البحث الثانى

عنوان البحث (باللغة التى نشر بها) :

Strengthening of slab-column connections using ultra high-performance fiber concrete

تاريخ النشر : **2022/11/25**

Abstract:

This experimental work intends to assess the efficiency of employing ultra-high-performance fiber concrete (UHPFC) as a strengthening system for improving the punching shear capacity of slab-column connections (SCCs). Seven reinforced concrete SCCs were constructed and tested under axial load. One of them was retained as a control slab (un-strengthened), and the other six were strengthened with different strengthening schemes. The results revealed that the strengthening scheme is effective in improving the punching shear capacity of slab-column connections significantly. Strengthened slabs achieved increases in punching shear capacity, pre cracking stiffness, post-cracking stiffness, and toughness of up to 172.68%, 235.70%, 300%, and 233.59%, respectively. It turns out that it is important to use UHPFC with longitudinal reinforcement (R-UHPFC) to enhance the strength and toughness. Finally, the punching shear capacities of the tested specimens were compared to those predicted by the existing theoretical approach.