ASCE Manuals and Reports on Engineering Practice No. 67

Wind Tunnel Studies of Buildings and Structures

ASCE

AMERICAN SOCIETY OF CIVIL ENGINEERS

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Wind Tunnel Studies of Buildings and Structures

Task Committee on
Wind Tunnel Testing of Buildings and Structures
Aerodynamics Committee
Aerospace Division

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Abstract: This Manual of Practice provides guidelines to assist architects, building code officials, engineers, town planners, and others who become involved with the wind tunnel model testing of buildings and structures and/or the evaluation and use of information from such tests. Many Codes of Practice now permit such studies as alternative approaches for the design against wind action. Part 1 updates the Manual, which was first published in 1987, to reflect new developments in wind engineering and adds a chapter on atmospheric dispersion of exhausts and pollutants around buildings and in built-up areas. Part 2 is a Commentary which contains detailed information on specific methodologies of wind tunnel testing and the use of such data to predict the performance of full-scale buildings and structures. Rigorous model similitude requirements must be followed in order to assure that the findings of wind tunnel model studies are representative. A Glossary and an extensive list of references are included. This Manual has been prepared by a special Task group of the Aerodynamics Committee of the Aerospace Division and includes contributions from some of North America's leading wind engineering experts and laboratories.

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MANUALS AND REPORTS ON ENGINEERING PRACTICE

(As developed by the ASCE Technical Procedures Committee, July 1930, and revised March 1935, February 1962, and April 1982)

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FOREWORD

The first edition of the *Manual of Practice for Wind Tunnel Studies of Buildings and Structures* was published in 1987. The wind engineering field continues to evolve, and this update of that manual emphasizes the circumstances under which tests might be needed, the types of tests that might be performed and the physical principles that need to be followed to ensure meaningful results.

This edition of the Manual has two parts. Part 1 is an updated version of *ASCE Manual 67* with an added section on Atmospheric Dispersion Around Buildings. Part 2 is a Commentary, which provides supporting information on the methodologies needed and examples of typical tests. It also includes a bibliography.

This Manual has been prepared by a Task Committee formed under the auspices of the Aerodynamics Committee of the Aerospace Division of the ASCE. Members of this Task Committee, who have contributed to the preparation of this Manual are:

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