Wind Loads

Guide to the Wind Load Provisions of ASCE 7-22

T. Eric Stafford, P.E.
Timothy Reinhold, Ph.D., P.E.

ASCE PRESS

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Other Titles of Interest

Minimum Design Loads and Associated Criteria for Buildings and Other Structures, by the American Society of Civil Engineers (ASCE/SEI 2022). Standard ASCE/SEI 7-22 provides requirements for general structural design and includes means for determining various loads and their combinations, which are suitable for inclusion in building codes and other documents. (ISBN 978-0-7844-1578-8)

Wind Loads: Guide to the Wind Load Provisions of ASCE 7-16, by William L. Coulbourne and T. Eric Stafford (ASCE Press 2020). Authors Coulbourne and Stafford provide a comprehensive overview of the wind load provisions in *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ASCE/SEI 7-16, focusing on the provisions that affect the planning, design, and construction of buildings for residential and commercial purposes. (ISBN 978-0-7844-1526-9)

Wind Engineering for Natural Hazards: Modeling, Simulation, and Mitigation of Windstorm Impact on Critical Infrastructure, edited by Aly Mousaad Aly and Elena Dragomirescu. (ASCE/EMI 2018). TEMPS (Trends in Engineering Mechanics Special Publication) 3 contains selected papers from the EMI 2016 conference which address the challenges of understanding and mitigating windstorm impact on critical infrastructure. (ISBN 978-0-7844-1515-3)

Wind-Induced Motion of Tall Buildings: Designing for Habitability, by Kenny C. S. Kwok, Melissa D. Burton, and Ahmad K. Abdelrazaq (ASCE/SEI 2015). This state-of-the-art report describes various facets of the human response to wind-induced motion in tall buildings and identifies design strategies to mitigate the effects of such motion on building occupants. (ISBN 978-0-7844-1385-2)

Urban Aerodynamics: Wind Engineering for Urban Planners and Designers, by the Task Committee on Urban Aerodynamics. (ASCE/Technical Council on Wind Engineering 2011). This report introduces the basic tools and technology used by engineers to determine the effects of wind on city streets and structures. (ISBN 978-0-7844-1179-7)

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Preface

This guide is designed to assist professionals in using the wind load provisions of *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ASCE/SEI 7-22, published by ASCE. The guide represents a major revision of *Wind Loads: Guide to the Wind Load Provisions of ASCE 7-16*. It has been reorganized to follow the flow of ASCE 7-22 provisions and reflects significant changes made to the wind load provisions from the previous version of the standard, ASCE/SEI 7-16.

The guide contains 19 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 welcome comments regarding inaccuracies, errors, or different interpretations. The views expressed and interpretation of the wind load provisions made in this guide are those of the authors and not of the ASCE 7 Standards Committee or ASCE.

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The authors express their deepest gratitude and thanks to Dr. Kishor C. Mehta, who was an author of this guide from its inception in 1995 through the 2010 edition. Dr. Mehta has been a guiding force in the development of wind engineering practice in the United States for 45 years. The authors also want to express their gratitude and thanks to the other authors who have worked with Dr. Mehta over the years in producing various editions of this guide. They include Dr. Richard D. Marshall, Dr. Dale C. Perry, James M. Delahay, and William C. Coulbourne. This guide would not be the same without their leadership and counsel on the types of information the practice can most use and what design issues are the most misunderstood.