

ABSTRACT

Concrete made with Portland cement has certain characteristics: it is relatively strong in compression but weak in tension and tends to be brittle. The weakness of concrete is that cracks start to form as soon as concrete is placed and before it has properly hardened. These cracks are major cause of weakness in concrete the weakness in tension can be overcome by inclusion of a sufficient volume of certain fibres. Polypropylene is a synthetic hydrocarbon polymer, the fibre of which is made using extrusion processes by hot drawing the material through a die. Its use enables reliable and effective utilization of intrinsic tensile strength of the material along with significant reduction of plastic shrinkage cracking and minimizing of thermal cracking.

This Experimental investigation deals with the effects of addition of various proportions of Polypropylene fibres on the properties of M25 Grade of concrete, which was carried out to explore its effects on compressive strength under curing condition. The main aim is to study the effect of Polypropylene fibre mix by varying content such as 0%, 0.25%, 0.5%, 1% & 1.5% and finding the optimum Polypropylene fibre content. The concrete specimens were tested at different age level for mechanical properties of concrete, namely, cube compressive strength. However, further investigations were highly recommended and should be carried out to understand more mechanical properties of fibre reinforced concrete.

Keywords: Concrete, Compressive Strength, Mechanical Properties of Concrete, Polypropylene Fibres