

A comparison and an overview

Sources of the Standards Relevant to Precast Structural Concrete in Europe and the US

A joint activity is going on between PCI and fib Commission 6 "Prefabrication". The idea was raised in 2007 and it materialized with a meeting on 23 May 2008 in Amsterdam, specially organized in conjunction with a fib Symposium and a C6 meeting. The object was to compare European vs. American standards and practice related to structural prefabrication. In fact, documents such as technical reports and recommendations are prepared by both bodies on similar issues, although with different approach.

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Some differences between the roles of fib Commission 6 and PCI themselves were noted. fib C6 is specialised on precast concrete only. PCI covers prestressed concrete, including post-tensioning and segmental construction. PCI is a self-standing organisation, while C6 is part of fib, where other Commissions take care of questions concerning different matters, as: materials, post-tensioning, seismic design, environmental issues (fib website lists all Commissions and Task Groups). C6 stimulates and coordinates research but it is not due nor able to sup-

port and control it in the same way as PCI does. Such differences were deemed not to limit the possibilities of cooperation. Instead, they make the object of interaction interesting.

The kick-off meeting started with a brainstorming on motivations and philosophy of the cooperation but soon objective and method were defined. Some issues of common immediate interest and undergoing separate action on both sides were pointed out, e.g.: hollow core floors, structural connections, design with regard to accidental loading, seismic design, precast bridges, etc.

For the above issues, it was agreed to implement the cooperation, by comparing

the approaches and integrating the respective knowledge. Up to now, several joint seminars were held, where the exchange was recognized as very useful. Reports are going to be issued for synthesising the comparisons.

A matter of interest also resulted the code and standard systems concerning structural precast concrete in Europe and in United States, respectively. The actual state was debated, which can be immediately described and is the scope of this article.

Standards in Europe

Still, the official standards for structural design in Europe are issued by the National Authorities of the individual Countries. Standards have different legal enforcement in the different Countries and may be mandatory or voluntary.

However, a process of harmonization and unification is rather advanced, with the Structural Eurocodes (ECs) and other standards, aimed at eliminating technical barriers to the professionals working among the member States of European Community, as well as trading goods within this area. ECs provide common structural design rules for whole structures and components.

In application of the principle of subsidiarity, national rules apply for matters involving structural safety. These rules may be laid down in National Standards (NS) or otherwise.

Since the beginning of the process, subsequent editions of NS on structural design and safety in all countries are becoming closer and closer to the ECs, therefore closer among each other, too. At present, Countries of the European Community are not allowed to issue nor to update their structural standards in contrast with the Eurocodes. Compatibility is checked by European authorities.



Fig. 1: Prefabrication and in-situ construction have always coexisted. In the case of the figure, they belong to different times but to the same building: Roman Teatro di Marcello with Renaissance Orsini Palace on top of it.

