

A REVIEW OF LIGHTWEIGHT AGGREGATE CONCRETE FIBER REINFORCEMENT

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ABSTRACT

Despite its numerous benefits, lightweight aggregate concrete (LWAC) has not been extensively utilized in the construction industry due to its greater brittleness and poorer mechanical characteristics when compared to normal weight concrete (NWC) at the same compressive strength. Fibers in LWAC have been proven in studies to be an effective option for resolving such issues. This study examines the effects of fiber addition on the characteristics of several kinds of LWAC. Workability, compressive strength, stress–strain behaviour, tensile strength, modulus of elasticity, and compressive and flexural toughness are some of these characteristics. In general, adding fibers to LWAC, whether in single or hybrid forms, improves mechanical characteristics and increases toughness, ductility, and energy absorption while reducing workability, especially when steel fiber is included in the concrete mixture. The efficacy of fiber in LWAC is greater than NWC when it comes to splitting tensile and flexural strengths.'

KEYWORDS: *Ductility, Fiber, Lightweight Concrete, Mechanical Properties, Toughness.*

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