Plastic in Concrete- A Review

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Abstract— Today Environmental challenge is to dispose of waste plastic. The use of plastic has been increased day by day at all levels in the industry as well as domestic level. This waste plastic remains in environment for 1000 years and are not biodegradable and that's why its quantity is getting accumulated each year. The present work, the concrete is made by adding waste plastic in shredded form. As per mix design concrete is prepared by addition of varying quantity of shredded plastic. All the materials like cement, sand, coarse aggregate and plastic is taken as per IS code. Finally concrete is tested for 7 days, 14 days and 28 days. The results of compressive strength of concrete with different percentage of plastic are compared.

Keywords: Non-Biodegradable, Plastic, Concrete

I. INTRODUCTION

Concrete is the proportionate homogenous mixture of cement, fine aggregate, coarse aggregate and water with or without admixtures. Concrete is one of the oldest and mostly used construction materials in the worlds, because of low cost, high strength, durability and ability to sustain extreme weather conditions. It is prepare by mixing of various material like aggregates, sand and water etc which are available economically. Concrete is incomparable among major construction materials as it is designed specifically for choosy civil engineering projects. It is a composite material composed of granular materials like coarse aggregates, sand and cement embedded in a matrix and bound together with cement or binder which fills the space between the particles and glues them together.

Among various waste parts, plastic waste merits extraordinary consideration on record decay able material which is drawing attention of everybody. When we go through the information about plastic waste produce in India in a month then various records are available. Plastic can be used in the concrete in shredded form to replace some amount of natural aggregate to reduce the use of natural materials. Use of plastic in the concrete reduces the pollution in the environment. It reduces the consumption of natural resources in the construction industry which is very harmful for the environment. It produces light weight and low cost concrete.

II. MATERIALS USED

- Cement.
- Sand.
- Coarse aggregate.
- Plastic bottles (In shredded form).
- Water.

III. METHODOLOGY

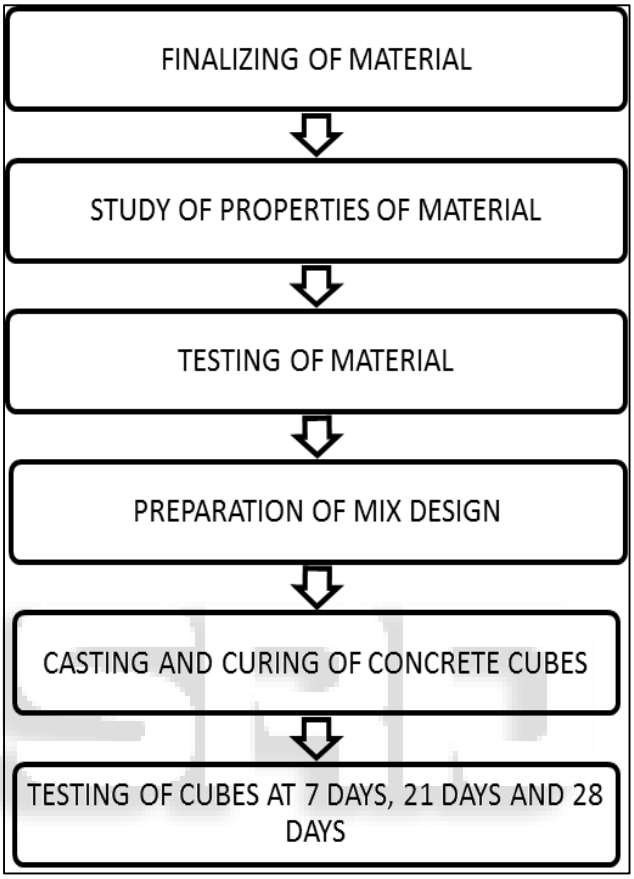

Fig. 1: Methodology chart

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