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An Experimental Study on Strength of Rubberized Concrete with coupling agent surface treatment of crumb rubber

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Abstract :

In solid waste management, accumulated waste tyres have become a problem of interest because of its non-biodegradable nature. With the increase in the automobile production, huge amounts of waste tyre need to be disposed. Most of the waste tyre rubbers are used as a fuel in many industries such as thermal power plant, cement kilns and brick kilns etc.,. This kind of usage is not environment friendly and requires high cost. So it's become necessary to think about alternates for waste tyre rubber consumption. Waste tyre rubber is a promising material in the construction industry due to its light weight, elasticity, energy absorption, sound and heat insulating properties. But there is a drastic decrease in mechanical properties of concrete with partial replacement of tyre rubbers. This is because there is no proper bond formation between cement paste and Tyre rubber. The tyre rubber particles with coupling agent surface treatment may increase the strength of rubberized concrete. In this study, an attempt has been made to identify the strength and durability of rubberized concrete of M25 grade with and without surface treatment of Crushed tyre rubber. The coupling agent used in this study was Silane for surface treatment of tyre rubbers.