

Mechanical Properties of High-Strength Fiber Reinforced Concrete

Dr.Kaiss Sarsam*& Zaid Muhammad Kani Al-Azzawi

Abstract

Experimental results of this work in addition to a wide range of data from previous work were analyzed to study the mechanical properties and strength of high-strength concrete with and without fibers. Different types of steel fibers (straight, hooked, duoform, crimped) with a volume fraction ranging from 0 to 2 percent were studied. The concrete compressive strength ranged from 41 to 115 MPa. The influence of fiber on the compressive strength, axial strain, modulus of elasticity, Poisson's ratio, modulus of rupture, and splitting tensile strength, were studied. In addition to that, size effect of control specimens on high-strength fiber reinforced concrete materials, was observed. The main conclusion indicates that high-strength concrete (HSC) properties, especially with fibers are significantly different from normal-strength concrete (NSC).