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Light Transmitting Concrete using Eco Friendly materials (Waste materials)

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Abstract : Concrete is a composite material composed of fine and coarse aggregate bonded together with fluid cement that hardens over time. Now days mostly the construction researchers have been trying to improve the quality and reduced dead weight of the structure and enhance its performance. In this current situation there is a demand in natural sand so engineers are using manufactured sand. The aim of our project is to reduce the dead weight of the structure as well increase the strength of the concrete. So we developed light weight aggregate and sand by using waste plastic and glass materials. We developed a concrete by using crushed glass bottles and melted plastic which is considered as light weight concrete. Glass is an ideal material for recycling use of recycled glass helps in energy saving. This indicate that glass can be effectively used as a fine aggregate replacement without substantial change in strength and also we used aluminum metal powder for reducing the member weight by introduced air in concrete. For the innovative and aesthetic purpose we made the concrete to glow using plastic optical fiber which acts as a transmitting agent which also called as translucent concrete in which the optical fiber is inserted in parallel way. We used epoxy to harden the optical fiber (0.75mm) and M20 grade concrete.

Keywords : Fine glass-waste plastic aggregates-epoxy-optical fiber ,aluminum metal powder.

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