

Understanding Changes in the 2009 International Codes

AIA New Hampshire
March 23, 2010

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Understanding Changes in the 2009 International Codes

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Understanding Changes in the 2009 International Codes

- Learning Objectives
 - Identify changes within the 2009 International Codes
 - Recognize the implications of the changes within the 2009 International Codes
 - Recognize and apply the NH amendments to the 2009 International Codes
 - Discuss and assess ways to incorporate changes in the requirements of the 2009 International Codes into future building designs

Understanding Changes in the 2009 International Codes

- Many grammatical and formatting changes intended to clarify intent and tighten interpretation
 - Many sections reorganized without major technical changes
- Items highlighted by ➤ indicate requirements that are new or radically changed from the 2006 International Codes. The particular item that has changed is noted in general terms only. It is suggested that the user refer to the 2006 codes to understand precisely what has changed
- New Hampshire amendments appear in **gold font**

Understanding Changes in the 2009 International Codes

International Building Code

INTERNATIONAL BUILDING CODE

2009 Significant Changes Overview

- Chapter 1 – Administration
 - Section 107.1 – Geotechnical Report submission required for building permit
 - Section 110 – Fire/Smoke Resistant Penetrations require inspection & approval before being concealed

INTERNATIONAL BUILDING CODE

2009 Significant Changes Overview

- Chapter 2 – Definitions
 - Story Above Grade Plane – Definition no longer references basements, otherwise essentially unchanged
 - Basement redefined as a story that is not a Story Above Grade Plane in Section 502
 - Primary Structural Frame and Secondary Members defined
 - Primary includes columns, members connected directly to columns and bracing thereof for gravity loads

INTERNATIONAL BUILDING CODE

2009 Significant Changes Overview

■ Chapter 3 – Use & Occupancy Classification

- Clinic - Outpatient – Group B, < 24 hr medical care, where patients are NOT rendered incapable self-preservation
- Ambulatory Healthcare Facilities – Group B, < 24 hr medical care, where patients ARE rendered incapable of self-preservation – see Section 422

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INTERNATIONAL BUILDING CODE

2009 Significant Changes Overview

■ Chapter 4 – Special Detailed Requirements Based on Use & Occupancy

- Section 403 High-Rise Buildings – Extensive changes in the continuing response to 9/11, particularly in buildings greater than 120 feet and 420 feet
- Section 410.3 Proscenium Curtains – Rewritten completely, references NFPA 80
- Section 419 Live/Work Units – Group R-2 dwelling/sleeping units with non-separated business area; up to 5 outside workers
- Section 422 Ambulatory Healthcare Facilities - Smoke barriers, refuge area, independent egress, sprinklers & fire alarm

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 5 – Building Height & Area
 - NH does not use Table 503 nor Section 506 for Height & Area limits and area modifications
 - Continue to use modified Table 503 and Section 506 as in previous years (derived from 1999 BOCA)
 - Table 503 – Number of stories reduced for Groups B, M, S-1 and S-2 for Construction Types IIB and IIIB
 - Section 508 Incidental Accessory Occupancies – Was Incidental Use areas
 - Now incidental uses are part of Accessory Occupancies with area limits and mandatory separation/sprinkler requirements

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 5 – Building Height & Area
 - Table 508.2.5 Incidental Accessory Occupancies
 - Where no fire barrier is required but sprinklers are, construction must resist passage of smoke, doors have closers
 - Parking Garages & Storage Rooms
 - NO longer incidental accessory spaces
 - Treat as Group S Occupancies and accessory or mixed occupancy provisions apply
 - Fire pump rooms
 - Table 508.4 Separation of Occupancies – Group I-2 to ALL occupancies 2 hr min

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 6 – Types of Construction

- Section 602.1 – Protection of openings, ducts and air transfer grilles in building elements per Table 601 are not required unless by requirements of other sections

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 7 – Fire and Smoke Protection Features

- Section 703.6 Marking – All fire/smoke rated walls shall be marked above accessible finish ceilings, at 30 foot intervals; except R2 with hard ceilings
- Section 704.3 – Clarifies that primary structural members must be protected by individual encasement; secondary structural members protected by individual encasement or membrane
- Section 704.13 Sprayed Fireproofing (SFRM) – Expanded information with emphasis on durability and substrate
- Section 705.5 Fire-Rating of Exterior Walls – If fire separation distance is ≤ 10 feet, walls must be designed for fire from either side
 - Usually exterior walls protect spread of fire from inside only; interior walls from spread of fire from either side
 - Increased from ≤ 5 feet

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 7 – Fire and Smoke Protection Features
 - Section 706.5 Exterior Wall Protection at firewall intersections – 2 approaches – prescriptive (previous method) or as exterior wall to lot line
 - Section 707 Fire Areas (Chapter 9) clarified to include horizontal assemblies
 - Section 708.14 Elevator lobbies required for Group I-2, I-3 and high-rises if elevator connects > 3 stories (sprinkler exception does not apply)
 - Section 712.9 Horizontal assemblies as smoke barriers, dealing with penetrations, shafts
 - Section 715.4.5 – Opening protective requirements for fire-rated door frames with transoms and/or sidelights

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 8 – Interior Finishes
 - Entire chapter reorganized
 - Site Fabricated Stretch Systems – Assembly testing requirements
- Chapter 9 – Fire Protection Systems
 - Section 903.2 – Maximum fire area for Group E w/o sprinklers reduced from 20,000 SF to 12,000 SF
 - Section 903.2 Ambulatory Health Care requires sprinklers (2 qualifiers)
 - Section 906 – New section on portable fire extinguishers (copied from *International Fire Code*)
 - Section 907 – Fire Alarm & Detection is completely reformatted (no significant technical changes)
 - Section 913 – Fire pump rooms require fire-rated separation
 - Section 914 – Shaft access must now be marked for emergency responders

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 10 – Means of Egress
 - NH does not use Chapter 10 except when referenced by other sections
 - NH complies with NFPA 101 for means of egress
 - Significant changes include:
 - Incremental measurement of egress width revised to match NFPA 101; i.e. no differences for sprinklers
 - Horizontal sliding doors permitted with ≤ 10 occupants
 - Permitted use of bolt locks for inactive leafs expanded into Groups B, F & S and Group I-2 patient rooms
 - Dead end of 50 feet permitted in Groups E, I-1, M, R-1, R-2, R-4, S & U (in addition to Groups B & F) with NFPA 13 sprinkler systems

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 11 – Accessibility
 - IBC contains scoping requirements; ICC A117.1 has technical requirements
 - NH amends ICC A117.1 as follows:
 - Section 406.12 – Requires detectable warnings at curb ramps
 - Sections 502.2, 502.4.2 and 502.4.4 – Revises parking space size, access aisle width and related markings to be compatible with ADA/ABA requirements

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 11 – Accessibility

- Section 1105.1 Public Entrances – Requires at least one entrance in Groups A, B, E, I-1, I-2, I-3, M, R-1 & R-2 to be equipped with full powered automatic doors
- Section 1107.3 – Group I-2 Patient rooms – door clearance exempted on room side for 44 inch minimum wide doors
- Section 1108.4 – New judicial facility requirements

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 11 – Accessibility

- Section 1109.2 – All restrooms & bathing facilities to be accessible EXCEPT:
 - Single user restrooms grouped together, then 1 accessible for each sex
 - Different rules for residential occupancies – see Section 1107
 - Private use restrooms - must be set up for accessible alteration
 - Critical care / intensive care patient sleeping room restrooms
 - A single urinal is not required to be accessible
- Section 1109.2.1 Unisex toilet room – Term no longer used in the Codes NOW “Family or Assisted-Use Toilet Room” - Accessible facility for use by either sex allowing for assistance by family member. These fixtures count in determining required fixtures
 - Required at Assembly & Mercantile uses where 6 or more toilets required
 - For renovations where making existing restrooms accessible is not feasible – see Section 3411.8.11
 - ALL other toilet rooms required to be MALE or FEMALE – see Section 2902.2

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 11 – Accessibility

- Section 1109.2.3 – Lavatory with enhanced reach range required where 6 or more lavatories required
- Section 1109.12 – Accessible windows required in accessible dwelling and sleeping units
- Section 1110 Signs – Accessible spaces for accessible & non-accessible exits

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 12 – Interior Environment

- Section 1203.2 Attic ventilation – 1/300 rather than 1/150 vent area – only better VRs allowed
- Section 1210.1 Toilet/Shower Room Wall Base – 4 inches high, not 6 inches anymore
- Section 1210.2 – Seal wall mounted accessories for water entry into wall cavity

■ Chapter 13 – Energy Efficiency

- 15% improvement over 2006
- See *International Energy Conservation Code* changes

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 14 – Exterior Walls
 - Section 1405.3 Vapor Retarders – Use of Class I, II & III defined
 - Section 1406.2.2 Type I, II, III, & IV Construction (wood use)
 - Was Architectural Trim
 - Section 1407 MCM Panels – Limitations on how high & where can be used
 - Now related to grade, NOT to grade plane
- Chapter 15 – Roof Assemblies & Rooftop Structures
 - Section 1503.4 Roof Drainage – Requirements for secondary drainage, scupper sizing
 - Section 1507.16 Roof Gardens & Landscaped Roofs – Regulated by Sections 1607.11.2 and 1607.11.3
 - Section 1509.2 Penthouses – Rewritten and clarified as portion of story below
 - FRT wood permitted for Construction Type I ≤ 2 stories & all other Types

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

- Chapter 16 – Structural Design
 - Section 1604.5 Occupancy Category – Good idea to review w/ structural engineer and Owner
 - New/Revised requirements for wind and seismic design
 - Section 1608.2 Ground Snow Loads – Permits use of Table 1 of *Ground Snow Loads for New Hampshire* ERDC/CRREL TR-02-6
- Chapter 17 – Special Inspections
 - Section 1704 Special Inspectors – Who they are better defined; Group R-3 exemption removed
 - Special inspections of concrete anchors installed in hardened concrete
 - Special inspections of CFMF & wood truss bracing with spans > 60 feet
- Chapter 23 – Wood
 - Section 2304.11.2 Wood siding 2 inches min above concrete pads & steps; 6 inches min above ground

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INTERNATIONAL BUILDING CODE 2009 Significant Changes Overview

■ Chapter 29 – Plumbing

- Section 2902.1.1 Fixture Count Calculations clarified – Add fractional numbers for each occupancy type, then round up
- Section 2902.3 Public toilets – Required for customers, patrons and visitors
- Route to public toilet shall not pass thru kitchens, storage, closets
- Section 2903 – Adds requirement for toilet compartment & urinal screens
- Section 2902.4 Accessibility signs required designating the sex at entrance to toilet facility & directional signage indicating route shall be posted in corridor or aisle at entrance to customer & visitor facilities
- Plumbing Code adopts Appendix C permitting grey water recycling systems

■ Chapter 30 – Elevators

- Section 3002.4 – Car size for stretchers clarified
- Requirements for elevators in high-rise buildings > 120 feet and 420 feet

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International Residential Code

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INTERNATIONAL RESIDENTIAL CODE 2009 Significant Changes Overview

- Chapter R202 – Definitions
 - Habitable Attic
 - Floor area \geq 70 SF
 - Ceiling height per Section R305
 - Enclosed by roof assembly above, knee walls (if applicable) and floor-ceiling assembly below
 - High-Efficiency Lamps
 - Compact fluorescent lamps (CFL), T-8 or smaller diameter lamps or lamps with minimum efficiency of:
 - 60 lumens per watt for lamps over 40 watts
 - 50 lumens per watt for lamps over 15 watts to 40 watts
 - 40 lumens per watt for lamps over 15 watts or less

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INTERNATIONAL RESIDENTIAL CODE 2009 Significant Changes Overview

- Chapter 3 – Building Planning
 - Table R301.2(1) – Permits use of Table 1 of *Ground Snow Loads for New Hampshire* ERDC/CRREL TR-02-6
 - Section R301.2.1.5.1 – Simplified method for designing for topographic wind speed
 - Section R301.2.2.3.1 – Height limitation changed from 2 stories to \leq 3 stories above grade
 - Section R310 – Requires emergency escape and rescue opening from habitable attics
 - Section R311.4 – Requires egress from habitable attics and basements via stairway or ramp

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INTERNATIONAL RESIDENTIAL CODE 2009 Significant Changes Overview

- Chapter 3 – Building Planning
 - Section R313 – Residential sprinklers required – NFPA 13D or per Section P2904
 - Effective date of April 1, 2012 to permit legislative review
 - Requires 2-hour rating for separation of townhouses without sprinklers; 1-hour with sprinklers
 - Permits deletion of emergency escape and rescue openings with sprinklers
 - Section R315 – Carbon monoxide alarms required in new dwelling units with fuel fired appliances
 - Also in existing dwelling units when work requiring a permit is performed
 - Adopts Appendix G for swimming pools, spas and hot tubs
 - Adopts Appendix O permitting grey water recycling systems

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INTERNATIONAL RESIDENTIAL CODE 2009 Significant Changes Overview

- Chapter 11 – Energy Efficiency
 - Extensively revised
 - Basement walls increased to R-15/19
 - Reduction to R-30 for sloped ceilings limited to 500 SF or 20% of area
 - Exception added for solar heated pool covers
 - Introduces *Simulated Performance Alternative* method from IECC Section 405

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International Energy Conservation Code

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INTERNATIONAL ENERGY CONSERVATION CODE 2009 Significant Changes Overview

- Chapter 1 – Administration and Enforcement
 - Section 102.1 Above Code Programs – Must now meet mandatory provisions of Chapters 4 and 5
 - Section 103.2 – Information required on construction documents
 - Area weighted U-factor and SHGC calculation
 - Numerous mechanical items
 - Lighting fixture schedule with wattage
 - Air sealing details
 - NH amendment designating entire state as Zone 6 dropped
 - Cheshire, Hillsborough, Rockingham & Strafford counties in Zone 5

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INTERNATIONAL ENERGY CONSERVATION CODE 2009 Significant Changes Overview

- Chapter 4 – Residential
 - Revised in its entirety
 - Table 402.1.1 – Component Requirements (Zones 5 & 6)
 - Wood frame wall increased to R-20 (or R13 + R5)
 - Mass wall added R-values for when more the 1/2 of insulation is on interior face of wall
 - Basement wall in Zone 6 increased to R-15/19
 - Permits any structure ≤ 3 stories and < 4000 SF in gross floor area to comply with this Chapter

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INTERNATIONAL ENERGY CONSERVATION CODE 2009 Significant Changes Overview

- Chapter 4 – Residential
 - Section 402.4 Air Leakage (Mandatory)
 - Testing required using either
 - Blower door test
 - Independent visual inspection by approved entity
 - Wood-burning fireplaces must have gasketed doors and outdoor combustion air supply
 - Section 404 – Lighting
 - A minimum of 50% of lamps in permanently installed lighting fixtures must be high efficiency

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INTERNATIONAL ENERGY CONSERVATION CODE 2009 Significant Changes Overview

- Chapter 5 – Commercial
 - Table 502.2(1) – Opaque Envelope Requirements (Zones 5 & 6)
 - Separate requirements for Group R
 - Attics increased to R-38
 - Walls above grade revised upwards
 - Walls below grade minimum R-values added
 - Joist framed floors increased to R-30 in Zone 5
 - Unheated slab-on-grade minimum R-values added in Zone 5 for Group R and all of Zone 6
 - Roll-up and sliding door U-values decreased (higher efficiency)

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Questions and Discussion

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