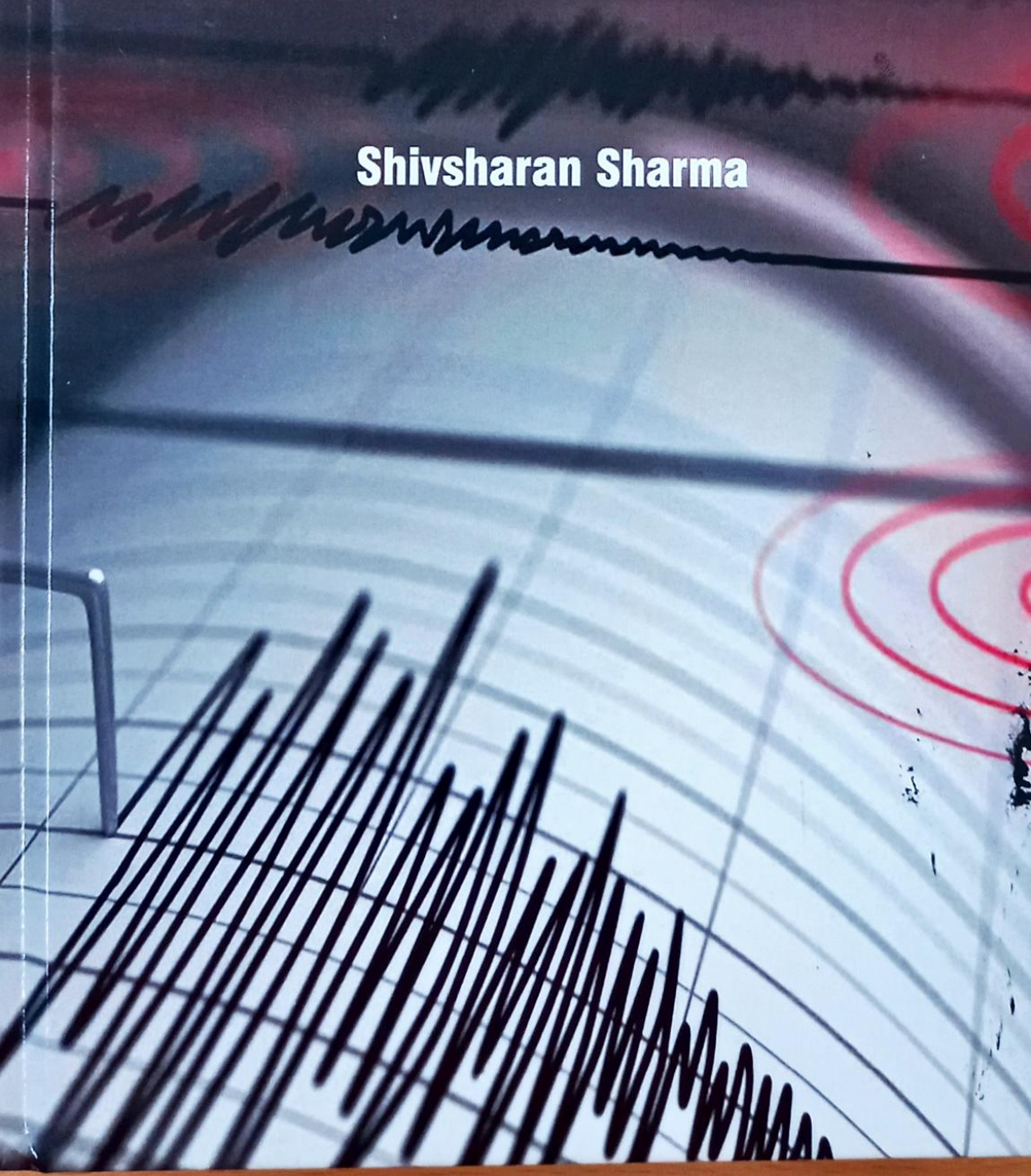


CRITERION FOR EARTHQUAKE RESISTANT DESIGN

Shivsharan Sharma



Criterion for Earthquake Resistant Design

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RANDOM PUBLICATIONS LLP
NEW DELHI (INDIA)

Criterion for Earthquake Resistant Design

edited by Shivsharan Sharma

This edition published by Random Publications,
Gali Murari Lal, Ansari Road Daryaganj,
New Delhi-110002 (India)

ISBN 978-93-93884-48-0

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Published in 2022 in India by

RANDOM PUBLICATIONS LLP

4376-A/4B, Gali Murari Lal, Ansari Road
New Delhi-110002

Phone : +9111-43580356, 011-23289044, 011-43142548

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info@randompublications.com, randomexports@gmail.com

Type Setting by : Friends Media, Delhi-110089
Digitally Printed at: Replika Press Pvt. Ltd.

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CRITERION FOR EARTHQUAKE RESISTANT DESIGN

The buildings affected by earthquake may suffer both non-structural and structural damages. This standard lays down guidelines for non-structural/architectural as well as structural repairs, seismic strengthening and seismic retrofitting of existing buildings. Guidelines have been given for selection of materials for repair work such as cement, steel, epoxy resins, epoxy mortar, quick setting cement mortar and special techniques such as shotcrete, mechanical anchorage etc. Seismic strengthening techniques for the modification of roofs or floors, inserting new walls, strengthening existing walls, masonry arches, random rubble masonry walls, strengthening long walls, strengthening reinforced concrete members and strengthening of foundations. Building codes generally are intended to be applied by architects and engineers but also are used for various purposes by safety inspectors, environmental scientists, real estate developers, contractors and subcontractors, manufacturers of building products and materials, insurance companies, facility managers, tenants, and others. Most of the existing seismic design codes are based on the empirical knowledge accumulated through systematic earthquake damage data collection and their analysis. Required levels of protection and seismic design forces gradually are increased after each series of catastrophic earthquakes particularly in developed countries. Many efforts have been made through experimental and analytical studies to improve detailing and to increase inelastic capacity of buildings and structures to resist earthquake ground motions with acceptable damage levels. The general belief was that empirically developed seismic design codes contain performance objectives, but usually in a descriptive form that cannot be quantified and that explicit code design for life safety provides adequate damage protection. This book Earthquake resistant design consists of an evaluation of the earthquake excitation and the structure response to this excitation at a particular site in order to provide a structural system that will not collapse, that may prevent loss of life and will limit economic loss during an earthquake.

Contents: 1. Designing for Earthquake Resistance and Structures, 2. Design Parameters of Foundations in Seismic Zones of Earthquake, 3. Earthquake Prediction, 4. Seismic Retrofit, Earthquake Resistant Techniques, 5. Earthquake and Construction Engineering, 6. Controlling Hazards Through Design, 7. Geological Consideration for Construction of Building, 8. Safety Management in Building Structures Management, 9. Seismic Design and Structural Engineering Theory.

About the Author



Shivsharan Sharma obtained his M.Sc. in Civil Engineering from Institute of Higher Education Sultanpur UP and Ph.D. from the same Institute. He is founder, copyright holder and co-editor of the Journal of Earthquake Engineering and editorial board member of several other journals, a member of the drafting panel of the Asian design codes, past chair of the Asian earthquake engineering association. He is the winner of the Institute of Higher Education Prize for the best Ph.D. thesis in Civil and Mechanical Engineering. He has contributed to major projects for a number of international campaigns and other agencies. At the present time, he is working as a director of the CSF network for Earthquake Engineering at Bhadohi, UP.


RANDOM
RANDOM PUBLICATIONS LLP
PUBLISHERS • DISTRIBUTORS

4376-A/4B, Gali Murari Lal, Ansari Road, Daryaganj
New Delhi-110002, Ph: +91-11-43142548/43580356/23289044
Email: randomexports@gmail.com,
sales@randompublications.com,
info@randompublications.com

ISBN 978-93-93884-48-0



Size: Royal
Pgs.: 300 (Appx.)