2021 IBC Non-structural Code Changer Preview

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Kim is a licensed architect. Before joining ICC she worked as a structural engineer.
A review of some of the most critical changes in the 2021 IBC non-structural chapters – Chapter 1-15 and 26-33 and related Appendix
Legislative format or intent

During the presentation today this presentient will include the new section number and either:

Appear in legislative format:
- **Strikeout** – is language removed
- **Underline** – is new text

Or provide just the reason/intent for the change
ADMINISTRATION & DEFINITIONS
CHAPTER 1 ADMINISTRATION

SECTION 103
DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE AGENCY

SECTION 107
SUBMITTAL CONSTRUCTION DOCUMENTS

SECTION 113
BOARD MEANS OF APPEALS
110.3.7 Inspection of Weather-Exposed Balconies

• Scope of the required waterproofing inspection of balconies and similar elevated walking surfaces that are exposed to water has been modified.

• Waterproofing inspection is now specifically limited to surfaces that are “weather-exposed.”

• Defined term “weather-exposed surfaces”:
  • Is limited to water, snow and similar elements that are weather-related (deletes irrigation water).
  • Is prescriptively established as covered areas not significantly set back from the edge of the overhead projection (in general, at least twice the clear height under the projection).
202 Definition of Mass Timber

• Mass timber is considered as structural elements of Type IV construction primarily of solid, built-up, panelized or engineered wood products that meet minimum cross-section dimensions.

• Single term represents both:
  • Heavy-timber represented by Type IV-HT which includes various types of members and fire-resistance is based on minimum dimensions.
  • Mass timber used in new Types IV-A, IV-B and IV-C that must have a fire-resistance rating.

• New definition of *noncombustible protection* addresses the passive fire protection required for mass timber.
  • Mass timber may have its own rating or by combination with noncombustible materials.
202 Definition of Penthouse

[BG] PENTHOUSE. An enclosed, unoccupied rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, stairways and vertical *shaft* openings.

• Critical in determining allowable height of a building.
• Included Section 1510.2 for what is considered parts of a penthouse
• Coordinated with ‘occupied roof’ requirements
202 Definition of Puzzle Room

• Puzzle room is a new defined term that is mostly commonly recognized as “escape room.”
• Occupants are encouraged to solve a challenge to escape from a room or, more commonly, a series of rooms.
• Of particularly importance is the recognition by the definition that a puzzle room is considered as a “special amusement area.”
  • Special amusement areas continue to be strictly regulated under provisions of Section 411.
OCCUPANCY CLASSIFICATIONS
306.2 Group F Occupancy Classification

- Two new items added to listing of Group F-1 occupancies.
- Energy storage systems (ESS) dedicated use buildings (in mixed-use buildings, ESS to be classified the same as major occupancy)
  - Previously would often be Group H-2, however new IFC requirements reduce potential hazards
- Water/sewer treatment plants
  - Typically contain materials in use that would warrant a Group H classification should MAQs be exceeded.
307.1.1 Uses Not Classified as Group H

- Two new items have been added to the list of uses that store, use, and/or handle hazardous materials but are not classified as Group H.
  - Distilling or brewing of alcohol beverages
  - Storage of beer, distilled spirits, and wines in barrels and casks
- Removal of Group H status applicable regardless of alcohol content and quantity of liquid.
- IFC has added additional requirements to address hazards, including automatic sprinkler systems in Group F-1 and S-1 fire areas where such liquids are located.
311.2, 311.3 Alcohol Beverage Storage Classification

- Storage of alcoholic beverages with over 16% alcohol content now classified as Group S-1 occupancy.
  - Previously not specifically addressed.
- Where alcohol content does not exceed 16%, classification continues to be Group S-2.
  - Limit that containers be only metal, glass or ceramic has been deleted to allow for wooden barrels and casks.
  - IFC safeguards no longer warrant restriction to only noncombustible containers.
SPECIAL DETAIL REQUIREMENTS BASED ON OCCUPANCY AND USE
Atrium Provisions

• ATRIUM. An opening A vertical space that is closed at the top, connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505—in Group I-2 and I-3 occupancies of three or more stories in all other occupancies.
404.1 Scope of atrium provisions

- The scope was modified for consistency with the definition.
- Egress through the atriums both above and at the level of exit discharge was relocated to Section 1017 – exit access travel distance.
- Exit stairways can discharge through an atrium in accordance with Section 1028 – exit discharge.
404.5 Smoke Control in Atriums

- New allowance to permit a combination vertical opening condition consisting of both an atrium and a shaft enclosure without the requirement for a smoke control system.
- Smoke control system not required for atriums connecting more than two stories where:
  - Only the two lowest stories permitted to be open to the atrium, and
  - All stories above the lowest two stories to be separated from the atrium in accordance with shaft enclosure provisions.
406.2.4 Floor Surfaces in Parking Garages

- Floor in vehicle areas of Group S-2 parking garages now required to be sloped.
  - Previous allowance for no slope considered helpful in design of large garages constructed of prefabricated materials.
- Applicable to both open and enclosed garages.
- Allows for means to move damaging oils and deicing salts from floor surface to approved areas.

Introduction to the 2021 IBC
Section 407 Group I-2

• Continue to work on consistency with the CMS federal standard
• Requirements related to corridor doors not required to have fire protection have expanded the smoke-resistant criteria in order to address the various types of doors used.
• Egress travel allowances, both within an individual care suite as well as from a suite into a corridor, have been revised to allow for additional design flexibility.
• The closing of automatic-closing doors on hold-open devices must now also occur upon activation of the fire alarm system or automatic sprinkler system.
411.5 Puzzle Rooms
(Special Amusement Areas)

- Puzzle rooms now regulated as special amusement areas, requiring compliance with Section 411:
  - Classified as Group A or B, based upon occupant load.
  - Fire protection systems required, including:
    - Automatic sprinkler system
    - Automatic smoke detection system
    - Emergency voice/alarm communication system
  - Class A interior finishes.
  - Special exiting, including the following new provisions:
    - Per Chapter 10, or
    - Alternate design approved by building official, or
    - Exit to be open and readily available upon activation by fire alarm system, sprinkler system, or manual control at constantly attended location
414.2.3 Use of Fire Walls for Control Areas

- For purposes of determining the number of control areas in a building, each portion separated by one or more fire walls shall be considered a separate building.
- Previously, the “separate building” allowance has been limited to allowable area, allowable height and type of construction.
- New allowance permits additional quantities of hazardous materials without classification as a Group H occupancy by increasing the number of control areas permitted in the structure.
Children’s Play Structures

• No longer limited to structures used solely by children, such as climbing walls.
• New requirements for structures more than 600 square feet in area or more than 10 feet in height.
  • Interior finishes per Table 803.13
  • Designed in accordance with Chapter 16
• Special investigation to demonstrate adequate fire safety now required where area of play structure exceeds 600 square feet.
  • Previously required when greater than 300 square feet in area.
BUILDING HEIGHT AND AREA
Table 504.3 Allowable Building Height in Feet

- Limits to building height (in feet) have been developed for Types IV-A, IV-B and IV-C
- Significant decreases where building is not sprinklered
- Consistency between IB and IV-B

| Allowable Building Height in Feet Above Grade Plane (Sprinklered Building) |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Type IV-A | Type IV-B | Type IV-C | Type IB | Type IIA | Type IIB | Type IV-HT |
| A, B, M | 270 | 180 | 85 | 180 | 85 | 75 | 85 |
| R | 270 | 180 | 85 | 180 | 85 | 75 | 85 |

(Only examples representing Group A, B, M and R occupancies shown)
Table 504.4 Allowable Building Height in Stories

- Limits to building height (in stories) have been developed for Types IV-A, IV-B and IVC
- Significant reductions in height in stories where building is not sprinklered

| Allowable Building Height in Stories Above Grade Plane (Sprinklered Building) |
|---------------------------------|-------------|-------------|----------------|----------------|
|                                 | Type IV-A   | Type IV-B   | Type IV-C      | Type IB        |
| A-3                             | 18          | 12          | 6              | 12             |
| B                               | 18          | 12          | 9              | 12             |
| M                               | 12          | 8           | 6              | 12             |
| R-2                             | 18          | 12          | 8              | 12             |

(Only examples representing Group A-3, B, M and R-2 occupancies shown)
Table 504.4 Allowable Building Height in Stories

<table>
<thead>
<tr>
<th>Type</th>
<th>Stories</th>
<th>Building Height</th>
<th>Allowable Building Area</th>
<th>Average Area Per Story</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-A</td>
<td>18</td>
<td>270 ft</td>
<td>972,000 sf</td>
<td>54,000 sf</td>
</tr>
<tr>
<td>IV-B</td>
<td>12</td>
<td>190 ft</td>
<td>648,000 sf</td>
<td>54,000 sf</td>
</tr>
<tr>
<td>IV-C</td>
<td>9</td>
<td>85 ft</td>
<td>405,000 sf</td>
<td>45,000 sf</td>
</tr>
<tr>
<td>IV-HT</td>
<td>6</td>
<td>85 ft</td>
<td>324,000 sf</td>
<td>54,000 sf</td>
</tr>
</tbody>
</table>

Business Occupancy
Fully sprinklered, no open perimeter
• Limits to building floor areas have been developed for Types IV-A, IV-B and IVC

• No unlimited area permitted for any of Type IV classifications

Table 506.2 Allowable Building Area

<table>
<thead>
<tr>
<th></th>
<th>Type IV-A</th>
<th>Type IV-B</th>
<th>Type IV-C</th>
<th>Type IB</th>
<th>Type IIA</th>
<th>Type IIB</th>
<th>Type IV-HT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-3</td>
<td>135k</td>
<td>90k</td>
<td>56.25k</td>
<td>UL</td>
<td>46.5k</td>
<td>28.5k</td>
<td>45k</td>
</tr>
<tr>
<td>B</td>
<td>324k</td>
<td>216k</td>
<td>135k</td>
<td>UL</td>
<td>112.5k</td>
<td>69k</td>
<td>108k</td>
</tr>
<tr>
<td>M</td>
<td>184.5k</td>
<td>123k</td>
<td>76.87k</td>
<td>UL</td>
<td>64.5k</td>
<td>37.5k</td>
<td>61.5k</td>
</tr>
<tr>
<td>R-1</td>
<td>184.5k</td>
<td>123k</td>
<td>76.87k</td>
<td>UL</td>
<td>72k</td>
<td>48k</td>
<td>61.5k</td>
</tr>
</tbody>
</table>

(Only examples representing Group A-3, B, M and R-1 occupancies shown)
508.4.4, 509.4.1.1 Fire Separations of Mass Timber – Type IV-B and IV-C

- Mass timber elements used as fire barriers and horizontal assemblies for separating occupancies or incidental use areas to be protected with approved thermal barrier of:
  - Minimum ½-inch gypsum board, or
  - Material tested to NFPA 275 (Temperature and Integrity Fire Tests of thermal barriers)
- Only needs to cover exposed wood surfaces and does not add to fire-resistance rating of mass timber.
- Only required on incidental use side of separation, on both sides for occupancy separation.
508.5 Application of Live/Work Provisions

• Live/work provisions formerly in Section 419 have been moved to Section 508 dealing with mixed occupancies.

• No change in technical requirements that allow for a single Group R-2 classification (which is only reason to apply the provisions).

• Live/work use continues to not create a mixed occupancy condition.
  • Provision should be considered as an exception to the mixed occupancy concept.
510.2 Stairway Construction in Podium Buildings

• Stairway construction in Type IA (lower) portion of podium buildings now permitted to be of combustible materials where two conditions exist:
  • Upper building is of Type III, IV or V construction, and
  • Stairway in lower building enclosed by minimum 3-hour fire-resistance-rated construction (shaft enclosure) with protected openings.

• Addresses confusion on how to address stairway construction that connects combustible and noncombustible portions of a podium building.
TYPES OF CONSTRUCTION
Table 601 Type IV Buildings

- Table 601 identifying minimum fire-resistance rating for building elements based on type of construction has been expanded to include new Type IV-A, IV-B and IV-C buildings.
- General comparison with Type IA (IV-A), Type IB (IV-B) and Type IIIA (IV-C).
  - Except Type IV-C has higher required ratings than Type IIIA for structural frame members, interior bearing walls and floors.
602.4 Type IV Construction

• Type IV-A, IV-B and IV-C buildings may be constructed of mass timber and noncombustible materials.

• Required fire-resistance ratings may come from mass timber, noncombustible protection, or both.
  • Protective material to be applied directly to the timber members
  • Assigned time determined per Sections 703.8 and 722.7.
  • Minimum timber member dimensions per Sections 602.4 and 2304.11.

• Joint publication “Mass Timber Buildings and the IBC” by ICC and AWC addresses Type IV construction in detail.
602.4.1 - 602.4.3 Type IV Mass Timber

• Type IV-A construction mandates that faces of all timber members be protected with noncombustible materials.
  • Noncombustible protection to contribute a time per Table 722.7.1(1), but not less than 80 minutes.
  • Floor assembly to be protected with noncombustible material at least 1 inch thick on top.

• Type IV-B construction mandates similar protection, but only required on an established percentage of members.
  • Some degree of exposed timber permitted

• Type IV-C construction permits all timber members to be unprotected.

• All three types permit concealed spaces with limitations.
Comparison

<table>
<thead>
<tr>
<th></th>
<th>Type IV-C</th>
<th>Type IV-B</th>
<th>Type IV-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum height</td>
<td>85’</td>
<td>180’</td>
<td>270’</td>
</tr>
<tr>
<td>Number of stories</td>
<td>4-9</td>
<td>6-12</td>
<td>9-18</td>
</tr>
<tr>
<td>Exposed mass timber</td>
<td>Fully exposed</td>
<td>Partially</td>
<td>Fully protected</td>
</tr>
<tr>
<td>Sprinklers</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Primary frame</td>
<td>2 hours</td>
<td>2 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>Floor</td>
<td>2 hours</td>
<td>2 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>Fire resistance from non-combustible</td>
<td></td>
<td>80 minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>Stair towers</td>
<td>Protected mass timber</td>
<td>Protected mass timber</td>
<td>Non-combustible</td>
</tr>
<tr>
<td>Concealed spaces</td>
<td>Permitted if protected</td>
<td>Permitted if protected</td>
<td>Permitted if protected</td>
</tr>
</tbody>
</table>
602.4.4 Type IV Heavy Timber

- Traditional Type IV is now identified as Type IV-HT to differentiate from other mass timber buildings.
- All fire-resistance based on dimensions of timber members, prescriptive rather than performance.
- Limited changes in application, except that concealed spaces are now permitted for limited applications where:
  - Building is sprinklered throughout, including within concealed space, or
  - Concealed space is completely filled with noncombustible insulation, or
  - Surfaces within concealed space to be fully covered with minimum 5/8” Type X gypsum board.
FIRE AND SMOKE PROTECTION FEATURES
Table 705.5 Exterior Wall Protection

• Previous Table 602 addressing “Fire-resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance” has been relocated.

• Relocation is deemed appropriate as Chapter 7 is the primary location for establishing exterior wall requirements related to fire-resistance.

• In addition, entries have been made for new construction types IV-A, IV-B and IV-C.
707.5 Enclosure of Exit Passageways

- Allowance now provided for fire barriers creating an exit passageway to terminate at a fire-resistance-rated lid
  - Enclosure at top to have same fire-resistance rating as required for the exit passageway.
- This new option can be applied where fire barrier does not extend to the underside of the roof sheathing, slab or deck above.
Three specific methods for terminating a shaft enclosure at the top have been established to clarify the options that are available:

- Extend the shaft walls to the underside of the roof sheathing, deck or slab, or
- Terminate below the roof assembly with a top enclosure having the same fire-resistance rating as the topmost floor penetrated by the shaft but not less that the required rating of the shaft enclosure, or
- Extend past the roof assembly and comply with the provisions for rooftop structures (penthouses) in Section 1511.
New definition in Section 202 defining fire-protective curtain assembly as: *an assembly consisting of a fabric curtain, bottom bar, guides, coil, and an operating and closing system*

New provisions establish guidance on how such assemblies are to be tested, labeled and installed.

IBC does not address how or where these systems are to be used or where they would be accepted.

- It is assumed that the assemblies would typically be installed as a means of smoke and draft control.

Their use, either vertical or horizontal, will need to be reviewed and approved by the building official under alternate methods provisions of Section 104.11.
717.5.2 Flex Connectors

• Under Exception 3, fire dampers may be omitted at penetrations of fire barriers in fully-ducted HVAC systems where specified conditions are met.

• New allowances permit the installation of flex connectors under two conditions:
  • At the duct connection to the air handling unit or equipment located within the mechanical room per IMC Section 603.9.
  • From an overhead metal duct to a ceiling diffuser within the same room per IMC Section 603.6.2.
722.7 Fire-Resistance Rating of Mass Timber

- A prescriptive approach has been provided to achieve the required fire-resistance ratings for mass timber members and assemblies.
- The fire-resistant rating shall consist of the rating of the unprotected mass timber element added to the protection time of the noncombustible protection.
  - At least 2/3 of the required fire-resistance rating must come from the noncombustible protection.
- Provisions address protection on both exterior and interior surfaces.
FIRE PROTECTION SYSTEMS
903.2 Sprinklers and Upholstered Furniture/Mattresses

- Sprinkler requirements for Groups F-1, M and S-1 where upholstered furniture or mattresses are manufactured, sold or stored have been clarified to establish scope of provision.
- Area threshold now based on size of fire area, not that of total occupancy.
- Where threshold exceeded, sprinkler need only be provided in fire area and not throughout building.
- In addition, new exception indicates that one-story Group S-1 self-storage facilities are exempt from 2,500 sf sprinkler threshold where all storage spaces can be accessed directly from exterior.
903.2.4.2, 903.2.9.3 Sprinklers and Distilled Spirits Manufacture and Storage

- New requirement for sprinkler systems throughout Group F-1 and S-1 fire areas used for the manufacture or bulk storage of distilled spirits (and wine in Group S-1) is part of a series of changes in IBC and IFC addressing alcoholic beverage manufacture and storage.
  - Other changes provided additional safeguards such that these types of uses are not to be classified as Group H.
  - The threshold for classification is 16% alcohol content:
    - Not more than 16%: Groups F-2 and S-2
    - Over 16%: Groups F-1 and S-1
903.2.10 Sprinklers and Open Parking Garages

- Sprinklers now required in Group S-2 open parking garages where any fire area exceeds 48,000 sf.
  - Sprinkler protection to extend to entire garage
- Concern was based on increased use of plastics and lightweight materials in vehicles, as well as types of fuels being utilized.
- Increase in fuel load plus recognition of a fire that occurred in a parking garage in Liverpool, England in late 2017 provided justification for new requirement.
Scoping for the permitted use of an NFPA 13R sprinkler system in Group R occupancies has been modified such that the following three conditions must be met by the Group R to allow for use of 13R system:

- Located no more than 4 stories above grade plane, and
- Floor level of highest story no more than 30 feet above lowest level (or lowest story below highest level) of fire department vehicle access. (previously 60 feet above grade plane)
- The story limit of four is now to be measured from grade plane in podium buildings (Sec. 510.2 and 510.4) rather than from the horizontal assembly separating the two buildings.
903.3.1.2.2 13R Sprinkler Protection of Corridors and Exterior Exit Balconies

• In Group R buildings where NFPA 13R sprinkler system is provided, sprinkler protection shall extend to corridors and balconies in means of egress where any of following conditions apply:
  • Corridors with combustible walls or floors
  • Corridors with interior change of direction exceeding 45 degrees
  • Corridors that are less than 50% open to the outside atmosphere at the ends
  • Open-ended corridors and associated exterior stairways per Section 1027.6, Exception 3
  • Egress balconies not in compliance with Sections 1021.2 (wall separation) and 1021.3 (openness)
MEANS OF EGRESS
1008.2.1 Stairway Illumination

- Exit stairways, exit access stairways and their associated landings must now have an illumination level under normal power of at least 10 footcandles.
  - Measured at the walking surface
  - Not applicable to stairs in exit discharge
  - Required only when stairway is in use, allowing for occupant-sensor or daylight-responsive controls
  - Exceptions for auditoriums, theaters and similar assembly occupancies still applicable
- Considered as an easily accomplished means for improving stairway safety
1009.2.1 Accessible Means of Egress from Occupied Roofs

- Where an occupied roof is four or more stories above the level of exit discharge, at least one required accessible means of egress shall be an elevator with standby power.
- Recognizes that the occupied roof is to be considered in the same manner as a story when determining if an elevator is required to comply as an accessible means of egress.
1010.1.1 Maximum Door Leaf Size

- The requirement limiting the maximum leaf size of a swinging egress door has been removed from the IBC.
  - Previously, such door leaves were limited to 48 inches in width
  - The provision was primarily established due to weight issues with larger doors, often resulting in the need for greater maintenance to maintain:
    - Proper functioning
    - Reasonable opening effort
  - It was determined that the maximum force provisions will continue to provide for complying swinging doors.
  - In addition, the deletion now allows for wider doors where they may be needed, such as in hospitals.
1010.2.4 Locking Devices at Occupied Exterior Areas That Egress Through Building

• New conditions have been identified where locks and latches are permitted to prevent the operation of egress doors:

  • Locking devices permitted on doors to balconies, decks or other exterior spaces:
    • Serving an individual dwelling or sleeping unit
    • Serving a private office space, provided the exterior space does not exceed 250 sf.

• For other than egress courts, where occupants must egress from an exterior space through the building, exit access doors are permitted to be equipped with an approved locking device where appropriately installed and operated.
1010.2.4 Locking Devices at Occupied Exterior Areas That Egress Through Building

• The following six conditions must be met in order for the locking devices to be permitted:
  • Maximum occupant load posted per Section 1004.9
  • Weatherproof telephone or two-way communication system installed
  • Locking device to be key-operated and readily distinguishable as locked
  • Minimum 5 sf clear window or glazed door opening provided at each exit access door
  • Signage posted on interior side at each locked door stating “THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED”
  • Occupant load of exterior area limited to 300
1010.2.8 Locking Arrangements in Educational Occupancies

- The allowance for special locking arrangements in Group B educational occupancies and Group E occupancies has been extended to Group I-4.
  - IBC is now consistent with the IFC
  - In addition, it has been clarified that the remote operation of such locks (both locking and unlocking operations) is permitted in addition to the “unlocking from outside the room” option.
    - Operations can be from main office, security office, or even a remote fob given to staff.
    - Does not modify or override egress capabilities requiring being “openable from the inside without the use of a key, special effort or special knowledge.”
1016.2 Egress Through Elevator Lobbies

- Egress through an enclosed elevator lobby now permitted for spaces having a single means of egress.
- Previous language mandated that access to not less than one of required exits to be provided without travel through an enclosed elevator lobby.
  - Such requirement still applicable to spaces where two or more means of egress are required
Guidance has been provided to address handrails on those stairs, primarily in assembly and educational occupancies, that are a combination of stairway travel and assembly seating.

Based on the assembly stepped aisle provisions, the condition is viewed as an assembly seating area with the seating platforms (without seats) located to the side of the stepped aisle.

Where the stepped aisle has seating on one side and the aisle width is at least 74 inches, two handrails are required (with at least one within 30 inches of the stepped aisle).

Where the stepped aisle is required to have two handrails, the mid-aisle handrails shall be discontinuous.
1030.16 Handrails on “Social Stairs”

Handrail requirements for social stairway.
1031 Emergency Escape and Rescue Openings

- The provisions for emergency escape and rescue openings have been reorganized and reformatted for clarification purposes.

- Two slight modifications occurred:
  - Where a door is used as an EERO, it must be a sliding door or a swinging door
  - Where steps are used from a window well serving an EERO, they must be at least 12 inches wide, have treads more than 5 inches in depth, and have a maximum riser height of 18 inches for the full height of the area well.
ACCESSIBILITY
1102 Accessible Design Compliance

• The ICC A117.1 standard as referenced by the IBC for the design and construction of accessible buildings and facilities has been updated from the 2009 edition to the 2017 edition.

• Many of the major revisions are addressed in the ICC publication *Significant Changes to the ICC A117.1 Accessibility Standard, 2017 Edition*, including:
  • Enhanced dimensions for clear floor spaces and turning spaces.
  • Modifications to exterior routes, curb cuts, blended transitions, detectable warnings, passenger drop-offs and parking facilities.
Revisions include items such as

- 30”x52” clear floor space
- 67” turning circle
- 8” chamfered corners on turns for 36” wide aisles and corridors
- Changes to turning spaces allowances to use knee and toe clearances
1105.1.1 Automatic Doors at Public Entrances

- In specified occupancies with sizable occupant loads, the accessible public entrances (60% of building entrances) must now be provided with an automatic door.
  - Where an automatic door is required by Table 1105.1.1, it shall be either a full power-operated door or a low-energy power-operated door.
  - Where the public entrance includes a vestibule, at least one door into and one door out of the vestibule must comply with the requirements.

**TABLE 1105.1.1 Public Entrance with Power-Operated Door**

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Building Occupant Load Greater Than</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1, A-2, A-3, A-4</td>
<td>300</td>
</tr>
<tr>
<td>B, M, R-1</td>
<td>500</td>
</tr>
</tbody>
</table>

a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.
1107.2 Electric vehicle charging stations.

- Where electrical vehicle charging stations are provided for other than residents of Group R-2, R-3 and R-4.
- 5% of the stations sized the same as a van accessible parking space.
- No signage, so not required to be reserved.
- A117.1 requires a route to the station and the operable parts to be in the reach range.
- No requirements for a route to the building entrance or a location.
1108.5, 1110.2 Assisted Toileting and Bathing

• Changes have been made to the provisions for rehabilitation hospitals, nursing homes and assisted living facilities to allow some units to have toilet and bathing facilities designed for assisted use.
  • These allowances are permitted instead of the independent use facilities generally intended by the ICC A117.1 Accessible unit provisions.
• The assisted use provisions are optional and can be applied when desired by the designer.
• The designer may also choose to modify a limited number of the Accessible units for toileting and bathing depending on the needs of the client.
1110.2 Assisted Toileting and Bathing
1110.2 Assisted Toileting and Bathing

ASSISTED BATHING ROLL-IN SHOWER - USING EXCEPTIONS EXAMPLE 1

ASSISTED BATHING ROLL-IN SHOWER - USING EXCEPTIONS EXAMPLE 2
INTERIOR ENVIRONMENT
1207 Enhanced Classroom Acoustics

- In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms having a volume of 20,000 cubic feet or less.
- Such acoustics to be in compliance with Section 808 of ICC A117.1, including regulation of:
  - Reverberation times based on either the performance method or prescriptive method
  - Ambient sound levels from sources both inside and outside of the classroom
- Good acoustics are essential to support language acquisitions and learning for all children.
EXTERIOR WALLS
Metal composite materials (MCM) and systems installed on buildings of Type I, II, III and IV construction are now regulated based upon one of two conditions:

- Such installations that are over 40 feet above grade plane must comply with:
  - Surface-burning characteristics
  - Thermal barrier separation
  - Acceptance criteria of NFPA 285
- Such installations that do not exceed 40 feet above grade plane must comply with:
  - Compliance with acceptance criteria of NFPA 285
- Modification addresses any confusion in the various requirements, as well as eliminating allowances previously provided where building is sprinklered.
Instead of calling it the john, I'm going to start calling my bathroom the "Jim". That way I can say I go to the Jim every morning.

PLUMBING SYSTEMS
2902 Minimum Plumbing Facilities

• Provisions have been clarified for minimum toilet facilities, including:
  • Single-user, family and assisted-use facilities shall be identified as available for use by all persons regardless of their sex
  • Separate facilities not required where rooms having both water closets and lavatory fixtures are designed for use by both sexes
    • Water closet privacy provided per IPC, and
    • Urinals, where provided, to be in an area visually separated or each urinal located in a stall
SPECIAL CONSTRUCTION
3114 Intermodal Shipping Containers

• Use of shipping containers as buildings and structures now address in code.

• Previously, approval based on Section 104.11 addressing alternate methods and materials.

  • ICC G5-2019 Guideline for the Safe Use of ISO Intermodal Shipping Containers Repurposed as Buildings and Building Components

  • Evaluation Reports

• Provisions intended to supplement existing applicable IBC requirements, including:

  • Inspection by approved agency
  • Verification of data plate
  • Method of structural design (detailed design procedure or simplified method for single-units)
Appendix B Board of Appeals

• New and expanded criteria for board of appeals as established in Section 113, including detailed provisions dealing with:
  • Application process
  • Board membership
  • Board meetings
• As with all appendix chapters, only applicable where specifically adopted by jurisdiction.
Appendix O Application of ICC Performance Code

- New appendix chapter containing administrative provisions excerpted from ICCPC.
- Intended to serve as starting point for formulation of an effective submittal and review process under IBC allowance for alternate methods, materials and designs.
  - Also can assist in evaluating a rational analysis, such as Section 909 (smoke control systems).
- No new code requirements are involved, just an optional design, review and approval framework.
- Jurisdiction may:
  - Adopt appendix as written, or
  - Adopt with local amendments, or
  - Use as a guideline on a case-by-case basis.
Thank you for participating!

The question and answer session will be this afternoon from 3 to 4 Eastern. Please email your questions to Catherine at cvinson@iccsafe.org.

The Significant Code Change books will be available on the ICC store.