

A REVIEW ON GLASS AND PLASTIC CONCRETE

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ABSTRACT—

This review paper shows that the exploration of waste increases day by day in the recent years and is not recycled as per the need of environment. Recycling of waste consumes lot of energy and control the environment pollution. In these recent years, managing the waste which is cause a lot of environmental issues is one of the critical problems faced by the world now. This waste mainly includes glass and plastic waste. Once they have all been utilized, they are difficult to dispose of. The use of such waste in the manufacturing of concrete has emerged as a fantastic method for managing them. These wastes can be utilized as a partial replaced or complete replacement of certain ingredients like fine & coarse aggregates on the concrete. Recycling these waste materials for use in concrete not only improves solid waste management but also preserves natural resources. The utilization of waste materials as resources during the manufacturing of concrete.

KEYWORDS— Lightweight concrete, Glass, and Plastic waste

I. INTRODUCTION

This type of lightweight concrete is also known as aerated or foamed concrete, since it is developed by introducing large voids into the mortar mass or concrete.

As the population increases, the waste also increases at a faster rate. This waste can be degradable and non-degradable materials. Non- biodegradable material remains for long years due to non- decomposition matters, causing a problem of disposal. Hence utilizing the waste as an ingredient of concrete has reduced the load on natural source of the ingredients of concrete, such as aggregates and sand to a reasonable percentage. In this present scenario, Concrete is the second-last material consumed globally in the construction industry and is preferred in almost all civil engineering projects.

This paper shows that plastic as substitute of fine aggregate. It found reduction in strength of concrete but support the use of plastic in nonstructural concrete for the reason it shows the higher workability and reduce environmental issues and glass as substitute of cement.

II. MATERIALS

Now a days, the cost of materials used in the construction is growing higher day by day. In our country, the price of cement goes very high from Rs. 200 to Rs. 300 and the exploration of the river sand's is banned due to shortage of natural resource because of many environmental hazards.

Plastic waste:

It is the accumulation of plastic objects i.e., plastic bottles and plastic bags etc., Plastic has a very low biodegradability nature. As a result, it can stay in the earth's crust for thousands of years,

Increasing gradually until it is stored in large quantities, posing a disposal problem that pollutes the land and water and makes it difficult to decompose nonrecyclable thin plastic waste globally. Around 15% of all plastic garbage remains today.

Stages of acquiring plastic bags:



Fig-1: stages of plastic waste

Many surveys states that a substantial number of studies have been conducted on the utilization of plastic as aggregates in concrete.

Glass waste:

It is used in the partial replacement of cement in the mortar or concrete. When grinded to a powder, glass becomes the one of natural pozzolans that improves concrete's fresh and hardened properties. While concrete is in its plastic state, glass powder will increase its workability, so it requires less energy, cost, and time to place and consolidate the concrete.

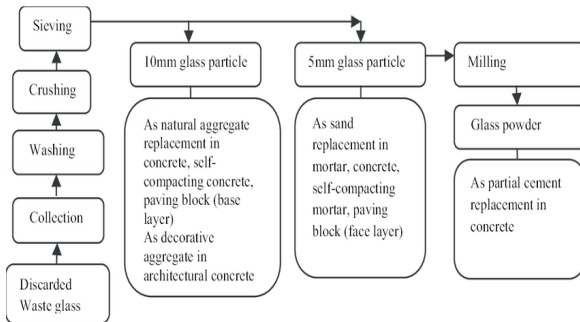


Fig-2: stages of glass waste

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III. CONCLUSION:

1. Utilizing the plastic and glass waste as a partial replacement of fine aggregate and cement in concrete may lower down the need of original ingredients of cement concrete. In addition, it provides the way to handle the environmental wastes.
2. By using the natural resources such as glass and plastic, we can easily control the environmental issues.

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