

Title: “Prestressing, Present State, Tendencies, and Challenges for the Future”

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Summary

This work, as stated in its title, looking for a vision on the actual status of prestressing and its challenges in the future, it is done under the prism of the prestressing systems or simply ‘the systems’. Surely, the vision is not complete, but it is done by who has developed his professional activity for more than 17 years in companies owning and distributing prestressing systems within domestic and international markets as well.

Although the technology of prestressing systems has been developed for relevant applications like stay cable bridges, this work basically deals with its relevance in the bridge construction otherwise defined as prestressed concrete structures with post-tensioned reinforcement. Neither applications to prestressed concrete where reinforcement is stressed before pouring concrete are part of this work.

The first part is an historic introduction of the prestressed concrete and the prestressing systems too.

This part ends with a list and with a description of most important applications of the prestressing systems considering their level of present activity.

The second part deals with the actual prestressing systems. It would be not possible to collect all technological aspects of every prestressing system in use today. Therefore, only the basic components of the so called most qualified prestressing systems are shown, trying to strength their analysis in that way.

This part comprises the rules and standards along with the actual status of the market in order to explain what the prestressing systems mean in the present and what can bring in the future.

This part ends with an approximation to the prestressing systems like a common consumption product. A model for the life cycle is presented, proposing the actual position in it. Of course, this is an exercise quite particular, leaving it open to nay opinion and debate coming from the readers.

The third part refers to actual references. The consideration of these realisations is obvious, even so it may break the general line of the work. Truly, it could be inserted in any position of the work and look at it as an independent part.

The references are not selected in consideration to the recognition of its importance by known or relevant professionals n the sector, nor attending the number of papers or other written references. The two main criteria are: the impact on the author and/or his degree of implication in them.

The fourth part the rules for the prestressing systems in the European Community are exposed. This is an important issue in this moment, it originated and probably will originate a lot of controversy and stress among the professionals involved in its preparation.

The author believes that this is a good example of a poor result when decisions are mainly based on politics and not on knowledge, as it unfortunately happens with most of the issues related to the construction in the EC .

The fifth and last part refers to future trends and challenges. Some of the most recent issues that are included in any actual event related to prestressing are included, two among them could be significant: the durability and the role of new materials.

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