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**INTERNATIONAL CODE COUNCIL  
PERFORMANCE CODE®** FOR BUILDINGS AND FACILITIES



2009

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2009 ICC Performance Code® for Buildings and Facilities

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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 *ICC Performance Code® for Buildings and Facilities* (ICCPC®), in this 2009 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 *ICC Performance Code® for Buildings and Facilities* 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 2006 edition of the *International Codes®* (I-Codes®) published by the International Code Council (ICC)®. However, this code is distinctly different from the other *International 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 *International Codes*, including the *International Building Code®*, *International Energy Conservation Code®*, *International Existing Building Code®*, *International Fire Code®*, *International Fuel Gas Code®*, *International Mechanical Code®*, *International Plumbing Code®*, *International Private Sewage Disposal Code®*, *International Property Maintenance Code®*, *International Residential Code®*, *International Wildland-Urban Interface Code™* and *International Zoning Code®*, 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 *ICC Performance Code for Buildings and Facilities* 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.

## Development

The first edition of the *ICC Performance Code for Buildings and Facilities* (2001) was the culmination of an effort initiated in 1996 by the ICC. This effort included two drafting committees, Fire and Building, appointed by the ICC and consisting of representatives of the three statutory members of the International Code Council at that time, including: Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International (SBCCI). The intent was to draft a comprehensive set of performance regulations, consistent in scope with the existing model codes, but with a performance emphasis. This 2009 edition presents the code as originally issued, with changes reflected through the previous 2006 edition, and further changes developed through the ICC Code Development Process through 2008. A new edition of the code is promulgated every three years.

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

## Adoption

The *ICC Performance Code for Buildings and Facilities* is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's laws. At the time of adoption, jurisdictions should insert the appropriate information in provisions requiring specific local information, such as the name of the adopting jurisdiction. These locations are shown in bracketed words in small capital letters in the code and in the sample ordinance. The sample adoption ordinance on page ix addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text. In addition, because of the reliance of most performance-based design on proper maintenance of building and fire protection systems, it is recommended that a jurisdiction adopt this code in its entirety.

## Maintenance

The ICC *Performance Code for Buildings and Facilities* is kept up to date through the review of proposed changes submitted by code enforcing 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 contents of this work are subject to change both through the code development cycles and the governmental body that enacts the code into law. For more information regarding the code development process, contact the Codes and Standards Development Department of the International Code Council.

While the development procedure of the ICC *Performance Code for Buildings and Facilities* assures the highest degree of care, ICC, its members and those participating in the development of this code do not accept any liability resulting from compliance or noncompliance with the provisions, because the ICC does not have the power or authority to police or enforce compliance with the contents of this code. Only the governmental body that enacts the code into law has such authority.

## Marginal Markings

The *International Codes* are formatted with solid vertical lines in the margins within the body of the code indicating a technical change from the requirements of the previous edition. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or table has been deleted. The 2009 edition does not include any margin markings as the text has remained unchanged from the 2006 edition.

## Italicized Terms

Selected terms set forth in Chapter 2, Definitions, are italicized where they appear in code text. Such terms are not italicized where the definition set forth in Chapter 2 does not impart the intended meaning in the use of the term. The terms selected have definitions which the user should read carefully to facilitate better understanding of the code.

# Effective Use of the ICC Performance Code for Buildings and Facilities

The purpose of the ICC Performance Code® for Buildings and Facilities (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. For example, sustainability is becoming a topic of interest both nationally and internationally. This movement has driven the increased desire for the use of environmentally friendly construction techniques such as straw-bale construction, rammed earth and the increased use of recycled materials. 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 above 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 within 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, the topic-specific qualitative statements are the basic elements missing from the 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 ICC *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 103.3.4.2.1 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 *International Building Code*® (IBC) and other *International 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 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:

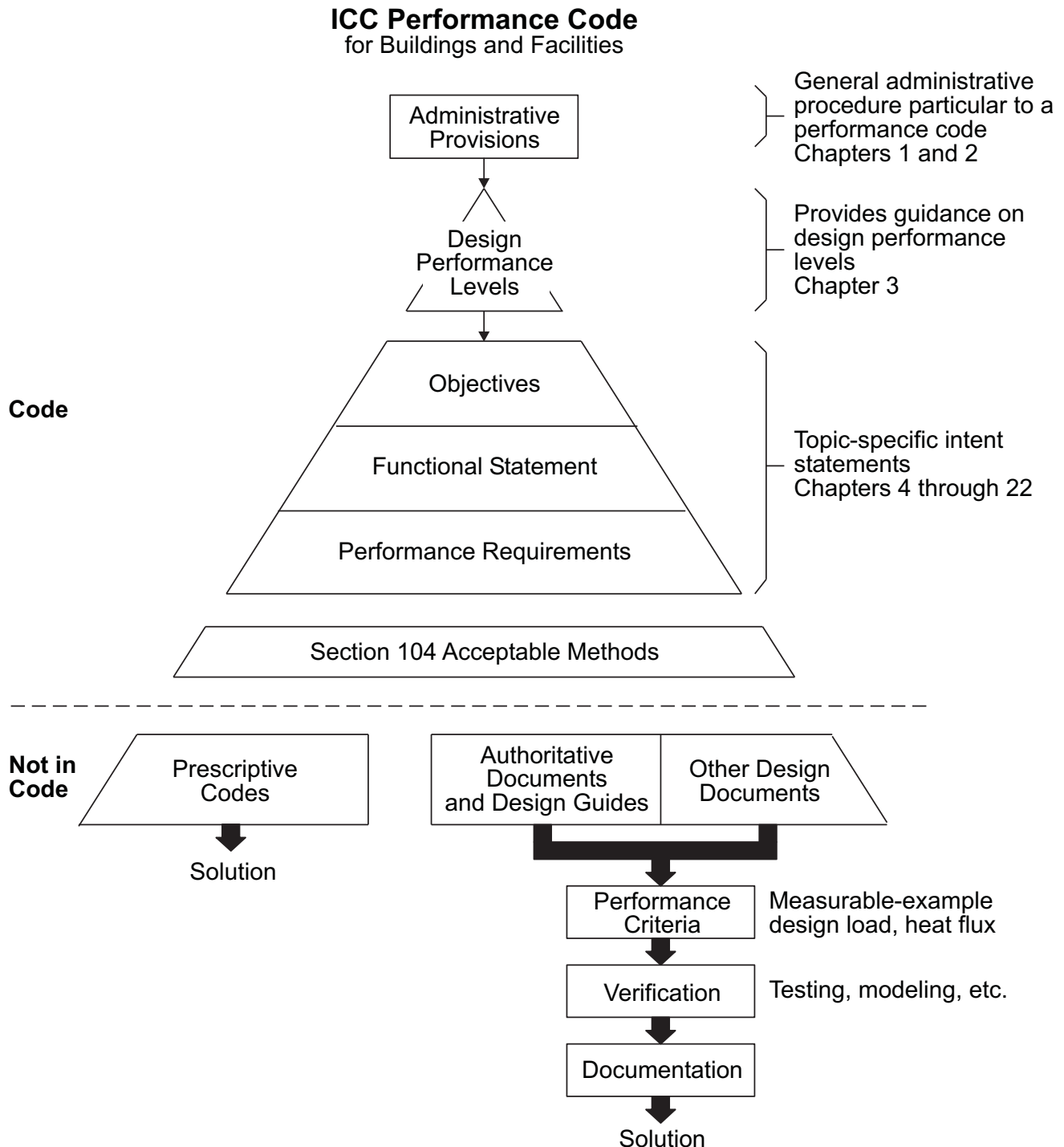
1. Examine applicable design documents, deed restrictions and maintenance requirements to determine building requirements where the original design is performance based in nature; prepare a concept report in accordance with Section 103.3.4.2.1.
2. Any features based on a performance approach need to 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 upon 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 ICC *Performance Code for Buildings and Facilities* 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.





# ORDINANCE

The *International Codes* are designed and promulgated to be adopted by reference by ordinance. Jurisdictions wishing to adopt the 2009 ICC *Performance Code for Buildings and Facilities* as an enforceable performance-based regulation governing structures and premises should ensure that certain factual information is included in the adopting ordinance at the time adoption is being considered by the appropriate governmental body. The following sample adoption ordinance addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

## SAMPLE ORDINANCE FOR ADOPTION OF THE ICC *PERFORMANCE CODE FOR BUILDINGS AND FACILITIES* ORDINANCE NO. \_\_\_\_\_

An ordinance of the [JURISDICTION] adopting the 2009 edition of the ICC *Performance Code for Buildings and Facilities*, regulating and governing the performance-based design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of building and/or fire protection systems in the [JURISDICTION]; providing for the issuance of permits and collection of fees therefor; repealing Ordinance No. \_\_\_\_\_ of the [JURISDICTION] and all other ordinances and parts of the ordinances in conflict therewith.

The [GOVERNING BODY] of the [JURISDICTION] does ordain as follows:

**Section 1.** That a certain document, three (3) copies of which are on file in the office of the [TITLE OF JURISDICTION'S KEEPER OF RECORDS] of [NAME OF JURISDICTION], being marked and designated as the ICC *Performance Code for Buildings and Facilities*, 2009 edition, as published by the International Code Council, be and is hereby adopted as the Performance Code of the [JURISDICTION], in the State of [STATE NAME] for regulating and governing the performance-based design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of building and/or fire protection systems as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Performance Code on file in the office of the [JURISDICTION] are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance.

**Section 2.** The issuance of permits and collection of fees therefore, and each and all of the regulations, provisions, conditions and terms of the *International Codes*, \_\_\_\_\_ edition published by the International Code Council, adopted by [JURISDICTION] Ordinance No(s). \_\_\_\_\_ also on file in the office of the [JURISDICTION] shall provide enforcement, permits, plan review, inspection, fees and Certificate of Occupancy requirements where not specified in the ICC *Performance Code for Buildings and Facilities*. The [JURISDICTION] also establishes the following performance groups for new and/or existing use groups or specific buildings or facilities for the application of this code<sup>1</sup>.

### 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	

**Section 3.** That Ordinance No. \_\_\_\_\_ of [JURISDICTION] entitled [FILL IN HERE THE COMPLETE TITLE OF THE ORDINANCE OR ORDINANCES IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY DEFINITE MENTION] and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

**Section 4.** That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The [GOVERNING BODY] hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

<sup>1</sup> The concept of assigning buildings or facilities to performance groups relates to the use of Chapter 3 for the determination of design performance levels. Communities may find that they have unique objectives that would require adjusting the performance groups assigned in Chapter 3 for particular buildings or facilities.

**Section 5.** That nothing in this ordinance or in the ICCPC hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 3 of this ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this ordinance.

**Section 6.** That the [JURISDICTION'S KEEPER OF RECORDS] is hereby ordered and directed to cause this ordinance to be published. (An additional provision may be required to direct the number of times the ordinance is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

**Section 7.** That this ordinance and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect [TIME PERIOD] from and after the date of its final passage and adoption.

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