

02 Days, 5th International Conference on Recent Trends In Engineering, Science & Management

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COMPRESSIVE STRENGTH OF CONCRETE BINDERDED WITH TEXTILE FIBRE WASTE AND WASTE PLASTER OF PARIS

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ABSTRACT

Now a day construction material made with new innovation ideas and concept .so when we study about any work then study about recycle and reuse is necessary .Plaster of paris waste may come from industry and river in the form solid or clay. The global textile fiber production, consumption of textiles and amounts of textile waste are constantly growing.The aim of this paper is a contribution to environmental protection and the demonstration of an opportunity to recycle Plaster of paris waste and textile waste.The reuse of waste materials can contribute to improve the strength of materials They were binderded with the minimum waste textile waste in order to reduce its environmental impact in comparison to other boards, while preserving its mechanical and physical requirements for the purpose.

This shows the results of a study of the economical and eco-friendly material for increasing strength of concrete block .Textile fiber waste use 0% to 2% by weight of cement and also use waste plaster of paris 10%-20% by weight of cement. In the performed tests and examinations the characteristic properties of concrete block such as Determination of Net Area and/or Voids , Density, Moisture Content Compressive Strength , water Absorption.

Key Word: Waste, Plaster Of Paris, Textile Fibre ,Reuse ,Strength.

I INTRODUCTION

In recent years, critical issues concerning environmental damage caused by various productive sectors were the discharged of waste materials directly into ecosystems without adequate treatment Accumulation of unmanaged wastes especially in developing countries has resulted in an increase environmental concern. Recycling of such wastes as building materials appears to be viable solution not only to such pollution problem but also to the problem of economical design of buildings. Taking into account that the construction sector carries out a high

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consumption of resources such as materials, energy, and water, it is imperative the use of more sustainable construction solutions. Textile waste integrates the group of reusable materials that can be included in the building construction and which have different possibilities of application. These textile wastes may have origin in the textile industry or may simply result from clothes that are no longer used .

The study of the performance of these types of wastes in the construction should be partly based on the behavior of the tissues when they are used as clothing. Different textiles fibers are analyzed as a material to produce lightweight concrete, as reinforcement of cement mortar

“Plaster of Paris” or Gypsum powder is basically a sedimentary rock, which settled through the evaporation of sea water trapped in lagoons. Plaster of Paris is a type of plaster which can be used in art, architecture, fireproofing, and medical applications. Plaster can also be used to make molds which will be very dependable while withstanding high temperatures. We all know that pop cannot dissolve in water and ultimately we ignore the harmful water pollution and its dangerous side effect on us. So to avoid the pollution by wastage pop, we have to divert wastage pop in some beneficial use. The study of different paper for recycling of textile waste and pop waste. The properties of material we can use with composition of material. there for it will be become easy and economical.

1.1 PLASTER OF PARIS

Advantages

1. It is light in weight and more durable.
2. It has low thermal conductivity.
3. It is very good fire resistant and hence a very good heat insulating material.
4. It does not shrink while setting. Therefore, it does not develop cracks on heating or setting.
5. It forms a thick surface to resist normal knocks after

Disadvantages

1. Gypsum plaster is not suitable for exterior finish as it is slightly soluble in water.
2. It is more expensive than cement or cement lime plaster.
3. It cannot be used in moist situations.
4. Skilled labour is required for precise application and thus labour cost for applying plaster of Paris is high.

1.3 TEXTILE FIBRE

Advantages

Cotton can be processed into a wide selection of fabrics. Among the sheer fabrics are cambric, batiste, chiffon, lawn, organdy and voile. Medium weight cottons include broadcloth, drill, flannel, poplin, terry cloth and long cloth. The heavy weight cottons include brocade, corduroy, denim, pique, and velveteen.

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- Cotton can be mercerized to improve luster, absorbency, dye-ability and strength.
- Textured effects are easily achieved either by yarn structure (high twist yarns, nub yarns, boucle yarns, and crimped yarns), fabric construction (crepes, seersuckers) or application of special finishes (embossing, napping).
- Cotton fabrics can be easily dyed or printed with almost all the classes of dyes (except acid and disperse). Pigment printing can be done with the help of a binder. Acid and basic dyes are not used on cotton, since cotton has no affinity for these dyes.
- Cotton is absorbent, does not build up static electricity and is a good conductor of heat and hence is very comfortable to wear.
- The wear-life of cottons is excellent since the fibre is strong.
- Fabrics are easy to launder. They can also be dry-cleaned.
- Various treatments like water repellent finishes, fire retardant and mildew resistant finishes can be given to cottons.

Disadvantages

- Untreated cotton wrinkles easily.
- Cotton is susceptible to mildew if left damp.
- Cotton is flammable.
- Fabrics take a long time to dry.

II LITERATURE SURVEY

S.M.CORREA(2005)-:From this research paper we known about waste lime utilization produced from the industry.To produce a new raw material for the production of concrete . to check the compressive strength of concrete block, and from the lime powder waste(LPW) to create mould (2x2cm)for water absorption test. and also check physico chemical strengthening of the material.

Paki Turgut (2007)-: The main aim of this paper is the combination of two waste material such as cotton waste(C W) and lime powder waste (LPW) to create or manufacture brick . From this result are found light weight brick, ceiling pannels and sound barrier pannels etc .The tests are conducted i.e compressive strength ,flexural strength ,ultrasonic pulse velocity test and water absorption test.

David Nascimento(2012) :- from this paper we know following things .By using woven textile waste they control the temperature or thermal insulation in building .They prepared a wall having size 1.6x1.20x0.42m. (width ,height ,thickness). The component of that wall is (a) 1cm cement based coating mortar .(b)20cm cement based brick masonry wall .(c) 1cm cement mortar. (d)6cm air box.(e) 11 cm ceramic brick masonry wall and (f) 25cm cement concrete mortar and the air box completely filled with W.F.W.(woven fabric /textile waste).

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Ms.Laxmi Chaudhary (2013)-: In this paper broadly studied about the plaster of paris .to minimize the ceiling problem such as cracks by using POP and textile waste . They prepare a pannel from textile waste and plaster of paris waste and to obtained results i.e. 1-dimentional stability ,2-moisture resistance ,3-higher strength ,4-fire resistance,5-chemical resistance 6-electrical properties and thermal conductivity etc.

Michal F.petrou(2013):- This paper represents the recycle of waste lime powder as a asphalt concrete production process. They prepare 6 cubes such as(50x50x50mm) in size each. and 15 standard cubes of (100x100x100mm)and9 standard cylindrical mould of dia.100mm and height 200mm.To determine the compressive strength of 7 days and 28 days.

Ronaldo L.S.Izzo(2015):- In this Paper material obtained from construction material and demolition debris and lime production wasre . they checks the phymical and chemical characteristics of the waste lime and mechanical also. To study about the chemical, mineralogy composition of initial component and final products also axial resistance strength ,waste resistance and water absorption etc. Extra studies about growth after adding of calcium carbonate and carbonate of magnesium .

olatzPombo(2016)-: In this paper the textile waste reused with lime for imparting strength and sustainabilty in between them. The use of textile waste sludge had been partially replaced with cement as well as ash coming from industry is utilisd for fire brick ,wall and ceiling pannels. and then use of cotton waste into concrete blocks The mould is prepared by using lime paste and textile waste having their size 240x240x30 mm for conductivity.

III CONCLUSION

Now-a- days the major problem of textile waste and plaster of paris waste , the solution is summarized in this paper . The researcher reaserch is carried out over textile waste and plaster of paris waste individually . But dominant role is the effective reaserch is required over the plaster of paris waste and textile waste with proper combination. The effect of combination of these two material to improve the sustainability of material.

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