

Bookmark File  
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Concrete Design  
By A K Jain

*Reinforced*

*Concrete*

*Design By A K*

*Jain*

**This book  
provides an  
extensive  
coverage of  
the design of  
reinforced**

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**concrete  
structures in  
accordance  
with the  
current Indian  
code of  
practice (IS  
456: 2000). As  
some of the  
Indian code  
provisions are  
outdated, the**

**American code provisions are provided, wherever necessary. In addition, an attempt is made to integrate the provisions of IS 456 with earthquake**

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code (IS  
By A.K.Jain

13920), as  
more than 60%  
of India falls  
under moderate  
or severe  
earthquake  
zones. The  
text is based  
on the limit  
state approach  
to design and

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**covers areas  
such as the  
properties of  
concrete,  
design of  
various  
structural  
elements such  
as compression  
and tension  
members, beams  
& slabs, and**

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**design for  
flexure, shear  
torsion, uni-  
axial and  
biaxial  
bending and  
interaction of  
these forces.  
Each chapter  
features  
solved  
examples,**

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**review  
questions, and  
practice  
problems as  
well as ample  
illustrations  
that  
supplement the  
text. An  
exhaustive  
list of  
references as**

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**well as  
appendices on  
strut-and-tie-  
method,  
properties of  
soils, and  
practical tips  
add value to  
the rich  
contents of  
book.**

**The sixth**

*Page 8/148*



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**edition of  
this  
comprehensive  
textbook  
provides the  
same  
philosophical  
approach that  
has gained  
wide  
acceptance  
since the**

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**first edition  
was published  
in 1965. The  
strength and  
behavior of  
concrete  
elements are  
treated with  
the primary  
objective of  
explaining and  
justifying the**

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**rules and  
formulas of  
the ACI  
Building Code.  
The treatment  
is  
incorporated  
into the  
chapters in  
such a way  
that the  
reader may**

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**study the  
concepts in a  
logical  
sequence in  
detail or  
merely accept  
a qualitative  
explanation  
and proceed  
directly to  
the design  
process using**

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By A. K. Jain

**the ACI Code.**

**Publisher**

**Description**

**Practical**

**Deterministic**

**and**

**Probabilistic**

**Approaches**

**A Practical**

**Approach**

**Reinforced**

**Concrete**

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Concrete Design  
By A. K. Jain

**Design to BS  
8110 Simply  
Explained  
Structural  
Concrete**

*This new edition of a highly practical text gives a detailed presentation of the design of common reinforced concrete structures to limit state theory in accordance*

Bookmark File  
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Concrete Design  
with BS 8110.

*This highly successful book describes the background to the design principles, methods and procedures required in the design process for reinforced concrete structures. The easy to follow style makes it an ideal reference for students and professionals alike.*

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Concrete Design  
By A. K. Jain

*The purpose of this text is to provide a straightforward introduction to the principles and methods of design for concrete structures.*

*The theory and practice described are of fundamental nature and will be of use internationally.*

*Section and Slender  
Member Analysis*



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ADVANCED  
REINFORCED  
CONCRETE DESIGN  
*Examples of the  
Design of Reinforced  
Concrete Buildings to  
BS8110  
Design and  
Construction*  
A PRACTICAL  
GUIDE TO  
REINFORCED  
CONCRETE

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# STRUCTURE ANALYSIS AND DESIGN

Reinforced  
Concrete  
Structures explains  
the underlying  
principles of  
reinforced concrete  
design and covers  
the analysis,  
design, and

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detailing  
By A. K. Jain

requirements in the  
2008 American  
Concrete Institute  
(ACI) Building  
Code  
Requirements for  
Structural Concrete  
and Commentary  
and the 2009  
International Code  
Council (ICC)

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International Building Code (IBC). This authoritative resource discusses reinforced concrete members and provides techniques for sizing the cross section, calculating the required

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amount of  
reinforcement, and  
detailing the  
reinforcement.

Design procedures  
and flowcharts  
guide you through  
code requirements,  
and worked-out  
examples  
demonstrate the  
proper application

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of the design  
provisions.

COVERAGE

INCLUDES:

Mechanics of  
reinforced concrete  
Material properties  
of concrete and  
reinforcing steel  
Considerations for  
analysis and  
design of

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reinforced concrete  
structures  
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Requirements for  
strength and  
serviceability  
Principles of the  
strength design  
method Design and  
detailing  
requirements for  
beams, one-way  
slabs, two-way

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slabs, columns,  
walls, and  
foundations

17 2 STRESS  
FIELDS FOR  
SIMPLE  
STRUCTURES 2.  
1 INTRODUCTION

In this chapter the  
behavior and  
strength of simple  
structures made of



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reinforced or prestressed concrete is investigated with the aid of stress fields. In particular, the webs and flanges of beams, simple walls, brackets, bracing beams and joints of frames are

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investigated. By this means, the majority of design cases are already covered. In reality, all structural components are three-dimensional. Here, however, components are considered either directly as two-

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dimensional plate elements (i. e. the plane stress condition with no variation of stress over the thickness of the element) or they are subdivided into several plates. Since two-dimensional structural elements

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are statically  
redundant, it is  
possible for a  
particular loading  
to be in equilibrium  
with many  
(theoretically an  
infinite number of)  
stress states. If the  
lower bound  
method of the  
theory of plasticity

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is employed, then an admissible stress field or any combination of such stress fields may be selected. In chapter 4 it is shown that this method is suitable for the design of reinforced concrete structures, and the

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consequence of the choice of the final structural system on the structural behavior is dealt with in detail. The first cases of the use of this method date back to Ritter [6] and Morsch [4], who already at the beginning of the

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century

investigated the resultants of the internal stresses by means of truss models.

For courses in reinforced concrete. A practitioner's guide to reinforced concrete design

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Reinforced  
Concrete Design  
integrates current  
building and  
material codes with  
realistic examples  
to give readers a  
practical  
understanding of  
this field and the  
work of its  
engineers. Using a



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step-by-step  
solution format, the  
text takes a  
fundamental, active-  
learning approach  
to analyzing the  
design, strength,  
and behavior of  
reinforced concrete  
members and  
simple reinforced  
concrete structural

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systems. Content throughout the 9th edition conforms to the latest version of ACI-318 Code. It expands discussion of several common design elements and practice issues, and includes more end-

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of-chapter  
problems reflecting  
real-world design  
projects.

Design Theory and  
Examples, Fourth  
Edition

Reinforced  
Concrete Beams,  
Columns and  
Frames

Concrete Design

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Reinforced  
Concrete Design to  
Eurocode 2

The latest  
edition of this  
well-known book  
makes available  
to structural  
design  
engineers a  
wealth of  
practical

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advice on  
effective  
design of  
concrete  
structures. It  
covers the  
complete range  
of concrete  
elements and  
includes  
numerous data  
sheets, charts  
and examples to

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help the  
designer. It is  
fully updated  
in line with  
the relevant  
British  
Standards and  
Codes of  
Practice.  
Design of  
Reinforced  
Concrete John  
Wiley & Sons

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Incorporated  
By A. K. Jain  
Concrete Design  
covers concrete  
design  
fundamentals  
for architects  
and engineers,  
such as  
tension,  
flexural,  
shear, and  
compression  
elements,

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anchorage,  
lateral design,  
and footings.

As part of the  
Architect's  
Guidebooks to  
Structures  
Series it  
provides a  
comprehensive  
overview using  
both imperial  
and metric



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units of  
measurement.  
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Written by  
experienced  
professional  
structural  
engineers

Concrete Design  
is beautifully  
illustrated,  
with more than  
170 black and  
white images,

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Concrete Design  
By A. K. Jain  
contains clear  
examples that  
show all design  
steps, and  
provides rules  
of thumb and  
simple tables  
for initial  
sizing. A  
refreshing  
change in  
textbooks for  
architectural

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materials  
By A. K. Jain

courses, it is  
an  
indispensable  
reference for  
practicing  
architects and  
students alike.  
As a compact  
summary of key  
ideas it is  
ideal for  
anyone needing

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Concrete Design  
a quick guide  
to concrete

design.

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Concrete

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Concrete Design

of Tall

Buildings

Design of

Reinforced

Concrete

Theory and

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Concrete Design  
Design  
By A. K. Jain

*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*

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*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-*

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*of-the-art  
technologies  
required to build  
vertical structures  
as sound as they are  
eloquent. Dozens of  
cases studies of tall  
buildings  
throughout the  
world, many  
designed by Dr.  
Taranath, provide*

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Concrete Design  
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*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*



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*computer skills and  
analytical  
techniques.  
Examining the  
results when  
experiential  
intuition marries  
unfathomable  
precision, this book  
discusses: The latest  
building codes,  
including*

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***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,***

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*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*

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*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*

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*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*

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*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*

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*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.*

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*Through my book  
with the Title: Civil  
Engineering In  
Reinforced  
Concrete Design  
Making It Easy For  
You Without  
Acquiring  
Bachelor's  
Degree You will  
learn the following  
series of designs:1.)*



*To determine the thickness of the Concrete Slab and the Diameter (size) of the Reinforcement Bars for any building according to the specified load that the slab will be carrying. 2.) The dimension of the*

*beam and the  
Diameter (size) of  
Reinforcement Bars  
where the slab  
transfers its load. 3.)  
The dimension of  
the Column and the  
Diameter (size) of  
the Reinforcement  
Bars that carries the  
Beam and last but  
not least,4.) The*

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By A K Jain

*dimension of the  
Foundation and the  
Diameter (size) of  
the Reinforcement  
Bars. The foregoing  
series of Designs  
are all in the  
category of the  
Preliminary Design  
using Working  
Stress Design  
Method prior to the*

*execution of the final Design where the Ultimate Strength Design Method will be used.*

*The costs of inadequate earthquake engineering are huge, especially for reinforced concrete*

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*buildings. This book  
presents the  
principles of  
earthquake-resistant  
structural  
engineering, and  
uses the latest tools  
and techniques to  
give practical design  
guidance to address  
single or multiple  
seismic*

Bookmark File  
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Concrete Design  
*performance levels.*  
By A K Jain

*It presents an  
elegant, simple and  
theoretically  
coherent design  
framework.*

*Required strength is  
determined on the  
basis of an  
estimated yield  
displacement and  
desired limits of*

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*system ductility and drift demands. A simple deterministic approach is presented along with its elaboration into a probabilistic treatment that allows for design to limit annual probabilities of failure. The design*

*method allows the seismic force resisting system to be designed on the basis of elastic analysis results, while nonlinear analysis is used for performance verification.*

*Detailing requirements of*



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*ACI 318 and Eurocode 8 are presented. Students will benefit from the coverage of seismology, structural dynamics, reinforced concrete, and capacity design approaches, which allows the book to be used as a*

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*foundation text in  
earthquake  
engineering.  
Introduction to  
Reinforced  
Concrete Design  
Practical Design of  
Reinforced  
Concrete Buildings  
Design,  
Performance and  
Applications*

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*Emphasizing a conceptual understanding of concrete design and analysis, this revised and updated edition builds the student's understanding by presenting*

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Concrete Design  
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*design methods  
in an easy to  
understand  
manner  
supported with  
the use of  
numerous  
examples and  
problems.  
Written in  
intuitive, easy-t  
o-understand*

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*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*

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*addition, the coverage has been completely updated to reflect the latest ACI 318-11 code.*

*Based on the 1995 edition of the American Concrete Institute*

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*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*

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*worked  
examples,  
illustrations,  
and  
photographs.*

*The focus is on  
preparing  
students to  
make the many  
judgment  
decisions  
required in*



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*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.*

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*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*

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*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.*

*Concrete is one  
of the most used  
materials in the  
construction  
industry. In  
structural  
systems, the  
combination of  
concrete and*

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*steel reinforcement bars gives rise to reinforced concrete (RC), which is widely applied in the civil engineering field due to its adequate mechanical*

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*strength, durability, and fire resistance. Steel-rebar reinforced structures are subjected to structural deterioration when subjected to extreme loadings such as*

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*earthquake,  
fire, impact  
loadings and  
cyclic loading,  
consequently  
reducing the  
expected life  
and  
performance of  
structures. To  
enhance the  
structural*

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*performance,  
the RC  
structures are  
usually  
retrofitted or  
strengthened.  
This book  
reviews design,  
performance  
and applications  
of reinforced  
concrete.*



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*Design of  
Concrete  
Structures with  
Stress Fields  
Principles of  
Reinforced  
Concrete Design  
Conforms to  
1995 ACI Codes  
Design of  
Reinforced  
Concrete*

Bookmark File  
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Concrete Design  
*Buildings for  
Seismic*

*Performance*

Reinforced Concrete  
Design: A Practical  
Approach, 2E is the  
only Canadian textbook  
which covers the design  
of reinforced concrete  
structural members in  
accordance with the  
CSA Standard A23.3-04  
Design of Concrete

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Structures, including its 2005, 2007, and 2009 amendments, and the National Building Code of Canada 2010.

Reinforced Concrete Design: A Practical Approach covers key topics for curriculum of undergraduate reinforced concrete design courses, and it is a useful learning resource for the students

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and a practical reference  
for design engineers.

Since its original release  
in 2005 the book has  
been well received by  
readers from Canadian  
universities, colleges,  
and design offices. The  
authors have been  
commended for a simple  
and practical approach  
to the subject by  
students and course  
instructors. The book

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contains numerous design examples solved in a step-by-step format. The second edition is going to be available exclusively in hard cover version, and colours have been used to embellish the content and illustrations. This edition contains a new chapter on the design of two-way slabs and numerous revisions of

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the original manuscript.  
Design of two-way slabs is a challenging topic for engineering students and young engineers. The authors have made an effort to give a practical design perspective to this topic, and have focused on analysis and design approaches that are widely used in structural engineering practice.

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The topics include design of two-way slabs for flexure, shear, and deflection control.

Comprehensive revisions were made to Chapter 4 to reflect the changes contained in the 2009 amendment to CSA A23.3-04.

Chapters 6 and 7 have been revised to correct an oversight related to the transverse

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reinforcement spacing requirements in the previous edition of the book. Chapter 8 includes a new design example on slender columns and a few additional problems. Several errors and omissions (both text and illustrations) have also been corrected. More than 300 pages of the original book have been



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revised in this edition.  
Several supplements are included on the book web site. Readers will get time-limited access to the new column design software BPA COLUMN, which can generate column interaction diagrams for rectangular and circular columns of variable dimensions and reinforcement amount.

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Additional supplements include spreadsheets related to foundation design and column load take down, and a few Power Point presentations showcasing reinforced concrete structures under construction and in completed form. Instructors will have an access to additional web site, which contains

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electronic version of the  
Instructor's Solution  
Manual with complete  
solutions to the end-of-  
chapter problems, and  
Power Point  
presentations containing  
all illustrations from the  
book. The book is a  
collaborative effort  
between an academic  
and a practising  
engineer and reflects  
their unique

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perspectives on the subject. Svetlana Brzev, Ph.D., P.Eng. is a faculty at the Civil Engineering Department of the British Columbia Institute of Technology, Burnaby, BC. She has over 25 years of combined teaching, research, and consulting experience related to structural design and rehabilitation of

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concrete and masonry structures, including buildings, municipal, and industrial facilities. John Pao, MEng, PEng, Struct.Eng, is the President of Bogdonov Pao Associates Ltd. of Vancouver, BC, and BPA Group of Companies with offices in Seattle and Los Angeles. Mr. Pao has extensive consulting

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experience related to design of reinforced concrete buildings, including high-rise residential and office buildings, shopping centers, parking garages, and institutional buildings. Complete coverage of earthquake-resistant concrete building design  
Written by a renowned seismic engineering

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expert, this authoritative resource discusses the theory and practice for the design and evaluation of earthquakeresisting reinforced concrete buildings. The book addresses the behavior of reinforced concrete materials, components, and systems subjected to routine and extreme loads, with an emphasis

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on response to  
earthquake loading.  
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Design methods, both at a basic level as required by current building codes and at an advanced level needed for special problems such as seismic performance assessment, are described. Data and models useful for analyzing reinforced



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concrete structures as well as numerous illustrations, tables, and equations are included in this detailed reference. Seismic Design of Reinforced Concrete Buildings covers: Seismic design and performance verification Steel reinforcement Concrete Confined concrete Axially loaded members

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Moment and axial force  
Shear in beams,  
columns, and walls  
Development and  
anchorage Beam-  
column connections  
Slab-column and slab-  
wall connections  
Seismic design  
overview Special  
moment frames Special  
structural walls Gravity  
framing Diaphragms  
and collectors

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Foundations  
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This book is focused on the theoretical and practical design of reinforced concrete beams, columns and frame structures. It is based on an analytical approach of designing normal reinforced concrete structural elements that are compatible with most international design

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rules, including for instance the European design rules – Eurocode 2 – for reinforced concrete structures. The book tries to distinguish between what belongs to the structural design philosophy of such structural elements (related to strength of materials arguments) and what belongs to the design rule aspects

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associated with specific characteristic data (for the material or loading parameters). A previous book, entitled Reinforced Concrete Beams, Columns and Frames – Mechanics and Design, deals with the fundamental aspects of the mechanics and design of reinforced concrete in general, both related to the

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Serviceability Limit State (SLS) and the Ultimate Limit State (ULS), whereas the current book deals with more advanced ULS aspects, along with instability and second-order analysis aspects. Some recent research results including the use of non-local mechanics are also presented. This book is aimed at

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Masters-level students, engineers, researchers and teachers in the field of reinforced concrete design. Most of the books in this area are very practical or code-oriented, whereas this book is more theoretically based, using rigorous mathematics and mechanics tools.

Contents 1. Advanced

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Design at Ultimate  
Limit State (ULS). 2.  
Slender Compression  
Members – Mechanics  
and Design. 3.

Approximate Analysis  
Methods. Appendix 1.  
Cardano's Method.

Appendix 2. Steel  
Reinforcement Table.

About the Authors  
Jostein Hellesland has  
been Professor of  
Structural Mechanics at



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the University of Oslo, Norway since January 1988. His contribution to the field of stability has been recognized and magnified by many high-quality papers in famous international journals such as Engineering Structures, Thin-Walled Structures, Journal of Constructional Steel Research and Journal of Structural Engineering.

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Noël Challamel is  
Professor in Civil  
Engineering at UBS,  
University of South  
Brittany in France and  
chairman of the EMI-  
ASCE Stability  
committee. His  
contributions mainly  
concern the dynamics,  
stability and inelastic  
behavior of structural  
components, with  
special emphasis on

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Continuum Damage  
Mechanics (more than  
70 publications in  
International peer-  
reviewed journals).

Charles Casandjian was  
formerly Associate  
Professor at INSA  
(French National  
Institute of Applied  
Sciences), Rennes,  
France and the chairman  
of the course on  
reinforced concrete

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design. He has published work on the mechanics of concrete and is also involved in creating a web experience for teaching reinforced concrete design – BA-CORTEX. Christophe Lanos is Professor in Civil Engineering at the University of Rennes 1 in France. He has mainly published work

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on the mechanics of concrete, as well as other related subjects. He is also involved in creating a web experience for teaching reinforced concrete design – BA-CORTEX. Civil Engineering in Reinforced Concrete Design  
Seismic Design of Reinforced Concrete Buildings

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Elementary Reinforced  
Concrete Design for  
Students of Architecture  
and Building  
Reinforced Concrete  
Structures: Analysis and  
Design

The new edition of  
Reinforced Concrete  
Design includes the  
latest technical  
advances, including  
the 1995 American

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Building Code.

Review questions and problem sets at the end of every chapter are identical to those your civil engineering undergraduates will encounter in practice. This textbook describes the basic mechanical features of concrete and explains

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the main resistant mechanisms activated in the reinforced concrete structures and foundations when subjected to centred and eccentric axial force, bending moment, shear, torsion and prestressing. It presents a complete set of limit-state



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design criteria of the modern theory of RC incorporating principles and rules of the final version of the official Eurocode 2.

This textbook examines methodological more than notional aspects of the presented topics, focusing on the verifications of

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assumptions, the rigorousness of the analysis and the consequent degree of reliability of results. Each chapter develops an organic topic, which is eventually illustrated by examples in each final paragraph containing the relative numerical applications. These

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practical end-of-  
chapter appendices  
and intuitive flow-  
charts ensure a smooth  
learning experience.

The book stands as an  
ideal learning resource  
for students of  
structural design and  
analysis courses in  
civil engineering,  
building construction  
and architecture, as

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well as a valuable reference for concrete structural design professionals in practice.

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

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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

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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

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industry, with the  
current emphasis on  
'design for  
durability'.

Reinforced Concrete  
Design

Durability of Concrete  
Design theory and  
examples

Reinforced Concrete  
Design with FRP  
Composites

This established

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and popular  
textbook has now  
been extensively  
rewritten and  
expanded in line  
with the current  
Eurocodes. It  
presents the  
principles of the  
design of concrete  
elements and also  
the design of  
complete



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structures, and provides practical illustrations of the theory. It explains the background to the Eurocode rules and goes beyond the c

Using a straightforward, step-by-step, problem-solution format with an abundance of

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fully-worked sample  
problemsthis book  
provides an  
elementary, non-  
Calculus, practical  
approach to the  
design and analysis  
of reinforced  
concrete structural  
members. It  
translates a vast  
amount of  
information and

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data in an integrated source that reflects the latest standards and that provides a basic, workable understanding of the strength and behavior of reinforced concrete members and simple concrete structural systems.

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A valuable design guide and resource for practicing technicians and technologists, and engineers and architects preparing for state licensing examinations for professional registrations. Intended as a companion volume

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to the author's Limit  
By A. K. Jain  
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

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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

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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

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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



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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

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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

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speedy estimate of  
the steel  
requirements in  
slabs, beams,  
columns and  
footings of ordinary  
buildings.  
Making It Easy For  
You Without  
Acquiring  
Bachelor's Degree  
Mechanics and  
Design

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Concrete Design to  
Eurocodes  
Reinforced-concrete  
Design

*Encouraging  
creative uses of  
reinforced  
concrete,  
Principles of  
Reinforced  
Concrete Design  
draws a clear*

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*distinction  
between  
fundamentals and  
professional  
consensus. This  
text presents a  
mixture of  
fundamentals  
along with  
practical  
methods. It  
provides the  
fundamental  
concepts*

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*required for  
designing  
reinforced  
concrete (RC)  
structures,  
emphasizing  
principles based  
on mechanics,  
experience, and  
experimentation,  
while  
encouraging  
practitioners to  
consult their*

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*local building codes. The book presents design choices that fall in line with the boundaries defined by professional consensus (building codes), and provides reference*

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material

By A. K. Jain  
outlining the  
design criteria  
contained in  
building codes.  
It includes  
applications for  
both building  
and bridge  
structural  
design, and it  
is applicable  
worldwide, as it  
is not dependent



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upon any  
particular

codes. Contains  
concise coverage  
that can be  
taught in one  
semester

Underscores the  
fundamental  
principles of  
behavior

Provides  
students with an  
understanding of

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*the principles  
upon which codes  
are based  
Assists in  
navigating the  
labyrinth of  
ever-changing  
codes Fosters an  
inherent  
understanding of  
design The text  
also provides a  
brief history of  
reinforced*

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*concrete. While the initial attraction for using reinforced concrete in building construction has been attributed to its fire resistance, its increase in popularity was also due to the creativity of*

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*engineers who  
kept extending  
its limits of  
application.  
Along with  
height  
achievement,  
reinforced  
concrete gained  
momentum by  
providing  
convenience,  
plasticity, and  
low-cost*

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Concrete Design  
economic appeal.

By A. K. Jain  
*Principles of  
Reinforced  
Concrete Design  
provides  
undergraduate  
students with  
the fundamentals  
of mechanics and  
direct  
observation, as  
well as the  
concepts  
required to*

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*design  
reinforced  
concrete (RC)  
structures, and  
applies to both  
building and  
bridge  
structural  
design.*

*This book will  
provide  
comprehensive,  
practical  
knowledge for*

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*the design of  
reinforced  
concrete  
buildings. The  
approach will be  
unique as it  
will focus  
primarily on the  
design of  
various  
structures and  
structural  
elements as done  
in design*

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*offices with an  
emphasis on  
compliance with  
the relevant  
codes. It will  
give an overview  
of the  
integrated  
design of  
buildings and  
explain the  
design of  
various elements  
such as slabs,*



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*beams, columns,  
walls, and  
footings. It  
will be written  
in easy-to-use  
format and refer  
to all the  
latest relevant  
American codes  
of practice (IBC  
and ASCE) at  
every stage. The  
book will compel  
users to think*

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*critically to  
enhance their  
intuitive design  
capabilities.  
Although the use  
of composites  
has increased in  
many industrial,  
commercial,  
medical, and  
defense  
applications,  
there is a lack  
of technical*

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*literature that  
examines  
composites in  
conjunction with  
concrete  
construction.  
Fulfilling the  
need for a  
comprehensive,  
explicit guide,  
Reinforced  
Concrete Design  
with FRP  
Composites*

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Concrete Design  
*presents*  
By A. K. Jain  
*specific*

*informat*

*Design of*

*Reinforced*

*Concrete*

*Structures*

*To Eurocode 2*

*Elementary*

*Reinforced*

*Concrete Design*

*for Student of*

*Architecture and*

*Building*