fib BULLETIN NO. 91 TITLE: FLOATING CONCRETE STRUCTURES

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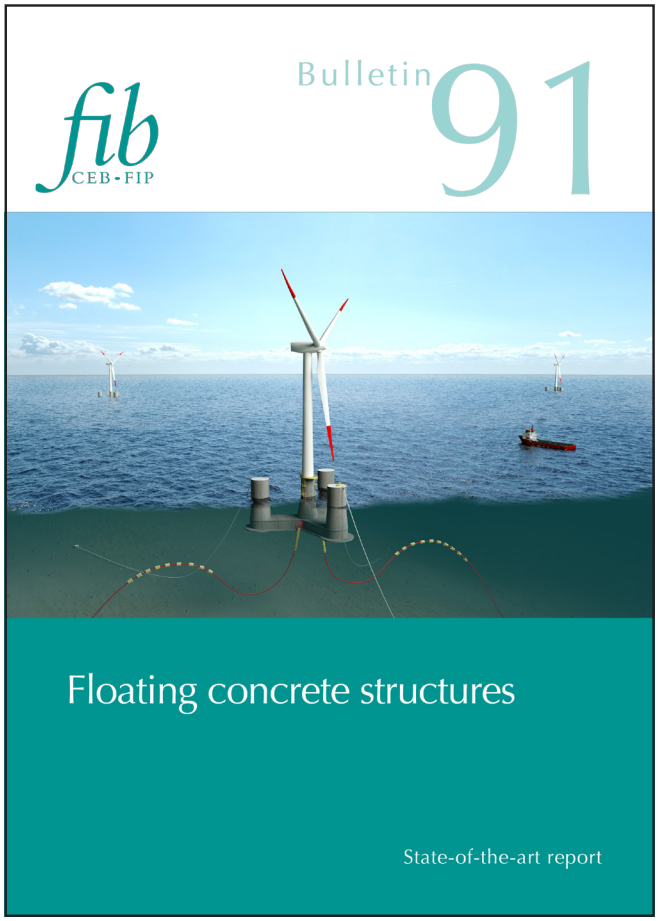
Abstract:
This bulletin is the first document prepared by TG 1.2 "Concrete structures in marine environments". This theme is considered important for Commission 1, since in the future several applications are forecast in marine environments.

Floating concrete structures allow the use of marine spaces with important developments for urban areas, industrial plants, infrastructures and energy production. In this bulletin a series of applications, projects and conceptual ideas are presented. This should be considered as a document representing the potentialities and the innovations on the use of structural concrete in marine environmental.

The floating structure presented in the bulletin should be of inspiration for new application that will be developed in the nearly future, representing a challenge not only for structural designers, but also for administrations, construction companies and industrial entities.

The use of structural concrete is becoming essential in these kinds of applications, in terms of cost, durability and sustainability.

As Commission 1 chair, I'm very grateful to Tor Ole Olsen and to all members of WP 1.2.1 "Floating concrete structures" for having produced this document that I consider very interesting not only for the fib members, but also for concrete community.



fib BULLETIN NO. 92 TITLE: SERVICEABILITY LIMIT STATE OF CONCRETE STRUCTURES

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Abstract:
Serviceability limit states are essential for appropriate function and durability of concrete structures. The attention is paid especially to the stress limitation, crack width analysis and deflection analysis. The document provides supplementary information to the fib Model Code 2010 (MC2010), where a limited space did not allow for a detailed description of individual procedures. The principles used in MC2010 in chapter 7.6 are explained in detail within this document.

The stress analysis is focused on stresses in concrete and steel including the stress redistribution due to the long-term load and cracking of reinforced concrete and prestressed concrete elements. Crack width analysis explains the mechanism of cracking under mechanical loading and due to deformation restraint. Cracks in prestressed concrete elements are also discussed. Deflection analyses with different levels of accuracy are described including the shear effects.

Examples illustrate the practical application of rules defined in the MC2010 of individual serviceability limit states. Simplified and more general methods are used.

An important part of the bulletin shows the development and extension of the serviceability limit states after publishing of the MC2010 and alternative approaches. Special attention is paid to deflections of prestressed concrete beams, shear effects on deflection, slenderness limits and influence of the concrete cover. The final part deals with an application of numerical simulations.