BOOK REVIEW

Concrete: Structure, Properties, and Materials

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REFERENCE: Mehta, P. K. and Monteiro, P. J. M., *Concrete: Structure, Properties, and Materials, Second Edition,* Prentice-Hall, Inc., Englewood Cliffs, NJ, 1993, ISBN: 0-13-175621-4, 548 pp.

As with many sequels, this book is good, but falls short of the level of excellence established in the first edition. For technical content, the second edition is a reference worth owning. The three major parts of the book deal with material science, construction and technology, and special topics, which is the same format used in the first edition.

Part I, titled "Structure and Properties of Hardened Concrete," is a well written treatise of the material science of concrete. The information is presented in a clear and understandable fashion. The test questions at the end of the chapters are probing and comprehensive in nature.

The subject of Part II, "Concrete Materials, Mix Proportioning, and Early-Age Properties," deals with the construction and technology of concrete. The topics covered represent a fairly extensive review of the state of the art. However, caution must be used when quoting this text verbatim since, for example, an error in reference to ASTM C 632 was noted in Chapter 7.

The book presents Part III as "Recent Advances, and Concrete in the Future." The preface states that Chapter 11 contains "up-to-date" information, but the section on "Heavyweight Concrete for Radiation Shielding" in that chapter relies on old research literature and does not reference the ASTM symposium on radiation shielding material held in June 1991. Also, Chapter 13 includes a section titled, "Advantages of Concrete Over Steel Structures." This section states that concrete is more resistant than steel to cyclic loading. This is completely misleading. Professionals dealing with seismic issues know, too well, how the lack of ductility in older, concrete frame structures or in unreinforced concrete buildings make them much more vulnerable than steel structures designed in the same era. The book, in this instance, took a grain of truth about fatigue and provided misleading conclusions by not presenting the more important issue of energy absorption in structures.

In summary, the book has several failings, but, considering the book in its entire context, the reader should find this a useful reference in which information is readily accessible and easily understood.