Ohio Building Code Update

Presenter: Steven Regoli
Tuesday, September 12, 2017
8:00 AM – 11:15 AM
Ohio Building Code
Significant Changes
Based on the 2012 and 2015 International Building Codes® (IBC®)

Description

- Overviews the changes adopted in Ohio from the 2012 and the 2015 IBC® by the Ohio Board of Building Standards and printed as the Ohio Building Code.
  - Identifies changes in organization and code requirements and the applicability of these requirements to design, plan review, and inspection.
  - This course also draws upon the Significant Changes to the International Building Code: 2012 and 2015 Editions.
Goal

- The use of the Significant Changes to the International Building Code® 2012 and 2015 Editions allows building officials, fire officials, plans examiners, inspectors, design professionals, contractors, and others in the construction industry to become familiar with many of the important changes in the updated Ohio Building Code® (OBC).

Objectives

Upon completion of this seminar, participants will be better able to:

- Identify some of the most significant differences between the OBC based upon the 2009 edition of the IBC and the updated OBC based upon the 2012 and 2015 IBC.
- Explain the differences between the current and previous editions.
- Identify key changes in the organization of the code and new or modified code requirements.
- Identify the applicability of these provisions to the design, plan review, approval, and inspection processes.
Introduce the course here

- Instructions for the course, breaks, restroom location.
- Introduction of instructor and participants.
- Other

Format of Significant Changes Series

<table>
<thead>
<tr>
<th>Deleted Language</th>
<th>Change Type</th>
<th>New Code Text</th>
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</thead>
<tbody>
<tr>
<td>1804.1 Excavation Near Foundations</td>
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<table>
<thead>
<tr>
<th>Change Type</th>
<th>New Code Text</th>
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<tbody>
<tr>
<td>Addition</td>
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</tbody>
</table>
OBC Topic Chapters

- Administration, Chapters 1 and 2
- Building Planning, Chapters 3 through 6
- Fire Protection, Chapters 7 through 9
- Means of Egress, Chapter 10
- Accessibility, Chapter 11
- Building Envelope, Structural Systems and Construction, Chapters 12 through 26
- Building Services, Special Devices, and Special Conditions, Chapters 27 through 34
101.2 Scope.

CHANGE TYPE: Ohio Modification

- 17. Wind turbines, pumps, site lighting, and flagpoles not connected to building services equipment.
- 20. Oil or gas beam pumping units and derricks.
- 22. Retaining walls, bridges, walkways or stairs not associated with a building or building egress.

102.10 Work exempt from approval.

CHANGE TYPE: Ohio Modification

BUILDING:
11. Battery operated smoke or carbon monoxide alarms installed in existing buildings where no construction is taking place.

ELECTRICAL:
6. Electrical wiring equipment not connected to building services equipment in and adjacent to natural or artificially made bodies of water as defined in Article 682 of NFPA 70 as referenced in Chapter 35.
102.10 Work exempt from approval.

CHANGE TYPE: Ohio Modification

PLUMBING:
2. The clearance of stoppages or the repair of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement of more than one fixture or rearrangement of valves, pipes or fixtures.

102.11 Building department jurisdictional limitations.

CHANGE TYPE: Modification

5.2 Park districts created pursuant to Chapter 1545. of the Revised Code. A certified municipal, township, or county building department may exercise enforcement authority, accept and approve plans and specifications, and make inspections for a park district created pursuant to Chapter 1545. of the Revised Code upon the approval, by resolution, of the board of park commissioners of the park district requesting the department to exercise that authority and conduct those activities.
202 Care Facility

CHANGE TYPE: Modification

- CARE FACILITY. A building or portion of a building that is held out to the public for and intended to provide all the following: (1) housing or accommodation; (2) personal, custodial, or medical care; and (3) a supervised environment. Care provided in a dwelling or dwelling unit that is the permanent residence of the care provider is not a care facility.

202 Custodial Care

CHANGE TYPE: Modification

- CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes persons receiving care who have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications. Persons who receive custodial care may or may not require assistance with evacuation depending on the occupancy and/or the “condition” in the occupancy.
202 Platform

CHANGE TYPE: Clarification

- 202. Platform. A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round stages; and similar purposes wherein, other than horizontal sliding curtains, there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.
308.3 Groups I-1 Occupancy Classification

CHANGE TYPE: Modification

- The uses permitted in a Group I-1 custodial care facility have been expanded to include care recipients who may need a limited degree of verbal or physical assistance if responding to an emergency situation (Condition 2).

308.4 Group I-2 Occupancy Classification

CHANGE TYPE: Modification

- Two basic conditions of Group I-2 medical care uses that have previously been regulated together as a single category have been created, dividing the classification into short-term care facilities, such as hospitals (Condition 2), and long-term care facilities, such as nursing homes (Condition 1).
Chapter 3 Simplification

CHANGE TYPE: Modification

- **301.1 Scope.** The provisions of this chapter shall control the classification of all buildings and structures as to use and occupancy and are established to organize and prescribe the appropriate features of construction and occupant safety requirements for buildings and are not established for compliance with any conditions of licensure which are outside the jurisdiction of this code…

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Chapter 3 Simplification

CHANGE TYPE: Modification

- ... There may be other requirements owners may be required to meet as set forth by other licensing agencies such as the Ohio State Fire Marshal, Ohio Department of Health, the Ohio Department of Jobs and Family Services, Ohio Department of Mental Health and Addiction Services, Ohio Department of Developmental Disabilities, federal agencies, or other licensing authorities. Owners and designers should investigate these additional licensing agency requirements to ensure they are incorporated into the building design before submitting to the certified building department for plan approval.
Chapter 3 Simplification

CHANGE TYPE: Modification

**310.3.2 Vacation Rentals**

CHANGE TYPE: Addition

- Group R-1 vacation rentals shall be permitted to comply with the construction requirements of the “Residential Code of Ohio for One-, Two-, and Three-Family Dwellings” when:
  1. The building is composed of a single dwelling unit;
  2. The building is occupied by a family or no more than 10 unrelated adults;
  3. The building has two exits directly to the exterior at the level of exit discharge; and,
  4. The building is located to maintain a minimum fire separation distance of thirty feet.
310.5 Group R-3 Lodging Houses

CHANGE TYPE: Modification

- Lodging houses are now specifically defined in Chapter 2 and are permitted to be constructed in accordance with the Residential Code of Ohio (RCO) if they contain no more than five guest rooms.

310.6 Group R-4 Lodging Houses

CHANGE TYPE: Modification

- The uses permitted in a Group R-4 custodial care facility have been expanded to include care recipients who may need a limited degree of verbal or physical assistance (Condition 2) while responding to an emergency situation.
407.2.5 Group I-2 Shared Living Spaces

CHANGE TYPE: Addition

- Shared living spaces, group meeting areas, and multipurpose therapeutic spaces are now permitted to be open to corridors in Group I-2, Condition 1 (Capable of responding) nursing homes provided five specific conditions are met.

407.2.6 Group I-2 Cooking Facilities

CHANGE TYPE: Addition

- A room or space containing a cooking facility with domestic cooking appliances is now permitted to be open to the corridor in a Group I-2, Condition 1 (Capable of responding) nursing home provided 13 specific conditions are met.
407.5 Maximum Size of Group I-2 Smoke Compartments

CHANGE TYPE: Modification

- The maximum allowable smoke compartment size for Group I-2, Condition 2 (hospitals and similar occupancies) has been increased to 40,000 square feet (from 22,500).

423.4 Storm Shelters Serving Group E Occupancies

CHANGE TYPE: Addition

- Storm shelters are now required in Group E occupancies located in those areas of the United States where the shelter design wind speed for tornadoes is at its highest.
424 Children’s Play Structures

CHANGE TYPE: Modification

- Regulations for children’s play structures, previously limited in application only to covered mall buildings, now applicable where such structures are located within any building regulated by the OBC, regardless of occupancy classification.

426 Combustible Dusts, Grain Storage, and Storage

CHANGE TYPE: Addition

- New language and standards added to address grinding rooms, conveyors, grain elevators, coal packets, tire rebuilding, and explosion control.
503 General Building Height and Area Limitations

CHANGE TYPE: Clarification

- The provisions regulating building height and area limitations have been extensively revised with no change in technical application in order to provide an increased degree of user-friendliness and technical consistency.

Tables 504.3, 504.4 Building Height and Number of Stories

<table>
<thead>
<tr>
<th>Occupancy Classification</th>
<th>See Footnotes</th>
<th>Type of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Type I</td>
</tr>
<tr>
<td>A, B, E, F, M, S, U</td>
<td>NS</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>165</td>
</tr>
<tr>
<td>H-1, H-2, H-3, H-5</td>
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<td>UL</td>
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<tr>
<td></td>
<td>S</td>
<td>160</td>
</tr>
</tbody>
</table>

Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.

(Only a portion of Table 504.3 is shown above.)
Tables 504.3, 504.4 Building Height and Number of Stories

<table>
<thead>
<tr>
<th>Occupancy Classification</th>
<th>See Foot-/Notes</th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
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<td>S</td>
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Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1

(Only a portion of Table 504.4 is shown above.)

Table 506.2 Building Area

CHANGE TYPE: Clarification

<table>
<thead>
<tr>
<th>Occupancy Classification</th>
<th>See Footnotes</th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
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</tr>
<tr>
<td></td>
<td>S1</td>
<td>UL</td>
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<td>38,000</td>
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<td>25,000</td>
<td>23,500</td>
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</tbody>
</table>
602.4.2 Cross-Laminated Timber in Exterior Walls

CHANGE TYPE: Addition

- Cross-laminated timber is now permitted within the exterior walls of Type IV buildings where protected by one of three specified materials.
703.7 Identification of Fire and Smoke Separation Walls

CHANGE TYPE: Modification

- Size and location of identifying markings required on vertical fire assemblies in accessible above-ceiling spaces modified to increase potential for such markings to be seen.

711, 712 Horizontal Assemblies and Vertical Openings

CHANGE TYPE: Modification

- The reorganization of Sections 711 and 712 has been continued such that Section 711 now contains only the construction requirements for floor and roof assemblies, and Section 712 only contains the requirements related to the protection of vertical openings.
711, 712 Horizontal Assemblies and Vertical Openings

Section 711 regulates the construction of floor and roof assemblies.

Section 712 regulates the vertical openings in floor and roof assemblies.

716.3 Marking of Fire-Rated Glazing Assemblies

CHANGE TYPE: Clarification

- Table 716.3 added to define and relate various test standards for fire-rated glazing to designations used to mark such glazing.
- Fire-rated glazing now defined in Chapter 2.

<table>
<thead>
<tr>
<th>TABLE 716.3 Marking Fire-Rated Glazing Assemblies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Test Standard</td>
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<tr>
<td>---------------------</td>
</tr>
<tr>
<td>ASTM E 119 or UL 207</td>
</tr>
<tr>
<td>NFPA 251 or UL 9</td>
</tr>
<tr>
<td>NFPA 252 or UL 108</td>
</tr>
<tr>
<td>or UL 10C</td>
</tr>
<tr>
<td>X</td>
</tr>
</tbody>
</table>
908.7 Carbon Monoxide Alarms

CHANGE TYPE: Clarification

- Single-station carbon monoxide (CO) alarms now required in buildings housing Group I or R occupancies where building:
  - Contains one or more fuel-burning appliances, or
  - Provided with attached garage.

909.21.1 Elevator Hoistway Pressurization

CHANGE TYPE: Modification

- Viable alternatives to the general elevator hoistway pressurization requirements are now available where pressurization is provided in lieu of an enclosed elevator lobby or an additional door.
909.21.1 Elevator Hoistway Pressurization, Exception 1,2

Exception 1:
Elevator landing

R

Pressure permitted to be measured between hoistway and residential units.
Not at landing adjacent to hoistway.

R

R

Exception 2:
Elevator lobby

Pressure permitted to be measured between hoistway and space outside of lobby.
Not at landing within the lobby.

Exceptions 1 and 2 to pressurization requirement

909.21.1 Elevator Hoistway Pressurization, Exception 3, 4

Exception 3:
Hoistway pressure measured relative to interior point for:
- Floor above fire floor
- Fire floor
- Two floors below fire floor

Hoistway pressure measured relative to outdoor atmosphere on other floors

Pressure difference not regulated at elevator recall floor (Exception 4)
910 Smoke and Heat Removal

CHANGE TYPE: Modification

- The format and technical requirements for smoke and heat removal systems have been revised, including a new allowance permitting a mechanical smoke removal system as an alternative to smoke and heat vents.

915 Carbon Monoxide Detection

CHANGE TYPE: Modification

- The carbon monoxide (CO) alarm provisions have been relocated, reformatted and revised; the scope has been modified to exclude Group I-3 occupancies while adding Group E occupancies.
Means of Egress

CHANGE TYPE: Modification

- Provisions addressing the minimum required number of means of egress and their arrangement for rooms and space as well as stories have been reformatted and relocated.

- Section 1015 1006 Numbers of Exits and Exit Access Doorways
- Section 1021 Number of Exits and Exit Configuration
- Section 1007 Exit and Exit Access Doorway Configuration
- Section 4007-1009 Accessible Means of Egress
1005 Means of Egress Capacity Determination

CHANGE TYPE: Modification

- Reduced exit width factors established for sprinklered buildings provided with emergency voice/alarm communication system.
  - Stairways: 0.2 inches per occupant
  - Other egress components: 0.15 inches per occupant
  - Not applicable to Group H and I-2 occupancies

1006.3 Egress From Stories or Occupied Roofs

CHANGE TYPE: Addition

- The means of egress requirements – number of exits, occupant load based egress, single exits, mixed occupancies – from stories or occupied roofs have been consolidated in Chapter 10.
1009, 1010 Interior Stairways and Ramps

CHANGE TYPE: Clarification

- Interior means of egress stairways now include:
  - Interior exit stairways.
  - Exit component
  - Exit access stairways.
    - Not a required interior exit stairway.
    - Exit access component.

1028.1.1.1/1029.1.1.1 Separation of Spaces Under Grandstands and Bleachers

CHANGE TYPE: Addition

- Spaces beneath grandstands and bleachers now required to be separated by minimum 1-hour fire barriers and/or horizontal assemblies to protect the assembly seating area from any potential hazards below.
- Exception for small ticket booths and toilet rooms.
1203.1 Mechanical Ventilation Required

CHANGE TYPE: Addition

- Option of natural ventilation rather than mechanical ventilation now unavailable when at least 5 air changes per hour not provided.
- Determination to be made using blower door test.
1203.3 Unvented Attic and Unvented Enclosed Rafter Framing.

CHANGE TYPE: Addition

- New provisions added for the use of unventilated attics and unvented enclosed rafter assemblies.

1404.12, 1405.18 Polypropylene Siding

CHANGE TYPE: Addition

- Polypropylene siding now regulated for:
  - Flame-spread
  - Testing requirements
  - Fire-separation distance.

- Use limited to exterior walls of buildings of Type V construction.
1507.16 Roof Gardens and Landscaped Roofs

**CHANGE TYPE:** Addition

- New reference to IFC provisions addressing roof gardens and landscaped roofs.
- Footnote a to Table 601 not applicable for roof gardens or landscaped roofs.

1507.17 Photovoltaic Systems

**CHANGE TYPE:** Addition

- Photovoltaic elements (modules/shingles or systems) must now meet general code requirements for roofing materials and rooftop structures.
1509 Rooftop Structures

CHANGE TYPE: Modification

- Provisions addressing rooftop structures reformatted to better organize and clarify requirements.

1602.2 Live Loads Posted

CHANGE TYPE: Addition

- Where the live loads for a commercial or industrial building exceed 50 psf (2.40 kN/m²), design live loads shall be conspicuously posted by the owner in that part of each story in which they apply.
- Language was originally in Ch. 16 but later moved to IBC Ch. 1 and thus lost from OBC Ch. 16.
1604.5 Risk Category

**CHANGE TYPE:** Clarification

- In the application of assigning the appropriate risk category for a structure, Section 1604.5 has been revised to clarify that where standards refer to ASCE 7 Table 1.5-1, IBC Table 1604.5 should be used instead. In addition, descriptions for Risk Category III structures have been revised to include occupancy classifications to help clarify the intent.

1607.12 Roof Loads

**CHANGE TYPE:** Addition

- The term “vegetative roof” has been defined in Section 202 and a reference to ASTM E 2397 has been added to Section 1607.
1607.12.5 Photovoltaic Panel Systems

CHANGE TYPE: Addition

- Design requirements for roof structures supporting photovoltaic (PV) solar panels and modules have been added to Section 1607.

1609, 202 Determination of Wind Loads

CHANGE TYPE: Modification

- Wind design requirements of Section 1609 updated and coordinated with latest wind load provisions in ASCE/SEI 7 (ASCE 7-10).
- Wind load maps in IBC now based on ultimate design wind speeds, $V_{ult}$, which produce a strength level wind load similar to seismic load effects.
- Maps shown per Risk Category.

\[ V_{asd} = V_{ult} \sqrt{0.6} \]

Equation 16-33, conversion of wind speed from $V_{ult}$ to $V_{asd}$.
1704.3 Statement of Special Inspections

CHANGE TYPE: Modification

- Provisions requiring specific items to have special inspection and what information is required to be included in the statement of special inspections have been clarified and coordinated, with previous conflicts between the two being resolved.

1704.5 Submittals to the Building Official

CHANGE TYPE: Addition

- Requirements for submittal of reports and certificates of compliance related to construction that is subject to special inspections and tests are now clearly specified.
1704.5 Submittals to the Building Official

CHANGE TYPE: Addition

- Requirements for submittal of reports and certificates of compliance related to construction that is subject to special inspections in ADDITION to special inspection reports and tests are now clearly specified.

1705.16 Special Inspection of Fire-Resistant Penetration and Joint Systems

CHANGE TYPE: Addition

- Special inspection required for penetration firestop systems (ASTM E 2174) and fire-resistant joint systems (ASTM E 2393) used in:
  - High-rise buildings
  - Buildings assigned to Risk Categories III and IV.
2308.7 Roof and Ceiling Framing

CHANGE TYPE: Modification

- Ceiling joist and rafter span tables from the IRC have been incorporated into the conventional construction provisions of the IBC and incorporate updated stress values.

2309 Wood Frame Construction Manual

CHANGE TYPE: Addition

- Section 2309 has been added to reference the American Wood Council’s (AWC) Wood Frame Construction Manual (WFCM) for structural design of wood frame buildings assigned to Risk Category I or II.
2612 Plastic Composites

CHANGE TYPE: Addition

- New definitions and applicable test standards now address the use of plastic composites for use as exterior deck boards, stair treads, handrails and guards.

Chapters 27 through 34
Building Services, Special Devices, and Special Conditions
3007 Fire Service Access Elevators

CHANGE TYPE: Modification

- Many provisions addressing fire service access elevators now coordinated with those applicable to occupant evacuation elevators.
- Pictorial symbol identifying fire service access elevators to be provided.

3008 Occupant Evacuation Elevators

CHANGE TYPE: Modification

- Provisions addressing occupant evacuation elevators now more closely coordinated with those regulating fire service access elevators.
Chapter 34 Existing Structures

CHANGE TYPE: Deletion

- Chapter 34 has been deleted from the IBC in its entirety, and existing buildings will now be solely regulated by the International Existing Building Code (IEBC).
- Ohio will keep Ch. 34.

3401.1.1 Compliance

CHANGE TYPE: Clarification

Compliance shall be demonstrated by meeting the requirements of one of the following options:

1. Chapters 2 through 33 of this code; or
2. Sections 3403 through 3411; or
3. Section 3412 Compliance Alternatives.
Additional and Helpful Resources

ICC publishes the *Significant Changes to the IBC* for each edition of the IBC. Significant Changes publications are also available for the IMC, IPC, IRC, IFGC, IFC, IECC, ASHRAE 90.1, and ANSI A117.1.

**Additional and Helpful Resources**

ICC publishes revision histories for each edition of the codes. These publications present a complete history of each code change including the original petition, justification, committee actions, modifications, and final actions.
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