

PREFACE

Introduction

Internationally, code officials recognize the need for a modern, up-to-date code addressing repair, alteration, addition or change of occupancy in existing buildings. The *International Existing Building Code*®, in this 2006 edition, is designed to meet this need through model code regulations that safeguard the public health and safety in all communities, large and small.

This comprehensive existing building code establishes minimum regulations for existing buildings using prescriptive and performance-related provisions. It is founded on broad-based principles intended to encourage the use and reuse of existing buildings while requiring reasonable upgrades and improvements. This 2006 edition is fully compatible with all the *International Codes*® (I-Codes®) published by the International Code Council (ICC)®, including the *International Building Code*®, *ICC Electrical Code*®, *International Energy Conservation Code*®, *International Fire Code*®, *International Fuel Gas Code*®, *International Mechanical Code*®, *ICC Performance Code*® for Buildings and Facilities®, *International Plumbing Code*®, *International Private Sewage Disposal Code*®, *International Property Maintenance Code*®, *International Residential Code*®, *International Wildland-Urban Interface Code*™ and *International Zoning Code*®.

The *International Existing Building Code* provisions provide many benefits, including the model code development process, which offers an international forum for building professionals to discuss performance and prescriptive 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 *International Existing Building Code* (2003) was the culmination of an effort initiated in 2000 by a development committee 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 regulations for existing buildings consistent with and inclusive of the scope of the existing model codes. Technical content of the latest model codes promulgated by BOCA, ICBO and SBCCI as well as other rehabilitation codes was utilized as the basis for the development, followed by a public forum in 2001 and the publication of the 2001 Final Draft. This 2006 edition presents the code as originally issued with changes approved through the ICC code development process through 2005. A new edition such as this is promulgated every three years.

This code is founded on principles intended to encourage the use and reuse of existing buildings 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 *International Existing Building Code* 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 v addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

Maintenance

The *International Existing Building Code* 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 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 Code and Standard Development Department of the International Code Council.

While the development procedure of the *International Existing Building Code* 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 these provisions, because 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.

Letter Designations in Front of Section Numbers

In each code development cycle, proposed changes to this code are considered at the Code Development Hearings by the International Existing Building Code Development Committee, whose action constitutes a recommendation to the voting membership for final action on the proposed changes. Proposed changes to a code section having a number beginning with a letter in brackets are considered by a different code development committee. For example, proposed changes to code sections that are preceded by the letter [F] (e.g., [F] 1404.2), are considered by the International Fire Code Development Committee at the Code Development Hearings.

The content of sections in this code that begin with a letter designation is maintained by another code development committee in accordance with the following:

- [B] = International Building Code Development Committee;
- [F] = International Fire Code Development Committee;
- [P] = International Plumbing Code Development Committee.
- [FG] = International Fuel Gas Code Development Committee;
- [EC] = International Energy Conservation Code Development Committee;
- [M] = International Mechanical Code Development Committee; and
- [ICC EC] = ICC Electrical Code Development Committee

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2003 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 a table has been deleted.

ORDINANCE

The *International Codes* are designed and promulgated to be adopted by reference by ordinance. Jurisdictions wishing to adopt the 2006 *International Existing Building Code* 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 *INTERNATIONAL EXISTING BUILDING CODE* ORDINANCE NO. _____

An ordinance of the [JURISDICTION] adopting the 2006 edition of the *International Existing Building Code*, regulating and governing the repair, alteration, change of occupancy, addition and relocation of existing buildings, including historic buildings, 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 *International Existing Building Code*, 2006 edition, including Appendix Chapters [FILL IN THE APPENDIX CHAPTERS BEING ADOPTED] (see *International Existing Building Code* Section 101.7, 2006 edition), as published by the International Code Council, be and is hereby adopted as the Existing Building Code of the [JURISDICTION], in the State of [STATE NAME] for regulating and governing the repair, alteration, change of occupancy, addition and relocation of existing buildings, including historic buildings, 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 Existing Building 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 following sections are hereby revised:

Section 101.1 Insert: [NAME OF JURISDICTION]

Section 1301.2 Insert: [DATE IN ONE LOCATION]

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.

Section 5. That nothing in this ordinance or in the Existing Building Code 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.

TABLE OF CONTENTS

CHAPTER 1 ADMINISTRATION 1	
Section	
101 General	1
102 Applicability	1
103 Department of Building Safety	2
104 Duties and Powers of Code Official	2
105 Permits	3
106 Construction Documents	5
107 Temporary Structures and Uses	6
108 Fees	6
109 Inspections	7
110 Certificate of Occupancy	7
111 Service Utilities	8
112 Board of Appeals	8
113 Violations	8
114 Stop Work Order	9
115 Unsafe Buildings and Equipment	9
116 Emergency Measures	9
117 Demolition	10
CHAPTER 2 DEFINITIONS 11	
Section	
201 General	11
202 General Definitions	11
CHAPTER 3 PRESCRIPTIVE COMPLIANCE METHOD..... 13	
Section	
301 General	13
302 Additions, Alterations or Repairs	13
303 Fire Escapes	15
304 Glass Replacement	15
305 Change of Occupancy	15
306 Historic Buildings	16
307 Moved Structures	16
308 Accessibility for Existing Buildings	16
CHAPTER 4 CLASSIFICATION OF WORK..... 19	
Section	
401 General	19
402 Repairs	19
403 Alteration—Level 1	19
404 Alteration—Level 2	19
405 Alteration—Level 3	19
406 Change of Occupancy	19
407 Additions	19
408 Historic Buildings	19
409 Relocated Buildings	19
CHAPTER 5 REPAIRS 21	
Section	
501 General	21
502 Building Elements and Materials	21
503 Fire Protection	21
504 Means of Egress	21
505 Accessibility	21
506 Structural	21
507 Electrical	23
508 Mechanical	23
509 Plumbing	23
CHAPTER 6 ALTERATIONS—LEVEL 1..... 25	
Section	
601 General	25
602 Building Elements and Materials	25
603 Fire Protection	25
604 Means of Egress	25
605 Accessibility	25
606 Structural	26
607 Energy Conservation	27
CHAPTER 7 ALTERATIONS—LEVEL 2..... 29	
Section	
701 General	29
702 Special Use and Occupancy	29
703 Building Elements and Materials	29
704 Fire Protection	31
705 Means of Egress	33
706 Accessibility	36
707 Structural	36
708 Electrical	37
709 Mechanical	37
710 Plumbing	37
711 Energy Conservation	38

TABLE OF CONTENTS

CHAPTER 8 ALTERATIONS—LEVEL 3..... 39

Section

801 General..... 39

802 Special Use and Occupancy 39

803 Building Elements and Materials 39

804 Fire Protection 40

805 Means of Egress..... 40

806 Accessibility..... 40

807 Structural 40

808 Energy Conservation 41

CHAPTER 9 CHANGE OF OCCUPANCY 43

Section

901 General..... 43

902 Special Use and Occupancy 43

903 Building Elements and Materials 43

904 Fire Protection 43

905 Means of Egress..... 43

906 Accessibility..... 43

907 Structural 43

908 Electrical 44

909 Mechanical..... 45

910 Plumbing 45

911 Other Requirements..... 45

912 Change of Occupancy Classification 45

CHAPTER 10 ADDITIONS 49

Section

1001 General..... 49

1002 Heights and Areas 49

1003 Structural 49

1004 Smoke Alarms in Occupancy
Groups R-3 and R-4 50

1005 Accessibility..... 50

CHAPTER 11 HISTORIC BUILDINGS..... 51

Section

1101 General..... 51

1102 Repairs 51

1103 Fire Safety 51

1104 Alterations 52

1105 Change of Occupancy 52

1106 Structural 53

**CHAPTER 12 RELOCATED OR MOVED
BUILDINGS 55**

Section

1201 General..... 55

1202 Requirements 55

**CHAPTER 13 PERFORMANCE COMPLIANCE
METHODS 57**

Section

1301 General..... 57

CHAPTER 14 CONSTRUCTION SAFEGUARDS .. 67

Section

1401 General..... 67

1402 Protection of Adjoining Property 68

1403 Temporary Use of Streets, Alleys and Public
Property 68

1404 Fire Extinguishers 68

1405 Exits 69

1406 Standpipe Systems..... 69

1407 Automatic Sprinkler System..... 69

1408 Accessibility..... 69

CHAPTER 15 REFERENCED STANDARDS 71

**APPENDIX A GUIDELINES FOR THE SEISMIC
RETROFIT OF EXISTING
BUILDINGS 73**

**CHAPTER A1 SEISMIC STRENGTHENING
PROVISIONS FOR UNREINFORCED
MASONRY BEARING WALL
BUILDINGS 73**

Section

A101 Purpose..... 73

A102 Scope 73

A103 Definitions 73

A104 Symbols and Notations 73

A105 General Requirements 74

A106 Materials Requirements..... 75

A107 Quality Control 77

A108 Design Strengths 77

A109 Analysis and Design Procedure 78

A110 General Procedure..... 78

A111 Special Procedure 78

A112 Analysis and Design 80

A113 Detailed System Design Requirements 81
 A114 Walls of Unburned Clay,
 Adobe or Stone Masonry 82

**CHAPTER A2 EARTHQUAKE HAZARD
 REDUCTION IN EXISTING
 REINFORCED CONCRETE AND
 REINFORCED MASONRY WALL
 BUILDINGS WITH FLEXIBLE
 DIAPHRAGMS..... 87**

Section
 A201 Purpose..... 87
 A202 Scope 87
 A203 Definitions 87
 A204 Symbols and Notations 87
 A205 General Requirements 87
 A206 Analysis and Design 88
 A207 Materials of Construction 89

**CHAPTER A3 PRESCRIPTIVE PROVISIONS FOR
 SEISMIC STRENGTHENING OF
 CRIPPLE WALLS AND SILL PLATE
 ANCHORAGE OF LIGHT, WOOD-
 FRAME RESIDENTIAL
 BUILDINGS 91**

Section
 A301 General 91
 A302 Definitions 91
 A303 Structural Weaknesses 92
 A304 Strengthening Requirements..... 92

**CHAPTER A4 EARTHQUAKE HAZARD
 REDUCTION IN EXISTING WOOD-
 FRAME RESIDENTIAL BUILDINGS
 WITH SOFT, WEAK OR OPEN-
 FRONT WALLS 107**

Section
 A401 General 107
 A402 Definitions 107
 A403 Analysis and Design 108
 A404 Phased Construction 110
 A405 Prescriptive Measures for Weak Story 110
 A406 Materials of Construction 110
 A407 Information Required to be on the Plans 111
 A408 Quality Control 111

**CHAPTER A5 EARTHQUAKE HAZARD
 REDUCTION IN EXISTING
 CONCRETE BUILDINGS AND
 CONCRETE WITH MASONRY
 INFILL BUILDINGS..... 113**

Section
 A501 Purpose..... 113
 A502 Scope 113
 A503 Definitions 113
 A504 Symbols and Notations 113
 A505 General Requirements..... 114
 A506 Site Ground Motion..... 115
 A507 Tier 1 Analysis Procedure..... 115
 A508 Tier 2 Analysis Procedure..... 115
 A509 Tier 3 Analysis Procedure..... 117
 A510 Determination of the Stress-Strain Relationship
 of Existing Unreinforced Masonry..... 122

APPENDIX A REFERENCED STANDARDS 129

**APPENDIX B SUPPLEMENTARY ACCESSIBILITY
 REQUIREMENTS FOR EXISTING
 BUILDINGS AND FACILITIES ... 131**

Section
 B101 Qualified Historical Buildings and Facilities... 131
 B102 Fixed Transportation Facilities and Stations ... 131
 B103 Dwelling Units and Sleeping Units 132
 B104 Referenced Standards 132

**RESOURCE A GUIDELINES ON FIRE RATINGS
 OF ARCHAIC MATERIALS AND
 ASSEMBLIES..... 133**

Section
 1 Fire-related Performance of Archaic
 Materials and Assemblies 134
 2 Building Evaluation..... 135
 3 Final Evaluation and Design Solution 140
 4 Summary 145
 Appendix 149
 Resource A Table of Contents 149

INDEX..... 285

CHAPTER 1

ADMINISTRATION

SECTION 101 GENERAL

101.1 Title. These regulations shall be known as the *Existing Building Code* of [NAME OF JURISDICTION], hereinafter referred to as “this code.”

101.2 Scope. The provisions of the *International Existing Building Code* shall apply to the repair, alteration, change of occupancy, addition and relocation of existing buildings.

101.3 Intent. The intent of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public health, safety and welfare insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings.

101.4 Applicability. This code shall apply to the repair, alteration, change of occupancy, addition and relocation of all existing buildings, regardless of occupancy, subject to the criteria of Sections 101.4.1 and 101.4.2.

101.4.1 Buildings not previously occupied. A building or portion of a building that has not been previously occupied or used for its intended purpose in accordance with the laws in existence at the time of its completion shall comply with the provisions of the *International Building Code* or *International Residential Code*, as applicable, for new construction or with any current permit for such occupancy.

101.4.2 Buildings previously occupied. The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *International Fire Code*, or the *International Property Maintenance Code*, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

101.5 Compliance methods. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 101.5.1 through 101.5.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the code official. Sections 101.5.1 through 101.5.3 shall not be applied in combination with each other.

Exception: Alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building has sustained substantial structural damage as defined in Section 506.2, or the building is undergoing more than a limited structural alteration as defined in Section 807.5.3. New structural members added as part of the repair or alteration shall comply with the *International Building Code*. Repairs and alterations of existing buildings in flood hazard areas shall comply with Sections 501.4 and 601.3, respectively.

101.5.1 Prescriptive compliance method. Repairs, alterations, additions and changes of occupancy complying with Chapter 3 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

101.5.2 Work area compliance method. Repairs, alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 4 through 12 of this code shall be considered in compliance with the provisions of this code.

101.5.3 Performance compliance method. Repairs, alterations, additions, changes in occupancy and relocated buildings complying with Chapter 13 of this code shall be considered in compliance with the provisions of this code.

101.6 Safeguards during construction. All construction work covered in this code, including any related demolition, shall comply with the requirements of Chapter 14.

101.7 Appendices. The code official is authorized to require rehabilitation and retrofit of buildings, structures or individual structural members in accordance with the appendices of this code if such appendices have been individually adopted.

101.8 Correction of violations of other codes. Repairs or alterations mandated by any property, housing, or fire safety maintenance code or mandated by any licensing rule or ordinance adopted pursuant to law shall conform only to the requirements of that code, rule, or ordinance and shall not be required to conform to this code unless the code requiring such repair or alteration so provides.

SECTION 102 APPLICABILITY

102.1 General. Where in any specific case different sections of this code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state, or federal law.

102.3 Application of references. References to chapter or section numbers or to provisions not specifically identified by number shall be construed to refer to such chapter, section, or provision of this code.

102.4 Referenced codes and standards. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

102.5 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the