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Book Review

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Book review

Textile Reinforced Concrete

A. Peled, B. Mobasher and A. Bentur (eds). CRC Press, Boca Raton, FL, USA, 2017, ISBN 978-14-6655-255-5, £120-00, 489 pp.

The book *Textile Reinforced Concrete* gives a broad and partly deep overview of textile-reinforced concrete, testing methods and mechanical performance under static and dynamic loading of this composite material. It also gives insight into fibre characteristics, production and treatment methods of fabrics. The authors are well known and experienced specialists in this field.

The book features scientific research on a wide variety of fibre materials and fabric types that have been studied in the framework of this subject, including aramide, polyethylene, polypropylene, polyvinylalcohol as well as carbon and focuses on alkali-resistant glass fibers as reinforcement materials for concrete.

Furthermore, manufacturing methods of the composite material, such as the hand-laminating technique, as well as not so well-known production technologies like filament winding or pultrusion are described. A useful contribution of this book is the in-depth overview of the microfracture mechanics and bonding behavior of textile-reinforced concrete. In addition, chapter 5 deals with the influence of cementitious matrix, fabric geometry, fabric coating and manufacturing process on the mechanical performance

of the composite. Chapter 9 presents an outline of durability issues of glass reinforcement materials in concrete and of the composite material itself due to various exposition conditions such as water or chloride uptake. It includes a review of the two controversially discussed aging mechanisms (chemical and microstructural) of glass fibres in concrete. Chapter 10 provides an overview of strengthening methods (shear, flexural and compression) of existing structures depending on the reinforcement material and number of layers. Innovative application examples described in chapter 11 round off this work.

The innovative composite material – textile-reinforced concrete, composed of textile fabrics that are embedded in a cementitious matrix – allows the construction of light, thin, flexible and high load-bearing structures. For over 20 years, researchers and industry partners worldwide have been working on, among other aspects, the development of textile fabrics, optimised composite behaviour of the textile fabrics to the cementitious matrix, as well as testing methods from which rules for construction with textile-reinforced concrete, the calculation and the design are derived, leading to numerous projects in the recent years. Owing to the novelty of this material, and since there are no existing standards for textile-reinforced concrete, there is a high demand for information. This book will be of great value to designers and engineers as well as scientists, who seek information about textile-reinforced concrete and its possibilities, as well as its mechanical behaviour.

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