Foreword

Collected volume of concrete technology reports for 2007 to 2009

The first “Concrete Technology Report” appeared in the journal “beton” 50 years ago, early in 1960. At the instigation of Beton-Verlag, which is now Verlag Bau und Technik, the concrete technology reports that had appeared so far were published for the first time in a collected volume in 1961. The publisher was Kurt Walz, who was followed in this position by Gerd Wischers in 1981 and by Gerd Thielen in 1997. With this, the 31st collected volume, which covers the years 2007 to 2009, the Research Institute of the Cement Industry is carrying on the long tradition of innovative contributions to issues relating to concrete technology and chemical mineralogy.

One of the focal points in this volume is the use of cements that contain other main constituents in addition to Portland cement clinker. Cements with several main constituents not only reduce the carbon dioxide emissions generated during cement production and contribute to conserving resources. They can also, depending on the composition and application, be particularly efficient. During the period covered by the reports this has been intensively researched for cements containing fly ash, limestone and granulated blastfurnace slag.

Concrete admixtures form another focal point. For many concretes they are now indispensable. However, their successful use requires a deeper understanding of their mode of operation. This also applies to shrinkage-reducing and air-entraining admixtures that are covered in these reports.

One report also deals with autogenous shrinkage that is attributable to internal self-drying of the microstructure. It can lead to early cracking, especially in high and ultra high strength concretes with very low water/cement ratios. Suitable test methods have been developed for investigating this problem.

Over 300 concrete technology reports have appeared so far. In his foreword to the first collected volume Kurt Walz expressed the wish that it would contribute to spreading the understanding of concrete as a construction material, to its appropriate use and to the further development of construction with concrete. I have precisely the same hope for this 31st collected volume. As always, the reader will find the subject index at the end. It contains specialist concrete technology terms that are associated with the individual contributions and makes it simple to research specific topics.

I would like to thank all the authors and staff who have contributed to the success of this volume.

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Martin Schneider