

2009 IBC[®] Q&A STRUCTURAL PROVISIONS



2009 IBC Q&A: Structural Provisions

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PREFACE

This updated question-and-answer manual is dedicated exclusively to the structural provisions of the 2009 *International Building Code*[®] (IBC[®]). The questions presented in this document, *2009 IBC Q & A: Structural Provisions*, are commonly asked questions that arise in the application of code provisions during design, plan review, construction, and daily code enforcement. Many of the answers include helpful illustrations (not drawn to scale) that provide a clear interpretation of both the intent and meaning of the code text. This document is an essential resource for anyone involved with the IBC structural provisions, including civil and structural engineers, architects, building officials, plans examiners, inspectors, academics, and students.

The code section or referenced standard text is often reprinted for easy reference, followed by questions and answers pertaining to the particular provision. This allows for quick reference to questions and answers on specific code sections. This publication covers the following eight structural chapters:

- Chapter 16: Structural Design
- Chapter 17: Structural Tests and Special Inspections
- Chapter 18: Soils and Foundations
- Chapter 19: Concrete
- Chapter 21: Masonry
- Chapter 22: Steel
- Chapter 23: Wood
- Chapter 25: Gypsum Board and Plaster

The structural provisions of the IBC include references to many standards published by other organizations. For example, the 2009 IBC references the 2005 edition of the national load standard, *Minimum Design Loads for Buildings and Other Structures* (ASCE/SEI 7-05), published by the American Society of Civil Engineers (ASCE). Each of the structural material chapters (concrete, aluminum, masonry, steel, wood) also reference various structural standards. The following table gives the primary structural material standards referenced in the 2009 IBC.

Structural Design Standards for Structural Materials¹		
Material	IBC Chapter	Referenced Standard
Concrete	19	ACI 318—08 <i>Building Code Requirements for Structural Concrete and Commentary</i>
Aluminum	20	ADM 1—00 <i>Aluminum Design Manual</i>
Masonry	21	TMS 402-08/ACI 530-08/ASCE 5-08 and TMS 602-08/ACI 530.1-08/ASCE 6-08 <i>Building Code Requirements and Specification for Masonry Structures (MSJC-08)</i>
Steel	22	AISC 360—05 <i>Specification for Structural Steel Buildings</i> AISC 341—05 <i>Seismic Provisions for Structural Steel Buildings, including Supplement No. 1 dated 2006</i> AISI S100—2007 <i>North American Specification for the Design of Cold-Formed Steel Structural Members</i>
Wood	23	ANSI/AF&PA NDS—05 <i>National Design Specification (NDS) for Wood Construction with 2005 Supplement</i> ANSI/AF&PA SDPWS—08 <i>Special Design Provisions for Wind and Seismic</i>

1. The above table shows the main structural design standards for these structural materials. For a complete list of all referenced standards, see IBC Chapter 35.

In general, only the design criteria are given in the code for environmental loads such as seismic, snow, and wind. The technical design provisions are not in the code but are found in ASCE/SEI 7. Nearly all of the design provisions for concrete, masonry, steel, and wood structures are not in the code but in the referenced standards. Because of this, some of the Q & As in this publication are based on the provisions in the referenced standard rather than the code.

There is no substitute for careful study of each code provision. This publication will not qualify the user as an expert in the code. However, when used in connection with careful review of the code, it will enhance the reader’s understanding and ability to apply the code effectively.

The applications and illustrations published herein are those of the ICC staff and are not binding on the authority having jurisdiction. The authority having jurisdiction has the ultimate responsibility for rendering interpretations of the code.

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The questions and answers in this publication represent inquiries from code officials and designers received over a period of many years. Susan Dowty, S.E., project manager at S.K. Ghosh Associates, Inc., was selected by ICC to compile these questions and answers as they applied to the 2006 *International Building Code*. Her expertise and experience in the area of structural code consulting enabled her to pinpoint those tough, hard-to-answer questions that are asked during a project's design and plan review phases.

Subsequently, ICC Principal Staff Engineer John Henry, P.E., updated the questions and answers to the 2009 IBC and referenced structural standards, and added new questions and answers that have been collected since the 2006 edition was published.

Acknowledgement goes to Alan Carr, S.E., ICC Codes and Standards, who contributed a significant portion of the new Q & As that appear in this 2009 edition.

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