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Durability of Concrete Structures Simplified Design of Concrete Structures Durability of Concrete Structures Computational Modelling of Concrete Structures Durability Design of Concrete Structures REPAIR AND REHABILITATION OF CONCRETE STRUCTURES Time-Dependent Behaviour of Concrete Structures Durable Concrete Structures Concrete Structures Non-Destructive Assessment of Concrete Structures: Reliability and Limits of Single and Combined Techniques Unified Theory of Concrete Structures Design of Concrete Structures Failure, Distress and Repair of Concrete Structures Basic Principles of Concrete Structures Rehabilitation of Concrete Structures with Fiber-Reinforced Polymer Time Effects in Concrete Structures Repair and Strengthening of Concrete Structures Durability Design of Concrete Structures in Severe Environments Concrete Structures Ultimate Limit-state Design of Concrete Structures Computational Modelling of Concrete Structures Design of Concrete Structures Design of Concrete Structures Limit State Design of Concrete Structures Computational Modelling of Concrete and Concrete Structures Concrete Structures: Stresses and Deformations Dynamic Behavior of Concrete Structures Creep and Shrinkage Finite Element Design of Concrete Structures Control of Cracking in Reinforced Concrete Structures Design Of R.C.C. Structural Elements Vol. I Repair and Protection of Concrete Structures Ultimate Load Design of Concrete Structures Quality Control of Concrete Structures Modernisation, Mechanisation and Industrialisation of Concrete Structures Introduction to Eurocode 2 Durability of Concrete Contemporary Concrete Structures Deformation of Concrete Structures Durability of Concrete Structures and Constructions

Durability of Concrete Structures 1991-11-14 this book is concerned with the long term durability of concrete as a structural material as used in the construction of buildings bridges roads marine and civil engineering structures it discusses the fundamental reasons for the deterioration of concrete over time and available techniques for detecting remedying and preventing the deteriorati

Simplified Design of Concrete Structures 2007-01-22 for over sixty years the primary source for design of concrete structures now revised and updated simplified design of concrete structures eighth edition covers all the latest commonly used concrete systems practices and research in the field reinforced with examples of practical designs and general building structural systems updated to conform to current building codes design practices and industry standards simplified design of concrete structures eighth edition is a reliable easy to use handbook that examines a wide range of concrete structures building types and construction details it includes a wealth of illustrations expanded text examples exercise problems and a helpful glossary highlights of this outstanding tool include its use of the current american concrete institute building code for 2005 aci 318 and the load and resistance factor design lrfd method of structural design fundamental and real world coverage of concrete structures that assumes no previous experience valuable study aids such as exercise problems questions and word lists enhance usability

Durability of Concrete Structures 2021-03-10 this book provides a collection of recent research works related to structural stability and durability service life reinforced concrete structures recycled materials and sustainability with endogenic materials intended as an overview of the current state of knowledge the book will benefit scientists students practitioners lecturers and other interested parties at the same time the topics covered are relevant to a variety of scientific and engineering disciplines including civil materials and mechanical engineering

Computational Modelling of Concrete Structures 2010-02-24 since 1984 the euro c conference series split 1984 zell am see 1990 innsbruck 1994 badgastein 1998 st johann im pongau 2003 mayrhofen 2006 schladming 2010 has provided a forum for academic discussion of the latest theoretical algorithmic and modelling developments associated with computational simulations of concrete and concrete structure

Durability Design of Concrete Structures 2004-03-01 concrete structures can be designed for durability by applying the principles and procedures of reliability theory combined with traditional structural design this book is the first systematic attempt to introduce into structural design a general theory of structural reliability and existing calculation models for common degradation processes it covers both the theoretical background and practical design for service life and includes worked examples which highlight the application of the design procedure and methods

REPAIR AND REHABILITATION OF CONCRETE STRUCTURES 2015-12-01 the field of concrete repair and rehabilitation is gaining importance in view of its positive impacts in terms of socio economic benefits and environmental sustainability due to growing importance of this field many engineering colleges have included the subject of concrete repair and rehabilitation in the senior undergraduate and postgraduate course curriculums of civil engineering this book is an earnest attempt to help students of civil engineering in enhancing their understanding and awareness about critical elements of repair and rehabilitation of concrete structure the content is organised in such a way that it fulfils the academic needs of the students this text attempts to dovetail all important aspects such as causes of distress assessment and evaluation of deterioration techniques for repair and rehabilitation along with selection of repair and rehabilitation materials and other important aspects related to preventive maintenance and rehabilitation structural safety measures the primary objective of this textbook is to guide students to understand the underlying causes and types of deterioration in concrete structure learn about the field and laboratory testing methods available to evaluate the level of deterioration get well acquainted with options of repair materials and techniques available to address different types of distress in concrete structure grasp the knowledge of available techniques and their application for strengthening existing structural systems

Time-Dependent Behaviour of Concrete Structures 2010-09-21 serviceability failures of concrete structures involving excessive cracking or deflection are relatively common even in structures that comply with code requirements this is often as a result of a failure to adequately

account for the time dependent deformations of concrete in the design of the structure the serviceability provisions embodied in codes of practice are relatively crude and in some situations unreliable and do not adequately model the in service behaviour of structures in particular they fail to adequately account for the effects of creep and shrinkage of the concrete design for serviceability is complicated by the non linear and inelastic behaviour of concrete at service loads providing detailed information this book helps engineers to rationally predict the time varying deformation of concrete structures under typical in service conditions it gives analytical methods to help anticipate time dependent cracking the gradual change in tension stiffening with time creep induced deformations and the load independent strains caused by shrinkage and temperature changes the calculation procedures are illustrated with many worked examples a vital guide for practising engineers and advanced students of structural engineering on the design of concrete structures for serviceability and provides a penetrating insight into the time dependent behaviour of reinforced and prestressed concrete structures

Durable Concrete Structures 1992 this design guide allies basic knowledge with current engineering experience of the durability of concrete structures it presents appropriate solutions for different environmental conditions the complex nature of environmental effects on structures requires improved materials as well as measures at the architectural design phase and proper inspection and maintenance procedures

Concrete Structures 2016-08-13 this revised fully updated second edition covers the analysis design and construction of reinforced concrete structures from a real world perspective it examines different reinforced concrete elements such as slabs beams columns foundations basement and retaining walls and pre stressed concrete incorporating the most up to date edition of the american concrete institute code aci 318 14 requirements for the design of concrete structures it includes a chapter on metric system in reinforced concrete design and construction a new chapter on the design of formworks has been added which is of great value to students in the construction engineering programs along with practicing engineers and architects this second edition also includes a new appendix with color images illustrating various concrete construction practices and well designed buildings the aci 318 14 constitutes the most extensive reorganization of the code

in the past 40 years references to the various sections of the aci 318 14 are provided throughout the book to facilitate its use by students and professionals aimed at architecture building construction and undergraduate engineering students the scope of concepts in this volume emphasize simplified and practical methods in the analysis and design of reinforced concrete this is distinct from advanced graduate engineering texts where treatment of the subject centers around the theoretical and mathematical aspects of design as in the first edition this book adopts a step by step approach to solving analysis and design problems in reinforced concrete using a highly graphical and interactive approach in its use of detailed images and self experimentation exercises concrete structures second edition is tailored to the most practical questions and fundamental concepts of design of structures in reinforced concrete the text stands as an ideal learning resource for civil engineering building construction and architecture students as well as a valuable reference for concrete structural design professionals in practice

Non-Destructive Assessment of Concrete Structures: Reliability and Limits of Single and Combined Techniques 2012-01-21 this book gives information on non destructive techniques for assessment of concrete structures it synthesizes the best of international knowledge about what techniques can be used for assessing material properties strength and structural properties geometry defects it describes how the techniques can be used so as to answer a series of usual questions highlighting their capabilities and limits and providing advices for a better use of techniques it also focuses on possible combinations of techniques so as to improve the assessment it is based on many illustrative examples and give in each case references to standards and guidelines

Unified Theory of Concrete Structures 2010-03-16 unified theory of concrete structures develops an integrated theory that encompasses the various stress states experienced by both rc pc structures under the various loading conditions of bending axial load shear and torsion upon synthesis the new rational theories replace the many empirical formulas currently in use for shear torsion and membrane stress the unified theory is divided into six model components a the struts and ties model b the equilibrium plasticity truss model c the bernoulli compatibility

truss model d the mohr compatibility truss model e the softened truss model and f the softened membrane model hsu presents the six models as rational tools for the solution of the four basic types of stress focusing on the significance of their intrinsic consistencies and their inter relationships because of its inherent rationality this unified theory of reinforced concrete can serve as the basis for the formulation of a universal and international design code includes an appendix and accompanying website hosting the authors finite element program scs along with instructions and examples offers comprehensive coverage of content ranging from fundamentals of flexure shear and torsion all the way to non linear finite element analysis and design of wall type structures under earthquake loading authored by world leading experts on torsion and shear

Design of Concrete Structures 2004 using the 2002 aci code this text covers the behavior and design aspects of concrete and provides examples and homework problems it covers strut and tie models and presents the basic mechanics of structural concrete and methods for the design of individual members for bending shear torsion and axial force

Failure, Distress and Repair of Concrete Structures 2009-10-26 understanding and recognising failure mechanisms in concrete is a fundamental pre requisite to determining the type of repair or whether a repair is feasible this title provides a review of concrete deterioration and damage as well as looking at the problem of defects in concrete it also discusses condition assessment and repair techniques part one discusses failure mechanisms in concrete and covers topics such as causes and mechanisms of deterioration in reinforced concrete types of damage in concrete structures types and causes of cracking and condition assessment of concrete structures part two reviews the repair of concrete structures with coverage of themes such as standards and guidelines for repairing concrete structures methods of crack repair repair materials bonded concrete overlays repairing and retrofitting concrete structures with fiber reinforced polymers patching deteriorated concrete structures and durability of repaired concrete with its distinguished editor and international team of contributors failure and repair of concrete structures is a standard reference for civil engineers architects and anyone

working in the construction sector as well as those concerned with ensuring the safety of concrete structures provides a review of concrete deterioration and damage discusses condition assessment and repair techniques standards and guidelines

Basic Principles of Concrete Structures 2015-12-09 based on the latest version of designing codes both for buildings and bridges gb50010 2010 and jtjg d62 2004 this book starts from steel and concrete materials whose properties are very important to the mechanical behavior of concrete structural members step by step analysis of reinforced and prestressed concrete members under basic loading types tension compression flexure shearing and torsion and environmental actions are introduced the characteristic of the book that distinguishes it from other textbooks on concrete structures is that more emphasis has been laid on the basic theories of reinforced concrete and the application of the basic theories in design of new structures and analysis of existing structures examples and problems in each chapter are carefully designed to cover every important knowledge point as a basic course for undergraduates majoring in civil engineering this course is different from either the previously learnt mechanics courses or the design courses to be learnt compared with mechanics courses the basic theories of reinforced concrete structures cannot be solely derived by theoretical analysis and compared with design courses this course emphasizes the introduction of basic theories rather than simply being a translation of design specifications the book will focus on both the theoretical derivations and the engineering practices

Rehabilitation of Concrete Structures with Fiber-Reinforced Polymer 2018-11-12 rehabilitation of concrete structures with fiber reinforced polymer is a complete guide to the use of frp in flexural shear and axial strengthening of concrete structures through worked design examples the authors guide readers through the details of usage including anchorage systems different materials and methods of repairing concrete structures using these techniques topics include the usage of frp in concrete structure repair concrete structural deterioration and rehabilitation methods of structural rehabilitation and strengthening a review of the design basis for frp systems including strengthening limits fire endurance and environmental considerations in addition readers will find sections on the strengthening of members under flexural

stress including failure modes design procedures examples and anchorage detailing and sections on shear and torsion stress axial strengthening the installation of frp systems and strengthening against extreme loads such as earthquakes and fire amongst other important topics presents worked design examples covering flexural shear and axial strengthening includes complete coverage of frp in concrete repair explores the most recent guidelines aci440 2 2017 as5100 8 2017 and concrete society technical report no 55 2012

Time Effects in Concrete Structures 1988 the inability of designers of concrete structures to recognize and quantify the non linear effects of cracking creep and shrinkage is a common cause of serviceability failure such failures include excessive deflection camber and or shortening of members and excessive cracking which may cause aesthetic or durability problems this book provides practising engineers with practical and usable techniques for predicting the non linear effects of creep and shrinkage on the in service behaviour of concrete structures both cracked and uncracked reinforced prestressed and composite members subjected to sustained loads or sustained deformations are considered analytical procedures are developed for the calculation of instantaneous and time dependent stresses and deformations on cross sections in both simple and continuous members numerous self contained worked examples which clearly illustrate the analytical procedures are included a wide variety of practical situations is considered listings of microcomputer programs for a number of the analyses are also presented

Repair and Strengthening of Concrete Structures 1991 this guide to good practice focuses on the techniques for the repair and strengthening of reinforced and prestressed concrete structures covering the planning design implementation and monitoring of repair and strengthening projects

Durability Design of Concrete Structures in Severe Environments 2009-01-21 by designing in corrosion prevention and through preventive maintenance the overall service cost of a concrete structure can be substantially reduced this book takes a probabilistic approach to the engineering design issues for controlling durability and service life of concrete structures in severe environments many durability problems

are caused by poor quality control as well as special problems during concrete construction the issue of construction quality and variability need to be grasped before durability can be successfully controlled this book helps by giving reviews of field performance deteriorating processes and current codes and practice methods for calculation of corrosion probability performance based concrete quality control corrosion prevention and preventive maintenance calculation of life cycle costs and life cycle assessment recommended job specifications internationally relevant with a practical focus this is the essential guide for consulting and construction engineers involved in the design and execution of new concrete structures

Concrete Structures 2006-01-16 concrete structures must be designed not only to be safe against failure but also to perform satisfactorily in use this book is written for practising engineers and students and focuses on design methods for checking deflections and cracking which can affect the serviceability of reinforced and prestressed concrete structures the authors present accurate and easy to apply methods of analysing immediate and long term stresses and deformations these methods allow designers to account for variations of concrete properties from project to project and from country to country making the book universally applicable comprehensively updated this third edition of concrete structures also includes four new chapters covering such topics as non linear analysis of plane frames design for serviceability of prestressed concrete serviceability of members reinforced with fibre polymer bars and the analysis of time dependent internal forces with linear computer programs that are routinely used by structural designers a website accompanies the book featuring three design calculation programs related to stresses in cracked sections creep coefficients and time dependent analysis the book contains numerous examples some of which are worked out in the si units and others in the imperial units the input data and the main results are given in both si and imperial units the book is not tied to any specific code although the latest american and european codes of practice are covered in the appendices

Ultimate Limit-state Design of Concrete Structures 1999 structural concrete members often show great deviation in structural performance

from that predicted by the current code of practice in certain cases the predication considerably underestimate the capabilities of a structure or member while in others the predictions are unsafe as they overestimate the member's ability to perform in a prescribed manner clearly a rational and unified design methodology is still lacking for structural concrete this book presents a simplified methodology based on calculations which are quick easily programmable and no more complex than those required by the current codes it involves identifying the regions of a structural member or structure through which the external load is transmitted from its point of application to the supports and then strengthening these regions as required as most of these regions enclose the trajectories of internal compression actions the technique has been called the compressive force path method ultimate limit state design for concrete structures will provide designers with a practical and easily applied method for the design of a concrete structure which is fully compatible with the behaviour of concrete as described by valid experimental evidence at both the material and structural level

Computational Modelling of Concrete Structures 2018-01-31 the euro c conference series split 1984 zell am see 1990 innsbruck 1994 badgastein 1998 st johann im pongau 2003 mayrhofen 2006 schladming 2010 st anton am arlberg 2014 and bad hofgastein 2018 brings together researchers and practising engineers concerned with theoretical algorithmic and validation aspects associated with computational simulations of concrete and concrete structures computational modelling of concrete structures reviews and discusses research advancements and the applicability and robustness of methods and models for reliable analysis of complex concrete reinforced concrete and pre stressed concrete structures in engineering practice the contributions cover both computational mechanics and computational modelling aspects of the analysis and design of concrete and concrete structures multi scale cement and concrete research experiments and modelling aging concrete from very early ages to decades long durability advances in material modelling of plain concrete analysis of reinforced concrete structures steel concrete interaction fibre reinforced concrete and masonry dynamic behaviour from seismic retrofit to impact simulation computational modelling of concrete structures is of special interest to academics and researchers in computational

concrete mechanics as well as industry experts in complex nonlinear simulations of concrete structures

Design of Concrete Structures 2012-03-01 this book design of concrete structures in s i units is based on working stress method as per code is 456 2000 all the chapters of the book have been revised and re arranged in eight parts 32 thirty two chapters separate aspects of design of one structural member have been described in different subsequent chapters in addition to above i the service life of concrete structures ii non destructive tests evaluation of strength ndt nde of materials and iii futuristic construction materials and technique fcmt likely to be used for the concrete are new topics text for these topics rarely available in current books by other authros have been first time given to familiarize the readers

Design of Concrete Structures 1996 this introduction to the principles of concrete mechanics and design focuses on the fundamentals from very basic elementary to the very complicated concepts and features an easy to follow yet thorough step by step design methodology emphasizes basic principles of the mechanics aspects of concrete design and avoids explanations of the detail requirements which can be found in the aci code and commentary surveys modern design philosophies and features an amply illustrated tour of the world of concrete carefully lays out the various design procedures step by step for flexural design shear design column design etc prepares and encourages students to program procedures for computer solution instructors at their own discretion can suggest follow up coding assignment goes beyond the traditional description of materials to provide substantive coverage of concrete current concrete technology and the durability of materials especially since many engineers will find themselves repairing rehabilitating and strengthening existing structures rather than designing new ones explores the interrelationship between design and analysis a typical problem area for students especially in relation to statically indeterminate structures reviews some structural analysis methods for continuous beams and frames especially those methods that designers will find useful for checking purposes e g moment distribution explains how the behavior of structures can be controlled through design decisions includes sections on basic plate theory and yield line theory as supplements to the common design procedures of

the aci code contains important optional topics that students can master through self study after understanding the basics such as torsion slab design footings and retaining walls includes many easy to follow examples worked out in great detail contains a large number of illustrations features very carefully designed problem sets that require students to think and appreciate various physical aspects of what they are doing contains a comprehensive glossary of terms common in concrete engineering and the construction industry definitions are based largely on the cement and concrete terminology report of aci committee 116

Limit State Design of Concrete Structures 2018-10-01 bureau of indian standards delhi made large number of changes and alterations in is 456 2000 code of practice for plain and reinforced concrete realizing the necessity and importance authors have updated the complete text and presented this subject limit state design of concrete structures ultimate limit state ult conditions to be avoided and serviceability limit state sls limits undesirable cracks and deflections are two main essential elements of this subject ult includes limit state of collapse in compression in flexure in shear and in torsion as sub elements whereas sls includes limit state of serviceability for deflections cracking fatigue durability and vibrations as sub elements features i text for life of concrete structures fire resistance and corrosion ii for all those who carry out their design using computer programme authors have given procedures developed by them for determining the stress in hysd steel bars corresponding to strain developed in concrete

Computational Modelling of Concrete and Concrete Structures 2022-05-22 computational modelling of concrete and concrete structures contains the contributions to the euro c 2022 conference vienna austria 23 26 may 2022 the papers review and discuss research advancements and assess the applicability and robustness of methods and models for the analysis and design of concrete fibre reinforced and prestressed concrete structures as well as masonry structures recent developments include methods of machine learning novel discretisation methods probabilistic models and consideration of a growing number of micro structural aspects in multi scale and multi physics settings in addition trends towards the material scale with new fibres and 3d printable concretes and life cycle oriented models for

ageing and durability of existing and new concrete infrastructure are clearly visible overall computational robustness of numerical predictions and mathematical rigour have further increased accompanied by careful model validation based on respective experimental programmes the book will serve as an important reference for both academics and professionals stimulating new research directions in the field of computational modelling of concrete and its application to the analysis of concrete structures euro c 2022 is the eighth edition of the euro c conference series after innsbruck 1994 bad gastein 1998 st johann im pongau 2003 mayrhofen 2006 schladming 2010 st anton am arlberg 2014 and bad hofgastein 2018 the overarching focus of the conferences is on computational methods and numerical models for the analysis of concrete and concrete structures

Concrete Structures: Stresses and Deformations 1994-10-13 concrete structures must be designed both to be safe against failure and to perform satisfactorily in use this book is written for practising engineers students and designers and concentrates on design methods for checking the main serviceability requirements of control of deflections and cracking in reinforced and prestressed concrete structures

Dynamic Behavior of Concrete Structures 2013-10-22 this book is concerned with the dynamic behavior of reinforced prestressed concrete structures such as buildings and bridges it discusses how to predict or check the real inelastic behavior of concrete structures subjected to dynamic loads including equipment loads earthquake motions seismic interactions and missile impacts a number of techniques have recently been developed to assist in evaluating such occurrences this book is intended to apply structural dynamics to concrete structures and is appropriate as a textbook for an introductory course in dynamic behavior of concrete structures at the upper undergraduate or graduate level as well as for practicing engineers

Creep and Shrinkage 2012-12-06 this book is based on reinforced concrete prestressed concrete volume 2 accounting for the effects of creep and shrinkage on the behavior of structural systems by hubert rusch and dieter jungwirth which appeared in german in 1976 even then it was hubert rusch s fervent wish to have his thoughts on the deformations of concrete translated into english in order to reach a

wider audience his earlier efforts to contribute a study to the series of monographs of the american institute had unfortunately not succeeded despite a serious illness hubert rusch undertook with his characteristic prudence and thoroughness the preparatory work for the translation and related revision of his book unfortunately fate did not grant him the satisfaction of seeing his work completed hubert rusch died on october 17 1979 in writing this book hubert rusch drew on his many years of devoted study of the creep problem these investigations go back to 1934 his awareness of the plastic deformation of concrete under sustained load which had been reported to him on the occasion of an american sojourn led him to discover the causes of a major building collapse at his urging professor a hummel published in 1935 a critical survey of the test results then available on concrete creep

Finite Element Design of Concrete Structures 2004 in finite element design of concrete structures practical problems and their solutions the author addresses this blind belief in computer results by offering a useful critique that important details are overlooked due to the flood of information from the output of computer calculations indeed errors in the numerical model may lead in extreme cases to structural failures as the collapse of the so called sleipner platform has demonstrated

Control of Cracking in Reinforced Concrete Structures 2016-08-29 this book presents new guidelines for the control of cracking in massive reinforced and prestressed concrete structures understanding this behavior during construction allows engineers to ensure properties such as durability reliability and water and air tightness throughout a structure's lifetime based on the findings of the french national ceos for project the authors extend existing engineering standards and codes to advance the measurement and prediction of cracking patterns various behaviors of concrete under load are explored within the chapters of the book these include cracking of ties beams and in walls and the simulation and evaluation of cracking shrinkage and creep the authors propose new engineering rules for crack width and space assessment of cracking patterns and provide recommendations for measurement devices and protocols intended as a reference for design and civil engineers working on construction projects as well as to aid further work in the research community applied examples are provided

at the end of each chapter in the form of expanded measurement methods calculations and commentary on models

Design Of R.C.C. Structural Elements Vol. I 2007 indian standard code of practice is 456 for the design of main and reinforced concrete was revised in the year 2000 to incorporate durability criteria in the design as a result of it many codal provisions have been changed hence there is need to train engineering students in designing reinforced cement concrete structures as per the latest code of is 456 with his experience of more than 40 years in teaching the author has tried to bring out students and teachers friendly book on the design of rcc structures as per is 456 2000 rcc design is a vast subject it is normally taught in two to three courses for civil engineering students this book is for the first course in rcc design and author is writing another book advanced rcc design to meet the requirement of further courses this book deals with design philosophy and design of various structural components of building the design procedure is clearly explained and illustrated with several examples by presenting the solutions step by step in details and with neat sketches showing reinforcement details

Repair and Protection of Concrete Structures 1991-12-18 repair and protection of concrete structures presents the latest information regarding the durability and repair of concrete structures it emphasizes the importance of selecting repair materials to match site and service conditions using proper repair procedures and attending to the details of design divided into three parts the book discusses such topics as the properties of new products the various materials in general use for repair work selection criteria methodologies for selecting appropriate repair materials the behavior of concrete under various environmental conditions non destructive evaluation methods for detecting deterioration of structures and basic repair principles applicable to a wide range of buildings engineers architects technologists and contractors should consider this book a valuable tool that provides a much needed survey of current work and thinking regarding degradation and techniques for improving repair work

Ultimate Load Design of Concrete Structures 1972 this book details the latest information on the applied methods and techniques being

used for quality control of concrete construction worldwide the book forms the proceedings of the second international symposium on quality control on concrete structures held in belgium june 1991

Quality Control of Concrete Structures 1991-05-30 modernisation mechanisation and industrialisation of concrete structures discusses the manufacture of high quality prefabricated concrete construction components and how that can be achieved through the application of developments in concrete technology information modelling and best practice in design and manufacturing techniques

Modernisation, Mechanisation and Industrialisation of Concrete Structures 2017-05-01 a concise and practical introduction to the new european code of practice for design of concrete structures ec2 this book guides the reader through the background to the eurocodes and explains the main differences between them and the equivalent standard codes of practice an introduction to eurocode 2 will be invaluable for engineers who need to learn about the new code and how it can be used effectively in design

Introduction to Eurocode 2 1997-10-16 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

Durability of Concrete 2017-06-26 contents general principles of durability design of reinforced concrete structures state of the art structural features of engineering installations for storage of dry materials and liquids analysis of defects and damages in reinforced concrete silos bunkers and reservoirs in service analysis of main degradation processes in concrete and reinforced concrete structures of engineering installations analysis of models of durability for the main degradation processes in concrete and reinforcement investigation of statistical

parameters of operational loads in engineering structures experimental and theoretical investigation of strength of reinforced concrete members of engineering structures under sustained low cycle loading durability design of reinforced concrete structures of engineering installations based on the limit state method application of finite element method in numerical investigation of durability of reinforced concrete silos practical methods of enhancing durability of reinforced concrete structures of engineering installations service conclusion index

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