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COMPARISION OF SPLIT TENSILE STRENGTH AND FLEXURAL OF GLASS FIBER REINFORCED CONCRETE WITH CONVENTIONAL CONCRETE

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ABSTRACT

GFRC has advantage of being light weight and thereby reducing the overall cost of construction there by bringing economy in construction. GFRC is concrete that uses glass fibres for reinforcement instead of steel. It is typically cast in a thin section of around ½" to ¾". Since the fibres cannot rust like steel, there is no need for a protective concrete cover thickness to prevent rusting. With the thin, hollow construction of GFRC products, they can weigh a fraction of weight of traditional precast concrete. This paper has compressive, flexural and tensile behaviour of the glass fiber reinforced concrete and aims to contribute to the classification and specification of glass fiber reinforced concrete (GFRC) and to deal with the question if structural glass fiber reinforced concrete as a special kind of glass fiber reinforced concrete is suited for use in load-bearing members. Despite excellent material properties, the use of glass fibers in a concrete matrix is carried out so far only in non-structural elements or as a modification for the prevention of shrinkage cracks. The aim of research is the use of alkali-resistant macro glass fibers as concrete reinforcement in structural elements as an alternative. In the future, structural glass fiber reinforced concrete shall provide a simple and visually appealing alternative to conventional steel bar or steel fiber reinforced concrete. The glass fibers can also be used in combination with conventional reinforcing bars or mat reinforcements. Initial investigations have announced some potential.

KEYWORDS: Glass Fiber, Compressive Strength, Flexural Strength, Split Tensile Strength

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