

A Full-Scale Test of Coping-Girder Integrated Bridge

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Abstract : Recently, a new continuous bridge system has been proposed to increase the space under the bridge and to improve aesthetic aspect of the urban area. The main feature of the proposed bridge is to connect steel I-girders and coping by means of prestressed high-strength steel bars and steel plate. The proposed bridge is able to lower the height of the bridge to ensure the workability and efficiency through a reduction of the cost of road construction. This study presents the experimental result of the full-scale connection between steel I-girders and coping under the negative bending moment. The composite behavior is thoroughly examined and discussed under the specific load levels such as service load, factored load and crack load. Structural response showed full composite action until the final load level because no relative displacement between coping and girder was observed. It was also found prestressing force into high-strength bars was able to control tensile stresses of deck slab. This indicated that cracks in deck slab can be controlled by above-mentioned prestressing force.

Keywords : coping, crack, integrated bridge, full-scale test

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