

Concrete 2nd Edition Sidney Mindess

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Materials Science of Concrete Menashi Cohen
1998 Contains 12 papers from a 1998
symposium. Topics include fluoro- sulfate
cements, the role of aggregates in hardened
concrete, rheology of fresh concrete, early age
properties for thermal and stress analyses during
hydration, ion transport mechanisms in cement-
based materials, long-term performance of fiber-
reinforced cementitious composites, high-
performance concrete, and computer tomography
of reinforced concrete. Annotation copyrighted by
Book News, Inc., Portland, OR

**Standard Practice for Concrete for Civil Works
Structures** American Society of Civil Engineers
1994

Binders for Durable and Sustainable Concrete

Pierre-Claude Aitcin 2007-07-05 Linking theory to
practice, this book provides a better fundamental
understanding of Portland cement and hydraulic
binders which is necessary to make better
concrete. It has been clearly demonstrated that
concrete durability is closely linked to its
water/binder ratio and proper curing during the
first week after casting. In this rigorously
presented work, Pierre-Claude Aitcin explains the
complexity of the hydration reaction and how to
make, use and cure durable and sustainable
concrete. This book also details the problems with
Portland cement composition at present and
outlines the concept of an ideal hydraulic binder
which is technically and ecologically efficient, as

well as being long-lasting and robust. Binders for Durable and Sustainable Concrete is a practical and innovative reference text which will be particularly relevant to engineers and chemists working in the Portland cement, concrete and admixture industries. This book will also be of interest to academics and graduate-level students in Civil Engineering departments who specialize in Portland cement and concrete technology.

National Union Catalog Includes entries for maps and atlases.

Highway Materials, Soils, and Concretes Harold N. Atkins 2003 This clear, concise text provides a user-friendly introduction to the most current civil engineering and highway construction materials. It covers the essentials of highway construction technology without getting bogged down with complicated mathematics, excess theory, or difficult language. Topics covered in this book include soils, aggregates, pavement structure and base, asphalt pavements and materials, and Portland Cement Concrete, as well as Stone Matrix Asphalt, admixtures, and whitetopping. For civil engineers, those in highway construction, construction materials dealers, and soil mechanics.

Fibre Reinforced Cementitious Composites, Second Edition Arnon Bentur 2006-11-16 Advanced cementitious composites can be designed to have outstanding combinations of strength (five to ten times that of conventional

concrete) and energy absorption capacity (up to 1000 times that of plain concrete). This second edition brings together in one volume the latest research developments in this rapidly expanding area. The book is split into two parts. The first part is concerned with the mechanics of fibre reinforced brittle matrices and the implications for cementitious systems. In the second part the authors describe the various types of fibre-cement composites, discussing production processes, mechanical and physical properties, durability and applications. Two new chapters have been added, covering fibre specification and structural applications. Fibre Reinforced Cementitious Composites will be of great interest to practitioners involved in modern concrete technology and will also be of use to academics, researchers and graduate students.

Concrete Technology, Special Volume Jan P. Skalny 2005-02-28 This edition contains 17 papers presented at past Anna Maria Workshops. Topics include The Future of the Cement and Concrete Industries, Testing and Standards for Concrete Durability, and Designing Concrete for Durability.

The Science and Technology of Civil Engineering Materials J. Francis Young 1998 For one/two-term courses in Introductory Engineering Materials in departments of civil engineering. Applies the rigor of material science principles to a comprehensive, integrative exploration of the

science and technology of construction materials. Materials Science of Concrete, Special Volume Andrew J. Boyd 2002-04-28 This workshop brought together representatives from different areas of the cement and concrete community to discuss future trends and challenges in the field of concrete materials. Topics include developments and their potential for application, industry's view on what it needs from academia, academia's view on what it expects from industry and what they have to offer, technical advances and barriers to advancement, the role of governments, business issues, and ecological and societal barriers.

Durability of Concrete Mark Alexander 2017-06-26 This book provides an up-to-date survey of durability issues, with a particular focus on specification and design, and how to achieve durability in actual concrete construction. It is aimed at the practising engineer, but is also a valuable resource for graduate-level programs in universities. Along with background to current philosophies it gathers together in one useful reference a summary of current knowledge on concrete durability, includes information on modern concrete materials, and shows how these materials can be combined to produce durable concrete. The approach is consistent with the increasing focus on sustainability that is being addressed by the concrete industry, with the current emphasis on 'design for durability'.

Sustainability of Concrete Pierre-Claude Aïtcin 2011-02-18 Production of Portland cement is responsible for about seven percent of the world's greenhouse gas emissions. The pressure to make the production of concrete more sustainable, or "greener", is considerable and increasing. This requires a wholesale shift in processes, materials and methods in the concrete industry. Pure Portland cement will need to be replaced by more complex binary, tertiary or even quaternary binders, including other types of cementitious materials. We can expect an increasing use of high performance concrete, primarily because of its high sustainability and durability. Much more attention will have to be paid to the proper curing of the concrete if we want to improve its life expectancy. Presenting the latest advances in the science of concrete this book focuses particularly on sustainability, durability, and economy. It explores the potential for increased sustainability in concrete from the initial mixing right through to its behaviour in complex structures exposed to different types of loads and aggressive environments.

Fiber-Reinforced Cementitious Materials: Volume 211 Sidney Mindess 1991-05-31 The MRS Symposium Proceeding series is an internationally recognised reference suitable for researchers and practitioners.

Durability of Concrete Mark G. Alexander 2017 This book provides an up-to-date survey of

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Advanced Civil Infrastructure Materials H Wu

2006-04-26 In recent decades, material development in response to a call for more durable infrastructures has led to many exciting advancements. Fiber reinforced composite designs, with very unique properties, are now being explored in many infrastructural applications. Even concrete and steel are being steadily improved to have better properties and durability. Advanced civil infrastructure materials provides an up-to-date review of several emerging construction materials that may have a significant impact on repairs of existing infrastructures and/or new constructions. Each chapter explores the 'materials design concept' which leads to the creation of advanced

composites by synergistically combining two or more constituents. Such design methodology is made possible by several key advancements in materials science and mechanics. Each chapter is concluded with selective examples of real world applications using these advanced materials. This includes relevant structural design guidelines and mechanics to assist readers in comprehending the uses of these advanced materials. The contributors are made up of renowned authors who are recognized for their expertise in their chosen field. Advanced civil infrastructure materials is of value to both graduate and undergraduate students of civil engineering, and will serve as a useful reference guide for researchers and practitioners in the construction industry. A valuable reference for researchers and practitioners in the construction industry Essential reading for graduate and undergraduate students of civil engineering Written by an expert panel **Concrete** Sidney Mindess 2003 This book presents a unified view of concrete behavior in light of a body of chemical and physical principles. It provides the most up-to-date information available on new concrete materials. The most up-to-date information on new concrete materials. SI units used as primary system, keeping readers current to the unit system being adopted in the United States. Latest ASTM specifications are included. Exercises at the end of each chapter. An excellent resource for

professionals in this industry.

The British Library General Catalogue of Printed Books 1976 to 1982 British Library 1983

Concrete Sidney Mindess 1981 Concrete text with a materials science orientation. Presents a unified view of concrete behavior in light of underlying chemical and physical principles.

Significance of Tests and Properties of Concrete and Concrete-making Materials Joseph F.

Lamond 2006

Fracture in Concrete Wai-Fah Chen 1980

Perspectives in Civil Engineering Jeffrey S.

Russell 2003-01-01 This report contains 27 papers that serve as a testament to the state-of-the-art of civil engineering at the outset of the 21st century, as well as to commemorate the ASCE's Sesquicentennial. Written by the leading practitioners, educators, and researchers of civil engineering, each of these peer-reviewed papers explores a particular aspect of civil engineering knowledge and practice. Each paper explores the development of a particular civil engineering specialty, including milestones and future barriers, constraints, and opportunities. The papers celebrate the history, heritage, and accomplishments of the profession in all facets of practice, including construction facilities, special structures, engineering mechanics, surveying and mapping, irrigation and water quality, forensics, computing, materials, geotechnical engineering, hydraulic engineering, and transportation

engineering. While each paper is unique, collectively they provide a snapshot of the profession while offering thoughtful predictions of likely developments in the years to come.

Together the papers illuminate the mounting complexity facing civil engineering stemming from rapid growth in scientific knowledge, technological development, and human populations, especially in the last 50 years. An overarching theme is the need for systems-level approaches and consideration from undergraduate education through advanced engineering materials, processes, technologies, and design methods and tools. These papers speak to the need for civil engineers of all specialties to recognize and embrace the growing interconnectedness of the global infrastructure, economy, society, and the need to work for more sustainable, life-cycle-oriented solutions. While embracing the past and the present, the papers collected here clearly have an eye on the future needs of ASCE and the civil engineering profession.

Canadian Symposium on Cement and Concrete, 2nd, Vancouver, 24-26 July 1991 University of British Columbia 1991

Developments in the Formulation and Reinforcement of Concrete Sidney Mindess 2019-06-26 *Developments in the Formulation and Reinforcement of Concrete, Second Edition*, presents the latest developments on topics covered in the first edition. In addition, it includes

new chapters on supplementary cementitious materials, mass concrete, the sustainability of concrete, service life prediction, limestone cements, the corrosion of steel in concrete, alkali-aggregate reactions, and concrete as a multiscale material. The book's chapters introduce the reader to some of the most important issues facing today's concrete industry. With its distinguished editor and international team of contributors, users will find this to be a must-have reference for civil and structural engineers.

Summarizes a wealth of recent research on structural concrete, including material microstructure, concrete types, and variation and construction techniques Emphasizes concrete mixture design and applications in civil and structural engineering Reviews modern concrete materials and novel construction systems, such as the precast industry and structures requiring high-performance concrete

Evaluation of New PCC Maturity Technology 2004

Books in Print Supplement 1985

The British National Bibliography Arthur James Wells 2006

Advances in Cementitious Materials Sidney Mindess 1991

Books for College Libraries: Psychology, science, technology, bibliography Association of College and Research Libraries 1988 The third edition lists 50,000 titles that form the foundation of an undergraduate library's collection.

American Book Publishing Record 2005

Bonding in Cementitious Composites Sidney Mindess 1988

ACI Materials Journal 2002

Materials Science of Concrete Jan Skalny 1989

Cementitious materials : historical notes / Waldemar A. Klemm / - Cement production and cement quality / Vagn Johansen / - Phase equilibria and cement hydration / Paul Wencil Brown / - Hydration mechanisms / E.M. Gartner and J.M. Gaidis / - The microstructure of concrete / Karen L. Scrivener / - Interfaces in concrete / S. Mindess / - Modeling of hydration reactions and concrete properties / L.J. Parrott / - Microsilica in concrete / L.R. Roberts / - Fiber-Reinforced cementitious materials / Arnon Bentur / - Mechanisms of corrosion of steel in concrete / Arnold Rosenberg / - Integrated knowledge systems for concrete science and technology / Geoffrey Frohnsdorff.

***High-performance Concrete Using Nevada Aggregates* Jeremy J. Will 2001**

Proceedings of the Institution of Civil Engineers 2005

Fibre Reinforced Cementitious Composites, Second Edition Arnon Bentur 2006-11-22

Advanced cementitious composites can be designed to have outstanding combinations of strength (five to ten times that of conventional concrete) and energy absorption capacity (up to 1000 times that of plain concrete). This second

edition brings together in one volume the latest research developments in this rapidly expanding area. The book is split into two parts. The first part is concerned with the mechanics of fibre reinforced brittle matrices and the implications for cementitious systems. In the second part the authors describe the various types of fibre-cement composites, discussing production processes, mechanical and physical properties, durability and applications. Two new chapters have been added, covering fibre specification and structural applications. Fibre Reinforced Cementitious Composites will be of great interest to practitioners involved in modern concrete technology and will also be of use to academics, researchers and graduate students.

Materials Science of Concrete VI Jan P. Skalny
2001-08-28 This volume contains papers on phase composition and quantitative x-ray powder diffraction analysis of Portland cement and clinker; neutron diffraction and neutron scattering studies of cement; scanning probe microscopy: a new view of the mineral surface; the stereological and statistical properties of entrained air voids in concrete: a mathematical basis for air void system characterization; fresh concrete rheology: recent developments; early age behavior of cement-based materials; transport mechanisms and damage: current issues in permeation characteristics of concrete; the use of silica fume to control expansion due to alkali-aggregate

reactivity in concrete: a review; delayed ettringite formation in concrete: recent developments and future directions; use of durability indexes to achieve durable cover concrete in reinforced concrete structures; and microfiller partial substitution for cement.

Progress in Structural Engineering, Mechanics and Computation Alphose Zingoni 2003-04-15

The Second International Conference on Structural Engineering Mechanics and Computation was held in Cape Town, South Africa in 2004. Its mission was 'To review and share the latest developments, and address the challenges that the present and the future pose'. This book contains its key findings with contributions from academics, researchers and practitioners in the broad fields of structural mechanics, associated computation and structural engineering. Their work builds a clear picture of recent achievements in the advancement of knowledge and understanding in these areas. This text therefore covers all aspects of structural mechanics and is broken down into 36 sections which communicate the latest discoveries and developments across the following areas: * vibration, dynamics, impact response, soil-structure interaction and damage mechanics * numerical modeling and computational methods * practical aspects of the analysis, design, and construction of structures - Specific classes of structures such as shells, plates, frames, bridges,

buildings, lightweight structures, space structures and foundation structures * a variety of construction materials ranging from the traditional timber, masonry, concrete, steel and glass, to recent innovations encompassing high-performance composites, ceramics, high-strength concrete, fibre-reinforced concrete, stainless steel and smart alloys. The large number of high-quality papers presented and the wide spectrum of relevant topics covered, as well as the great diversity of nationalities represented by the participants, bring the reader up to speed with developments on a global scale.

Aggregates in Concrete Mark Alexander

2010-02-25 Bringing together in one volume the latest research and information, this book provides a detailed guide to the selection and use of aggregates in concrete. After an introduction defining the purpose and role of aggregates in concrete, the authors present an overview of aggregate sources and production techniques, followed by a detailed study of their physical, mechanical and chemical properties. This knowledge is then applied to the use of aggregates in both plastic and hardened concretes, and in the overall mix design. Special aggregates and their applications are discussed in detail, as are the current main specifications, standards and tests.

Shotcrete Dudley Robert Morgan 2022-03-30

Shotcrete: Materials, Performance and Use is a

comprehensive textbook covering the current state-of-the-art shotcrete technology. It provides an overview of the many and various uses of shotcrete. Shotcrete is well suited for construction of curvilinear structures (domes, shells, bobsleigh/luge tracks, etc.) and overhead shotcrete applications (seismic retrofit, repairs, ground support, etc.) that could not be constructed technically and/or economically using conventional formed, cast-in-place concrete construction methods. It contains chapters on history, shotcrete materials and mixture proportioning, performance, shotcrete research, equipment and shotcrete application. It is also comprised of shotcrete case history examples including buildings and structures, infrastructure repair and rehabilitation, ground support and shoring, underground support in tunnels and mines, swimming pools and spas, and, finally, architectural shotcrete. This text should be of interest to design engineers and architects considering the use of the technology, as well as academics. It serves as a useful guide to contractors using shotcrete in one or more of its many and various applications.

Concrete International 2002

Concrete Surface Engineering Benoit Bissonnette

2018-10-09 Applying any material to an existing concrete surface intrinsically entails the development of a bond. Considering the ever increasing importance of concrete repair and

protection, which imply the creation of an interface between two materials, an improved knowledge of concrete surface characteristics is paramount. Surface engineering, which has evolved from the world of metallurgy, addresses all surface-related considerations, notably adhesion. It provides a fundamental understanding of what will make the contact between two materials effective or not, allowing for interactions of variable intensity. It also comes with a variety of scientific tools for characterizing the quality of the substrate, the properties of the new material layer and their interface. In the case of concrete surface treatment, this is especially important for achieving lasting results. This book addresses the essentials of concrete surface engineering in view of a wide variety of concrete surface treatments, from protective coatings to repairs. It provides a leading-edge source of

information for practicing engineers, architects, repair specialists, and researchers on the following topics: Surface engineering principles applied to concrete Methods and techniques for assessing concrete surface characteristics Fundamentals of adhesion between concrete and surface repairs/treatments Compatibility requirements for concrete surface repairs/treatments Review of surface preparation techniques available for concrete Achievement and appraisal of bond between existing concrete and surface repairs/treatments Benoît Bissonnette is professor of civil engineering at Laval University in Quebec City, Canada. Luc Courard is professor of building materials at the University of Liège in Belgium. Andrzej Garbacz is professor of building materials engineering in the Department of Building Materials Engineering at the Warsaw University of Technology in Poland.