

CTE & AICAP

Il Codice Modello 2010

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Il 29 ottobre 2011 a Losanna, l'Assemblea Generale della *fib* ha approvato definitivamente il nuovo Codice Modello presentato l'anno precedente in bozza a Washington. Il Comitato redattore presieduto dal Prof. Joost Walraven ha messo a punto il più completo codice oggi presente nella letteratura tecnica sul tema delle Strutture in Calcestruzzo. Il Codice considera l'intero ciclo di vita delle strutture: l'idea progettuale ("conceptual design"), il dimensionamento, la costruzione, la conservazione e la dismissione.

Il *Model Code 2010* rappresenta una pietra miliare della tecnica costruttiva delle strutture in calcestruzzo, a vent'anni dalla presentazione dell'ultimo Codice Modello. I lavori furono iniziati nel 2002 ed il primo incontro del Gruppo redazionale SAG5, che ha curato i lavori con la collaborazione di vari comitati tecnici e di esperti attivi nella *fib*, si è tenuto nel settembre 2003 a Delft.

La giornata è mirata alla presentazione delle principali novità introdotte nel Codice che propone un nuovo approccio al calcolo della sicurezza delle strutture con algoritmi di calcolo quali gli Elementi Finiti, un nuovo approccio graduato alla sicurezza, una rivisitazione completa delle leggi costitutive del calcestruzzo, regole per la progettazione con nuovi materiali compositi quali i compositi fibrorinforzati con matrice polimerica (FRP) o cementizia (FRC), nuovi approcci mirati a garantire la sostenibilità delle costruzioni. Alla giornata parteciperanno il Coordinatore dei Lavori e alcuni esperti che hanno cooperato attivamente alla stesura del documento.

La giornata di studio è organizzata come un breve corso fib, al termine del quale sarà rilasciato a tutti i partecipanti un certificato di frequenza del corso e la versione digitale dei due bollettini che costituiscono i volumi del Codice modello 2010.

fib General Assembly approves the Model Code 2010 in Lausanne



Members of the 11th *fib* General Assembly, who approved the Model Code 2010 by unanimous vote.

On 29 October 2011, the 11th General Assembly of *fib* convened in Lausanne, Switzerland and accepted the *fib* Model Code 2010 ("MC2010"). Publication is planned for 2012, following a final editorial review by a small Editorial Group to be chaired by *Joost Walraven*, to achieve consistency and correctness throughout the entire document.

The *fib* Model Code 2010 is the continuation of the Model Codes that have been developed and published by *fib* and its predecessors CEB and FIP over the past three decades. These include the first edition of the CEB-FIP Model Code published in 1978, the CEB Model Code on Seismic Design of Concrete Structures (1985), CEB-FIP Model Code 1990, and *fib* Bulletin 34, "Model Code on Service Life Design" (2006).

An important document in both research and design, the *fib* Model Code 2010 influences both regional and national codes. MC2010 is now the most comprehensive code on concrete structures, including their complete life cycle: conceptual design, dimensioning, construction, conservation, and dismantlement.

The approval of the *fib* Model Code 2010 is an historic milestone nearly ten years in the making. Discussion on a new Model Code began in 2002, and Special Activity Group 5 (SAG5), "New Model Code", held its first meeting in September 2003 in Delft, The Netherlands. The first complete draft of the document was published in 2010 as *fib* Bulletins 55 and 56, which served as the basis for review and extensive comments by the National Delegations of *fib*.

fib sincerely thanks SAG5 convener *Joost Walraven* and the editor of the *fib* Model Code 2010, *Agnieszka Bigaj van Vliet*, for their consistent hard work and dedication, as well as

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fib Symposium 2012 in Stockholm

the members of SAG5, all of the invited experts who contributed to the document, and the National Delegations of *fib* for their invaluable comments on the first complete draft. *Agnieszka* and *Joost* received tokens of *fib*'s appreciation at the Technical Council Dinner that preceded the General Assembly.



The TC dinner was preceded by a reception offered by Mr. *C.R. Alimchandani*, Head of the Indian Delegation of *fib*.

Following the GA, the approval of the *fib* Model Code 2010 was celebrated with a reception for the delegates and deputies, including an *fib* cake, and Hungarian wine that was imported specially for the occasion by *fib* President *György L. Balazs*.



The famous Vasa Ship Museum hosts the warship Vasa that sank during its maiden voyage in August 1628, was salvaged 333 years later, and now is explored in a sustainable environment. Photo: Karolina Kristensson/SMM.

Sustainability is still a subject of media focus even though other international events such as the Arab Spring sometimes overshadow it. The constant interest in sustainability is of paramount importance since we have only a limited time to prevent dramatic climate changes that otherwise are inevitable according to leading international experts, and to adapt our society to probable changes. The building sector and especially the areas of cement and concrete can make a difference as this sector's impact is substantial.

The interest in sustainable concrete among researchers seems to be great and increasing – one example of this is the overwhelming interest in the 2012 *fib* Symposium and its theme, “Concrete Structures for Sustainable Community”. We have received over 280 abstracts. The proceedings will contain a selection of some 170 papers that also will be presented orally at the Symposium in Stockholm in early June 2012. When selecting papers, the Scientific Committee focused on papers that suit the symposium theme, meaning that general papers and papers with peripheral scope have been rejected.

The selected papers cover the following topics:

- Alternative binders
- Carbonation and carbon dioxide uptake
- Case studies
- Designing concrete structures for durability & sustainability
- Durability
- LCC, LCA, and classification systems
- Recycling
- Repair, renovation, and upgrading for improved sustainability
- Sustainable concrete materials
- Sustainable concrete pavements
- Sustainable concrete production

There will be no poster session, but papers describing ideas, ongoing projects, preliminary results and minor studies will be presented in special, shorter sessions, in order to provide a platform for these authors, who are generally younger and at an earlier stage of their careers.

The organizers have invited the following keynote speakers:

Dr *Carola Edvardsen*, chief specialist in concrete technology & durability, COWI A/S, Denmark, with

The aim of *fib* publishing

“Structural Concrete” issue 2/2011 contains a number of interesting articles dealing with advanced seismic provisions for buildings, precast concrete elements, materials and bridges, investigated from the points of view of construction, monitoring and design. The problems discussed relate to structural performance at the service and ultimate limit states, modelling, environmental aspects, normative provisions, construction methods and means, maintenance and sustainability.

These represent a small but significant sample of the many issues dealt with by the *fib* journal over the decade of its publication, reflecting the broad interests of this federation. This is what makes *fib* one of the major world players in the field of structural concrete.

In fact, *fib* inherited and continues all the activities of CEB and FIP, both founded in the early 1950s, which were already interrelated and could take advantage of the work performed by the numerous national associations and scientific institutions. It was they who had developed research into concrete issues since the beginning of 20th century, in Europe and worldwide, and had made them converge into a common forum. By means of its 10 Commissions, with a total of about 40 Task Groups and about 7 Special Activity Groups, *fib* continues to promote and coordinate research and pre-normative work as well as organize symposia, workshops and courses.

Besides this journal, for sharing and disseminating knowledge, *fib* issues “Bulletins” on various levels: technical reports, state-of-the-art reports, manuals, guides, recommendations and model codes.

One important landmark due in 2011 is the presentation to the General Assembly of the latest version of the “Model Code 2010” (MC 2010), which will be discussed by the General Assembly in June and then submitted for approval. It is deemed to be a reference for the next generation of operational structural design codes, even if it may be used itself as such.

Together with its predecessors CEB and FIP, *fib* has played and continues to play quite an important role in structural standardization, particularly in Europe. Mainly Eurocode 2 (EC2), but also EC0, EC1 and EC8 as well as many other Eurocodes would not have been possible without CEB/FIP/*fib* preparatory studies and Model Codes.

It was in 1964 that the first Model Code (although not given yet that name) appeared, i.e. the “CEB Recommendations”. These were proposals for rules for the design of reinforced concrete structures, using for the first time the probabilistic reliability concepts and the limit states and partial safety factors approach.

The year 1970 saw the publication of the “CEB-FIP Recommendations for Concrete”, which updated and unified the models for reinforced concrete and/or any degree of prestressed concrete. These openly acknowledged for the first time the unity of behaviour of what would later be called “structural concrete”.

In 1978 the “CEB-FIP Model Code for Concrete Structures” (MC 78), explicitly conscious of being a “model” for codes, became the real father of the Eurocodes, whose project followed immediately. In particular, it divided the clauses into “principles” and “application rules”, the latter being only recommendations for fulfilling the principles.



Marco Menegotto



Editorial

In 1990 the “CEB-FIP Model Code 1990” (MC 90) anticipated and helped the preparation of the Eurocodes, which was already in progress, and influenced the updating of most national codes.

Within *fib*, the work of “model coding” has continued. In 2006, while preparing MC 2010, the special, quite advanced “Model Code for Service Life Design” represented a particular anticipation of concepts related to life cycle design.

The approach of MC 2010 emphasizes the importance of conceptual design before engaging into analysis and detailed design. It proposes transparent models, accounts for construction technologies, considers new materials as well as existing structures, calls for sustainable development and is basically oriented towards full life cycle design.

Thus, the mission of *fib* goes on, and all its activities, expressed in several types of publications, converge every decade or so into the implementation of a MC, its most comprehensive and important one.



Marco Menegotto
Chairman, *fib* Commission 6
fib Medal of Merit 2009