used Waste rubber powder. After several trails in compression testing, we observed that it can withstand high pressure when compared to other type of bricks. In most of the area in our country this type of bricks are useful to decrease the pollution. In most of the rural areas that is people who still lives in mud houses, can use these bricks, it will not be destroyed during the rainy seasons and if there any damages occured these bricks can be recycled and reused. Plastic bricks are cost effective than the other bricks.

I. INTRODUCTION:

Now a days waste is a global problem and one that must be addressed in order to solve the world's resource and energy challenges. Among the different types of wastes generated, plastics waste is one of the most hazardous wastes which need to be treated in a proper systematic way. Plastics are made from limited resources such as petroleum and huge advances are being made in the development of technologies to recycle plastics waste among other resources. Plastics are non-biodegradable.

Plastics are generally categorized as Thermoplastics and thermoset plastics. Thermoplastics can heated up to form products and then if these end products are reheated , plastics will soften and again. These include LDPE,HDPE,PP etc here we used LDPE i.e., LOW DENSITY POLYETHYLENE. As more cities become industrialized, the surplus problem of plastic waste management comes along with it.

The world's annual consumption of plastic materials has increased from around 5 million tons in the 1950s to nearly 100 million tons today. Plastics constitute approximately 3-7% of municipal wastes. Now a days municipal solid waste or garbages burry the plastics along with other materials in landfill without even recognizing its ill effects. Municipal solid waste in India contains nearly 4% weight of plastic wastes. India's rate of recycling of plastic waste is the highest in the world as compared to other countries.

Using different proportions the bricks are made by the oven in specific temperature.firstly the plastic waste is being collected in bulk amount and the mould is being taken, the plastic wastes, such as crisp bags and polythene bags are filled in it. Air tight amount of plastic waste has to be filled in the mould. Required amount of rubber powder and mime is added to it. After the mould is closed with a metal plate on it and allowed to heat in an oven for some hour until it reaches the condition. Then the mould is taken out from the oven and cooled down immediately and it is heated in the sides to take out from mould.

II. LITERATURE REVIEW:

2.1.Bricks:

A Brick is building material used to make walls, pavements and other elements in masonry construction. Traditionally , the term brick referred to a unit composed of clay. Now a days different types of bricks are available varying in material i.e., clay, fly ash, sand lime, concrete, engineering bricks.

2.2.Plastics:

Plastics are non biodegradable. Plastics are typically organic polymers of high molecular mass and often contain other substances. They are usually synthetic, most commonly derived from petrochemicals, however , an array of variants are made from renewable materials such as polylactic acid from corn or cellulosics from cotton linters

2.3.Waste Rubber Powder:

Waste rubber powder is classified as fine, dry, powdered elastomeric crumb rubber in which a significant proportion of particles are less than 100µm.

2.4.Manufacturing Of Bricks:

- Required amount of plastic wastes, crisp bags, polythene bags, waste rubber powder and lime are weighed and mixed together.
- The mixture is placed in a mould of size 23*12*8.5 in m.
- The mould is closed using the metal plate on it top.
- Then it is kept in an oven for few hours until it is ready for mixing.
- After the mould is ready, it is taken out from the oven and made to cool down immediately.
- At last the plastic brick is being removed from the mould.

2.5 Aim Of The Project:

The main aim of this project is to reduce the atmospheric wastes and provide an effective way to overcome the problems faced by the humans due to pollution.

III. DESIGN OF BRICK:-

3.1 Overview:-

- In present times, in rural and coastal regions of India, there is no waste management system present to deal with the continuous increase of plastic waste that come into the villages everyday due to improper dumping by the localides.
- The villages due to lack of education and understanding about the importance of waste management, just burn away the waste in their stoves or in open places or may throw it in the nature, which creates problems such as foul smell around the region, blockage of drainage pipes, which are created to prevent flooding in the area, unhealthy environment for living and polluting the nearby river banks.

3.2 Materials Needed:

- Plastic bags, crisp bags

- Waste rubber powder
- Lime
- Oven and
- Mould
- Compressive testing machine

3.3. Tests On Bricks:

- Size and shape test
- Compressive test
- Hardness test

3.4 Compressive Test:

IV. RESULTS:

TRIAL	LOAD AT FAILURE(N)
1	362970
2	392400
3	303800

SAMPLE NO	PROPORTIONS IN WEIGHT %	COMPRESSIVE STRENGTH P/A (N/mm^2)
Sample 1	100% LDPE	5.422
Sample 2	100% Clay brick	3.636
Sample 3	80% Industrial waste LDPE, 12% Waste rubber powder 8% $CaCO_3$	11.73

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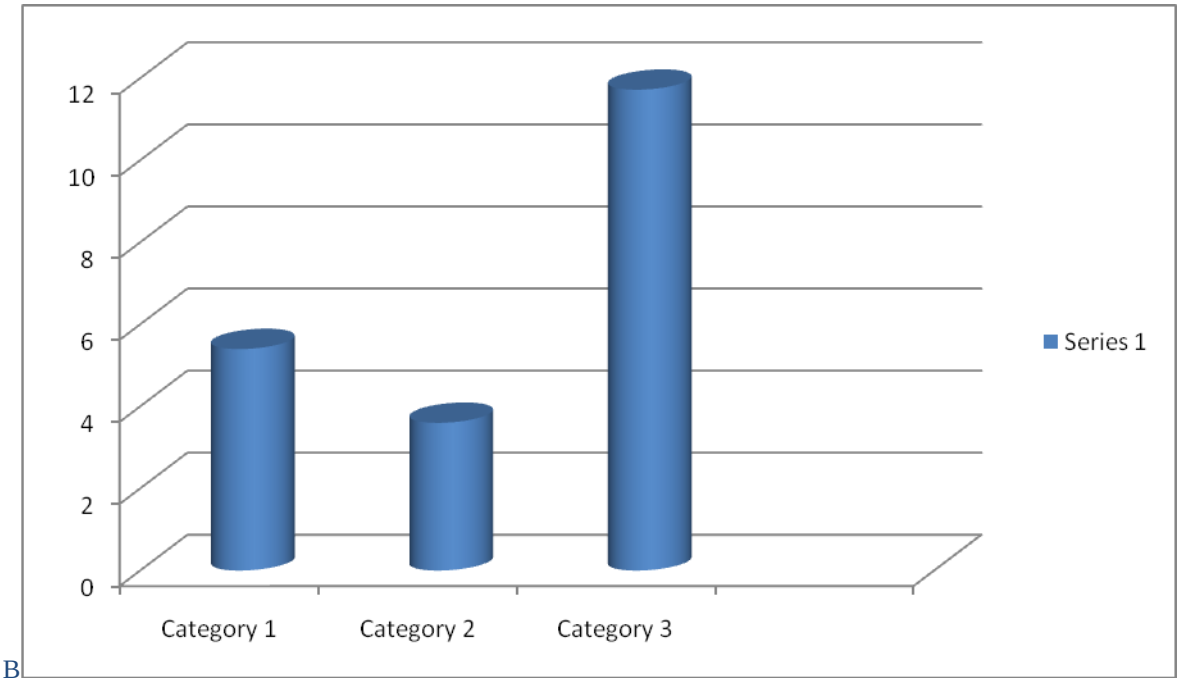

B

V. CONCLUSIONS:

This work effectively converts waste plastic into useful building materials like blocks, interlocks and also reduce the pollution faced by the humans. From the compressive testing results we come to know that waste plastics when mixed with waste rubber powder and $CaCO_3$ will cause highest compressive strength than other bricks.