

| Subject to priorities defined by the Technical Council and the Presidium, the results of <i>fib</i> 's work in Commissions and Task Groups are published in a continuously numbered series of technical publications called 'Bulletins'. The following categories are used: | |
|---|---|
| category | minimum approval procedure required prior to publication |
| Technical Report | approved by a Task Group and the Chairpersons of the Commission |
| State-of-Art Report | approved by a Commission |
| Manual, Guide (to good practice) or Recommendation | approved by the Technical Council of <i>fib</i> |
| Model Code | approved by the General Assembly of <i>fib</i> |
| Any publication not having met the above requirements will be clearly identified as preliminary draft. This Bulletin N° 54 was approved as an <i>fib</i> Manual by the Technical Council in June 2009. | |

This fourth volume of the Structural Concrete Textbook, second edition, was drafted by the following authors:

| | |
|---|------------------------|
| György L. Balázs* (Budapest Univ. of Technology and Economics, Hungary) | Editor |
| Karl R. Kordina [†] | Chapter 6 |
| Giuseppe Mancini* (Politecnico Torino, Italy) | Sections 7.1, 7.2, 7.4 |
| Kurt Schäfer (Germany) | Section 7.3 |
| Angelika Schießl (Germany) | Chapter 8 |
| Konrad Zilch* (Technische Univ. München, Germany) | Chapter 8 |

* member of Special Activity Group 2, "Dissemination of knowledge", Working Group "Textbook".

Full address details of Commission/Task Group members may be found in the *fib* Directory or through the online services on *fib*'s website, www.fib-international.org.

Cover image: Wadi Abdoun Bridge, Jordan, one of the winners of the 2010 *fib* Awards for Outstanding Concrete Structures [photo courtesy of Dar Al-Handasah (Shair & Partners)].

© fédération internationale du béton (*fib*), 2010

Although the International Federation for Structural Concrete *fib* - fédération internationale du béton - does its best to ensure that any information given is accurate, no liability or responsibility of any kind (including liability for negligence) is accepted in this respect by the organisation, its members, servants or agents.

All rights reserved. No part of this publication may be reproduced, modified, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission.

First published in 2010 by the International Federation for Structural Concrete (*fib*)

Postal address: Case Postale 88, CH-1015 Lausanne, Switzerland

Street address: Federal Institute of Technology Lausanne - EPFL, Section Génie Civil

Tel +41 21 693 2747 • Fax +41 21 693 6245

fib@epfl.ch • www.fib-international.org

ISSN 1562-3610

ISBN 978-2-88394-094-9

Printed by DCC Document Competence Center Siegmars Kästl e.K., Germany