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# Experimental Study on Wall Panel by Using Various Waste

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**Abstract: -**

300 billion tones sugar cane waste are arrived in India.The initial setting time of cement paste was 3.42 hours longest at 20 % sugarcane ash content. Cement manufacturing industry is one of the major source of $CO_2$emission resulting in global warming in order to reduce these effects on environment there is need for substitution of other waste material having same major constituents in this paper cement has been replace by sugar cane waste ash in the range 20% by weight for M-20 grade concrete and the compressive strength is calculated while waste minimization refers to reducing the volume (or) toxicity of hazardous wastes by waterrecyclingandreuse.InIndia9.46billiontonesplasticwastea rearrived 0.027 m³ wall panel as made up of by using 450 g plastic waste. All over India civil engineer can produce this type of wall panel huge amount of plastic waste can be reduced. In India produce 280 metric tons' coconut fiber per year 0.027 m³ wall panel made up of by using 20 g coconut fiber.

Key Words: Plastic waste , Sugarcane waste, coconut fiber , Waste management.

## I. INTRODUCTION

Due to the heat emitting materials Every year heat of global will increase. Among that, cement concrete is an heat emitting material in the form of $CO^2$ in these conditions ordinary concrete may fail to prevent the heat emission. In that cases, to modify the properties of ordinaryconcrete by using admixture so as to make it more suitable for any situation. Production of plastics is increasing in Global every year (245) million metric tons in (2008)and the amount of plastic litter that is finding its way into the environment andincreasing, into the ocean also especially in the areas of the world where waste management practices are not keeping up with the rapid development. The increase in population has resulted in a significant rise in the quantity of plastic waste. This project in particular deals with the possibility of using the fine or coarse aggregate in concrete. Specific gravity, fineness, setting time, tests are carried on cement etc., tests on coarse and fine aggregates like sieve analysis, fineness modulus, specific gravity, etc. are performed. Mix design using IS Code method is done and cubes are cast for M20 grade concrete with and without plastics and tests on concrete like slump, cube tests are performed to understand their behavior and usefulness as replacement. The standard compressive strength of concrete are tested and compared with the results of standard specimen. In the recent years the utilization of by-products in the production of concrete has gained considerable interest among concrete technologists.

**Sugarcane waste:**

Like sugar cane bagasse ash is most common type of by-product mineral admixture. That is usually incorporated into concrete mixes to produce concrete with special properties. Usually cement, fine aggregate, coarse aggregate and water used in conventional concrete. The cost of the construction materials like cement is increasing spirally hence they can be reduced to sugar cane bagasse ash, which areeasily available industrial wastes at low cost. For selection of water cementratio as not much of literature is available for the aspect of utilization. Trialand error procedure has been adopted

**Plasticwaste(chips):**

Plastic associate's products based have been considered as the world most consumer packaging solution. However, exponential increase of plastic derived waste led to substantialquantities of plastic consumption. Recycling of plastic waste as value added product such as concrete appears as one of promising solution for alternative use of plastic waste. This paper summarized recent progress on the development of concrete mixture which incorporates aggregate are replaced as partial byplastic wastesfor during concretemanufacturing.

**Cement:**

OPC 53 grade cement was used for this experiment (Ramco Cement Company) which is widely used in the construction industries. The chemical properties of cement are shown in Table. which is given by the supplier.

**Coconut fiber:**

Compared to other typical natural fibers, coconut fiber has higher lignin and lower cellulose and hemicelluloses, together with its high micro febrile angle, offers various valuable properties, such as resilience, strength, and damping, wear, resistance to weathering, and high elongation at break. Ropes, mats, mattresses, brushes, are made by using coir fiber in the upholstery industry, agriculture, construction, etc. Advantages of coconut fiber are agro-renewability, biodegradability and a good blend of strength, length, extensibility, moisture regain,andhigh durability or resistance against sunlight, saline water, microbes, etc.

| S.No. | Property | Value |
|---|---|---|
| 1 | Normal consistency | 31% |
| 2 | Initial setting time (min) | 70 |
| 3 | Final setting time (min) | 630 |
| 4 | Specific gravity | 3.12 |

***Materials Used;***

In this investigation, the following materials were used:

- Ordinary Portland Cement of 53 Grade cement conforming toIS:169-1989
- Fine aggregate and Coarse aggregate conforming to IS:2386-1963
- Water
- Plasticwaste
- Sugarcanewaste
- Coconutfibre

**Casting and Curing of Concrete:**

Concrete are casted according to the mix proportions. The workability characteristics of mix were determined by the slump test, flow table test and

compaction factor test. These tests are in accordance with relevant Indian standards. The weigh batched materials are hand mixed in pans separately for

concrete.

## III.RESULTS AND DISCUSSION

A mix must be workable enough to fill the form spaces completely, with the assistance of a reasonable amount of shoveling, spading, and vibrating. Since a fluid or runny mix does this more readily than a dry or stiff mix, one can see that workability varies directly with fluidity. The weigh batched materials are hand mixed in pans separately for preparing the conventional concrete and biases ash concrete. The workability characteristics of mix were determined by the slump test, flow table test and compaction factor test. These tests are in accordance with relevant Indianstandards.

**Compressive Strength Testfor Cube:**

As per IS 516:1959 Compression test was carried out on the three samples in each proportion were tested and the strength was obtained as an average. The individual variation of specimens was not more than ±15 percent of the average. The specimens stored in water were tested immediately on the removal from grid were wiped off

| Description | Day | Load (KN) | Strength ($N/mm^2$) | Strength Mean Value ($N/mm^2$) |
|---|---|---|---|---|
| Cement + Sugarcane waste (1%) + plastic waste ( 1%) | 7 | 350 | 13.5 | 14.0 |
| | 7 | 380 | 13.9 | |
| | 7 | 400 | 14.1 | |
| | 28 | 600 | 23.8 | 28.0 |
| | 28 | 740 | 26.2 | |
| | 28 | 680 | 28.3 | |

the specimens and any projecting pins removed. The dimensions of the specimens were recorded before testing.

**$f_c$ = P/A N/mm$^2$**

Where,

P = Load at which the specimen fails in N.

A= Load Carried Area in mm$^2$

F=Compressive stress in N/mm$^2$

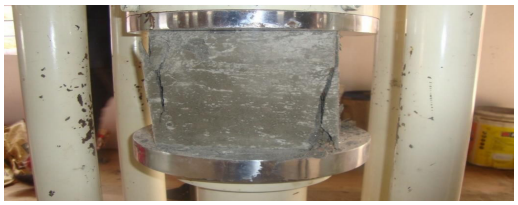
**Compressive strength of cube:**

Replacement of plastic waste and sugarcane waste 1% , 2% , 3% .

***Size of cube:*** **150x150x150 mm.**

**Compressive Strength Tests:**

The compressive strength of the concrete cubes with Bagasse ash of various proportions is found at the 7 and 28$^{th}$day from the day of curing.



In this project, we have implemented an organization-oriented recruitment system that would assist the human resource department in short listing the right candidate for a specific job profile and also shortlist the employee of the year. The system would be used in many business sectors that will require expert candidates, thus reducing the workload of the human resource department.
Failure: Network Fail.

## II. CONCLUSION

Fromthis project maximum strength was achieved at a Sugarcane waste (1%), plastic waste (1%), coconut fiber (20gm) replacement of concretematerials.
Replacement of Sugarcane waste (1%) + plastic waste ( 1%) + coconut fiber (20gm) concrete cube attained the maximum strength of 28.0 N/mm$^2$ at28Days.Replacement of Sugarcane waste (2%) + plastic waste ( 2%) + coconut fiber (20gm) concrete cube attained the maximum strength of 22.0 N/mm$^2$ at 28 Days. Replacement of Sugarcane waste (3%) + plastic waste ( 3%) + coconut fiber (20gm) concrete cube attained the maximum strength of 21.0 N/mm$^2$ at 28 Days.

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