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Composite Behavior of Precast Concrete Coping with Internal Connector and Precast Girder

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Abstract : Traditional marine concrete structures are difficult to construct and may cause environmental pollution. This study presents new concrete bridge system in the marine. The main feature of the proposed bridge is that precast girders and precast coping are applied to facilitate assembly and to improve constructability. In addition, the moment of the girder is reduced by continuation the joint. In this study, a full-scale joint specimen with a span of 7.0 m was fabricated and tested to evaluate the composite behavior of the joint. A finite element model was also developed and compared against the experimental results. All members of the test specimen behaved stably up to the design load. It was found that the precast joint of the proposed bridge showed the composite behavior efficiently before the failure.

Keywords : finite element analysis, full-scale test, coping, joint performance, marine structure, precast
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