Book review

Glassfibre Reinforced Concrete – Principles, Production, Properties and Applications

Peter J. M. Bartos. Whittles Publishing, Dunbeath, UK 2017, ISBN 978-184995-326-9, £50.00 (hardback), 183 pp.

Glassfibre reinforced concrete (GRC) is widely used in current construction practice. GRC is an unusual composite, in which both the matrix (concrete) and the reinforcement (fibre) alone can be themselves considered composites. GRC differs significantly from traditional steel-reinforced concrete, not only because of the type of the reinforcement used but also in terms of the stress transfer mechanism between the fibre and the matrix and the failure mechanism of the composite.

GRC is a very versatile composite material. Its range of practical applications has grown quickly in recent years. In the book *Glassfibre Reinforced Concrete*, Peter Bartos provides a state-of-the-art review on the historical background and development of GRC and guidance on GRC properties, its specification, testing and the latest methods for efficient production. The book contains 13 chapters. The first two chapters provide a brief introduction and the history of development of GRC. Chapter 3 describes the raw materials used for GRC such as binders, aggregates,

fibres, admixtures, polymers, pigments and additives, and water. Chapters 4 and 5 deal with the manufacturing process and corresponding composite action of GRC. Chapter 6 is the longest chapter in the book, which discusses the physical, mechanical and durability properties and the environmental performance of GRC composite. Chapters 7–10 are related to the design, specification and compliance, health and safety of GRC. Chapter 11 shows a large number of examples of applications of GRC in construction. Chapters 12 and 13 provide the list of relevant standards and references. In addition, there are four appendices in the book, which provide the description of the calibration of GRC spray equipment, the determination of glass content of uncurved GRC, the determination of flexural properties of GRC, and the determination of the dry and wet bulk density, water absorption and apparent porosity of GRC. A subject index is also provided in the end of the book.

Overall, the book provides a good coverage of the topic and valuable information for the understanding of GRC as a structural material used in practical construction. The book can serve as a reference for civil and structural engineering students and practising engineers who work in the field of civil and construction engineering.

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