Fiber Reinforced Concrete (Material aspect)

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[1175]Mixture Design of Steel Fiber-reinforced Concrete with an Ordinary Aggregate Gradation

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This study investigated the mixture design of steel fiber-reinforced concrete considering an ordinary aggregate gradation with a maximum aggregate size of 20mm. The coarse aggregate content was varied to obtain the optimum packing density to include 1.0 Vol.% fibers; the effects on workability and the stability of volume and stiffness in the hardened state were examined. It showed that reducing the coarse aggregate content to reach a relative packing density of about 0.99 was crucial for obtaining stable and highly workable slumped concrete. The effects of lowering coarse aggregate content on drying-induced shrinkage and elastic modulus were moderate within the studied mixtures.

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