

Punching shear of reinforced concrete slabs bonded with reactive powder after Exposure to Fire

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Abstract

Reactive powder concrete (RPC) is one of the most recent and significant advancements in the world of building , Due to its higher concrete characteristics, it has a common excessive benevolence happening in the globe at the moment , excessive ductility, shrinkage resistance, and corrosion and abrasion resistance. In this experimental investigation is carried out on the way to revision the RPC punching shear slab activity and the mechanical properties of this construction material to investigate the properties of steel fiber volumetric ratio, silica fume ratio, tensile steel ratio, reinforced concrete is the most essential composition for construction which is a great combination to building structures in any desired form. Present research, investigational work of RC slab with (1000 X 1000 X 60) mm, dimensions were tested. The goal of this study is to see how the steel fiber volumetric ratio (Vf) and silica fume content (Sf) affect the behavior of RC slabs after being exposed to fire. It was originate that the accumulation of 2% steel fibers to concrete mix improved the RPC slab's cracking and final punching shear. The presence of reactive powder increases fire resistance. The goal of this study's experiments was to see how reactive powder and Slabs' ultimate punching shear strength was affected by replacement ratio. when exposure to fire. After fire exposure, the initial and subsequent stiffness of reinforced concrete slabs reduced considerably as a temperature grew from 25 to 750 ° C.

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