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KEY=RESISTANT - SWANSON CONRAD

EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

PHI Learning Pvt. Ltd. This comprehensive and well-organized book presents the concepts and principles of earthquake resistant design of structures in an easy-to-read style. The use of these principles helps in the implementation of seismic design practice. The book adopts a step-by-step approach, starting from the fundamentals of structural dynamics to application of seismic codes in analysis and design of structures. The text also focusses on seismic evaluation and retrofitting of reinforced concrete and masonry buildings. The text has been enriched with a large number of diagrams and solved problems to reinforce the understanding of the concepts. Intended mainly as a text for undergraduate and postgraduate students of civil engineering, this text would also be of considerable benefit to practising engineers, architects, field engineers and teachers in the field of earthquake resistant design of structures.

EARTHQUAKE RESISTANT DESIGN OF BUILDINGS

CRC Press Introducing important concepts in the study of earthquakes related to retrofitting of structures to be made earthquake resistant. The book investigates the pounding effects on base-isolated buildings, the soil-structure-interaction effects on adjacent buildings due to the impact, the seismic protection of adjacent buildings and the mitigation of earthquakeinduced vibrations of two adjacent structures. These concepts call for a new understanding of controlled systems with passive-active dampers and semi-active dampers. The passive control strategy of coupled buildings is investigated for seismic protection in comparison to active and semi-active control strategies.

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EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

OUP India Earthquake-resistant Design of Structures 2e is designed for undergraduate students of civil engineering.

EARTHQUAKE-RESISTANT STRUCTURES

DESIGN, BUILD, AND RETROFIT

Butterworth-Heinemann Earthquake engineering is the ultimate challenge for structural engineers. Even if natural phenomena involve great uncertainties, structural engineers need to design buildings, bridges, and dams capable of resisting the destructive forces produced by them. These disasters have created a new awareness about the disaster preparedness and mitigation. Before a building, utility system, or transportation structure is built, engineers spend a great deal of time analyzing those structures to make sure they will perform reliably under seismic and other loads. The purpose of this book is to provide structural engineers with tools and information to improve current building and bridge design and construction practices and enhance their sustainability during and after seismic events. In this book, Khan explains the latest theory, design applications and Code Provisions. Earthquake-Resistant Structures features seismic design and retrofitting techniques for low and high raise buildings, single and multi-span bridges, dams and nuclear facilities. The author also compares and contrasts various seismic resistant techniques in USA, Russia, Japan, Turkey, India, China, New Zealand, and Pakistan. Written by a world renowned author and educator Seismic design and retrofitting techniques for all structures Tools improve current building and bridge designs Latest methods for building earthquake-resistant structures Combines physical and geophysical science with structural engineering

EARTHQUAKE RESISTANT BUILDINGS

DYNAMIC ANALYSES, NUMERICAL COMPUTATIONS, CODIFIED METHODS, CASE STUDIES AND EXAMPLES

Springer Science & Business Media This concise work provides a general introduction to the design of buildings which must be resistant to the effect of earthquakes. A major part of this design involves the building structure which has a primary role in preventing serious damage or structural collapse. Much of the material presented in this book examines building structures. Due to the recent discovery of vertical components, it examines not only the resistance to lateral forces but also analyses the disastrous influence of vertical components. The work is written for Practicing Civil, Structural, and Mechanical Engineers, Seismologists and Geoscientists. It serves as a knowledge source for graduate students and their instructors.

EARTHQUAKE RESISTANT CONCRETE STRUCTURES

CRC Press This book introduces practising engineers and post-graduate students to modern approaches to seismic design, with a particular focus on reinforced concrete structures, earthquake resistant design of new buildings and assessment, repair and strengthening of existing buildings.

EUROCODE 8, DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE

SILOS, TANKS AND PIPELINES. PART 4

Earthquake-resistant design, Structures, Structural design, Seismology, Silos, Tanks (containers), Pipelines, Safety measures, Reliability, Performance, Classification systems, Damping, Verification, Dynamic pressure, Seismic loading, Construction systems parts, Shell structures, Anchorages, Foundations, Pipes, Underground, Hydrodynamics, Earthquakes, Seismic coefficient, Mathematical calculations, Pressure

EARTHQUAKE RESISTANT DESIGN AND RISK REDUCTION

Whenever there is an earthquake-related disaster in the news bulletin with depictions of distorted buildings and other structures dispersed all over the place, one may doubtless think that earthquake-resistant design of structures is quiet in the dark ages. Obviously, the aim of professionals engaged in the field of earthquake-resistant design is to generate several cost-effective design solutions to make structures less vulnerable to earthquakes, even large earthquakes. As one of the most devastating natural events, earthquakes impose economic challenges on communities and governments. The number of human and economic assets at risk is growing as megacities and urban areas develop all over the world. The earthquake events have not only inflicted human and physical damage, they have also been able to cause considerable economic conflict in vulnerable cities and regions. The importance of the economic issues and the consequences of earthquakes attracted the attention of engineers and provided new research and working opportunities for engineers, who up until then had been concerned only with risk reduction options through engineering strategies. This book `Earthquake Resistant Design and Risk Reduction¿ is packed with the comprehensive information on recent development in earthquake-resistant structures, such as, buildings, bridges and liquid storage tanks. It contains chapters covering several interesting research topics written by researchers and experts in the field of earthquake engineering. The book covers seismic-resistance design of masonry and reinforced concrete structures to be constructed as well as safety assessment, strengthening and rehabilitation of existing structures against earthquake loads. It will also discuss the factors which will define the success of earthquake-resistant design concepts, approaches and techniques in the coming years.This book is an valuable guiding tool to civil and structural practicing engineers, researchers and postgraduate students in earthquake engineering and engineering seismology, policy makers and risk management officials.

EUROCODE-COMPLIANT SEISMIC ANALYSIS AND DESIGN OF R/C BUILDINGS

CONCEPTS, COMMENTARY AND WORKED EXAMPLES WITH FLOWCHARTS

Springer This book aims to serve as an essential reference to facilitate civil engineers involved in the design of new conventional (ordinary) reinforced concrete (R/C) buildings regulatedby the current European EC8 (EN 1998-1:2004) and EC2 (EN 1992-1-1:2004) codesof practice. The book provides unique step-by-step flowcharts which take the readerthrough all the required operations, calculations, and verification checks prescribed bythe EC8 provisions. These flowcharts are complemented by comprehensive discussionsand practical explanatory comments on critical aspects of the EC8 code-regulatedprocedure for the earthquake resistant design of R/C buildings. Further, detailedanalysis and design examples of typical multi-storey three-dimensional R/C buildingsare included to illustrate the required steps for achieving designs of real-life structures which comply with the current EC8 provisions. These examples can be readily used as verification tutorials to check the reliability of custom-made computer programs and of commercial Finite Element software developed/used for the design of earthquakeresistant R/C buildings complying with the EC8 (EN 1998-1:2004) code.This book will be of interest

to practitioners working in consulting and designingengineering companies and to advanced undergraduate and postgraduate level civilengineering students attending courses and curricula in the earthquake resistant designof structures and/or undertaking pertinent design projects.

EARTHQUAKE RESISTANT DESIGN AND RISK REDUCTION

John Wiley & Sons Earthquake Resistant Design and Risk Reduction, 2nd edition is based upon global research and development work over the last 50 years or more, and follows the author's series of three books Earthquake Resistant Design, 1st and 2nd editions (1977 and 1987), and Earthquake Risk Reduction (2003). Many advances have been made since the 2003 edition of Earthquake Risk Reduction, and there is every sign that this rate of progress will continue apace in the years to come. Compiled from the author's wide design and research experience in earthquake engineering and engineering seismology, this key text provides an excellent treatment of the complex multidisciplinary process of earthquake resistant design and risk reduction. New topics include the creation of low-damage structures and the spatial distribution of ground shaking near large fault ruptures. Sections on guidance for developing countries, response of buildings to differential settlement in liquefaction, performance-based and displacement-based design and the architectural aspects of earthquake resistant design are heavily revised. This book: Outlines individual national weaknesses that contribute to earthquake risk to people and property Calculates the seismic response of soils and structures, using the structural continuum "Subsoil – Substructure – Superstructure – Non–structure" Evaluates the effectiveness of given design and construction procedures for reducing casualties and financial losses Provides guidance on the key issue of choice of structural form Presents earthquake resistant design methods for the main four structural materials – steel, concrete, reinforced masonry and timber – as well as for services equipment, plant and non-structural architectural components Contains a chapter devoted to problems involved in improving (retrofitting) the existing built environment This book is an invaluable reference and guiding tool to practising civil and structural engineers and architects, researchers and postgraduate students in earthquake engineering and engineering seismology, local governments and risk management officials.

EUROCODE 8, DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE: ASSESSMENT AND RETROFITTING OF BUILDINGS

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Buildings, Seismic coefficient, Seismic loading, Earthquakes, Stability, Repair, Design calculations, Mathematical calculations, Ductility, Mechanical properties of materials, Strength of materials, Stiffness, Laboratory testing, Building maintenance, Concretes, Structural timber, Damage, Masonry work, Steels, Safety measures

WIND AND EARTHQUAKE RESISTANT BUILDINGS

STRUCTURAL ANALYSIS AND DESIGN

CRC Press Developed as a resource for practicing engineers, while simultaneously serving as a text in a formal classroom setting, Wind and Earthquake Resistant Buildings provides a fundmental understanding of the behavior of steel, concrete, and composite building structures. The text format follows, in a logical manner, the typical process of designing a building, from the first step of determining design loads, to the final step of evaluating its behavior for unusual effects. Includes a worksheet that takes the drudgery out of estimating wind response. The book presents an in-depth review of wind effects and outlines seismic design, highlighting the dymamic behavior of buildings. It covers the design and detailing the requirements of steel, concrete, and composite buidlings assigned to seismic design categories A through E. The author explains critical code specific items and structural concepts by doing the nearly impossible feat of addressing the history, reason for existence, and intent of major design provisions of the building codes. While the scope of the book is intentionally broad, it provides enough in-depth coverage to make it useful for structural engineers in all stages of their careers.

UK NATIONAL ANNEX TO EUROCODE 8. DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE. GENERAL RULES, SEISMIC ACTIONS AND RULES FOR BUILDINGS

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Construction systems, Hazard prevention in buildings, Safety measures, Seismic intensity, Plastic analysis, Design calculations, Foundations, Classification systems, Subsoil, Earthquake zones, Earthquakes, Mathematical calculations

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STRUCTURAL DYNAMICS IN EARTHQUAKE AND BLAST RESISTANT DESIGN

CRC Press Focusing on the fundamentals of structural dynamics required for earthquake blast resistant design, Structural Dynamics in Earthquake and Blast Resistant Design initiates a new approach of blending a little theory with a little practical design in order to bridge this unfriendly gap, thus making the book more structural engineer-friendly. This is attempted by introducing the equations of motion followed by free and forced vibrations of SDF and MDF systems, D'Alembert's principle, Duhammel's integral, relevant impulse, pulse and sinusoidal inputs, and, most importantly, support motion and triangular pulse input required in earthquake and blast resistant designs, respectively. Responses of multistorey buildings subjected to earthquake ground motion by a well-known mode superposition technique are explained. Examples of real-size structures as they are being designed and constructed using the popular ETABS and STAAD are shown. Problems encountered in such designs while following the relevant codes of practice like IS 1893 2016 due to architectural constraints are highlighted. A very difficult constraint is in avoiding torsional modes in fundamental and first three modes, the inability to get enough mass participation, and several others. In blast resistant design the constraint is to model the blast effects on basement storeys (below ground level). The problem is in obtaining the attenuation due to the soil. Examples of inelastic hysteretic systems where top soft storey plays an important role in expending the input energy, provided it is not below a stiffer storey (as also required by IS 1893 2016), and inelastic torsional response of structures asymmetric in plan are illustrated in great detail. In both cases the concept of ductility is explained in detail. Results of response spectrum analyses of tall buildings asymmetric in plan constructed in Bengaluru using ETABS are mentioned. Application of capacity spectrum is explained and illustrated using ETABS for a tall building. Research output of retrofitting techniques is mentioned. Response spectrum analysis using PYTHON is illustrated with the hope that it could be a less expensive approach as it is an open source code. A new approach of creating a fictitious (imaginary) boundary to obtain blast loads on below-ground structures devised by the author is presented with an example. Aimed at senior undergraduates and graduates in civil engineering, earthquake engineering and structural engineering, this book: Explains in a simple manner the fundamentals of structural dynamics pertaining to earthquake and blast resistant design Illustrates seismic resistant designs such as ductile design philosophy and limit state design with the use of capacity spectrum Discusses frequency domain analysis and Laplace transform approach in detail Explains solutions of building frames using software like ETABS and STAAD Covers numerical simulation using a well-known open source tool PYTHON

DESIGN OF EARTHQUAKE RESISTANT STRUCTURES

EARTHQUAKE DESIGN PRACTICE FOR BUILDINGS

ICE Publishing Earthquake Design Practice for Buildings, 3rd edition provides comprehensive, practical and easy to read advice for all engineers, designers and analysts of earthquake resistant structures. This new edition has been completely revised to account for the many developments that had taken place since the publication of the bestselling second edition.

EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

Createspace Independent Publishing Platform It aims to explain the different sources of damage that can be triggered by an earthquake and the conceptual method of earthquake-resistant design. The book would also be useful for postgraduate students of civil engineering, practising engineers, and architects.

EUROCODE 8, DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE

GENERAL RULES, SEISMIC ACTIONS AND RULES FOR BUILDINGS

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Construction systems, Hazard prevention in buildings, Safety measures, Seismic intensity, Plastic analysis, Design calculations, Foundations, Classification systems, Subsoil, Earthquake zones, Earthquakes, Mathematical calculations

RECOMMENDATIONS FOR EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

EUROCODE 8. DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE. ASSESSMENT AND RETROFITTING OF BUILDINGS

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Buildings, Seismic coefficient, Seismic loading, Earthquakes, Stability, Repair, Design calculations, Mathematical calculations, Ductility, Mechanical properties of materials, Strength of materials, Stiffness, Laboratory testing, Building maintenance, Concretes, Structural timber, Damage, Masonry work, Steels, Safety measures

EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

EUROCODE 8. DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE. GENERAL RULES, SEISMIC ACTIONS AND RULES FOR BUILDINGS

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Construction systems, Hazard prevention in buildings, Safety measures, Seismic intensity, Plastic analysis, Design calculations, Foundations, Classification systems, Subsoil, Earthquake zones, Earthquakes, Mathematical calculations

EARTHQUAKE-RESISTANT STRUCTURES

DESIGN, ASSESSMENT AND REHABILITATION

Earthquake-resistant structures are the structures considered to withstand earthquakes. While no structure can be entirely resistant to damage from earthquakes, the goal of earthquake-resistant building is to create structures that fare better during seismic activity than their predictable counterparts. Earthquake-resistant structures are envisioned to resist the largest earthquake of a certain probability that is likely to occur at their location. This means the loss of life should be minimized by preventing collapse of the buildings for rare earthquakes while the loss of functionality should be limited for more frequent ones. To be earthquake proof, buildings, structures and their foundations need to be built to be resistant to sideways loads. The lighter the building is, the less the loads. This is particularly so when the weight is higher up. They must be strong enough to take the loads. They must be tied in to any framing, and reinforced to take load in their weakest direction. They must not fall apart and must remain in place after the worst shock waves so as to retain strength for the aftershocks. Currently, there are several design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from past earthquakes to offer the required performance for the seismic threat at the site of interest. These range from appropriately sizing the structure to be strong and ductile enough to survive the shaking with an acceptable damage, to equipping it with base isolation or using structural vibration control technologies to minimize any forces and deformations. This book highlights on seismic-resistance design of masonry and reinforced concrete structures to be constructed in addition to safety assessment, strengthening and rehabilitation of existing structures in contrast to earthquake loads. This book focuses on earthquake-resistant structures, such as, buildings, bridges and liquid storage tanks. It covers topics in the field of earthquake engineering. The book provides the contemporary topics on recent progress in earthquake-resistant structures and a helpful tool for graduate students, researchers and practicing structural engineers.

EUROCODE 8. DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE. BRIDGES

Earthquake-resistant design, Structures, Structural design, Seismology, Construction systems, Seismic coefficient, Seismic loading, Earthquakes, Stability, Design calculations, Mathematical calculations, Bridges, Construction engineering works, Ductility, Mechanical properties of materials, Strength of materials, Steels, Concretes, Plastics, Bearings, Piers, Verification

UK NATIONAL ANNEX TO EUROCODE 8 - DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE - BRIDGES

Earthquake-resistant design, Structures, Structural design, Seismology, Construction systems, Seismic coefficient, Seismic loading, Earthquakes, Stability, Design calculations, Mathematical calculations, Bridges, Construction engineering works, Ductility, Mechanical properties of materials, Strength of materials, Steels, Concretes, Plastics, Bearings, Piers, Verification

SEISMIC RESISTANT DESIGN AND TECHNOLOGY

CRC Press An earthquake is a powerful surface acoustic wave (SAW) generated by a seismic event, such as a volcano or motion of the Earth's layers, that propagates on the Earth's surface. This book explains the design of earthquake resistant structures using SAW techniques that offer a variety of experimental setups and theoretical models. Designs of protecting systems able to dissipate or deflect SSW energy built around buildings or towns located in earthquake regions set this book apart from other seismology publications.

EUROCODE 8: DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE

FOUNDATIONS, RETAINING STRUCTURES AND GEOTECHNICAL ASPECTS

Earthquake-resistant design, Structures, Structural design, Seismology, Construction systems, Foundations, Retaining structures, Earthworks, Land retention works, Soil mechanics, Earthquakes, Siting, Subsoil, Site investigations, Stability, Design calculations, Mathematical calculations

DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE

Earthquake-resistant design, Structures, Structural design, Seismology, Structural systems, Construction systems, Hazard prevention in buildings, Safety measures, Seismic intensity, Plastic analysis, Design calculations, Foundations, Classification systems, Subsoil, Earthquake zones, Earthquakes, Mathematical calculations

DESIGN OF WIND AND EARTHQUAKE RESISTANT REINFORCED CONCRETE BUILDINGS

CRC Press Design of Wind and Earthquake Resistant Reinforced Concrete Buildings explains wind and seismic design issues of RCC buildings in brief and provides design examples based on recommendations of latest IS codes essential for industrial design. Intricate issues of RCC design are discussed which are supplemented by real-life examples. Guidelines are presented for evaluating the acceptability of wind-induced motions of tall buildings. Design methodologies for structures to deform well beyond their elastic limits, which is essential under seismic excitation, have been discussed in detail. Comparative discussion including typical design examples using recent British, Euro and American codes is also included. Features: Explains wind and earthquake resistant design issues, balancing theoretical aspects and design implications, in detail Discusses issues for designing the wind and earthquake resistant RCC structures Provides comprehensive understanding, analysis, design and detailing of the structures Includes a detailed discussion on IS code related to wind and earthquake resistant design and its comparison with Euro, British and American codes Contains architectural drawings and structural drawings The book is aimed at researchers, professionals, graduate students in wind and earthquake engineering, design of RCC structures, modelling and analysis of structures, civil/infrastructure engineering.

GUIDELINES FOR EARTHQUAKE RESISTANT NON-ENGINEERED CONSTRUCTION

UNESCO

EARTHQUAKE RESISTANT ENGINEERING STRUCTURES VI

WIT Press The problem of protecting the built environment in earthquake-prone regions of the world involves not only the optimal design and construction of new facilities, but also the upgrading and rehabilitation of existing structures and infrastructures. The latter is a laborious and expensive task, which can be accomplished only gradually. However, the inestimable loss of life and the colossal costs following a major earthquake in a metropolitan area provide sufficient reason to make it an important challenge for the scientific and technical community.Containing papers presented at the Sixth International Conference on Earthquake Resistance and Engineering Structures, this book will be invaluable to engineers, scientists and managers working in industry, academia, research organizations and governments. The book encompasses a wide range of topics such as: Site Effects and Geotechnical aspects; Earthquake resistant design; Seismic Behaviour and Vulnerability; Structural Dynamics; Monitoring and Testing; Bridges; Heritage Buildings; Masonry Construction; Retrofitting; Passive Protection Devices and Seismic Isolation; Lifelines; Design Codes and Response Spectre.

EARTHQUAKE RESISTANT DESIGN FOR CIVIL ENGINEERING STRUCTURES, EARTH STRUCTURES AND FOUNDATIONS IN JAPAN

EARTHQUAKE-RESISTANT LIMIT-STATE DESIGN FOR BUILDINGS

UK NATIONAL ANNEX TO EUROCODE 8. DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE. FOUNDATIONS, RETAINING STRUCTURES AND GEOTECHNICAL ASPECTS

Earthquake-resistant design, Structures, Structural design, Seismology, Construction systems, Foundations, Retaining structures, Earthworks, Land retention works, Soil mechanics, Earthquakes, Siting, Subsoil, Site investigations, Stability, Design calculations, Mathematical calculations

EARTHQUAKE-RESISTANT DESIGN WITH RUBBER

Springer Base isolation technology offers a cost-effective and reliable strategy for mitigating seismic damage to structures. The effectiveness of this new technology has been demonstrated not only in laboratory research, but also in the actual response of base-isolated buildings during earthquakes. Increasingly, new and existing buildings in earthquake-prone regions throughout the world are making use of this innovative strategy. In this expanded and updated edition, the design methods and guidelines associated with seismic isolation are detailed. The main focus of the book is on isolation systems that use a damped natural rubber. Topics covered include coupled lateral-torsional response, the behavior of multilayer bearings under compression and bending, and the buckling behavior of elastomeric bearings. Also featured is a section covering the recent changes in building code requirements.

TEXTBOOK OF SEISMIC DESIGN

STRUCTURES, PIPING SYSTEMS, AND COMPONENTS

Springer This book focuses on the seismic design of Structures, Piping Systems and Components (SSC). It explains the basic mechanisms of earthquakes, generation of design basis ground motion, and fundamentals of structural dynamics; further, it delves into geotechnical aspects related to the earthquake design, analysis of multi degree-of-freedom systems, and seismic design of RC structures and steel structures. The book discusses the design of components and piping systems located at the ground level as well as at different floor levels of the structure. It also covers anchorage design of component and piping system, and provides an introduction to retrofitting, seismic response control including seismic base isolation, and testing of SSCs. The book is written in an easy-to-understand way, with review questions, case studies and detailed examples on each topic. This educational approach makes the book useful in both classrooms and professional training courses for students, researchers, and professionals alike.

RECOMMENDATIONS

EARTHQUAKE RESISTANT DESIGN OF BUILDINGS, STRUCTURES AND TANK TOWERS

EARTHQUAKE-RESISTANT DESIGN OF MASONRY BUILDINGS

World Scientific In the last few decades, a considerable amount of experimental and analytical research on the seismic behaviour of masonry walls and buildings has been carried out. The investigations resulted in the development of methods for seismic analysis and design, as well as new technologies and construction systems. After many centuries of traditional use and decades of allowable stress design, clear concepts for limit state verification of masonry buildings under earthquake loading have recently been introduced in codes of practice. Although this book is not a review of the state-of-the-art of masonry structures in earthquake zones, an attempt has been made to balance the discussion on recent code requirements, state-of-the-art methods of earthquake-resistant design and the author's research work, in order to render the book useful for a broader application in design practice. An attempt has also been made to present, in a condensed but easy to understand way, all the information needed for earthquake-resistant design of masonry buildings constructed using traditional systems. The basic concepts of limit state verification are presented and equations for seismic resistance verification of masonry walls of all types of construction, (unreinforced, confined and reinforced) as well as masonry-infilled reinforced concrete frames, are addressed. A method for seismic resistance verification, compatible with recent code requirements, is also discussed. In all cases, experimental results are used to explain the proposed methods and equations. An important part of this book is dedicated to the discussion of the problems of repair, retrofit and rehabilitation of existing masonry buildings, including historical structures in urban centres. Methods of strengthening masonry walls as well as improving the structural integrity of existing buildings are described in detail. Wherever possible, experimental evidence regarding the effectiveness of the proposed strengthening methods is given. Contents:Earthquakes and Seismic Performance of Masonry BuildingsMasonry Materials and Construction SystemsArchitectural and Structural Concepts of Earthquake-Resistant Building ConfigurationFloors and RoofsBasic Concepts of Limit States Verification of Seismic Resistance of Masonry BuildingsSeismic Resistance Verification of Structural WallsMasonry Infilled Reinforced Concrete FramesSeismic Resistance Verification of Masonry BuildingsRepair and Strengthening of Masonry Buildings Readership: Practising engineers and students.