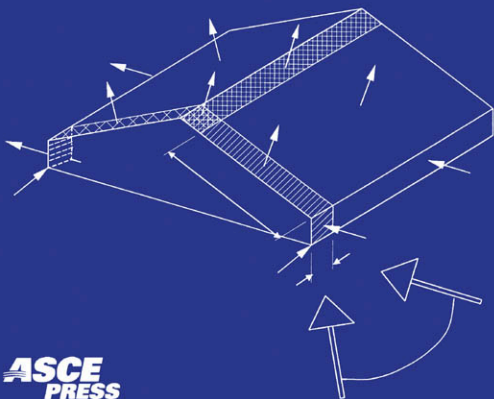


# GUIDE TO THE USE OF THE WIND LOAD PROVISIONS OF ASCE 7-98

Kishor C. Mehta and Dale C. Perry



**ASCE**  
**PRESS**

This is a preview. [Click here to purchase the full publication.](#)

# GUIDE TO THE USE OF THE WIND LOAD PROVISIONS

*of ASCE 7-98*

Kishor C. Mehta  
Dale C. Perry



This is a preview. [Click here to purchase the full publication.](#)

**Abstract:** The objective of the *Guide to the Use of Wind Load Provisions of ASCE 7-98* (formerly ASCE 7-88) is to provide guidance in the use of the wind load provisions set forth in ASCE Standard 7-98, *Minimum Design Loads for Buildings and Other Structures*. In order to clearly identify the scope and limitations of this Standard, the *Guide* first provides a brief review of the background material that forms the basis for the Standard's provisions. It then discusses the general format of an analytical procedure used to determine wind loads and the various wind load parameters involved in this determination, such as velocity pressure, gust response factor, and pressure coefficients. This discussion is followed by examples using this analytical procedure to determine wind load. Finally, the *Guide* presents additional background information on the different wind parameters and a discussion on using the wind-tunnel procedure to determine wind load.

Library of Congress Cataloging-in-Publication Data

Mehta, Kishor C.

Guide to the use of wind load provisions of ASCE 7-98 / Kishor C. Mehta, Dale C. Perry.  
p. cm.

Rev. ed. of: Guide to the use of wind load provisions of ASCE 7-95. c1998.

Includes bibliographical references and index.

ISBN 0-7844-0533-6

1. Wind-pressure. 2. Structural engineering. 3. Standards, engineering—United States.

4. Buildings—Standards—United States. I. Perry, Dale C. II. Mehta, Kishor C. Guide to the use of wind load provisions of ASCE 7-95. III. Title.

TH891 .M45 2001

624.1'72'021873—dc21

2001055233

The material presented in this publication has been prepared in accordance with generally recognized engineering principles and practices, and is for general information only. This information should not be used without first securing competent advice with respect to its suitability for any general or specific application.

The contents of this publication are not intended to be and should not be construed to be a standard of the American Society of Civil Engineers (ASCE) and are not intended for use as a reference in purchase of specifications, contracts, regulations, statutes, or any other legal document. No reference made in this publication to any specific method, product, process, or service constitutes or implies an endorsement, recommendation, or warranty thereof by ASCE. ASCE makes no representation or warranty of any kind, whether express or implied, concerning the accuracy, completeness, suitability, or utility of any information, apparatus, product, or process discussed in this publication, and assumes no liability therefore. Anyone utilizing this information assumes all liability arising from such use, including but not limited to infringement of any patent or patents. ASCE and American Society of Civil Engineers—Registered in U.S. Patent and Trademark Office.

Photocopies: Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by ASCE to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$8.00 per chapter plus \$.50 per page is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. The identification for ASCE Books is 0-7844-0533-6/01/\$8.00 + \$.50 per page. Requests for special permission or bulk copying should be addressed to Permissions & Copyright Department, ASCE.

Copyright © 2002 by the American Society of Civil Engineers.

All Rights Reserved.

Manufactured in the United States of America.

Second printing.

This is a preview. [Click here to purchase the full publication.](#)

# In Memoriam

*Guide to the Use of the Wind Load Provisions of ASCE 7-98* was assembled as a combined effort of the two authors. Prior to its final editing, Dale C. Perry passed away in an accident while he was inspecting a damaged building, a task that he loved to do. The completed *Guide* is dedicated to the memory of my colleague and friend of twenty-five years.

*Kishor C. Mehta*

*This page intentionally left blank*

# Preface

This guide is designed to assist professionals in the use of the wind load provisions of the American Society of Civil Engineers (ASCE) Standard ASCE 7-98. The *Guide* is a revision of *Guide to the Use of Wind Load Provisions of ASCE 7-95* because the wind load provisions underwent significant changes from the previous Standard, ASCE 7-95. The *Guide* contains 10 example problems worked out in detail, which can provide direction to practicing professionals in assessing wind loads on a variety of buildings and other structures. Every effort has been made to make these illustrative example problems correct and accurate. The authors would be pleased to receive comments regarding inaccuracies, errors, or different interpretations. The views expressed and interpretation of the wind load provisions made in the *Guide* are those of the authors and not of the ASCE 7 Standards Committee or the ASCE organization.

## Authors' Disclaimer

Although the authors have done their best to ensure that any advice, recommendation, interpretation, or information given herein is accurate, no liability or responsibility of any kind (including liability for negligence) is accepted by the authors.

*This page intentionally left blank*

# Acknowledgments

The authors wish to acknowledge the members of the ASCE 7 Standards Committee that was chaired by Dr. Jim Harris during the consensus process of ASCE 7-98. The members of the Wind Load Task Committee and the ASCE 7 Standards Committee contributed significantly to the final wind load provisions of ASCE 7-98 through their questions, comments, and discussions. The authors are indebted to these 100 plus members.

In a document of this type, there are individuals in the background who helped in layout, word-processing, and checking calculations. These tasks were handled by the staff of the Wind Science and Engineering Research Center, Texas Tech University. Personnel at Texas A&M University also assisted in formulating the example problems. Contributions by these individuals are acknowledged by the authors.



*This page intentionally left blank*

# About the Authors

**Kishor C. Mehta**, P.E., Honorary Member of ASCE, Horn Professor of Civil Engineering, is the Director of the Wind Science and Engineering Research Center at Texas Tech University, Lubbock, Texas. He served as Chairman of the ASCE 7 Task Committee on Wind Loads, which produced ASCE 7-88 and ASCE 7-95. He was lead author of the *Guide to the Use of Wind Load Provisions of ASCE 7-95*. Dr. Mehta is past president of the American Association of Wind Engineering and past chairman of the Committee on Natural Disasters, National Research Council. He is project director of the NSF-sponsored Colorado State University/Texas Tech University Cooperative Program in Wind Engineering and program director of the Texas Tech/National Institute of Standards and Technology Cooperative Agreement for Windstorm Damage Mitigation. In April 2000, the National Hurricane Conference honored Dr. Mehta with an award for distinguished service in wind engineering.

**Dale C. Perry** (1932–2001) was a Dockery Professor in the Department of Architecture at Texas A&M University, College Station, Texas. Dr. Perry worked for the Southern Building Code Congress International (secretary to the Wind Loads Deemed-to-Comply Ad Hoc Committee); served on ASCE/ANSI, SBCCI, and ICBO in developing performance criteria for wind/environmental loads; and was director of Research and Engineering for the Metal Building Manufacturers Association. He was past president of the American Association of Wind Engineering. He served on the ASCE Task Committee to Mitigate Wind Damage and on the ASCE 7 Task Committee on Wind Loads. He also served as a team leader or as a member of a number of post-disaster investigations, including Hurricanes Elena, Andrew, Iniki, Iwa, Gilbert, and Georges. He was the recipient of the engineering award of the National Hurricane Conference in 1993 and again in 1997.