

ICCPC[®]

INTERNATIONAL CODE COUNCIL
PERFORMANCE CODE[®]
for Buildings and Facilities

A Member of the International Code Family[®]

2021



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PREFACE

Introduction

Internationally, the design and regulatory community has embraced the need for a code that emphasizes performance requirements rather than prescriptive requirements. This need is not unique to the international community. As such, the *International Code Council Performance Code® for Buildings and Facilities* (ICCPC®), in this 2021 edition, is designed to meet this need through model code regulations that safeguard the public health and safety in all communities, large and small.

The ICCPC clearly defines the objectives for achieving the intended levels of occupant safety, property protection and community welfare. The code provides a framework to achieve the defined objectives in terms of tolerable levels of damage and magnitudes of design events, such as fire and natural hazards.

The concepts covered by this code are not intended to be any different in scope than those covered by the 2021 edition of the International Codes® (I-Codes®) published by the International Code Council® (ICC®). However, this code is distinctly different from the other I-Codes, which, in many cases, direct the user to a single solution to address a safety concern for a building or facility. The ICCPC allows the user to achieve various solutions, systematically. It should be noted that the family of I-Codes, including the *International Building Code®* (IBC®), *International Energy Conservation Code®* (IECC®), *International Existing Building Code®* (IEBC®), *International Fire Code®* (IFC®), *International Fuel Gas Code®* (IFGC®), *International Green Construction Code®* (IgCC®), *International Mechanical Code®* (IMC®), *International Plumbing Code®* (IPC®), *International Private Sewage Disposal Code®* (IPSDC®), *International Property Maintenance Code®* (IPMC®), *International Residential Code®* (IRC®), *International Swimming Pool and Spa Code®* (ISPSA®), *International Wildland-Urban Interface Code®* (IWUIC®) and *International Zoning Code®* (IZC®), is considered to provide an acceptable solution that will comply with the ICCPC. Conversely, this code provides a procedure to address design and review issues associated with the alternative materials and methods sections of the codes cited above.

It is strongly recommended that users of this code consult the User's Guide located in the second portion of this publication to gain additional insight into the provisions of this code.

The ICCPC provisions provide many benefits, including the model code development process, which offers an international forum for design professionals, code officials and other interested parties to discuss performance code requirements. This forum provides an excellent arena to debate proposed revisions. This model code also encourages international consistency in the application of provisions.

The I-Codes, including the ICCPC, are used in a variety of ways in both the public and private sectors. Most industry professionals are familiar with the I-Codes as the basis of laws and regulations in communities across the U.S. and in other countries. However, the impact of the codes extends well beyond the regulatory arena, as they are used in a variety of nonregulatory settings, including:

- Voluntary compliance programs such as those promoting sustainability, energy efficiency and disaster resistance.
- The insurance industry, to estimate and manage risk, and as a tool in underwriting and rate decisions.
- Certification and credentialing of individuals involved in the fields of building design, construction and safety.
- Certification of building and construction-related products
- US federal agencies, to guide construction in an array of government-owned properties.
- Facilities management.
- "Best practices" benchmarks for designers and builders, including those who are engaged in projects in jurisdictions that do not have a formal regulatory system or a governmental enforcement mechanism.
- College, university and professional school textbooks and curricula.
- Reference works related to building design and construction.

In addition to the codes themselves, the code development process brings together building professionals on a regular basis. It provides an international forum for discussion and deliberation about building design, construction methods, safety, performance requirements, technological advances and innovative products.

Development

This 2021 edition presents the code as originally issued, with changes reflected in the 2003 through 2018 editions and further changes approved by the ICC Code Development Process through 2019. A new edition such as this is promulgated every 3 years.

This code is intended to establish provisions consistent that adequately protect public health, safety and welfare; that do not unnecessarily increase construction costs; that do not restrict the use of new materials, products or methods of construction; and that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

Maintenance

The ICCPC is kept up to date through the review of proposed changes submitted by code enforcement officials, industry representatives, design professionals and other interested parties. Proposed changes are carefully considered through an open code development process in which all interested and affected parties may participate.

The ICC Code Development Process reflects principles of openness, transparency, balance, due process and consensus, the principles embodied in OMB Circular A-119, which governs the federal government's use of private-sector standards. The ICC process is open to anyone; there is no cost to participate, and people can participate without travel cost through the ICC's cloud-based app, *cdpAccess*[®]. A broad cross-section of interests are represented in the ICC Code Development Process. The codes, which are updated regularly, include safeguards that allow for emergency action when required for health and safety reasons.

In order to ensure that organizations with a direct and material interest in the codes have a voice in the process, the ICC has developed partnerships with key industry segments that support the ICC's important public safety mission. Some code development committee members were nominated by the following industry partners and approved by the ICC Board:

- American Institute of Architects (AIA)
- National Association of Home Builders (NAHB)
- National Association of State Fire Marshals (NASFM)

The code development committees evaluate and make recommendations regarding proposed changes to the codes. Their recommendations are then subject to public comment and council-wide votes. The ICC's governmental members—public safety officials who have no financial or business interest in the outcome—cast the final votes on proposed changes.

The contents of this work are subject to change through the code development cycles and by any governmental entity that enacts the code into law. For more information regarding the code development process, contact the Codes and Standards Development Department of the ICC.

While the I-Code development procedure is thorough and comprehensive, the ICC, its members and those participating in the development of the codes disclaim any liability resulting from the publication or use of the I-Codes, or from compliance or noncompliance with their provisions. The ICC does not have the power or authority to police or enforce compliance with the contents of this code.

Code Development Committee Responsibilities (Letter Designations in Front of Section Numbers)

In each code development cycle, proposed changes to this code are considered at the Committee Action Hearings by nine different code development committees. The committee responsible for each section of this code is noted by the bracketed letter in front of that section. For example, proposed changes to code sections that have [BS] in front of them (e.g., [BS] 501.1) are considered by the IBC—Structural Code Development Committee at the Committee Action Hearing in the 2022 (Group B) code development cycle.

The bracketed letter designations for committees responsible for portions of this code are as follows:

[A] = Administrative Code Development Committee;

[BF] = IBC—Fire Safety Code Development Committee;

[BG] = IBC—General Code Development Committee;

[BS] = IBC—Structural Code Development Committee;

[CE] = Commercial Energy Conservation Code Development Committee

[F] = International Fire Code Development Committee;

[M] = International Mechanical Code Development Committee; and

[P] = International Plumbing Code Development Committee.

For the development of the 2024 edition of the I-Codes, there will be two groups of code development committees and they will meet in separate years, as shown in the following Code Development Hearings Table.

Code change proposals submitted for this code will be heard by the code development committees noted in brackets [] in the text of the code. Because different committees hold Committee Action Hearings in different years, proposals for this code will be heard by committees in both the 2021 (Group A) and 2022 (Group B) code change cycles.

For example, every section of Chapter 1 of this code is designated as the responsibility of the Administrative Code Development Committee, and that committee is part of the Group B code hearings. This committee will conduct its code development hearings in 2022 to consider all code change proposals for Chapter 1 of this code and proposals for Chapter 1 of all I-Codes except the IECC, IRC and IgCC. Therefore, any proposal received for Chapter 1 of this code will be assigned to the Administrative Code Development Committee for consideration in 2022.

It is very important that anyone submitting code change proposals understands which code development committee is responsible for the section of the code that is the subject of the code change proposal. For further information on code development committee responsibilities, please visit the ICC website at www.iccsafe.org/current-code-development-cycle.

CODE DEVELOPMENT HEARINGS

Group A Codes (Heard in 2021, Code Change Proposals Deadline: January 11, 2021)	Group B Codes (Heard in 2022, Code Change Proposals Deadline: January 10, 2022)
International Building Code— Egress (Chapters 10, 11, Appendix E) – Fire Safety (Chapters 7, 8, 9, 14, 26) – General (Chapters 2–6, 12, 27–33, Appendices A, B, C, D, K, N)	Administrative Provisions (Chapter 1 of all codes except IECC, IRC and IgCC; IBC Appendix O; the appendices titled “Board of Appeals” for all codes except IECC, IRC, IgCC, ICCPC and IZC; administrative updates to currently referenced standards; and designated definitions)
International Fire Code	International Building Code – Structural (Chapters 15–25, Appendices F, G, H, I, J, L, M)
International Fuel Gas Code	International Existing Building Code
International Mechanical Code	International Energy Conservation Code—Commercial
International Plumbing Code	International Energy Conservation Code—Residential – IECC—Residential – IRC—Energy (Chapter 11)
International Property Maintenance Code	International Green Construction Code (Chapter 1)
International Private Sewage Disposal Code	International Residential Code – IRC—Building (Chapters 1–10; Appendices AE, AF, AH, AJ, AK, AL, AM, AO, AQ, AR, AS, AT, AU, AV, AW)
International Residential Code – IRC—Mechanical (Chapters 12–23) – IRC—Plumbing (Chapters 25–33, Appendices AG, AI, AN, AP)	
International Swimming Pool and Spa Code	
International Wildland-Urban Interface Code	
International Zoning Code	

Note: Proposed changes to the ICCPC will be heard by the code development committee noted in brackets [] in the text of the ICCPC.

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2018 edition. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, exception or table has been deleted or an item in a list of items or a row of a table has been deleted.

Coordination of the International Codes

The coordination of technical provisions is one of the strengths of the ICC family of model codes. The codes can be used as a complete set of complementary documents, which will provide users with full integration and coordination of technical provisions. Individual codes can also be used in subsets or as stand-alone documents. To make sure that each individual code is as complete as possible, some technical provisions that are relevant to more than one subject area are duplicated in some of the model codes. This allows users maximum flexibility in their application of the I-Codes.

Italicized Terms

Terms italicized in code text, other than document titles, are defined in Chapter 2. The terms selected to be italicized have definitions that the user should read carefully to better understand the code. Where italicized, the Chapter 2 definition applies. If not italicized, common-use definitions apply.

Adoption

The ICC maintains a copyright in all of its codes and standards. Maintaining copyright allows the ICC to fund its mission through sales of books, in both print and electronic formats. The ICC welcomes adoption of its codes by jurisdictions that recognize and acknowledge the ICC’s copyright in the code, and further acknowledge the substantial shared value of the public/private partnership for code development between jurisdictions and the ICC.

The ICC also recognizes the need for jurisdictions to make laws available to the public. All I-Codes and I-Standards, along with the laws of many jurisdictions, are available for free in a nondownloadable form on the ICC’s website. Jurisdictions should contact the ICC at adoptions@iccsafe.org to learn how to adopt and distribute laws based on the ICCPC in a manner that provides necessary access, while maintaining the ICC’s copyright.

To facilitate adoption, the jurisdiction must establish the following performance groups for new and/or existing use groups or specific buildings or facilities for the application of this code (see Chapter 3).

ALLOCATION OF USE AND OCCUPANCY CLASSIFICATIONS AND SPECIFIC BUILDINGS OR FACILITIES TO PERFORMANCE GROUPS

PERFORMANCE GROUP	USE AND OCCUPANCY CLASSIFICATION OR SPECIFIC BUILDINGS OR FACILITIES
I	
II	
III	
IV	

EFFECTIVE USE OF THE INTERNATIONAL CODE COUNCIL PERFORMANCE CODE FOR BUILDINGS AND FACILITIES

The purpose of the ICCPC is to promote innovative, flexible and responsive solutions that optimize the expenditure and consumption of resources while preserving social and economic value. This approach is unique to the structure of a performance-based code.

The methodology employed in performance-based codes focuses on outcomes. In other words, a performance code approach would identify and quantify the level of damage that is acceptable during and after a fire, earthquake or other event. Generally, but not in all cases, the current prescriptive code focuses on solutions that achieve a certain outcome. The difficulty is that the outcome is unclear. Therefore, when a design is proposed that is different from the prescriptive code, it is often difficult to determine whether the approach will be equivalent. There may be other more appropriate and innovative solutions available. A performance-based code creates a framework that both clearly defines the intent of the code and provides a process to understand quantitatively what the code is trying to achieve. Without this framework, the new techniques would be fairly difficult to accomplish and new methods of construction take longer to implement.

The code is organized into four major parts:

Part I—Administrative (Chapters 1–4)

Part II—Building Provisions (Chapters 5–15)

Part III—Fire Provisions (Chapters 16–22)

Part IV—Appendices (A–E)

Part I—Administrative. Part I of the document contains four chapters in which common approaches were found for both building and fire. Chapter 1 contains administrative provisions such as intent, scope and requirements related to qualifications, documentation, review, maintenance and change of use or occupancy. Also, provisions for approving acceptable methods are provided. Chapter 2 provides definitions specific to this document.

Chapter 3, Design Performance Levels, sets the framework for determining the appropriate performance desired from a building or facility based on a particular event, such as an earthquake or a fire. Specifically, the user of the code can more easily determine the expected performance level of a building during an earthquake. In the prescriptive codes, the required performance is simply prescribed with no method provided to determine or quantify the level of the building's or facility's performance.

Chapter 4 deals with the topics of reliability and durability and how these issues interact with the overall performance of a building or facility over its life. This issue has always been relevant to codes and standards but becomes more obvious when a performance code requires a designer to regard buildings as a system. Reliability includes redundancy, maintenance, durability, quality of installation, integrity of the design and, generally, the qualifications of those involved in this process.

Parts II and III—Building and Fire. Parts II and III provide topic-specific qualitative statements of intent that relate to current prescriptive code requirements. As noted, Parts II and III are building and fire components, respectively. The building and fire components were not fully integrated because of concerns relating to how such a document might be used. For instance, a fire department might want to utilize the document for existing buildings or facilities but would not be able to adopt chapters dealing with issues such as structural stability or moisture. Therefore, the code is designed so that a fire department could adopt Parts I and III only. When Part II is adopted, the entire document should be adopted. Part III should always be included in the adoption of this code.

Generally, such topic-specific qualitative statements are the basic elements missing from prescriptive codes. The statements follow a particular hierarchy, described below.

Objective. The objectives define what is expected in terms of societal goals or what society “demands” from buildings and facilities. Objectives are topic-specific and deal with particular aspects of performance required in a building, such as safeguarding people during escape and rescue.

Functional Statement. The functional statement explains, in general terms, the function that a building must provide to meet the objective or what “supply” must be provided to meet the “demand.” For example, a building must be constructed to allow people adequate time to reach a place of safety without exposure to untenable conditions.

Performance Requirement. Performance requirements are detailed statements that break down the functional statements into measurable terms. This is where the link is made to the acceptable methods.

Part IV—Appendices. Part IV contains the appendices to the code document. Each of the appendices relates to specific provisions of this code and is discussed within the User’s Guide as applicable.

GUIDE TO THE USE OF THE INTERNATIONAL CODE COUNCIL PERFORMANCE CODE FOR BUILDINGS AND FACILITIES

Procedural Steps for New Buildings

The following process is an outline for a performance-based design for an entire project or in combination with a prescriptive approach. This procedure for performance-based design extends from design preparation through issuance of a Certificate of Occupancy. The steps are as follows:

1. Preparation of a concept report in accordance with Section 102.3.4.2.1 by a qualified design professional.
2. Design preparation by a design team headed by a qualified principal design professional.
3. Coordination and verification via the principal design professional as a design team leader, with other design professionals, owners and contractors, when applicable.
4. Submit plans and supporting documents to the code official that shall identify which portions of the design are performance based and which portions are based on the prescriptive code. The submittal must include deed restrictions proposed to cover future maintenance requirements and special conditions for the life of the building.
5. Plan review is to be conducted by the code official staff when qualified for performance-based design.
 - 5.1 When staff is deemed not qualified for a proposed project, acquire qualified contract review services.
 - 5.2 Peer review is an optional approach for obtaining an additional review that is supplemental to the plan review.
6. The code official verifies that applicable prescriptive code provisions and performance-based objectives are met. When special inspections are required, ensure that documentation is complete.
7. The code official approves plans and issues a permit.
8. The holder of the permit is responsible to construct in accordance with approved plans and documents.
9. The code official ensures that qualified inspection services are provided and documented where required in accordance with the performance-based code and other applicable codes, and testing requirements are met as follows:
 - 9.1 Phase inspections (reference IBC and other I-Codes).
 - 9.2 Special inspection (reference IBC).
 - 9.3 Testing where required by design documents.
 - 9.4 Documentation that all requirements are met.
10. Issue a Certificate of Occupancy with applicable conditions, where required by the approved design documents.

Procedural Steps for Existing Buildings

For significant remodeling, alterations and additions, the design professional shall:

1. Examine applicable design documents, deed restrictions and maintenance requirements to determine building requirements where the original design is performance based in nature; prepare a concept report in accordance with Section 102.3.4.2.1.
2. Any features based on a performance approach need to be clearly differentiated from features of a building or facility designed using a prescriptive approach.

3. Verify compliance with the operations and maintenance manual.
4. Prepare a report specifying impact and requirements for the proposed design.
5. Prepare design documents based on applicable performance, prescriptive or combination of code provisions and specify which codes are applicable for each portion of the design, including any steps to correct identified deficiencies.
6. Submit reports to the code official for review and acceptance, similar to procedural steps for a new building.

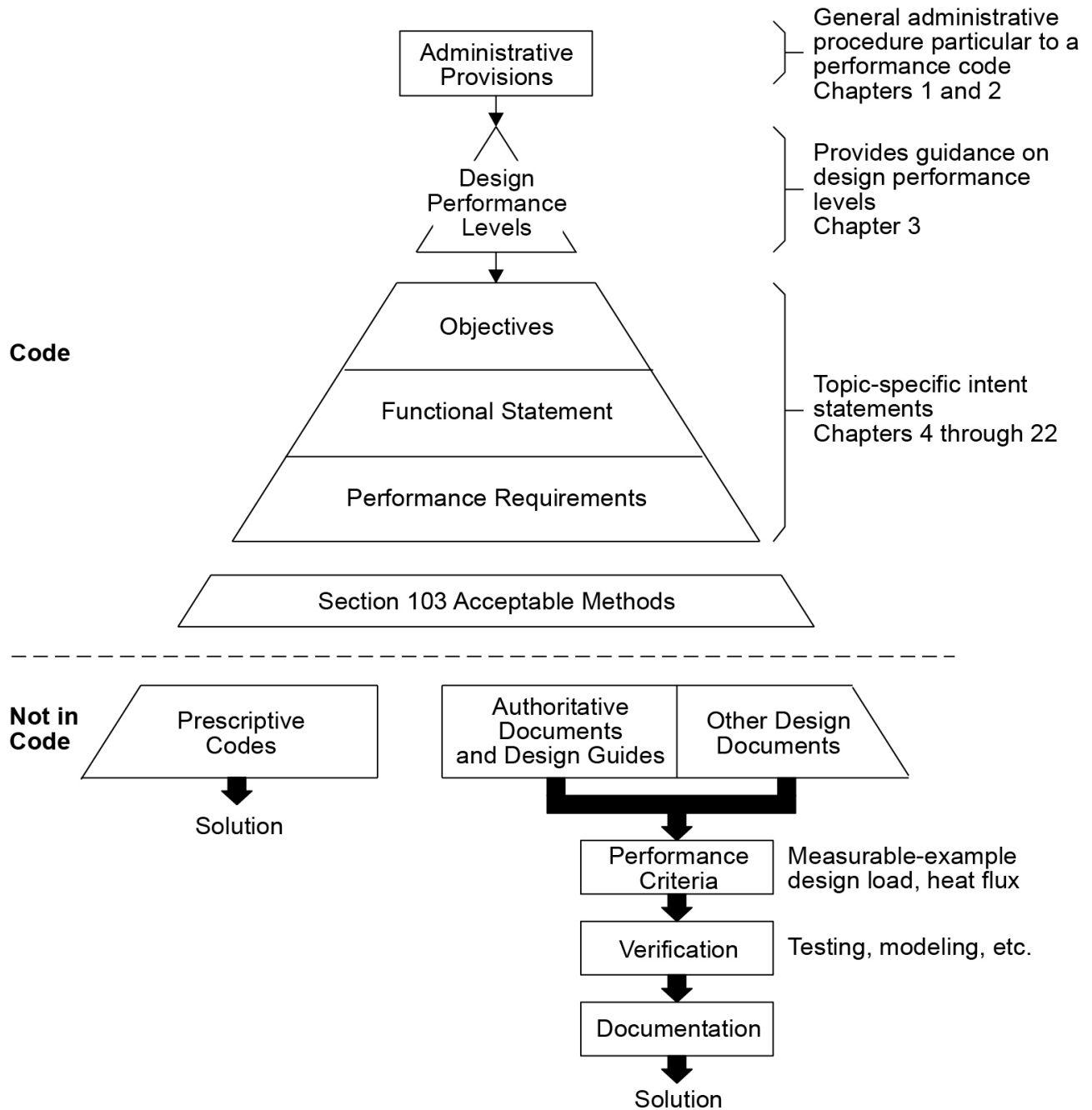
For change of use with no proposed physical alteration, the design professional shall:

1. Document existing building features and systems that impact fire or emergency performance.
2. Verify compliance with the operations and maintenance manual.
3. Prepare appropriate design fire scenarios pertinent to the building or facility and actual use, considering existing mitigation strategies and protection features.
4. Evaluate performance against Section 304, Maximum Level of Damage to Be Tolerated.
5. Prepare a report detailing impact; design and test systems to the objectives in Part III of this code.
6. Submit for review and approval in accordance with Chapter 1.

Flow Chart

The following chart is provided to give guidance as to how the ICCPC is intended to work. Essentially, this chart walks the user through the steps of applying the code. These steps begin with understanding the administrative process and the objectives of the ICCPC and eventually determining the acceptable methods used to design, construct, test, inspect and maintain the building or facility.

International Code Council Performance Code for Buildings and Facilities



ICCPC Flow Chart

TABLE OF CONTENTS

<i>PART I—Administrative</i>	<i>1-1</i>	CHAPTER 7 PEDESTRIAN CIRCULATION	7-1
CHAPTER 1 SCOPE AND ADMINISTRATION	1-1	Section	
PART 1—SCOPE AND APPLICATION	1-1	701 Means of Egress	7-1
Section		702 Accessibility	7-1
101 General	1-1	703 Transportation Equipment	7-1
PART 2—ADMINISTRATION AND ENFORCEMENT	1-1	CHAPTER 8 SAFETY OF USERS	8-1
Section		Section	
102 Administrative Provisions	1-1	801 Hazardous Materials	8-1
103 Acceptable Methods	1-7	802 Hazards from Building Materials	8-1
CHAPTER 2 DEFINITIONS	2-1	803 Prevention of Falls	8-1
Section		804 Construction and Demolition Hazards	8-1
201 General	2-1	805 Signs	8-2
202 Defined Terms	2-1	806 Emergency Notification	8-2
CHAPTER 3 DESIGN PERFORMANCE LEVELS	3-1	CHAPTER 9 MOISTURE	9-1
Section		Section	
301 Minimum Performance	3-1	901 Surface Water	9-1
302 Use and Occupancy Classification	3-1	902 External Moisture	9-1
303 Performance Groups	3-1	903 Internal Moisture	9-1
304 Maximum Level of Damage to Be Tolerated	3-3	CHAPTER 10 INTERIOR ENVIRONMENT	10-1
305 Magnitudes of Event	3-4	Section	
CHAPTER 4 RELIABILITY AND DURABILITY	4-1	1001 Climate and Building Functionality	10-1
Section		1002 Indoor Air Quality	10-1
401 Reliability	4-1	1003 Airborne and Impact Sound	10-1
402 Durability	4-1	1004 Artificial and Natural Light	10-2
<i>PART II—Building</i>	<i>5-1</i>	CHAPTER 11 MECHANICAL	11-1
CHAPTER 5 STABILITY	5-1	Section	
Section		1101 Heating, Ventilation and Air-Conditioning Equipment (HVAC)	11-1
501 Structural Forces	5-1	1102 Refrigeration	11-1
CHAPTER 6 FIRE SAFETY	6-1	1103 Piped Services	11-1
Section		CHAPTER 12 PLUMBING	12-1
601 Sources of Fire Ignition	6-1	Section	
602 Limiting Fire Impact	6-1	1201 Personal Hygiene	12-1
		1202 Laundering	12-1
		1203 Domestic Water Supplies	12-1
		1204 Wastewater	12-1

TABLE OF CONTENTS

CHAPTER 13 FUEL GAS..... 13-1
 Section
 1301 Fuel Gas Piping and Vents 13-1

CHAPTER 14 ELECTRICITY..... 14-1
 Section
 1401 Electricity 14-1

CHAPTER 15 ENERGY EFFICIENCY 15-1
 Section
 1501 Energy Efficiency 15-1

PART III—Fire..... 16-1

CHAPTER 16 FIRE PREVENTION 16-1
 Section
 1601 Fire Prevention 16-1

**CHAPTER 17 FIRE IMPACT
 MANAGEMENT 17-1**
 Section
 1701 Fire Impact Management..... 17-1

CHAPTER 18 MANAGEMENT OF PEOPLE.... 18-1
 Section
 1801 Management of People 18-1

CHAPTER 19 MEANS OF EGRESS..... 19-1
 Section
 1901 Means of Egress 19-1

**CHAPTER 20 EMERGENCY NOTIFICATION,
 ACCESS AND FACILITIES..... 20-1**
 Section
 2001 Emergency Notification,
 Access and Facilities 20-1

**CHAPTER 21 EMERGENCY
 RESPONDER SAFETY 21-1**
 Section
 2101 Emergency Responder Safety 21-1

CHAPTER 22 HAZARDOUS MATERIALS 22-1
 Section
 2201 Hazardous Materials 22-1

PART IV—Appendices APPENDIX A-1

**APPENDIX A RISK FACTORS OF
 USE AND OCCUPANCY
 CLASSIFICATIONS .. APPENDIX A-1**
 Section
 A101 Objective..... APPENDIX A-1
 A102 Functional Statements..... APPENDIX A-1
 A103 Use and Occupancy
 Classification APPENDIX A-1

**APPENDIX B WORKSHEET FOR ASSIGNING
 SPECIFIC STRUCTURES TO
 PERFORMANCE
 GROUPS APPENDIX B-1**
 B101 Risk Factor APPENDIX B-1

**APPENDIX C INDIVIDUALLY SUBSTANTIATED
 DESIGN METHOD ... APPENDIX C-1**
 Section
 C101 General APPENDIX C-1

**APPENDIX D QUALIFICATION
 CHARACTERISTICS FOR
 DESIGN AND REVIEW
 OF PERFORMANCE-
 BASED DESIGNS APPENDIX D-1**
 Section
 D101 General APPENDIX D-1

**APPENDIX E USE OF COMPUTER
 MODELS..... APPENDIX E-1**
 Section
 E101 General APPENDIX E-1
 E102 Requirements APPENDIX E-1
 E103 Responsibility APPENDIX E-1

INDEX..... INDEX-1

USER’S GUIDE UG-i

**USER’S GUIDE TABLE
 OF CONTENTS UG-iii**