

PREFACE

This book is entitled “The New Concrete”. What is “new”? There are many reasons why I have used this term . Some are related to the material. Others belong to the book

First of all, during the last 30 years concrete is changed in composition and performance: only a minor part of cement is still Portland cement. In Europe about 90 % of the cement adopted in modern concretes is in form of blended cements where Portland cement is replaced by fly ash, granulated ground blast furnace slag, natural or industrial pozzolan, silica fume and other components including ground limestone. The use of chemical admixtures, and particularly of superplasticizers, has revolutionized the technology of concrete in terms of water-cement -which can be as low as 0.30 to manufacture High Strength Concrete- or in terms of workability to manufacture Self-Compacting Concrete. More recently, the use of shrinkage-reducing admixtures (SRA), particularly in combination with polymer macro-fibres or CaO-based expansive agents, allows to manufacture crack-free concrete even in the absence of wet curing.

Secondly, this book is devoted to Architects and Building or Civil engineers who are interested in essential information about concrete and its performance, together with standard prescriptions to be adopted by contractors, pre-cast concrete and ready-mixed manufacturers. Other excellent books like “Properties of Concrete” by A.M. Neville, “High-Performance Concretes” by P.C. Aitcin, “Concrete. Microstructure, Properties an Materials” by P. K. Mehta and P. J. M Monteiro, are available and more devoted to scientists, students or concrete specialists, but they do not offer any helpful and practical support especially to European people concerned with concrete.

The third reason why the concrete presented in this book is new is that it is based on the European Standard (EN) specially for the cements and the concrete properties dealing with characteristic strength, permeability and durability. No other book is so devoted to the European Standards. However, the technical literature available in America (ACI,CANMET) or in Japan (specially in chemical admixtures) is taken in great account in this book.

Moreover, attached to the book is the “Easy & Quick” software to support and help readers to establish technical prescriptions about concrete strength, durability, placement, compaction and curing according to European Standards.

A fifth reason why the concrete of this book is new is the available link to [www. encosrl.it](http://www.encosrl.it) where the original papers of the author and his colleagues, quoted in the book, are freely available.

Finally let me thank my wife Isabella without whom, casting modesty aside, this book would not have had its specially pleasing graphics and colour treatment, including pictures, tables and graphs.

Mario Collepari, October 2006