

A STUDY OF LIGHTWEIGHT CONCRETE MADE WITH STYROFOAM

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ABSTRACT

Now days, the population growth is increasing significantly and the amount of waste materials are also increasing at the same time. Among a lot of waste materials, Styrofoam is widely used in food and manufacturing production equipment's as packaging materials because of its properties of absorbing vibration during handling and transportation process. Thus, Styrofoam can estimate as one of the waste materials that can lead to waste disposal crisis. Having light and buoyant properties, it is used as coarse aggregates in today's construction sites of today.

The title of the project is "A Study of Lightweight Concrete Made with Styrofoam" and Styrofoam is used as a replacement of coarse aggregates in this project. 48 cubes and 4 beams of normal concrete, lightweight concrete with Styrofoam, lightweight concrete with Styrofoam with addition of super plasticizer and lightweight concrete with Styrofoam with lime in replacement of cement are prepared and compared the compressive strength on 7th, 14th, 21st, and 28th days and flexural strength on 7th days and water absorption on 28th days. Another 6 cubes are made to use as samples to show in poster presentation. So, 54 cubes and 4 beams in total are prepared for this project.

From this research, it is found that adding Styrofoam can lead the decrease in strength of concrete but can give the buoyant lightweight concrete which is a common use in construction site in different places depending on the density and strength of lightweight concrete.