CFCC®
Carbon Fiber Composite Cable

Reinforcement of structures under a severe corrosive environment

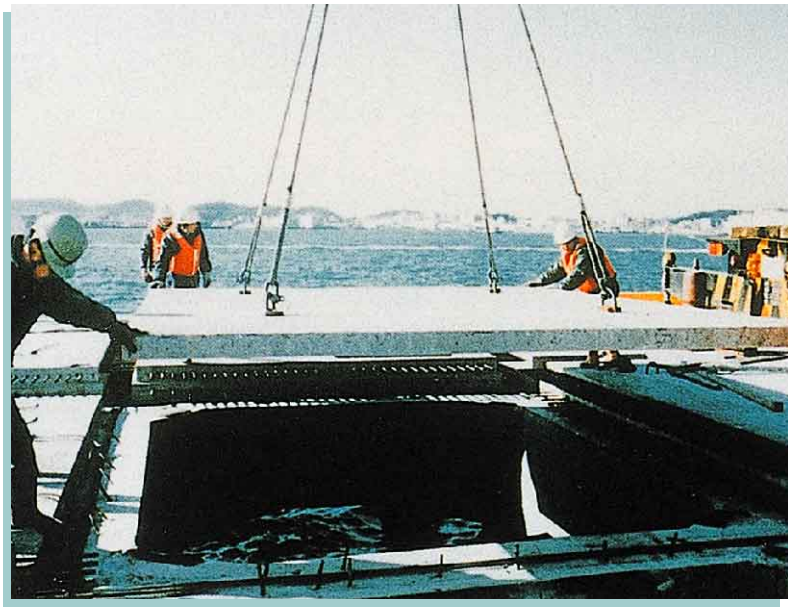
Deck slabs for the pier at the Kuzuha jetty

CFCC reinforced pre-cast prestressed concrete (PC) slabs were used as a portion of the pier slabs in work done to improve the dock. This pier replaced an old one suffering extensive salt-injury damage. The construction method used consisted of laying pre-cast concrete slabs with CFCC tendons (CFCC-PC slabs) on the beams, arranging steel bars and casting concrete as an overlay on the top of the CFCC-PC slabs. As a result, the pier becomes the composite structure.

The pre-cast CFCC slabs were fabricated in three subdivided small panels (1,500x3,800x120) at a pre-cast plant and were joined at a yard on site using CFCC tendons.

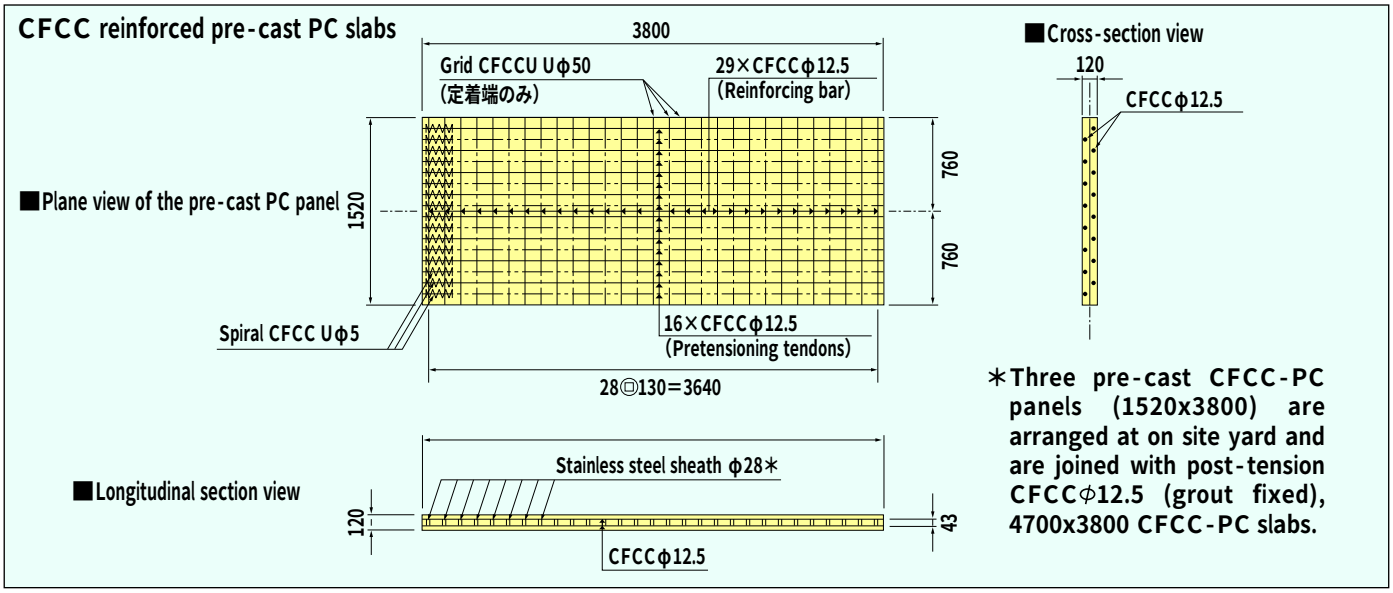
Since CFCC is used for the tensioning material and the reinforcement bars of these CFCC-PC slabs, there is no need to worry about corrosion even under the surface of the water where the structure comes into direct contact with the seawater. As a result, it is possible to reduce the protective covering from 70 mm commonly used for marine structures to just 38.5 mm. In addition, it was possible to rationalize the execution of construction without formworks and the falseworks.

Client	Coastal Development Institute of Technology
Location	Fukuoka Prefecture
Dimension	PC floor slabs: 4.7mx3.8m, two slabs
Material	CFCC 1x7φ12.5, CFCC Uφ5
Application	Pretensioned tendon for pre-cast PC slabs PC slab connecting tendons (post-tensioned tendons; grout fixing) reinforcement for end of tendon (Rebar grids, Rebar spirals)
Completed	March 1993



The view of installation of a CFCC-PC slab [4,700x3,800] (joining of three pre-cast PC panels [1,520x3,800]).

Schematic drawing of structure



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TOKYO ROPE INTERNATIONAL INC. CFCC Civil Engineering and Construction
3-6-2 Nihonbashi, Chuo-ku, Tokyo, 103-8306, Japan