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Experimental Study on Flexural Behavior of Glass Fibre Mesh on Glass Fibre Reinforced Concrete

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ABSTRACT

It is well known fact that plain concrete is brittle in nature; it has low tensile strength and less ductility. Moreover, plain concrete suffers from cracking due to drying shrinkage and various other causes. It has been found that the use of fibers in plain concrete controls shrinkage cracking to some extent and also improves the tensile properties of concrete. Glass fibers serve the similar purpose with an additional advantage of being used in ornamental concrete This material is alkali resistant and less dense than steel, so the final product known as 'glass fiber reinforced concrete (GFRC)', is lightweight but strong. GFRC is composed of fine sand, cement, water, admixtures (if required) and alkali-resistant (AR) glass fibers in different ratios. In this paper, effect of using glass fibers on strength properties of concrete has been discussed. 8 different GFRC mixes were cast using different percentages of glass fibers by weight of cement at constant mix and water cement ratios. The properties of concrete like workability, compressive strength, tensile strength, flexure strength to be investigated by casting respective concrete samples of standard dimensions in the form of cubes, cylinders and beams. In addition to this, the experimental study on flexural behaviour of Glass fibre mesh in glass fiber reinforced concrete by casting various thickness of slabs with different layers of glass fibre mesh.

Keywords: *AR Glass fibre, Glass fibre mesh, Flexural behavior*