

Bending and Shear Characteristics of Hollowcore Slab with Polystyrene Forms

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Abstract : New I-slab system with polystyrene forms and precast concrete deck is proposed to reduce the construction period and the self-weight of the slab. This paper presents experimental works on the bending and shear of the I-slabs. Five specimens were tested. The main parameters of experiments are diameters of the holes made by polystyrene form and the thickness of slab. Structural performance of I-slab is evaluated on the basis of failure mode, load-displacement curve, and ultimate strengths. Based on the test results, it is found that the critical punching shear sections are changed as the test variables are different, hence resulting in the varied punching shear strengths. Test results indicate that the developed I-slab is very effective to increase the strength due to self-weight reduction.

Keywords : hollowcore slab, section force-deformation response, precast concrete deck

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