

Reactive Powder Concrete Beam's Behavior in Flexural:

Review

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Reactive Powder Concrete can be considered as a special type of concrete in which the coarse aggregate will be eliminated to get a homogenous microstructure with a maximum density for the final result. Because of the importance of this type of concrete and its structural applications. This paper focused on reviewing the researchers that deal with the structural behavior of reactive powder concrete beams under bending load. Also, review the proposed design equations related to. reactive concrete behavior. Before starting a review of strength, stress-strain relation and ductility are presented because of their importance and effect on the structural behavior of beams under bending. According to the review of previous studies, the type of fibers and their content as a volumetric ratio, type of pozzolanic materials and its content, amount of longitudinal steel reinforcement are the main factors that affected the flexural behavior of reinforced Reactive Powder Concrete. For RPC the modulus of rupture has a significant positive effect on increasing steel fibers content. This positive effect reached 280% by using a steel fiber volumetric ratio of 2%, while the effect of increasing silica fume content from 5% to 15% has a limited effect on the modulus of rupture which increases it by only 7.8%. Based on test results for different studies one can conclude that quantity and type of fibers do not significantly affect cracking load but affected the rate of crack propagation, the failure loads, and stiffness. Also, it affects the failure mode from brittle failure to more ductile behavior.