

Using Ferrocement Laminates in Strengthening Flexural Behavior of R.C. Slabs with Opening

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Abstract:

This research presents a proposed method for strengthening reinforced concrete slabs with opening using ferrocement laminates. An experimental investigation was carried out to study the effectiveness of using ferrocement as external strengthening material to concrete slab with opening. The results of tests on nine simply supported slabs with overall dimensions of 1000 mm by 800 mm and 100 are presented. The effect of the following parameters: size of opening, strengthening length, volume fraction of reinforcement, and the type of connection between the ferrocement layer and the reinforced concrete slab on the ultimate flexural load, and the load-deflection relationship were examined. The test results clearly showed that ferrocement laminates strengthening leads to significant improvements in the flexural behavior of reinforced concrete with opening. The results indicate that the use of ferrocement cover slightly increases the ultimate flexural load, stiffness and energy absorption.