Experimental Investigation of Hybrid Beam Using Ferrocement and GFRP

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ABSTRACT

In building and construction industry one the problem which is being faced is the deterioration of the structures mainly due to corrosion. And heavy weight of structures due to using the materials which we used in construction. Fiber reinforced polymer and Ferrocement is gaining great importance in order to enhance the strength of concrete member and therefore overcoming this problem. Flexural behavior conventional beams reinforced with steel bars and hybrid beam using Ferrocement and glass frp laminates. The beams were 900mm long with a rectangular cross section of 210 mm in width and 380mm in depth. Twelve beams were reinforced with steel reinforced with steel, and three beams serving as control specimens. Three beams were strengthened with GFRP laminates, three beams were strengthened with ferrocement beams, and three beams were strengthened with ferrocement and GFRP laminates. The beams were tested for flexure failure and testing done by two-point bending over a clear span of 840mm. The results are reported in terms of deflection load carrying capacity, and mode of failure. The experimental results were compared between the conventional RC beams, ferrocement beams, GFRP beams and combination of GFRP and ferrocement beam. The experimental result shown combination of GFRP and ferrocement had more load carrying capacity than other beams.