

THE STUDY OF DEMOLITED MATERIAL IN CIVIL CONSTRUCTION AT AMBERPET AREA, HYDERABAD, TELANGANA

CH.SWETHAMBER

Asst prof

Mahaveer institute of science and
technology
swetham.cheruku@gmail.com

G PRABHAKAR

Assoc prof

UCS saifabad Hyderabad

ABSTRACT

Most waste materials are generated by urbanization and rapid construction. This waste causes huge financial loss to builders and contractors. Waste material causes effects over, health and the general environment. Wastage and demolished materials in India biggest problem for getting place and to manage that waste material in residential area .The main objective of this work to control demolished waste material and reuse the constructive data collection technique. We are presenting literature survey on demolished material and waste construction material Comparison of demolition and newly construction materials hold be done .This research paper reveals information that demolished material also have strength .They can use in roads and pavements .We have collected demolished material from Amber pet ,Hyderabad area .We have tested demolished material in concrete technology lab of Mahaveer Institute of science and technology, Chandrayangutta, Hyderabad,Telanagana. We have tested demolished material by various tests i.e compressive strength of the bricks, Absorption test on the bricks ,crushing strength, Hardness test on bricks, Impact test of aggregates and water absorption .This research paper gives result analysis of comparing strengths of demolished material and newly constructed building material

Key words: demolished material, strength of bricks, demolished construction materials

INTRODUCTION

The building or construction industry involves different processes and utilizes huge quantities of resources. According to hoarsely (2003) demolished waste processes impacts on environment Processing of raw materials will achieve more

during the construction process, Mostly wastage material or demolished material will occur during the construction process a large quantity of wastage material or demolished material occurs due to the construction activities. According to environmental survey most of the pollutants occurs in the atmosphere created by demolished material and wastage material. In India vast population is there most of the environmental problems, health diseases or lung diseases created by dust present in the atmosphere. This all environmental related problems are occurred by mostly wastage material placed in the dump yard. In some developed countries government has giving surplus funds to do on environmental issues. And all countries are concentrating on environment related projects which are directly related to construction waste management. So all countries mostly wastage material are using to recycle in the construction field.

This methods are identified by the ‘ Rethinking 121 Construction’ task force in the UK(DETR,2000).DETR identifies 13million tones of the estimated 70 million tones demolished materials are keeping unused

RESEARCH METHODOLOGY

The research methodology which refers to reduce, recycle, and replace, reuse, particularly in the context of production and consumption, For producing demolished materials into recycle use we have to follow some procedures Some resources and energy.



Concept of 4r management:

This can be applied to services and products - starting from design, raw material extraction, transportation, demolition, manufacture and disposal. "4R" can be expressed as throughout storage, material ought to be held on higher than soil level and guarded from the tough climate to forestall the fabric from soil and the harm. Waste and fabric loss occurred owing to improper material management and administration. Material management and management will become a lot of difficult in larger comes. Contractors got the

Absorption Test on Bricks

Studies reveal that about 500 gallons of water preserved each year per toilet with just one brick! · Fire pit or brick barbecue is the idea for recycled brick Recycling of bricks Absorption Amount of moisture present in the brick, this can be known by absorption test in this procedure sampled dried bricks are weighed, after weighing these bricks should be immersed a period of 24 hours. After this procedure dry and wet brick should be differentiated good quality brick should not exceed 20% of weight. Water absorption test done on demoted bricks which give result of 18% weight and newly constructed bricks have result of greater than 20% of weight.



Recycled bricks

element and material that are needed on web site. Once the fabric found out web site those material and element got to be blank pass around, being hold on. The aim is to minimize loss of fabric and thieving.

APPLICATIONS OF RECYCLED BRICK

Recycled bricks have as much use as the virgin material. The key uses are as follows:

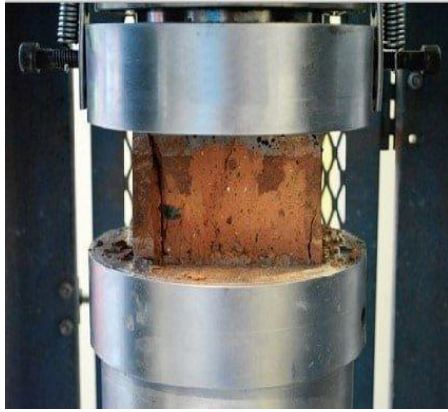
- Recycled or old bricks can be used in old monuments and projects.
- These old bricks can be sold as decorative items, aggregate drainage media or general fill.
- Recycled brick used in home as cistern to displace water.
- The amount of the water used to flush in toilet can be reduced by brick.



Water absorption test

Compressive Strength Test on Bricks

The compressive strength procedure is to place brick in machine. After applying the load If the brick breaks immediately we have to note the value of the failure brick. And crushing strength value should be noted. Brick crushing strength value minimum is 3.50 N/mm² if it is less than this value there is no use of that brick in construction. Here in our Mahaveer institute of technology concrete technology lab we tested compressive test on demolited brick and new brick we got result compression of demolited brick is 6.75 N/mm² and new brick result is 10.2 N/mm².



compression test

WATER ABSORPTION TEST

This test helps to determine the water absorption of coarse aggregates as per IS: 2386 (Part III) – 1963. For this test a sample not less than 2000g should be used. The apparatus used for this test are:-Wire basket – perforated, electroplated or plastic coated with wire hangers for suspending it from the balance, Water-tight container for suspending the basket, Dry soft absorbent cloth – 75cm x 45cm (2 nos.), Shallow tray of minimum 650 sq.cm area, Air-tight container of a capacity similar to the basket and water absorption test of aggregate



aggregate characteristics

The crushing characteristics of hardened concrete are similar to those of natural rock and are not significantly affected by the grade or quality of the original concrete. Recycled concrete aggregates produced from all but the poorest quality original concrete can be expected to pass the same tests required of conventional aggregates.

here recycled aggregates are brought from amberpet area ,this demolished recycled aggregates are tested under water absorption test .here demolished recycled aggregates result is 16% of wt and newly constructed material have result of 20% of wt.

PROPERTIES OF STEEL: It is mix of carbon and iron, other elements. Steel has low cost high tensile strength

It is used in construction of buildings automobiles' appliances and weapons.

Chemical composition

C=0.45%, MN=0.75% P=0.04% MAX, S=0.05%

MAX density: $7.872 \times 10^3 \text{ kg/m}^3$

Modulus of Elasticity: 201GPa

Electrical Resistivity: 1.62×10^7



Universal Testing Machine

Tensile test

the material will react to forces by applying tension. If the material is pulled, we can find strength of material how much it will elongate.

We have checked here demolished steel under tensile test on new steel.

Already used steel have got result of tensile test 37.5KN and new steel tested on Universal Testing Machine got the result of 40 KN .

S. N	MATERIAL	TEST NAME	DEMO LITION	NEW BUILDIN
------	----------	-----------	-------------	-------------

O			BUILDING	G
1	BRICKS	(a)WATER ABSORPTION (b)COMPRESSION	(a) 18% of weight (b) 6.75 N/mm ²	(a)<20% of weight (b)10.2 N/mm ²
2	AGGREGATES	(a)WATER ABSORPTION (b)CRUSHING	(a) 16% of weight (b)20%(100KN)	(a) <20% of weight (b)30%(100KN)
3	STEEL	TENSILE TEST	(a)37.5 KN	(a)40KN

to Delivering Environmentally responsible comes. CIRIA, London, CIRIA C571

- *Azizi Yahya, Shahrin Hashim, Jamaludin Ramli, Yusof Boon, Abd. Rahim Hamdan (2007). Menuasai Penyelidikan Dalam Pendidikan. PTS delicate*
- *Christini G., Micheal F., Chris H (2004). Environmental Management systems and ISO 14001 Certification for Construction Corporations. Journal of Construction Engineering and Management. 330 - 336*
- *Hired Institute of Building (CIOB) (1989). Project Management in Building. Hired Institute of Building*
- *Leased Institute of Building (CIOB) (1989). decide to Reducing Building Waste. UK: hired Institute of Building.*

CONCLUSION

Our research paper gives information that demolished materials have less strength than newly constructed material. So we can use demolished materials in the civil construction.

For getting these results we have done water absorption, compression test on bricks.

And also we have done test on aggregates and steel.

We got results of demolition building which we can use these recycled process materials in construction.

So this research paper reveals how we can recycle and reuse demolished materials in civil construction industry.

REFERENCES

- *Abd. Majid, M. Z. and McCafer R. (1997), Discussion of Assessment of labor Performance of Maintenance Contractors in Asian nation. Journal of Management in Engineering, ASCE. Vol. 13, No. 5, pp91*
- *Addis, B. Talbot, R (2002). property Construction procural : A Guide*