International Journal of Latest Research in Engineering and Technology (IJLRET)
ISSN: 2454-5031
www.ijlret.com || Volume 02 - Issue 12 || December 2016 || PP. 01-05

An Experimental study of manufacturing of fly ash brick by using e-waste & sculptures waste material

Prof. Dr. AMIT VISHVAKARMA
(DEPARMENT OF CIVIL ENGINEERING UIT-RGPV, BHOPAL M.P.)

Prof. Dr. S. S. KUSHWAHA
(HOD DEPARMENT OF CIVIL ENGINEERING UIT-RGPV, BHOPAL M.P.)

Er. AAKASH SAXENA
(DEPARMENT OF CIVIL ENGINEERING UIT-RGPV, BHOPAL M.P.)

ABSTRACT: India is a country with religious freedom. There people of the various communities and diverse community. Whose worship and religious deeds scandal method different from each other is. India's population of more than 125 corers. Every nation and culture and lifestyle of the community vary in their states is. Another whole world was looking at India in the hope that twenty-one century India will be sitting in India and hope to meet the rapid progress.

There is some field direction to be stronger. Some areas are very much hope these are describe below.

(1) Digital India

(2) Construction industries.

Indian Prime Minister has called for Digital India. And their efforts should be made so that each function digital transparency and easy of work and rest for the people of both countries could benefit from.

Digital India by one and we are meeting the same day, an ever new dreams and other e-waste material becoming too much problem for us.

There is here to order various e- waste materials such CD/ DVD / chips / LED etc.

Similarly, our babysitter Cure and Life Rivers / pond obscure and clean water to drink, we meet there. Some particular community to fulfill their religious customs and worship messy to make these water resources.

INTRODUCTION:

Since ancient times, India is a country of religious beliefs to follow. But in the old days, the population of the country was much lower than the current population.

His religious works, and worship system of water pollution and the likely short-lived. And as it was very limited.

No one was horrible condition resulting new fade. Currently India's population is about 125 car ores. But whenever a majority community to fulfill a religious function display streams and ponds are high in the pollution there. Which has resulted in a very substantial for the human society is getting very harmful and dangerous.

Images of sculptures waste materials.

LITRATURE REVIEW:

Plaster of Paris is a white powder wear & tear made from gypsum that, when mixed with water, becomes a thick paste. The paste dries relatively quickly and is used in craft projects. It easily forms moulds or sculptures that become durable as the plaster hardens. The finished project is usually then painted. Making bricks from Plaster of Paris is a relatively simple process.

Painting and colouring plaster of Paris is wear & tear a simple process that allows for lots of creative ideas and easy diy projects. Plaster of Paris is wear & tear the mineral gypsum in a dry, powdered form in. Mixed with water the plaster can be formed and shaped using moulds. When dry the plaster hardens wear & tear into the mould's shape and can be sanded, carved and painted wear & tear.

Gypsum is a crystalline mineral of hydrated calcium sulphate wear & tear (chemical formula $CaSO4 \cdot 2H2O$). Gypsum is colorless or white, is not highly water-soluble and is not at all hard. A little mixture of gypsum and water can be poured the gypsum hardens as the water evaporates wear & tear. In art gypsum is wear & tear mainly used in the partly dehydrated form of plaster of Paris ($2CaSO4 * H2O$) to making casts of objects or works of art in sculptures. (Moulds). The process entails making a negative form, of a sculpture, for istance, which is then coated with plaster of Paris. Plaster of Paris models of sculpture were widespread in antiquity wear & tear and the practice was revived in the Renaissance. From the late 17th century plaster of Paris casts were make for art academy study and model collections (plaster cast collections), which were taken up by museums wear & tear and art historical and other institutes in the nineteen century.

Plaster of Paris is also known as Gypsum Plaster (CaSO4·1/2H2O) or (2CaSO4·H2O)

1. Chemically it is called as "Calcium sulfate hemihydrate"
2. Is a white powdery slightly hydrated calcium sulfate.
3. It is produced by heating Gypsum { Ca SO4 · 2 H2O } to about 305 °F (155°C)

$CaSO4 \cdot 2H2O$ + *heat* □ $CaSO4 \cdot 0.5H2O$ + 1.5H2O (Heat released as form of steam)
There are various uses of Plaster of Paris given below:

- It is also **used** in medicine to make to plaster casts to immobilize broken bones while they heal, though to some orthopedic casts are made of fiberglass to or thermoplastics.
- It is commonly **used** to precast and to hold parts of ornamental plaster work placed on to ceilings and cornices in building construction.
- Outside of Paris in France hence its to name. Whenever gypsum is heated to about 150°C it loss water and produces the powder, to plaster of Paris.
- Gypsum =heat=> Plaster of Paris + steam.
- $2CaSO4 \cdot 2H2O$ =heat=> $2CaSO4 \cdot ½H2O + 3H2O$.
- When ever water is added to the plaster of Paris to powder it rehydrates and quickly hardens.
- Plaster of Paris + water ==> Gypsum.
- $2CaSO4 \cdot ½H2O + 3H2O$ ==> $2CaSO4 \cdot 2H2O$ + heat

Plaster of Paris can be used for casts to hold broken limbs in place, modeling casts, sculptures and in plasterboard walls and ceilings, commonly called Gyros.

What is fly ash? Pulverized coal ash (PCA) is one of the major residues generated during the combustion of coal in thermal power plants. Though PCA is a waste product for the power sectors it is used as a raw materials primarily, in construction. PCA is generally **classified into three types** depending upon its particle size and zone of collection.

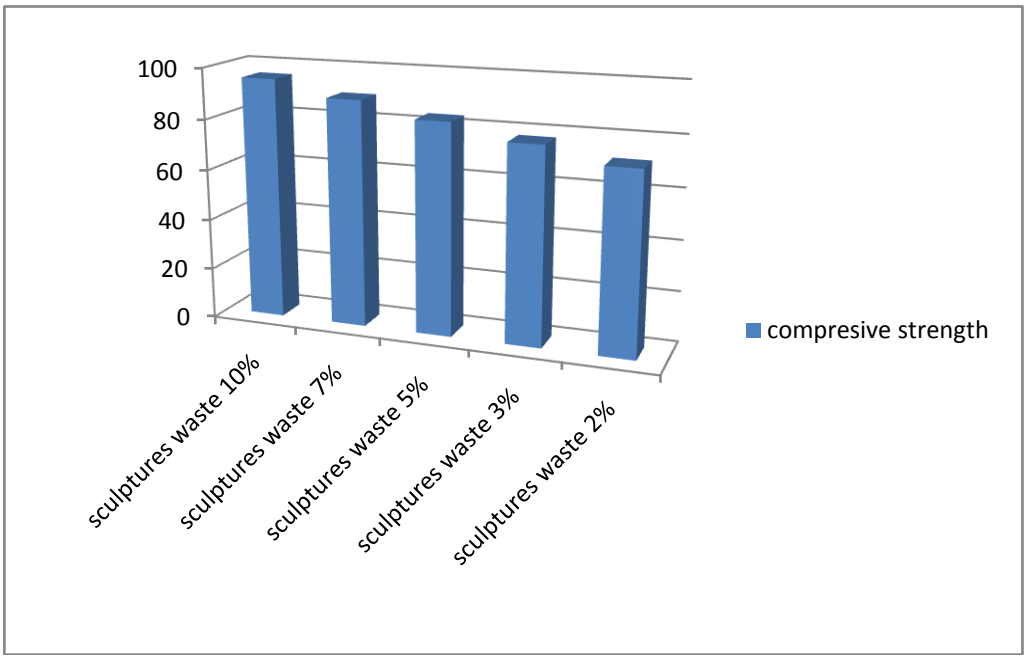
'FLY ASH' is the very extremely & commonly fine ash 'flying' along with flue gases is trapped in electro-static precipitators (ESP) and is collected. The relatively field coarser ash generated at the bottom of the boilers is mixed with water, made into slurry and pumped into fill sites called 'ash ponds'.

EXPERIMENTAL RESULT & DISCUSSION:

Compressive strength test is carried out by using various propotions of e-waste or sculptures material for manufacturing of fly ash brick the result are given below in the table.

PROPOTION OF MATERIAL WHEN GYPSUM IS REPLACED BY SCULPTURES WASTE.

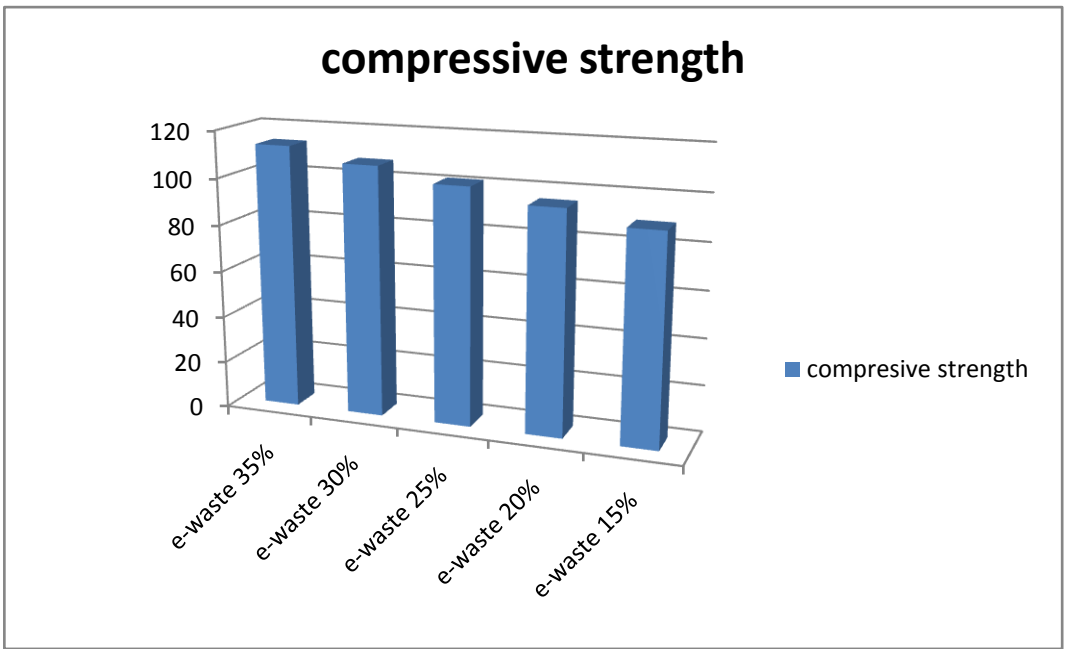
Sr. No.	Fly ash	Stone dust	lime	Sculptures waste	Load in kn	Compressive strength in kg/cm^2
1	55%	15%	20%	10%	160	95.41
2	58%	20%	15%	7%	150	89.44
3	60%	22%	13%	5%	140	83.48
4	57%	30%	10%	3%	130	77.52
5	61%	32%	5%	2%	120	71.55



PROPOTION OF MATERIAL WHEN STONE DUST IS REPLACED BY E-WASTE.

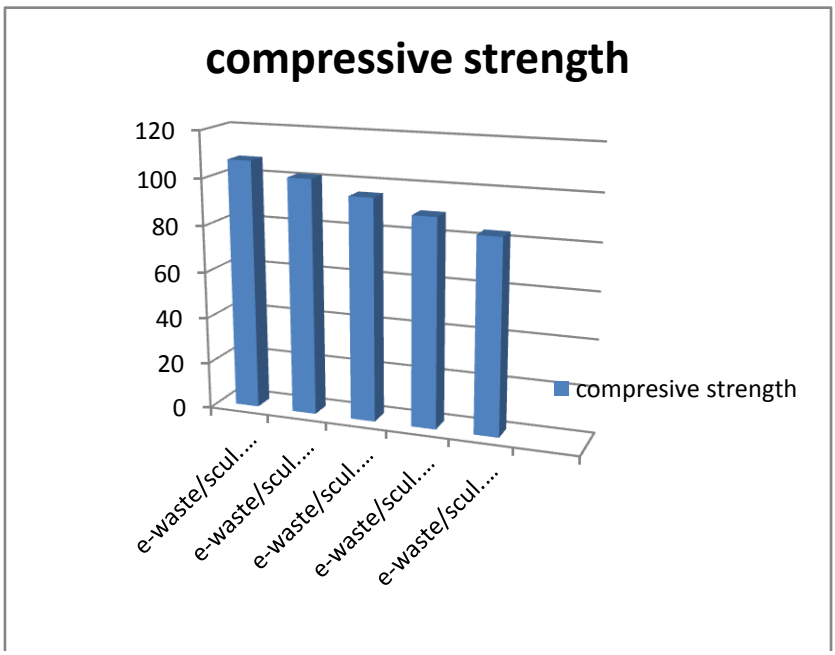
Sr. No.	Fly ash	e-waste	lime	Gypsum	Load in kn	Compressive strength in kg/cm^2
1	38%	35%	18%	9%	190	113.30
2	48%	30%	15%	7%	180	107.33

3	58%	25%	12%	5%	170	101.37
4	68%	20%	9%	3%	160	95.41
5	77%	15%	6%	2%	150	89.44



PROPOTION OF MATERIAL WHEN STONE DUST IS REPLACED BY E-WASTE & GYPSUM IS REPLACED BY SCULPTURES WASTE.

Sr. No.	Fly ash	e-waste	lime	Sculptures waste	Load in kn	Compressive strength in kg/cm^2
1	36%	30%	22%	12%	180	107.33
2	47%	26%	18%	9%	170	101.37
3	57%	22%	15%	6%	160	95.41
4	66%	18%	12%	4%	150	89.44
5	74%	15%	9%	2%	140	83.48



CANCLUSION & FUTURE WORK:

As per the result of above table compressive strength of fly ash brick is increased by using e-waste material by replacing stone dust is 113.30kg/cm^2. It is also a good quality of brick. By above table compressive strength of fly ash brick is also increased by using combination of both waste material like e-waste or sculptures waste of river & pond is 107.33 kg/cm^2 .

SCOPE OF THE PRESENT STUDY-

1. The research work we also have a healthy and long life aquatic wildlife will be able to them.
2. By millions of people in our country who work to make the statue of plaster of Paris is. They will not be unemployed. By any government policy due to this research work which is able to minimize the water pollution.
3. An artist and sculptor always will get the true value of his labor.
4. Construction Industries will build a new thrust by this research work.
5. In order to use the above research work can also be used in the future for any other task is.
6. All the religious people of India for their religious beliefs without any disturbance they will always follow them.

By this researching a system and in the life cycle of aquatic wildlife will help to reduce side effects on those. With the help of the above research, we will help to build construction Industries reach a new height. The above research work having a positive impact on the people's religious functions. We use e marshalling Digital India to their participation in the campaign will help.
And all this for our country, and human civilization would be very effective.
That is my hope and my faith.

REFRENCES:

[1]. Dhaval m. vaviya “comparing clay bricks nomograms with fly ash bricks” PG-Construction Engineering & Management student, B.V.M. Engineering college, Gujarat Technological University, Vallabh Vidhayanagar.
[2]. Dr. Akshaya Kumar Sabat “A study of nalco fly ash on compressive strength for effective use in high volume mass concrete for a sustainable development” kiit university,bhubaneswar-751024,Orissa
[3]. Tabin Rushad “Experimental studies on lime-soil-fly ash bricks” ph d scholar, department of civil engineering, motilal Nehru national institute of technology, Allahabad.
[4]. Jayeshkumr Pitroda “Comparative Study on Rice Husk Shell in Fly Ash Bricks” Assistant Professor of Civil Engineering Department Birla Vishvakarma Mahavidyalaya Engineering.