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Effect of Fire Exposure at Different Techniques of Strengthening RRC Columns

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ملخص البحث باللغه الانجليزيه

Effect of Fire Exposure at Different Techniques of Strengthening RRC Columns: This paper aims to two main purposes, first the effect of applying (GFRP) laminate, Ferrocement jacketing, and the combined technique between (GFRP), Ferrocement on RC columns, and the performance of using the outer coating on the behavior of the (GFRP) laminates specimens, secondly the effect of the elevated temperature on the same techniques. For that purposetwenty two specimens were involved in the experimental test program, eleven of them were tested directly under axial compression load, and the rest eleven specimens were firstly subjected to fire up to 650°c, with period 1 hour. The studyprogram includes1, 2, and 3 layers of(GFRP) laminate with and without using outer coating,1,2 , and 3 wire meshes for Ferrocement jacketing, and finally 1 layer of laminated (GFRP) and wire mesh were applied to the combined technique. Experimental work was conducted to the specimens to get the maximum load capacity (MCL) of each specimen, vertical displacement, and energy absorption wasdetermined. The results showed the maximum load capacity of each specimen, and the reduction of it under fire exposure, and the combined technique recorded great results for resistance, high temperature, beside the great effect of the outer coating for (GFRP)specimens compared with the specimens without coating.