

Study on Connecting Method of Box Pontoons

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Abstract : Due to a lot of limited conditions, a large box type floating structure is inevitably constructed by connecting many pontoons. When a floating structure is made with concrete, concrete shear key with saw-teeth shape is often used to carry shear force. Match casting for the shear key and precise construction on a sea are very important for making separated two pontoons as one body but those are not easy work and may increase construction time and cost. To solve this problem, one-way shear key is studied in this paper for a connected part where there is some difference between upward and downward shear force. It has only one inclined plane and can resist shear force in one direction. Big shear force is resisted by concrete which forms an inclined plane and small shear force is resisted by steel bar. This system can reduce manufacturing cost of individual pontoon and construction time and cost for constructing a floating structure on a sea. In this paper, the feasibility study about one-way shear key system is performed by comparing with design example.

Keywords : connection, floating container terminal, pontoon, pre-stressing, shear key

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