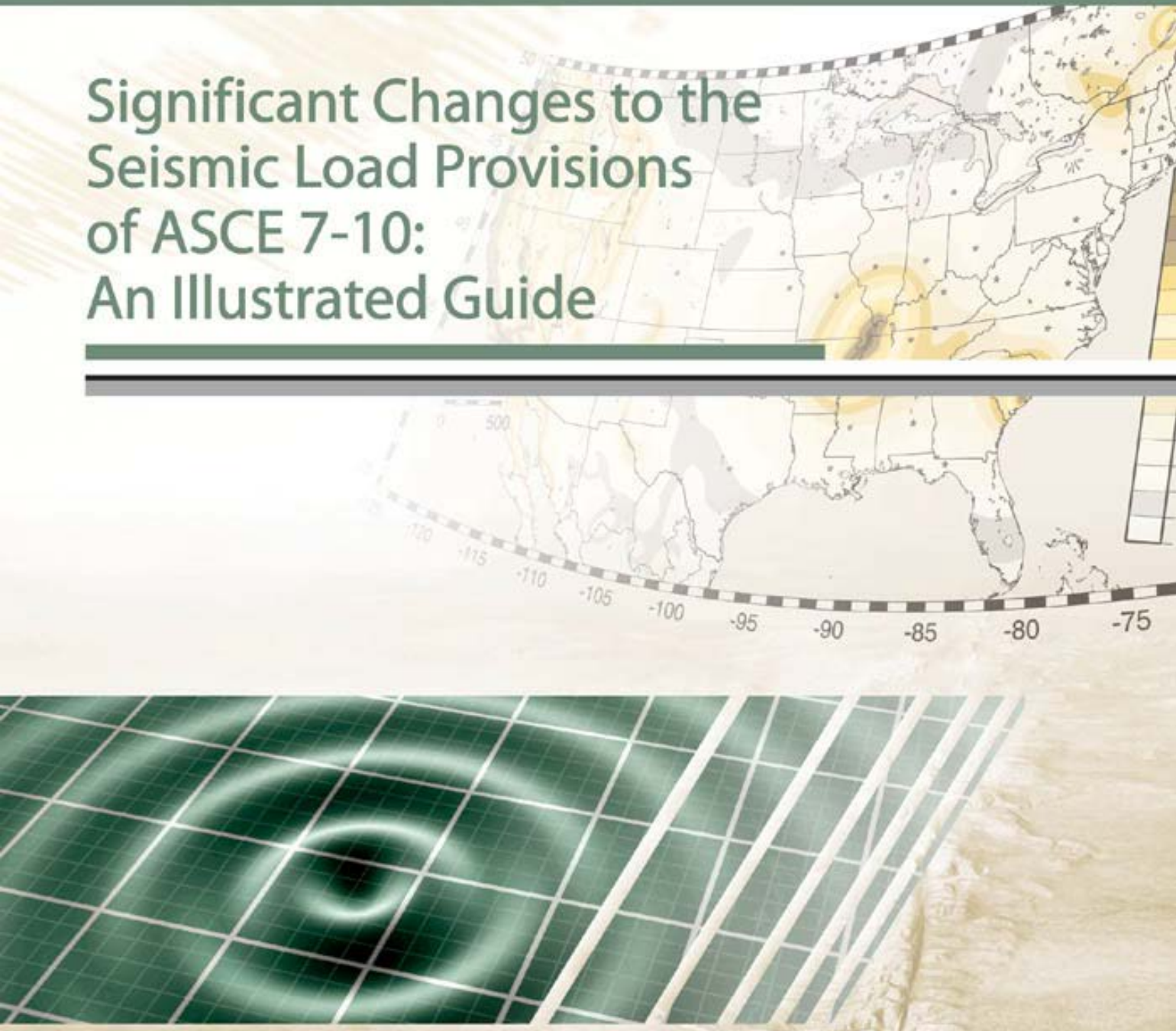
Significant Changes to the Seismic Load Provisions of ASCE 7-10: An Illustrated Guide



S.K. Ghosh, Susan Dowty and P. Dasgupta

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Significant Changes to the Seismic Load Provisions of ASCE 7-10

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An Illustrated Guide

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ASCE PRESS

Library of Congress Cataloging-in-Publication Data

Ghosh, S. K. (Satyendra Kumar)
Significant changes to the seismic load provisions of ASCE 7-10 : an illustrated guide / S.K. Ghosh, Susan Dowty, Prabuddha Dasgupta.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-7844-1117-9
1. Earthquake resistant design--Standards--United States. 2. Buildings--Standards--United States. I. Dowty, Susan. II. Dasgupta, Prabuddha, 1975- III. American Society of Civil Engineers. IV. Title.
TA658.44.G49 2010
624.1'762021873--dc22
2010052404

Published by American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, Virginia 20191
www.asce.org/pubs

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ISBN 978-0-7844-1117-9
Manufactured in the United States of America.

18 17 16 15 14 13 12 11 10 1 2 3 4 5

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PREFACE

Significant Changes to the Seismic Load Provisions of ASCE 7-10: An Illustrated Guide is intended to familiarize structural engineers, architects, code officials, and others in the building construction and design industry with the changes to the seismic load requirements in the newest edition of *Minimum Design Loads for Buildings and Other Structures*, Standard ASCE/SEI 7-10. This reference book is organized into eight parts that generally follow the organization of the seismic chapters in ASCE 7-10. Each significant change is presented using the following format:

Section(s): *Here the sections affected by the significant change are listed.*

Section Title or Subject: *Here the subject of the significant change is identified.*

Change Type: *Here the significant change is described by one of the following or a combination thereof: modification, addition, deletion, relocation, clarification.*

At-a-Glance: *Here the meaning of the significant change is succinctly summarized.*

2010 Standard: *Here the significant change is shown in strike-out and underline format, where strike-out indicates text from ASCE 7-05 that has been deleted and underlining indicates new text added to ASCE 7-10.*

Analysis and Commentary: *Here the reason for the significant change is explained. Analysis, commentary, color photographs or other illustrations are used to enrich the reader's understanding.*

Although it was not possible to discuss each and every change to the seismic provisions, the ones that would be of most interest to or have significant impact on the industry are discussed in detail. This reference is intended to be a companion to ASCE 7-10; it is important to have the full set of seismic provisions in ASCE 7-10 on hand for reference when reading through this document. The commentary and opinions provided are those of the authors and do not necessarily represent the official position of ASCE.

ACKNOWLEDGEMENT

The authors wish to acknowledge their appreciation to T. Eric Stafford who got them involved in this project. His support, counsel, and patience through the duration of this project have been greatly valued.

The authors would also like to sincerely thank Phil Brazil for his in-depth and thorough review, which greatly enhanced the quality of this publication.

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Part I
Terminology Changes Affecting Multiple Sections & Chapters

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Determination of Number of Stories

At a Glance

There are several requirements in ASCE 7 that are based on the number of stories in a structure. The determination of this number of stories is clarified.

2010 Standard

11.1.2 Scope

Every structure, and portion thereof, including nonstructural components, shall be designed and constructed to resist the effects of earthquake motions as prescribed by the seismic requirements of this standard. Certain non-building structures, as described in Chapter 15, are also within the scope and shall be designed and constructed in accordance with the requirements of Chapter 15. Requirements concerning alterations, additions, and change of use are set forth in Appendix 11B. Existing structures and alterations to existing structures need only comply with the seismic requirements of this standard where required by Appendix 11B. The following structures are exempt from the seismic requirements of this standard:

1. Detached one- and two-family dwellings that are located where the mapped, short period, spectral response acceleration parameter, S_s, is less than 0.4 or where the Seismic Design Category determined in accordance with Section 11.6 is A, B, or C.
2. Detached one- and two-family wood-frame dwellings not included in Exception 1 with not more than two stories above grade plane, satisfying the limitations of and constructed in accordance with the IRC.
3. *(no change to text)*
4. *(no change to text)*
5. *(no change to text)*

11.2 DEFINITIONS

The following definitions apply only to the seismic requirements of this standard.

~~**BASEMENT:** A basement is any story below the lowest story above grade.~~

GRADE PLANE: A horizontal reference plane representing the average of finished ground level adjoining the structure at all exterior walls. Where the finished ground level slopes away from the exterior walls, the grade ~~reference~~ plane is ~~shall be~~ established by the lowest points within the area between the structure ~~buildings~~ and the property ~~lot~~ line or, where the property ~~lot~~ line is more than 6 ft (1,829 mm) from the structure, between the structure and points 6 ft (1,829 mm) from the structure.