

**SEISMIC AND WIND FORCES  
Structural Design Examples**

**6th EDITION**

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ISBN: 978-1-971077-67-3 (soft-cover edition)  
ISBN: 978-1-971077-68-0 (PDF download)

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First Printing: March 2026

PRINTED IN THE USA

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# Introduction

The purpose of this publication is to provide an understanding of the application of the 2024 *International Building Code*<sup>®1</sup> (IBC<sup>®</sup>) to current design practice. The IBC is a design standard that is adopted by jurisdictions throughout the world as the mandated building code.

This text is intended to facilitate the transition of designers, teachers, and students from the previous code and aid with code compliance. In the text, sections of the code are presented, analyzed, and explained in a logical and simple manner and are followed by an illustrative example. Each example concentrates on a specific section of the code and provides a clear and concise interpretation of the issue.

The text is organized into six chapters that correspond to the primary structural design sections of the code. These are:

- earthquake loads
- wind loads
- design of steel structures
- design of concrete structures
- design of wood structures
- design of masonry structures

Chapter 16 of the IBC deals with structural design loads. These provisions are derived from ASCE 7<sup>2</sup> and the NEHRP<sup>3</sup> provisions. In this text, seismic design loads are covered in Chapter 1 and wind design loads are covered in Chapter 2.

Chapter 22 of the IBC deals with the seismic design of steel structures and is based on the AISC<sup>4</sup> seismic provisions. These requirements are covered in Chapter 3 of this text.

Seismic design of concrete structures is covered in Chapter 19 of the IBC and Chapter 4 of this text. These provisions are derived from the ACI<sup>5</sup> building code.

Seismic design of wood structures is covered in Chapter 23 of the IBC and Chapter 5 of this text. These requirements are derived from the NDS<sup>6</sup> code.

Seismic design of masonry structures is dealt with in Chapter 21 of the IBC. These provisions are derived from Masonry Society code TMS 402.<sup>7</sup> Chapter 6 of this text covers these requirements.

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