
Reinforced Concrete Design Two Way Slabs

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Elementary Reinforced Concrete Design UNSW Press
A PRACTICAL GUIDE TO REINFORCED CONCRETE
STRUCTURE ANALYSIS AND DESIGN Reinforced Concrete
Structures explains the underlying principles of reinforced concrete
design and covers the analysis, design, and detailing requirements in
the 2008 American Concrete Institute (ACI) Building Code
Requirements for Structural Concrete and Commentary and the
2009 International Code Council (ICC) International Building Code
(IBC). This authoritative resource discusses reinforced concrete
members and provides techniques for sizing the cross section,
calculating the required amount of reinforcement, and detailing the

reinforcement. Design procedures and flowcharts guide you through
code requirements, and worked-out examples demonstrate the
proper application of the design provisions. **COVERAGE
INCLUDES:** Mechanics of reinforced concrete Material properties of
concrete and reinforcing steel Considerations for analysis and design
of reinforced concrete structures Requirements for strength and
serviceability Principles of the strength design method Design and
detailing requirements for beams, one-way slabs, two-way slabs,
columns, walls, and foundations

Structural Elements for Architects and Builders: Design of Columns,
Beams, and Tension Elements in Wood, Steel, and Reinforced
Concrete, 2nd Edition CRC Press

Emphasizing a conceptual understanding of concrete design and
analysis, this revised and updated edition builds the student's
understanding by presenting design methods in an easy to understand
manner supported with the use of numerous examples and problems.
Written in intuitive, easy-to-understand language, it includes SI unit
examples in all chapters, equivalent conversion factors from US
customary to SI throughout the book, and SI unit design tables. In
addition, the coverage has been completely updated to reflect the latest

ACI 318-11 code.

Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary CRC Press

The leading structural concrete design reference for over two decades—updated to reflect the latest ACI 318-19 code A go-to resource for structural engineering students and professionals for over twenty years, this newly updated text on concrete structural design and analysis reflects the most recent ACI 318-19 code. It emphasizes student comprehension by presenting design methods alongside relevant codes and standards. It also offers numerous examples (presented using SI units and US-SI conversion factors) and practice problems to guide students through the analysis and design of each type of structural member. New to Structural Concrete: Theory and Design, Seventh Edition are code provisions for transverse reinforcement and shear in wide beams, hanger reinforcement, and bi-directional interaction of one-way shear. This edition also includes the latest information on two-way shear strength, ordinary walls, seismic loads, reinforcement detailing and analysis, and materials

requirements. This book covers the historical background of structural concrete; advantages and disadvantages; codes and practice; and design philosophy and concepts. It then launches into a discussion of the properties of reinforced concrete, and continues with chapters on flexural analysis and design; deflection and control of cracking; development length of reinforcing bars; designing with the strut-and-tie method; one-way slabs; axially loaded columns; and more. Updated to align with the new ACI 318-19 code with new code provisions to include: transverse reinforcement and shear in wide beams, hanger reinforcement, bi-directional interaction of one-way shear, and reference to ACI certifications Includes dozens of worked examples that explain the analysis and design of structural members Offers updated information on two-way shear strength, seismic loads, materials requirements, and more Improves the design ability of students by explaining code requirements and restrictions Provides examples in SI units in every chapter as well as conversion factors from customary units to SI Offers instructors access to a

solutions manual via the book's companion website Structural Concrete: Theory and Design, Seventh Edition is an excellent text for undergraduate and graduate students in civil and structural engineering programs. It will also benefit concrete designers, structural engineers, and civil engineers focused on structures.

Practical Design of Reinforced Concrete Buildings Dearborn Trade Publishing

Setting out design theory for concrete elements and structures and illustrating the practical applications of the theory, the third edition of this popular textbook has been extensively rewritten and expanded to conform to the latest versions of BS8110 and EC2. It includes more than sixty clearly worked out design examples and over 600 diagrams, plans and charts as well as giving the background to the British Standard and Eurocode to explain the 'why' as well as the 'how' and highlighting the differences between the codes. New chapters on prestressed concrete and water retaining structures are included and the most commonly encountered design problems in structural concrete are covered. Invaluable for students on civil engineering degree courses; explaining the principles of element design and the procedures for the design of concrete buildings, its breadth and depth of coverage also make it a useful reference tool for practising engineers.

Effects of Product Quality and Design Criteria on Structural Integrity
PHI Learning Pvt. Ltd.

Through four editions, Phil M. Ferguson's Reinforced Concrete Fundamentals has become a recognized classic, known for its clarity and thoroughness. There is, in fact, no other reinforced concrete text

available as useful for both beginners and experienced designers. Now a fifth edition, reflecting the 1983 and 1986 ACI Code revisions, brings Reinforced Concrete Fundamentals completely up to date while retaining Ferguson's popular approach. Changes include a return, for most examples, to the use of English units to reflect current practice, reorganization of material for greater clarity, revision and expansion of seismic design-related topics, and an emphasis on conceptual models for design. There are entirely new chapters on design and detailing in the central joint regions, and on shear wall design. In addition, substantial revisions have been made in the basic approach to the design of slender columns in order to emphasize the secondary deflection patterns, and in the treatment of splices, reinforcement development and hooks in order to reflect the basic behavior and failure patterns rather than just arbitrary code rules. The coverage of seismic design, interaction curves for eccentrically loaded columns, and direct design procedures for two-way slabs has been revised as well. As in previous editions, Reinforced Concrete Fundamentals imparts a clear understanding of the behavior of reinforced concrete members and assemblages with an emphasis on the "flow" of the design process. Throughout, behavior at all load stages is illustrated by figures and photos. A set of working appendices delivers a summary treatment of service load analysis for flexure, and design tables and curves. Maintaining the high standards of its popular predecessors, Reinforced Concrete Fundamentals, Fifth Edition makes up an ideal reference, refresher, and desktop resource for civil engineers needing a clear, modern approach to concrete design.

DESIGN OF CONCRETE STRUCTURES BSP Books
Reinforced Concrete Design has been written to impart in-depth knowledge to students about the subject. The appropriate Indian standard guidelines, suitable illustrations, figures and solved numerical problems have been included. The design techniques

used by the engineers have been discussed with suitable examples to provide basic knowledge to the readers. A sufficient number of questions are given at the end of each chapter to enable the students prepare for the examinations. An additional chapter explaining the concepts and applications of earthquake-resistant design of structures has been included in the text. The fundamentals of computer-aided design and drawing using suitable illustrations have been explained in the last chapter to enable the engineers to understand the practical applications of the subject. The book will serve the purpose of providing thorough knowledge to the students and practicing engineers in the subject.

Salient features

- Thorough understanding of design of reinforced concrete structures.
- Knowledge of earthquake-resistant design of structures.
- Computer-aided design fundamentals.
- Analysis and design using STAAD
- Drawing using AUTO CAD.
- Illustrations containing reinforcement details.

Contents: 1. Reinforced Concrete 2. Limit State Design 3. Limit State of Collapse – Flexure 4. Shear, Bond and Torsion 5. Limit State of Compression – Compression 6. Limit State of Serviceability 7. Design of Beams 8. Design of Slabs 9. Design of Stairs 10. Design of Foundations 11. Earthquake-Resistant Design of Structures 12. Computer-Aided Design of Structures

About the Authors: Ravi Kumar Sharma, Professor in Civil Engineering Department, National Institute of Technology, Hamirpur (HP), obtained his PhD in 1999 from the Indian Institute of Technology, Roorkee. He is an experienced teacher, researcher and consultant with more than 35 years of experience. He has published 3 books, 125 research papers, completed 13 research projects and provided

consultancy to more than 1500 construction projects. Rachit Sharma obtained his Masters degree in structural engineering from Guru Nanak Engineering College Ludhiana. He is currently pursuing research in structural engineering at National Institute of Technology Jalandhar. He has published 10 research papers in journals and conference proceedings.

Reinforced Concrete Design: Principles And Practice PHI Learning Pvt. Ltd. Concise but comprehensive, Jonathan Ochshorn's Structural Elements for Architects and Builders explains how to design and analyze columns, beams, tension members and their connections. The material is organized into a single, self-sufficient volume, including all necessary data for the preliminary design and analysis of these structural elements in wood, steel, and reinforced concrete. Every chapter contains insights developed by the author and generally not found elsewhere. Appendices included at the end of each chapter contain numerous tables and graphs, based on material contained in industry publications, but reorganized and formatted especially for this text to improve clarity and simplicity, without sacrificing comprehensiveness. Procedures for design and analysis are based on the latest editions of the National Design Specification for Wood Construction (AF&PA and AWC), the Steel Construction Manual (AISC), Building Code Requirements for Structural Concrete (ACI), and Minimum Design Loads for Buildings and Other Structures (ASCE/SEI). This thoroughly revised and expanded second edition of Structural Elements includes an introduction to statics and strength of materials, an examination of loads, and new sections on material properties and construction systems within the chapters on wood, steel, and reinforced concrete design. This permits a more comprehensive overview of the various design and analysis procedures for each of the major structural materials used in modern buildings. Free structural calculators (search online for: Ochshorn calculators) have been created for many examples in the book, enabling architects and builders to quickly find preliminary answers to structural design questions commonly encountered in school or in practice.

Design Handbook for Reinforced Concrete Elements, 2 Edition

Thomas Telford

Corrosion-resistant, electromagnetic transparent and lightweight fiber-reinforced polymers (FRPs) are accepted as valid alternatives to steel in concrete reinforcement. Reinforced Concrete with FRP Bars: Mechanics and Design, a technical guide based on the authors' more than 30 years of collective experience, provides principles, algorithms, and practical examples. Well-illustrated with case studies on flexural and column-type members, the book covers internal, non-prestressed FRP reinforcement. It assumes some familiarity with reinforced concrete, and excludes prestressing and near-surface mounted reinforcement applications. The text discusses FRP materials properties, and addresses testing and quality control, durability, and serviceability. It provides a historical overview, and emphasizes the ACI technical literature along with other research worldwide. Includes an explanation of the key physical mechanical properties of FRP bars and their production methods Provides algorithms that govern design and detailing, including a new formulation for the use of FRP bars in columns Offers a justification for the development of strength reduction factors based on reliability considerations Uses a two – story building solved in Mathcad® that can become a template for real projects This book is mainly intended for practitioners and focuses on the fundamentals of performance and design of concrete members with FRP reinforcement and reinforcement detailing. Graduate students and researchers can use it as a valuable resource. Antonio Nanni is a professor at the University of Miami and the University of

Naples Federico II. Antonio De Luca and Hany Zadeh are consultant design engineers.

Brayton Standards ASTM International

Publisher Description

Introduction to Reinforced Concrete Design PHI Learning Pvt. Ltd.

This book on Reinforced Concrete has been comprehensively revised with a view to make it more suitable for the updated syllabus of various Technical Institutes and Engineering Colleges of different Universities.

Reinforced Concrete Design CRC Press

This book is intended to guide practicing structural engineers familiar with earlier ACI building codes into more profitable routine designs with the ACI 1995 Building Code (ACI 318-95). Each new ACI Building Code expresses the latest knowledge of reinforced concrete in legal language for safe design application. Beginning in 1956 with the introduction of ultimate strength design, each new code offered better utilization of high-strength reinforcement and the compressive strength of the concrete itself. Each new code thus permitted more economy as to construction material, but achieved it through more detailed and complicated design calculations. In addition to competition requiring independent structural engineers to follow the latest code for economy, it created a professional obligation to follow the latest code for accepted levels of structural safety. The increasing complexity of codes has encouraged the use of computers for design and has stimulated the development of computer-based handbooks. Before computer software can be successfully used in the structural design of buildings, preliminary sizes of structural elements must be established from handbook tables, estimates, or experienced first guesses for input into the computer.

Reinforced Concrete Design McGraw Hill Professional

An exploration of the world of concrete as it applies to the construction of buildings, Reinforced Concrete Design of Tall Buildings provides a practical perspective on all aspects of reinforced concrete used in the design of structures, with particular focus on tall and ultra-tall

buildings. Written by Dr. Bungale S. Taranath, this work explains the fundamental principles and state-of-the-art technologies required to build vertical structures as sound as they are eloquent. Dozens of case studies of tall buildings throughout the world, many designed by Dr. Taranath, provide in-depth insight on why and how specific structural system choices are made. The book bridges the gap between two approaches: one based on intuitive skills and experience and the other based on computer skills and analytical techniques. Examining the results when experiential intuition marries unfathomable precision, this book discusses: The latest building codes, including ASCE/SEI 7-05, IBC-06/09, ACI 318-05/08, and ASCE/SEI 41-06 Recent developments in studies of seismic vulnerability and retrofit design Earthquake hazard mitigation technology, including seismic base isolation, passive energy dissipation, and damping systems Lateral bracing concepts and gravity-resisting systems Performance based design trends Dynamic response spectrum and equivalent lateral load procedures Using realistic examples throughout, Dr. Taranath shows how to create sound, cost-efficient high rise structures. His lucid and thorough explanations provide the tools required to derive systems that gracefully resist the battering forces of nature while addressing the specific needs of building owners, developers, and architects. The book is packed with broad-ranging material from fundamental principles to the state-of-the-art technologies and includes techniques thoroughly developed to be highly adaptable. Offering complete guidance, instructive examples, and color illustrations, the author develops several approaches for designing tall buildings. He demonstrates the benefits of blending imaginative problem solving and rational analysis for creating better structural systems.

Design of Reinforced Concrete Structures PHI Learning Pvt. Ltd.

This fourth edition of a bestselling textbook has been extensively rewritten

and expanded in line with the current Eurocodes. It presents the principles of the design of concrete elements and of complete structures, with practical illustrations of the theory. It explains the background to the Eurocode rules and goes beyond the core topics to cover the design of foundations, retaining walls, and water retaining structures. The text includes more than sixty worked out design examples and more than six hundred diagrams, plans, and charts. It suitable for civil engineering courses and is a useful reference for practicing engineers.

ADVANCED REINFORCED CONCRETE DESIGN

清华大学出版社有限公司

Intended as a companion volume to the author's Limit State Design of Reinforced Concrete (published by Prentice-Hall of India), the Second Edition of this comprehensive and systematically organized text builds on the strength of the first edition, continuing to provide a clear and masterly exposition of the fundamentals of the theory of concrete design. The text meets the twin objective of catering to the needs of the postgraduate students of Civil Engineering and the needs of the practising civil engineers as it focuses also on the practices followed by the industry. This text, along with Limit State Design, covers the entire design practice of revised Code IS456 (2000). In addition, it analyzes the procedures specified in many other BIS codes such as those on winds, earthquakes, and ductile detailing. What's New to This Edition Chapter 18 on Earthquake Forces and Structural Response of framed buildings has been completely revised and updated so as to conform to the latest I.S. Codes 1893 (2002) entitled Criteria for Earthquake Resistant Design of Structures (Part I - Fifth Revision). Chapters 19 and 21 which too deal with earthquake design have been revised. A Summary of elementary design of reinforced concrete members is added as Appendix. Valuable tables and charts are presented to help students and practising designers to arrive at a speedy estimate of the steel requirements in slabs, beams, columns and footings of ordinary

buildings.

Reinforced Concrete Slabs John Wiley & Sons

Designed primarily as a text for the undergraduate students of civil engineering, this compact and well-organized text presents all the basic topics of reinforced concrete design in a comprehensive manner. The text conforms to the limit states design method as given in the latest revision of Indian Code of Practice for Plain and Reinforced Concrete, IS: 456 (2000). This book covers the applications of design concepts and provides a wealth of state-of-the-art information on design aspects of wide variety of reinforced concrete structures. However, the emphasis is on modern design approach. The text attempts to:

- Present simple, efficient and systematic procedures for evolving design of concrete structures.
- Make available a large amount of field tested practical data in the appendices.
- Provide time saving analysis and design aids in the form of tables and charts.
- Cover a large number of worked-out practical design examples and problems in each chapter.
- Emphasize on development of structural sense needed for proper detailing of steel for integrated action in various parts of the structure. Besides students, practicing engineers and architects would find this text extremely useful.

DESIGN OF REINFORCED CONCRETE STRUCTURES John Wiley & Sons

Comprehensive, up-to-date coverage of reinforced concrete slabs-from leading authorities in the field. Offering an essential background for a thorough understanding of building code requirements and design procedures for slabs, Reinforced Concrete Slabs, Second Edition provides a full treatment of today's approaches to reinforced concrete

slab analysis and design. Now brought up to date with a wealth of new material on computer optimization, the equivalent frame method, lateral load analysis, and other current topics, the new edition of this classic text begins with a general discussion of slab analysis and design, followed by an exploration of key methods (equivalent frame, direct design, and strip methods) and theories (elastic, lower bound, and yield line theories). Later chapters discuss other important issues, including shear strength, serviceability, membrane action, and fire resistance. Comprehensive and accessible, Reinforced Concrete Slabs, Second Edition appeals to a broad range of readers-from senior and graduate students in civil and architectural engineering to practicing structural engineers, architects, contractors, construction engineers, and consultants.

LIMIT STATE DESIGN OF REINFORCED CONCRETE John Wiley & Sons

Based on the 1995 edition of the American Concrete Institute Building Code, this text explains the theory and practice of reinforced concrete design in a systematic and clear fashion, with an abundance of step-by-step worked examples, illustrations, and photographs. The focus is on preparing students to make the many judgment decisions required in reinforced concrete design, and reflects the author's experience as both a teacher of reinforced concrete design and as a member of various code committees. This edition provides new, revised and expanded coverage of the following topics: core testing and durability; shrinkage and creep; bases the maximum steel ratio and the value of the factor on Appendix B of ACI318-95; composite concrete beams; strut-and-tie models; dapped ends and T-beam flanges. It also expands the discussion of STMs and adds new examples in SI units.

Design of Reinforced Concrete John Wiley & Sons Incorporated
Develops simple theories to help students understand the fundamental principles of reinforced concrete design.
Incorporates current Code requirements, as well as design

formulas, design charts and design examples which will prove useful both to students and practising engineers.

Fundamentals of Reinforced Concrete Common Ground Publishing

This text primarily analyses different methods of design of concrete structures as per IS 456: 2000 (Plain and Reinforced Concrete—Indian Standard Code of Practice, 4th revision, Bureau of Indian Standards). It gives greater emphasis on the limit state method so as to illustrate the acceptable limits for the safety and serviceability requirements of structures. Besides dealing with yield line analysis for slabs, the book explains the working stress method and its use for designing reinforced concrete tension members, theory of redistribution of moments, and earthquake resistant design of structures. This well-structured book develops an effective understanding of the theory through numerous solved problems, presenting step-by-step calculations. The use of SP-16 (Design Aids for Reinforced Concrete to IS: 456 – 1978) has also been explained in solving the problems. **KEY FEATURES :**

Instructional Objectives at the beginning of the chapter highlight important concepts. Summary at the end of the chapter to help student revise key points. Sixty-nine solved illustrative examples presenting step-by-step calculations. Chapter-end exercises to test student 's understanding of the concepts. Forty Tests to enable students to gauge their preparedness for actual exams. This comprehensive text is suitable for undergraduate students of civil engineering and architecture. It can also be useful to professional engineers.

Reinforced Concrete Design John Wiley & Sons

Designed primarily as a text for undergraduate students of Civil Engineering for their first course on Limit State Design of Reinforced Concrete, this compact and well-organized text covers all the fundamental concepts in a highly readable style. The text conforms to the provision of the latest revision of Indian Code of Practice for Plain and Reinforced Concrete, IS : 456 (2000). First six chapters deal with fundamentals of limit states design of reinforced concrete. The objective of last two chapters (including design aids in appendix) is to initiate the readers in practical design of concrete

structures. The text gives detailed discussion of basic concepts, behaviour of the various structural components under loads, and development of fundamental expressions for analysis and design. It also presents efficient and systematic procedures for solving design problems. In addition to the discussion of basis for design calculations, a large number of worked-out practical design examples based on the current design practices have been included to illustrate the basic principles of reinforced concrete design. Besides students, practising engineers would find this text extremely useful.