

Preface

The field “polymers in concrete” is rather consolidated in the construction industry. The future of polymers in concrete will be oriented to take full benefit of the synergic actions between these organic and mineral materials, in order to obtain a significant contribution to more sustainable construction. Concrete-polymer composites (C-PC) have an excellent adhesion strength and durability in aggressive environment. The high performance of these materials makes innovative applications possible including new technologies in restoration and renovation of buildings.

Since production and engineering of materials and components are increasing knowledge – based, the technology itself reveals a gap in the basic understanding of materials. To understand and control of C-PC bulk properties it is necessary to focus on lower level of microstructure of composite materials. Influence of polymers in the composite performance is result of polymer properties and modification of the composite microstructure. Authors are trying to answer what is essential in Polymers in Concrete. Always “for better concrete”. In nowadays better concrete” means Well Defined Performance Concrete - better for the given project, but also better for repairing, renovation and restoration however first of all: more durable. In very ambition words – sustainable concrete, in this case Sustainable Concrete–Polymer Composite.

As Y. Ohama says “the early deterioration of reinforced concrete structures has been a big social problem in the world in recent years” and he continues “the future growth of sustainable concrete-polymer composites such as polymer modified mortar and concrete, and polymer mortar as repair materials is globally expected”. P. Seidler states “innovations cannot be forecasted: innovations need firstly leisure time and thus money”. It will be important for the development of the field polymers in concrete that the future technical trends will be well defined and that a good balance between time and money could be achieved.

Undoubtedly in all the papers the “hot problems” dealing with novelties are presented. Hopefully the readers will find useful inspiration for further activities in both practice and research. The age of concrete in the singular has definitely passed. In the present era the polymer are vital component in many concrete composites. The family of C-PC came of age but they are still very promising materials for existing and new applications and stimulating new researches. Papers included in this special volume were carefully reviewed by a Special Committee under the chairmanship of D. van Gemert. We want to express our sincere gratitude to the members of this ad hoc committee for the time and efforts they have spent. Finally we are very grateful to the authors who have provided contributions. In this way a considerable number of highly interesting and valuable papers will be published in this volume. This certainly will also contribute to the development of the fields related with polymers in concrete.

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