

REVIEWS OF TECHNICAL PUBLICATIONS

Value — Its Measurement, Design & Management

M. Larry Shillito and
David J. De Marle

This book offers a modern, interdisciplinary approach to using value management in product development. It is shown how the value of any product or service can be maximized by improving its ability to satisfy customer and company needs. Value can be defined and graphed. The process is illustrated by setting numerical value improvement targets, quality function deployment, together with planning and management techniques to evaluate new product development.

Wiley-Interscience, John Wiley & Sons, Inc., New York, NY, 1992, 350 pp., \$59.95.

High Performance Fiber Reinforced Cement Composites

H. W. Reinhardt and A. E. Naaman
(Editors)

Advanced composites and the fundamental understanding of their behavior is a rapidly expanding branch within construction materials. High performance fiber reinforced cement composites include materials such as SIFCON (slurry infiltrated fiber concrete), fiber reinforced DSP (densified small particles systems), CRC (compact reinforced composite), and SIFCA, a form of SIFCON particularly suitable for refractory applications. These materials can be designed to have outstanding combinations of strength [up to 40,000 psi (300 MPa), i.e., five to 10 times that of structural concrete] and ductility or energy absorption capacity (up to 1000 times that of plain concrete). Exciting engineering applications are therefore being developed to take advantage of these properties, such as in earthquake and blast resistant structures, offshore structures and super high-rise buildings. This book provides a compendium of the most recent research

advances and reviews presented at an international workshop sponsored by RILEM, ACI, NSF, the German DFG, the University of Stuttgart and the University of Michigan, held in Mainz, Germany, in June 1991. The proceedings includes more than 40 contributions from leading specialists around the world, and it is an essential reference for engineers and researchers who need to be at the forefront of developments in fiber reinforced cement composites.

E & FN SPON, an Imprint of Chapman and Hall, London, United Kingdom. Available in North America from Van Nostrand Reinhold Inc., New York, NY. RILEM Proceedings 15, 1992, 566 pp., \$74.95.

The Design of Water-Retaining Structures

Ian Batty and Roger Westbrook

This practical book provides a comprehensive understanding of the design and construction of water-retaining structures both for the practicing engineer and the structural engineering graduate. The book, for the most part, follows the British Code, BS 8110 Structural Use of Concrete. Many of the design examples are drawn from actual practice. Extensive tables and hand calculations are given to check against often complex results obtained from finite element methods. The following topics are covered: (1) Standards for the design of water-retaining structures, (2) Design and construction aspects, (3) Design of cantilevered walls to retain liquids, (4) Design of rectangular tanks, (5) Design of circular tanks, (6) Design of prestressed concrete circular tanks, (7) Design of a flat slab roof and columns for a reservoir, (8) Design of conical tanks, and (9) Design tables for water-retaining structures. An appendix includes the analysis of ground-supported open circular concrete tanks.

John Wiley & Sons, Inc., New York, NY, 1991, 202 pp., \$89.95.

Experience With Pre- and Post-Cracking Deflections of Prestensioned Members

Alex Aswad

A procedure for rational prediction of deformation in pretensioned members is described. Full-scale load tests on stemmed members spanning 30 to 62 ft (9.2 to 18.9 m) were conducted. The tests showed good correlation with the proposed predictions. Actual deflections were generally less or close to the computed values. It is suggested that the method may be used for loads not exceeding a certain ratio of the ultimate loads.

Designing Concrete Structures for Serviceability and Safety, SP-133, American Concrete Institute, Detroit, MI, 1992, pp. 207-224.

Using FRP Materials in Prestressed Concrete Structures

Koichi Minosaku

Presents a good overview of the state-of-the-art of fiber reinforced plastic (FRP) materials for prestressed concrete structures in Japan. The following applications are described: carbon FRP strands in a pretensioned prestressed concrete highway bridge, carbon FRP strands in a pretensioned prestressed concrete pedestrian bridge, carbon FRP strands in a post-tensioned prestressed concrete highway bridge, carbon FRP rods in a post-tensioned prestressed concrete bridge, braided aramid FRP tendons in a pretensioned prestressed concrete highway bridge, aramid FRP rods in a pretensioned and post-tensioned prestressed concrete bridge and aramid FRP bands in a post-tensioned prestressed concrete pedestrian bridge. FRP materials are also being used in harbor structures and to reinforce soil and embankment structures.

Concrete International, V. 14, No. 8, August 1992, pp. 41-44.