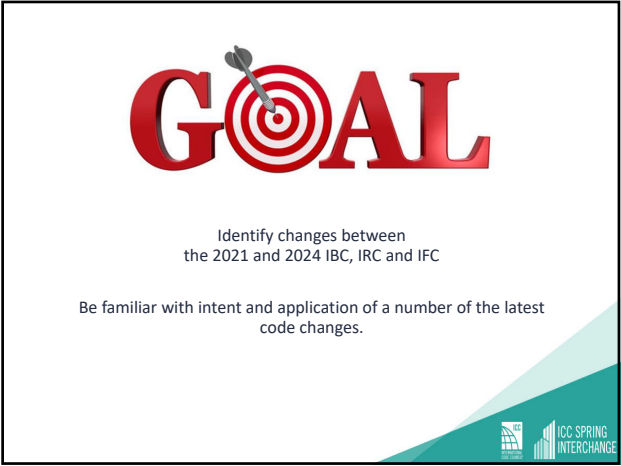
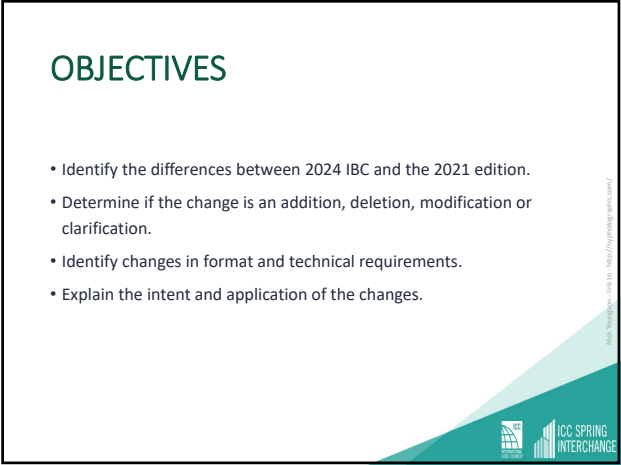




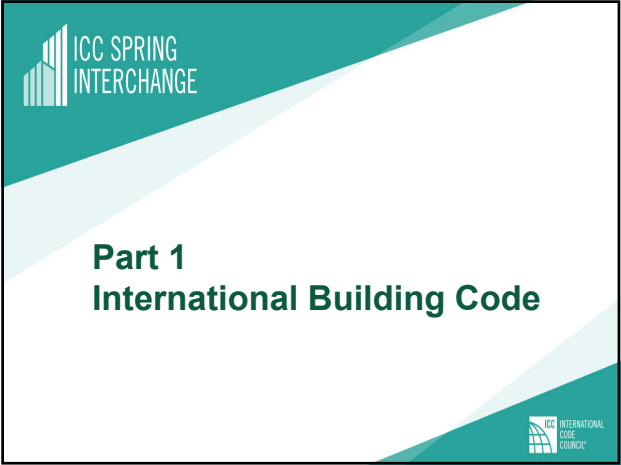
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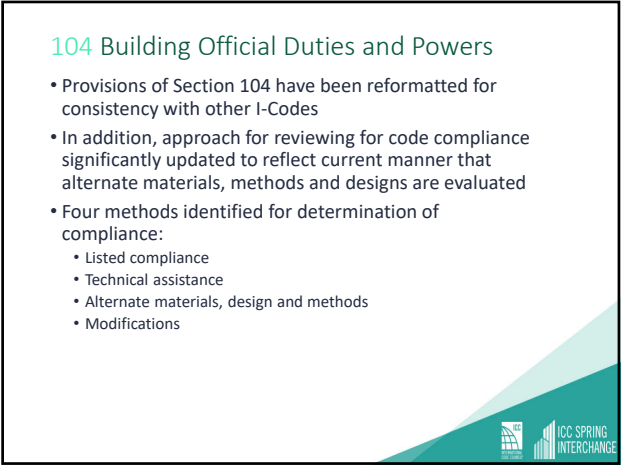
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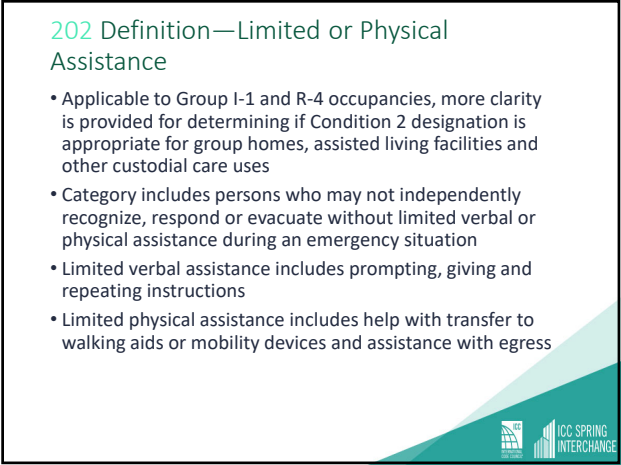
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5



6

202 Definition—High-Rise Building


- Special provisions, found primarily in Section 403, are mandated for buildings defined as “high-rise”
- Historically, such buildings are those with an occupied floor more than 75 feet above the lowest level of fire department vehicle access
- “High-rise” designation now also applies where occupiable roof is located above the 75-foot point
- Applicable concerns include:
 - Presence of occupants
 - Combustible furnishings
 - Difficulty of performing ground-based operations



7

304.1 Group B Occupancy Classification

- Electronic data processing has been modified to electronic data entry
 - Data entry is considered an activity performed in an office environment
 - Data processing is essentially automated work occurring in facilities typically accessed solely by maintenance personnel
 - More appropriately classified as Group F
- Lithium-ion and lithium metal battery testing, research and development activities newly addressed specifically and identified as Group B
 - Moderate-hazard classification is appropriate due to extensive protection features as established in IFC 1207, including:
 - Detection
 - Suppression
 - Explosion control



8

307.1.1, 414.1 Group H Occupancy Exemptions

- Provides for a more organized and comprehensive presentation of those conditions and materials that are exempt from:
 - Classification as a Group H occupancy, and
 - Needing to comply with any of general hazardous material regulations
- Replaces previous listing of exceptions in Section 307.1.1 and applicable notes to Tables 307.1(1) and 307.1(2)

TABLE 307.1.1 HAZARDOUS MATERIAL EXEMPTIONS*

Material Classification	Occupancy or Application	Exemption
Combustible fiber	Baled Cotton	Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 9115.
	Building materials	The quantity of commonly used building materials that are classified as corrosive materials is not limited.
Corrosive	Personal and household products	The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging.
	Retail and wholesale sales occupancies	The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited. To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.

(continued)



9

310.4 Group R Occupancy Classification


- In addition to several clarifications of various residential uses, the lodging house provisions have been revised.
- The scoping provisions for bed and breakfast establishments and similar lodging houses classified as a Group R-3 occupancy no longer mandate a maximum of 10 occupants
- In addition, there is no longer an occupant load limit required for construction of an owner-occupied lodging house under the *International Residential Code*
- The sole factor for lodging house classification that remains is the limit permitting no more than five guest rooms



10

411 Puzzle Rooms


- Puzzle rooms no longer required to comply with Section 411 as special amusement areas where the means of egress meets the fundamental requirements of Chapter 10
 - Unlocked
 - Readily available
 - Always available
- Previously, puzzle room exiting had to comply with one of three options:
 - Compliance with Chapter 10
 - Alternative design approved by building official
 - Exit system open and readily available upon activation by automatic fire alarm system, automatic sprinkler system, and a manual control at a constantly attended location



11

Table 509.1 Incidental Uses

- Sprinkler protection is now mandated in the following incidental use areas in ambulatory care facilities:
 - Storage rooms greater than 50 square feet
 - Waste and linen collection rooms with an aggregate volume of 8.67 cubic feet or greater
- Such rooms now require both the previously mandated 1-hour fire barrier and sprinkler protection
- Additional changes include lowering the following thresholds for inclusion as an incidental use for consistency with CMD federal standard:
 - Waste/linen collection rooms: Reduction from ≥ 10 cf to ≥ 8.67 cf
 - Storage rooms: Reduction from < 100 sf to < 50 sf



12

Table 509.1 Incidental Uses

TABLE 509.1
INCIDENTAL USES

In Group I-2, laundry rooms over 100 square feet	1 hour <u>and provide automatic sprinkler system</u>
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour <u>and provide automatic sprinkler system</u>
In Group I-2, physical plant maintenance shops	1 hour <u>and provide automatic sprinkler system</u>
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of <u>10 8.67</u> cubic feet or greater	1 hour <u>and provide automatic sprinkler system</u>
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than <u>50</u> square feet	1 hour <u>and provide automatic sprinkler system</u>
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.



13

510.2 Horizontal Building Separation

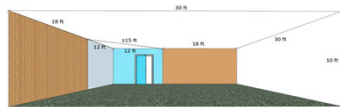
- Where the horizontal building separation allowance (podium buildings) of Section 510 is applied, the restriction on occupant loads for the upper building has been eliminated
- Previously, the only Group A occupancies permitted above the podium level were those with an occupant load of less than 300
- In addition, where vertical offsets occur in the horizontal separation required between the upper and lower buildings, the offsets shall be constructed as for fire barriers



14

602.4.2 Exposed Mass Timber in Type IV-B Construction

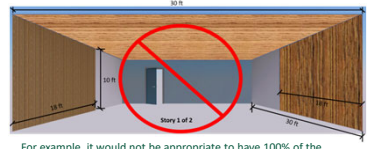
- The allowable unprotected mass timber on the ceilings of Type IV-B buildings has been increased from 20% to 100%
 - Revisions are based on fire research conducted at the Research Institute of Sweden
 - Tests exhibited satisfactory performance in that no significant fire growth was observed and temperatures within the compartment decreased continuously until the end of the four-hour test
- The separation distance between unprotected mass timber elements is now only required for walls



15

602.4.2 Exposed Mass Timber in Type IV-B Construction

- In addition, multiple-story floor areas are prohibited from being used to determine the allowable exposed mass timber in ceilings and walls in multi-story dwelling units and fire areas
 - Prohibition due to no testing of such conditions
- Each story to be evaluated on a story-by-story basis



For example, it would not be appropriate to have 100% of the ceiling and 60% of the walls (based on floor area) exposed on one of the two stories.



16

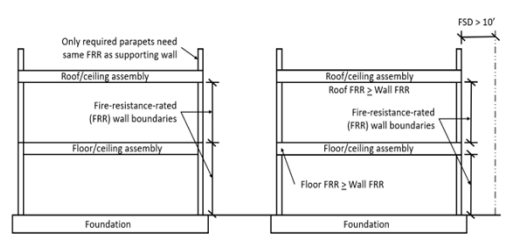
705.6 Exterior Wall Fire Rating Continuity

- The continuity requirements for the fire-resistance rating of exterior walls are now addressed for two conditions
- The required rating shall extend from the top of the foundation or floor/ceiling below to one of the following:
 - Underside of floor or roof sheathing, deck or slab above, or
 - Underside of floor/ceiling or roof/ceiling assembly having a fire-resistance rating \geq the exterior wall, and the fire separation distance $>$ 10 feet



17


705.6 Exterior Wall Fire Rating Continuity



18

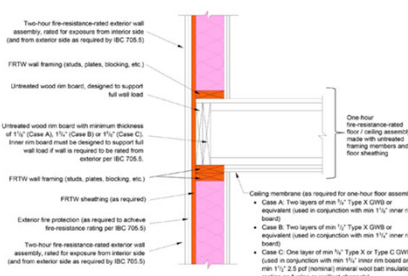
705.7.1 Exterior Wall/Floor Intersections in Type III Construction

- New provisions for load-bearing exterior walls in Type III construction clarify detailing where floors intersect the exterior wall in typical “platform” framing
- Fire-resistance rating of portion of floor assembly that supports exterior wall to be \geq than the rating required for the exterior wall per Table 601
 - The rating provided by the portion of the floor assembly supporting and within the plane of the exterior wall is permitted to include the contribution of the ceiling membrane when considering exposure from fire to the inside
- Where wall is load-bearing, floor construction within plane of the exterior wall to be in accordance with requirements for interior building elements of Type III construction
 - Includes rim joists, rim boards and blocking



19

705.7.1 Exterior Wall/Floor Intersections in Type III Construction



Two-hour fire-resistance-rated exterior wall assembly, rated for exposure from interior side (and from exterior side as required by IBC 705.5)

FRTW wall framing (posts, plates, blocking, etc.)

Untreated wood rim board, designed to support full wall load

Untreated wood rim board with minimum thickness of 1 1/2" (Case A), 1 1/4" (Case B) or 1 1/2" (Case C). Inner rim board must be designed to support full wall load if wall is required to be rated from exterior per IBC 705.5.

FRTW wall framing (posts, plates, blocking, etc.)

FRTW sheathing (as required)


Exterior fire protection (as required to achieve fire-resistance rating per IBC 705.5)

Two-hour fire-resistance-rated exterior wall assembly, rated for exposure from interior side (and from exterior side as required by IBC 705.5)

One-hour fire-resistance-rated floor/ceiling assembly (rated with associated framing members and floor sheathing)

Ceiling membrane (as required for one-hour floor assembly):


- Case A: Two layers of min. 1/2" Type X Gypsum or equivalent (used in conjunction with min. 1 1/2" inner rim board)
- Case B: Two layers of min. 1/2" Type X Gypsum or equivalent (used in conjunction with min. 1 1/2" inner rim board)
- Case C: One layer of min. 1/2" Type X or Type C Gypsum (used in conjunction with min. 1 1/2" inner rim board and min. 1 1/2" 2.0 g/ft² nominal mineral wool batt insulation resting on furring or resilient channels)



20

706.1.2, 706.2 Fire Walls—Deemed to Comply

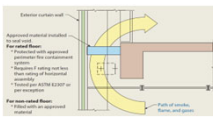
- The use of NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls*, was previously recognized as acceptable for dealing with structural stability requirement of IBC
- Fire walls now may be fully designed and constructed in accordance with NFPA 221, except where IBC addresses similar issues
 - For example, NFPA 221 does not contain any requirement for fire wall fire-resistance ratings. Therefore, provisions of IBC Section 706.4 will apply



21

715.4, 715.5 Exterior Curtain Wall and Floor Intersections

- Voids created at the intersection of exterior curtain wall assemblies and floor or floor/ceiling assemblies are required to be filled or protected to prevent the interior spread of fire
 - Fire-resistance-rated floor or floor/ceiling assemblies: Protected
 - Nonfire-resistance-rated floor or floor/ceiling assemblies: Filled
- Three new exceptions now provided where such voids do not require protection or filling
 - Floors within a single dwelling unit
 - Floors and ramps within parking garages
 - Mezzanine floors



The diagram illustrates the intersection of an exterior curtain wall and a floor assembly. It shows a cross-section of the wall and floor, with arrows indicating the path of fire and smoke. Annotations specify requirements for fire-resistance-rated floor or floor/ceiling assemblies (Protected) and nonfire-resistance-rated floor or floor/ceiling assemblies (Filled). It also notes that voids within a single dwelling unit, floors and ramps within parking garages, and mezzanine floors are exceptions where protection or filling is not required.

22

1106.3 Parking for Groups R-2, R-3 and R-4

- Clarifies that accessible parking requirements for Group R-2, R-3 and R-4 occupancies to be based on “the greatest number” of either the 2% requirement or at least one space for each Accessible and Type A unit.
- Code previously was not clear how to apply these two provisions so often was interpreted as providing a choice to use one or the other.

23


1106.3, 1106.7.1 Accessible Parking

- Group I-1 and R-1 (previous Item 2) removed from this section since they must provide accessible parking per Table 1106.2.
- Previous item 4 moved to location requirements of 1106.7.1. This expands the application to **all occupancies** and requires accessible parking be provided beneath the building if any parking is provided beneath the building.

24

1108.6.1.1 Group R-1 Accessible Units


- New exception permits more limited bathing options where none of the Accessible units in the building contain bathtubs.
- Where NONE of the units within the building contain tubs, standard or alternate roll-in showers with seats are permitted.
- Maintains concept that people with disabilities should be treated the same as other occupants.
- A second exception allows transfer showers to be substituted for all but the minimum number of roll-in showers from Table 1108.6.1.1



25

1112.6 Tactile Room Identification Signs


- Provisions for tactile signage for interior and exterior signs identifying permanent rooms and spaces moved from Appendix Section E107.2.
 - Technical requirements for signage found in A117.1-17 Section 703
- Insertion into Chapter 11 results in no requirement for specific adoption
- Also clarifies that tactile signage only required “where provided”



26

1110.4 Adult Changing Stations

- New provisions will require adult changing stations (or regulate them if they are just provided)
- They are required for:
 - Assembly and mercantile with aggregate of 6 or more male and female required water closets
 - Group B education facilities with aggregate of 12 or more male and female required water closets
 - Group E with an assembly room or space that requires an aggregate of 6 or more male and female water closets for that room
 - At highway rest stops and highway service plazas



27

1110.4 Adult Changing Stations

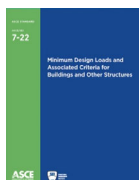
- Required to be located in a single occupant toilet room or in a family or assisted use toilet room
- Are prohibited from requiring travel through a security checkpoint from the general separate-sex toilet and bathing rooms
- Located on accessible route within two stories and a maximum of 2,000 feet of travel
- The water closet and lavatory within the room can be included to satisfy the occupancy's overall fixture requirements



28

Chapter 16 Structural Design Loads

- Updated loads
 - Snow
 - Wind
 - Rain
 - Seismic
- Guards and handrails
- Tornado loads – new
 - RC III & IV
- Elevators & Escalators
 - Wind
 - Snow
 - Seismic



29

Table 1705.3 Special Inspection – Rebar Welding



- Continuous special inspection
 - Reinforcement
 - Special moment frames
 - Boundary elements of special structural walls
 - Coupling beams
 - Reinforcement splices
 - Primary tension reinforcement in corbels



30

1807.2.5 Guards on Retaining Walls

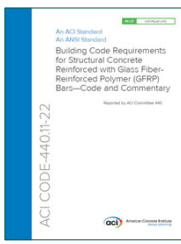

- Where required
 - ≤ 36" of walking surfaces
 - > 30" vertically & ≤ 36" horizontally
 - Loads per 1607.9
- Height ≥ 42"
- Openings per 1015.4
- Exception
 - Not publicly accessible

31

Chapter 19 Concrete

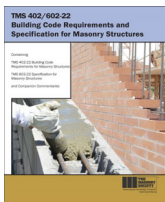

- New GFRP standard
 - Low seismic areas
 - Highly corrosive environments
 - Supporting MRI equipment
- Seismic provisions reorganized
 - ACI 318 revisions removed
 - Supplemental provisions remain

32

Chapter 21 Masonry

- Updated standards
 - Mortar requirements for adhered masonry veneers
 - GFRP for low seismic areas
 - Empirical design of Adobe
 - Masonry references TMS 402-16

33

Chapter 22 Steel

- Updated standards
 - Structural stainless steel
 - CFS diaphragm panels
 - Steel decks
 - Industrial shelving & platforms
 - Stairs, ladders and guards
- Metal building systems
 - New definition
 - New provisions
 - New special inspections




34


Chapter 23 Wood

- Updated standards
 - 2024 NDS
 - 2024 WFCM
- Revised FRTW provisions
 - FRT LVL
- Wind speeds updated
 - WSP wall sheathing
 - Rafter/truss uplift loads
- Connection fire protection
 - Type IV-A, IV-B & IV-C
- Wood shear walls and diaphragms
 - CLT and soil loads
- Hillside light-frame wood construction for seismic





35

2406.4.3 Glazing in Windows




- Required at windows where a person can fall
 - Out of a building
 - Into a building
 - Within the building



36

2902.1.2 Plumbing Fixture Calculations

- A methodology has been established to determine the required plumbing fixture count in many assembly uses where single-user or family/assisted toilet rooms are provided
- Number of fixtures in single user and family/assisted toilet rooms to be deducted proportionately from the required gender ratios of Table 2902.1



37


2902.1.2 Plumbing Fixture Calculations

EXAMPLE:
Given: A theater having 2000 occupants, the male water closet (WC) ratio is 1/125 and the female ratio is 1/65:
Design layout: Four single-user toilet facilities with the remainder of fixtures in multiple-user toilet facilities (separate sex).

Step 1: Determine minimum required number of male water closets, all located in a multiple-user toilet facility: $1000/125 = 8$

Step 2: Determine minimum required number of female water closets, all located in a multiple-user toilet facility: $1000/65 = 15.4$

Step 3: Add minimum required number of male and female water closets
 Total = 23.4 WCs



38


2902.1.2 Plumbing Fixture Calculations

Step 4: Proportionally reduce the number of water closets in the multiple-user toilet facilities (because of the presence of water closets located in single-user toilet facilities). In this example, each water closet in a single-user toilet facility allows for a reduction of $8/23.4 = 0.34$ male water closets and $15.4/23.4 = 0.66$ female water closets in the multiple-user toilet facilities.

Step 5: Therefore, four single-user toilet facilities, $(4 \times 0.34) = 1.36$ male WC reduction and $(4 \times 0.66) = 2.64$ female WC reduction.

Result: Thus, the multiple-user toilet facilities require a minimum of:


Male:	$8 - 1.36 = 6.64 = 7$ water closets
Female:	$15.4 - 2.64 = 12.76 = 13$ water closets



39

2902.3.6 Locking of Toilet Room Doors


- In a multi-user toilet room, the egress door is now permitted to be lockable from the interior side provided three conditions are met
- Egress door to be:
 - Lockable from inside of the toilet room only by authorized personnel by the use of a key or other approved means
 - Readily openable from the toilet room in accordance with Section 1010.2
 - Capable of being unlocked from outside the toilet room with a key or other approved means
- Allows for a safe area of refuge in the event of an emergency such as an active shooter



40

3001.2 Elevator Emergency Communication Systems


- Technical details of required elevator emergency communications system are no longer addressed in IBC as they are provided in reference standard
 - ASME—2019/CSA B44-19 *Safety Code for Elevators and Escalators*
- In addition, IBC now requires system to provide a means to enable authorized personnel to verify:
 - The presence of someone in car
 - That the person(s) is trapped
- Once an entrapment is verified, system to enable authorized personnel to:
 - Determine if assistance is needed
 - Communicate when help is on the way
 - Communicate when help arrives on the site



41

3006.3 Smoke Protective Curtain Assemblies at Elevator Hoistways



- Where Section 3006.2 requires protection at an elevator hoistway door, a fifth method of protection utilizing a *smoke protective curtain assembly* has been established
- Defined as “a listed smoke and draft control curtain assembly consisting of a curtain coil, control unit, and perimeter sealing system”
- Curtain assembly to:
 - Comply with smoke and draft control requirements in Section 716.2.2.1.1 when tested per UL 1784 without an artificial bottom seal
 - Be equipped with a control unit listed to UL 864
 - Comply with Section 2.11.6.3 of ASME A17.1/CSA B44
 - Be installed and maintained in accordance with NFPA 105



42

3103 Temporary Structures


- New definitions
- Reduced loads
 - Snow
 - Wind
 - Flood
 - Seismic
 - Ice
 - Tsunami
- Installation and maintenance inspections
- Risk category for each structure
 - Based on 1.5 x height
 - Examples include stands supporting
 - Lights
 - Audio
 - Cameras

43

Appendix P Sleeping Lofts


- New Appendix P sets forth the scoping limitations and technical criteria for sleeping lofts that are provided within Group R dwelling units and sleeping units
- Provisions based in large part on IRC Appendix RQ regulating tiny houses
- The following lofts are exempt from compliance with App. P
 - Maximum depth of < 3 feet, or
 - Floor area < 35 square feet, or
 - Not provided with a permanent means of egress
- Scoping limitations include:
 - Floor area < 70 square feet, and
 - Ceiling height \leq 7 feet for more than 1/2 of loft floor area



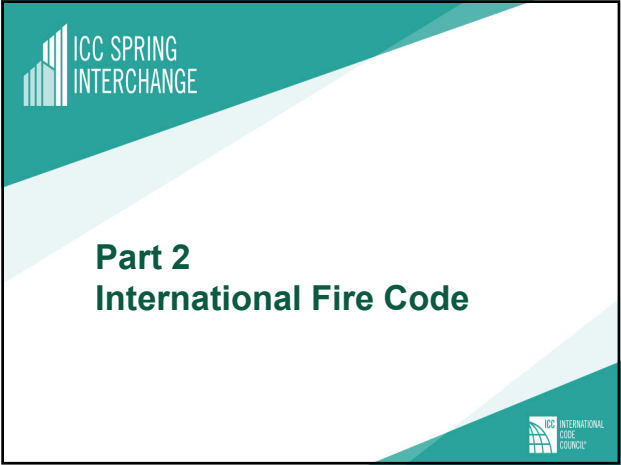
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Appendix P Sleeping Lofts

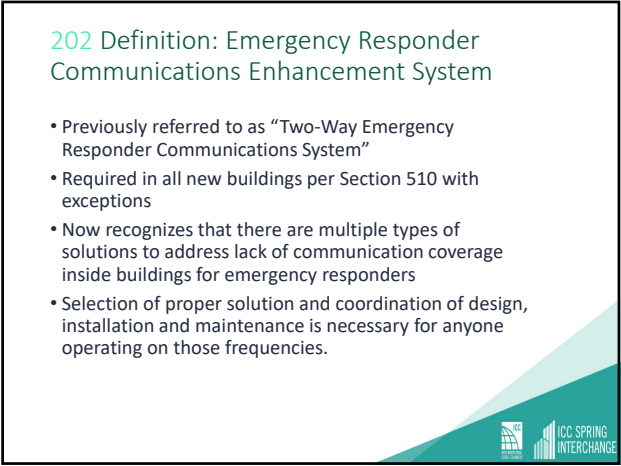
- Special technical requirements/allowances include:
 - Means of egress
 - Guards
 - Smoke alarms
- Where permanent means of egress provided for sleeping lofts, the egress to comply with Chapter 10, except as modified in the following areas:
 - Stairway width, treads, risers and landings
 - Alternate tread devices height limit
 - Ship's ladder's height limit
 - Ladder's height limit, size, capacity and incline



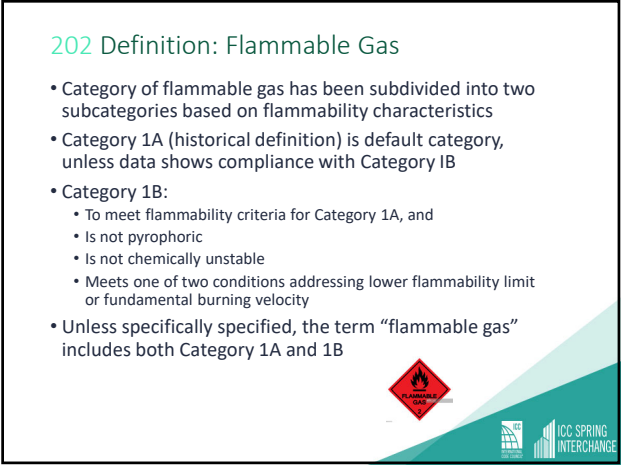
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46




47



48

202 Definition: Occupancy Classification and Use

- IBC occupancy classifications have historically been located in IFC
- Occupancy classifications have been removed from list of definitions in Chapter 2 and relocated to new Section 203.
- Intended to improve user understanding and enhance correlation with the IBC
- New format is similar to that in the IBC and section numbering enhances ability to correlate provisions between the two codes



49

304.1.1, Appendix O Valet Trash and Recycling Collection in Group R-2

- Defined as service that removes trash/recycling materials placed outside of residential units for final collection
- Only permitted where approved by fire code official.
- Owner and collection service provider to comply with rules and limitations established by the jurisdiction
- Appendix O provide to address:
 - Containers cannot obstruct egress width
 - Containers must be liquid-tight and have a lid
 - Containers are limited in size (capacity and height)
 - Containers to be noncombustible or of limited flammability
 - Time of placement of containers outside of residential unit
 - Administrative controls




50

314.4 Indoor Vehicle Display

- Revisions made to address newer alternative fuels and power systems found in today's vehicles
- Clarifies that only ignition batteries need be disconnected
 - Not applicable to main batteries used for propulsion
- Limitations on fuel permitted in fuel tanks has been clarified and expanded to address:

• Class I, II & III liquid fuel	¼ tank or 5 gallons, whichever less
• LP-gas	¼ tank or 6.6 gallons, whichever less
• CNG	¼ tank or 630 cubic feet, whichever less
• Hydrogen	¼ tank or 2000 cubic feet, whichever less



51

319 Mobile Food Preparation Vehicles



- Entirety of Section 319 has been deleted and replaced with new provisions
- Most of previous specific provisions no longer in IFC, but are referenced in NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*
- Although standard contains most requirements for mobile cooking operations, some maintenance criteria is missing
- Maintenance provisions provided in Section 319, including:
 - Inspection and cleaning of exhaust hood
 - Maintenance of fire-extinguishing system
 - Maintenance of fuel gas systems, including annual leak test and inspection tag
 - Manual operation of fire-extinguishing system




52

322 Powered Micromobility Devices

- Requirements added to regulate the use and recharging of powered micromobility devices
- Includes motorized bicycles and scooters, as well as other personal mobility devices powered by a lithium-ion or lithium metal battery (exempts those motor vehicles required to be registered with Department of Motor Vehicles)
- Items regulated include:
 - General scoping
 - Prohibited locations
 - Battery chargers and equipment
 - Listing
 - Battery charging areas
 - Fire safety plan

53

403.10.6 Safety Plan for Lithium-ion Batteries


- Approved fire safety and evacuation plan in accordance with Section 404 now required for occupancies that involve activities for lithium-ion or lithium metal batteries
- Plan to be prepared and maintained where activity is:
 - Research and development
 - Testing
 - Manufacturing
 - Handling
 - Storage
 - Repair or serving of vehicles
- Fire safety and evacuation plan to include thermal runaway event mitigation measures



54

705.2.7 Rolling Fire Door Testing

- Rolling steel fire doors have a unique operation and require specific product training to ensure proper inspection
- Complex nature of tension release devices and automatic closing systems include multiple components that must work together for the door to operate properly
- Therefore, a specific section now mandates that such doors be inspected and tested by a trained fire door systems technician on an annual basis
 - To be done in accordance with NFPA 80



55

903.2 Sprinkler System Required – Lithium-ion and Lithium Metal Batteries


- Sprinkler systems are required in certain Group B, F-1, M and S-1 occupancies where these batteries are involved.
- Not limited to use in Energy Storage Systems as previously done.
- Addresses the unique fire hazard the batteries create and the potential for a thermal runaway fire.
- Sprinkler required for:
 - Group B: Laboratories, testing, research and development of batteries
 - Group F-1: Manufacture of batteries or vehicles, ESS or equipment using them
 - Group M: Storage
 - Group S-1: Storage or repair of vehicles powered by these batteries with Fire Area over 500 sq. ft.



56

903.2 Sprinkler System Required – Lithium-ion and Lithium Metal Batteries


- A number of other provisions have been added in other sections to better address the hazards of these types of batteries. This includes:
- Sprinkler system design is based upon fire tests to address specific hazard and arrangement. Does not use standard density requirements for the general occupancy area.
- New IFC Sections 320 and 322 which address Battery Storage and Powered Micromobility Devices respectively.
- IFC 322 does not require a sprinkler system but addresses other protection issues for storage, charging, location, planning, etc.



57

903.3.1.2 NFPA 13R Sprinkler Systems

- Increases the height of a Group R-2 occupancy building which can use an NFPA 13R sprinkler system.
- Changes from a 30-foot maximum height to the highest floor level to a maximum 45-foot height to the roof assembly.
- 45-foot height continues to be measured from lowest level of fire department vehicle access to the eave of highest pitched roof, intersection of highest roof and exterior wall, or top of highest parapet, whichever is greatest height.



58

903.3.1.2 NFPA 13R Sprinkler Systems


- Residential occupancies other than Group R-2 will continue to use the maximum 30-foot height limitation
- The revised provisions addressing Group R-2 provide greater consistency with the 2018 thresholds for 13R protection
 - Requirements also consistent with provisions addressing protection of attic spaces where a 13R sprinkler system is provided
- 2021 provisions were felt to be too restrictive for Group R-2 occupancies



59

907.2 Fire Alarm and Detection Systems


- Two new exceptions exempt manual fire alarm boxes and occupant notification system in smaller (<15,000 occupant) Group A-5 outdoor bleacher seating, and in temporary outdoor Group A-5 seating.
- Limitations for compliance include items such as:
 - Enclosed spaces under or attached; including whether it is allowed, size limits and separation.
 - Requirement for public address system with standby power in permanent facility
 - Use limit of 180 days for temporary facilities
 - Egress/evacuation plans per exceptions
- Exceptions based on Section 309 of ICC 300



60

907.2 Fire Alarm and Detection Systems


- New sections added to require detection systems in areas containing lithium-ion and lithium metal batteries.
- Similar to 903.2, requirements apply to Group B, F, M and S occupancies
- Requires an alarm system activated by air sampling-type smoke detection or radiant energy-sensing detection.
- Helps to prevent/limit fire or thermal runaway hazard by early detection of battery failures
- Since fires are almost impossible to extinguish, this helps detect problems to allow evacuation, or mitigation efforts prior to fire occurrence.



61

907.2.11.3 Smoke Alarms Near Cooking Appliances


- Modifies the location requirements applicable to smoke alarms due to changes in the listing standard.
- New testing standards help reduce nuisance alarms caused by cooking sources.
 - Align with NFPA 72 and UL 217
- Requires 10-foot horizontal separation to permanently installed cooking appliance, with exception permitting reduction to 6 feet to ensure detectors are installed where required by 907.2.11.1 or 907.2.11.2.
- Code previously used 20 feet, 10 feet or 6 feet, depending on alarm type.



62

915 Carbon Monoxide Detection


- Detection now required in all normally occupied occupancies where a carbon monoxide producing device is present.
- Previously was only required in Group I-1, I-2, I-4 and R occupancies and in classrooms of Group E occupancies.
- An exception exempts detection requirement in F, S and U occupancies that are not normally occupied.
- Requirements have also been substantially revised and reformatted.
- Relies on definition in Chapter 2 which helps limit scope to permanent CO sources or regularly used vehicles (vehicles in garage, propane forklifts, etc.) and not temporary or infrequent sources.



63

915 Carbon Monoxide Detection


- Reformatting helps clarify requirements and how each aspect is applied.
 - 915.1 addresses where CO detection is needed
 - 915.2 specifies where detection devices are placed for best protection
 - 915.3 through 915.5 deals with installation itself, including compliance with NFPA 72, detectors being hardwired, and interconnection
- System requirements depend on other features in the building. Can be stand-alone if no fire alarm system is present, done as part of a fire alarm system by adding detectors, or as a part of a security system that the occupant may already have (when done per NFPA 72).



64

1006.3.3, Table 1006.3.3 Egress from Stories and Occupiable Roofs


- New definition added to Chapter 2 for Occupiable Roof
- Roof is designed for human occupancy and access is for other than maintenance or repair
- Revisions throughout code from “occupied roof” to “occupiable roof” which will provide better consistency when applying provisions
- Egress is required from “occupiable roof” whether it is occupied or not



65

1010.2.4, 1010.2.5 Locks and Latches

- Adds four definitions (automatic flush bolt, constant latching bolt, dead bolt, and manual bolt)
- Reformats provisions and provides a table to clarify which type of latching bolt is permitted in various applications.
- Modifies existing “main door” exception to clarify it as being the main door into the building or tenant space and excludes secondary doors.
- Eliminates the occupant load limit of 10 for dwelling units or sleeping units to use night latch, dead bolt or security chain.
 - Now permitted for units permitted a single means of egress.



66

1010.2.14 Elevator Lobby Exit Access Doors

- Permits electronically locked exit access doors to serve as the means of egress from an elevator lobby.
- Eliminates the need for an elevator lobby to have direct access to an exit and allow the egress path to go through a tenant space which could normally be locked and unavailable.
- Requires eight conditions to be met, including:
 - NFPA 13 sprinkler system
 - Fire alarm system
 - Smoke detection system in lobby
 - Other occupants of floor to have access to two exits without travel through lobby
 - Two-way communication system within the lobby



67

1013.2 Low-level Exit Signs in Group R-1

- New exception eliminates the requirement for low-level exit signs in areas serving the guestrooms of Group R-1 occupancies when the building is sprinklered.
 - The exception will require either an NFPA 13 or 13R system throughout the building.
- Low-level exit signs would still be required in older buildings which are not sprinklered and may lack many other current safety features.
- These additional exit signs were not felt to be justified based on many improvements in the fire safety record of R-1 occupancies. This includes compartmentation, sprinklers, alarms and loss history.



68

1029.3 Egress Courts – Opening Protection


- New exception eliminates the egress court requirements for a fire-resistance-rated wall and protected openings when the occupants have multiple egress path options.
- With options, it is unlikely that both egress paths would be blocked.
- Conceptually similar to existing exception permitted for egress balconies in Section 1021.2.
- Walls with limited fire separation distance would still require protection based on those requirements, but not necessarily based on the egress court protection requirement.



69

1107 Existing Lithium-ion Energy Storage Systems

- A Failure Modes and Effects Analysis (FMEA) must be provided to the fire code official by the owner of an energy storage facility where:
 - ESS utilizes lithium-ion battery technology having capacities exceeding values in Table 1207.1.1, and
 - Installed prior to jurisdiction's adoption of the 2018 or later edition of the *International Fire Code*
- Fire code official to review and approve FMEA
- Provisions also address:
 - Early detection and notification of thermal runaway, and
 - Corrective action plan for any hazards identified in the analysis



70

2404 Prohibited Enclosures for Spray Application Operations


- Inflatable or portable enclosures for spray application of flammable finishes is now prohibited except in marina, dry dock and construction areas
- Where membrane structures are used, they must be designed, constructed, protected, operated and maintained in accordance with NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*



71

2404.3 Limited Finishing Workstation

- The use of a limited finishing workstation has been added to the IFC for spray finishing operations
- Defined by NFPA 33 as 'power-ventilated apparatus that is capable of confining the vapors, mists residues, dusts, or deposits that are generated by a limited spray application.
 - It is not considered or regulated as a spray booth or spray room
- Allowance for spraying space still available for jobs not exceeding 9 square feet
- In addition to other construction and safety requirements:
 - Ventilation to be provided by dedicated air supply system
 - Automatic fire-extinguishing system to be provided
 - Quantity of materials sprayed in an 8-hour period not to exceed 1 gallon



72

3106 Inflatable Amusement Devices


- Provisions have been added for bounce houses, water slides, climbing obstacles and other similar inflatable equipment
 - Not applicable to devices operated on private property where not open to the public
- Issues addressed include:
 - Designed, anchored, operated and maintained in accordance with manufacturer's instructions and ASTM F2374
 - Flame propagation
 - Electrical equipment and wiring
 - Portable generators
 - Portable fire extinguishers




73

Chapter 41 Temporary Heating and Cooking Operations

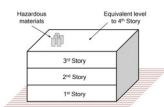

- A chapter has been added to bring together code requirements for temporary heating and cooking operations found throughout the IFC, as well regulating some operations that were not previously addressed
- Although most of chapter provisions have existed for some time, several new items include:
 - Three new operational permits have been added:
 - Temporary heating or cooling in a tent
 - Temporary heating or cooling in wildfire risk areas
 - Temporary heating at a construction site
- Relocated provisions include:
 - Portable heating and cooking devices
 - Temporary heating and cooking operations
 - Mobile food preparation vehicles



74

5003.13 Rooftop Storage of Hazardous Materials

- A new section regulates the storage, use and handling of hazardous materials on roofs or canopies
 - Outdoor control area provisions of IFC Chapter 50 never intended to be applied to rooftops
- Issues address by Section 5003.13 include:
 - Occupancy classification
 - Maximum allowable quantity per rooftop or canopy
 - Adjustment to allowable quantities based on building's number of stories
- Applicable requirements for outdoor story to be met
- Weather protection to comply with IBC Section 414.6.1


75

Appendix E Oxidizer Classification


- Information has been added to Appendix E to assist in correlating the oxidizer classifications in the IFC with those in the Globally Harmonized System
- Provides additional guidance in validating classifications of hazardous materials

**Table E102.1.7.2
Oxidizer Comparison (IFC vs. GHS)**


IFC Hazard Class	GHS Hazard Category
Oxidizer, Class 4	H271, Category 1
Oxidizer, Class 3	H271, Category 1
Oxidizer, Class 2	H272, Category 2
Oxidizer, Class 1	H272, Category 3



76





Part 3 International Residential Code



77

R104 Duties and Powers of the Building Official

- Section rewritten
- Detail to requirements added

78

R104 Duties and Powers of the Building Official

R104.1 General.

R104.2 Determination of compliance.

R104.2.1 Listed compliance.

R104.2.2 Technical assistance.

R104.2.2.1 Cost.

R104.2.2.2 Preparer qualifications.

R104.2.2.3 Content.

104.2.2.4 R104-11-1 Tests.

104.2.3 R104-11 Alternative materials, design and methods of construction and equipment.

104.2.3.1 Approval authority.

104.2.3.2 Application and disposition.

104.2.3.3 Compliance with code intent.

104.2.3.4 Equivalency criteria.

104.2.3.5 Tests.

104.2.3.6 Reports.

104.2.3.7 Peer review.

104.2.4 R104-10 Modifications.

104.2.4.1 R104-10-1 Flood hazard areas.

R104.3 R104-2 Applications and permits.

R104.4 R104-6 Right of entry.

R104.4.1 Warrant.

R104.5 Identification.

R104.6 R104-3 Notices and orders.

R104.7 Official Department records.

R104.7.1 Approvals.

R104.7.2 Inspections.

R104.7.3 Code alternatives and modifications.

R104.7.4 Tests.


R104.7.5 Fees.

R104.8 Liability.

R104.8.1 Legal defense.

R104.9 Approved materials and equipment.



R104.9.1 Materials and equipment reuse.



79

R202 Exterior Wall

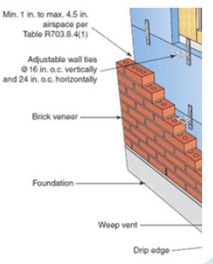

- Above-grade wall
- Defines exterior boundaries of a building.
- Includes between-floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, gable end roof trusses, walls enclosing a mansard roof and basement walls with an average below-grade wall area < 50% of the total area of that enclosing side.

80

R202 Rainscreen System

- An assembly applied to the exterior side of an exterior wall which consists of, at minimum, two layers and a cavity between them sufficient for the passive removal of liquid water and water vapor.
- Adds alternative to a required airspace behind siding and veneer

81

Chapter 3 Building Planning Reorganization

Section 301 Design Criteria	Section R305 R318 Protection Against Subterranean Termites
Section R302 Fire-resistant Construction	Section R306 R322 Flood-resistant Construction
Section R303 R316 Foam Plastic	Section R307 R323 Storm Shelters
Section R304 R317 Protection Of Wood And Wood-based Products Against Decay	Section R308 R319 Site Address
	Section R309 R313 Automatic Fire Sprinkler Systems



82

Chapter 3 Reorganization


Section R310 R314 Smoke Alarms	Section R315 R326 Habitable Attics
Section R311 R315 Carbon Monoxide Alarms	Section R316 R309 Garages And Carports
Section R312 R304 Minimum Room Areas	Section R317 R311 Means Of Egress
Section R313 R305 Ceiling Height	Section R318 R310 Emergency Escape And Rescue Openings
Section R314 R325 Mezzanines	Section R319 R312 Guards And Window Fall Protection



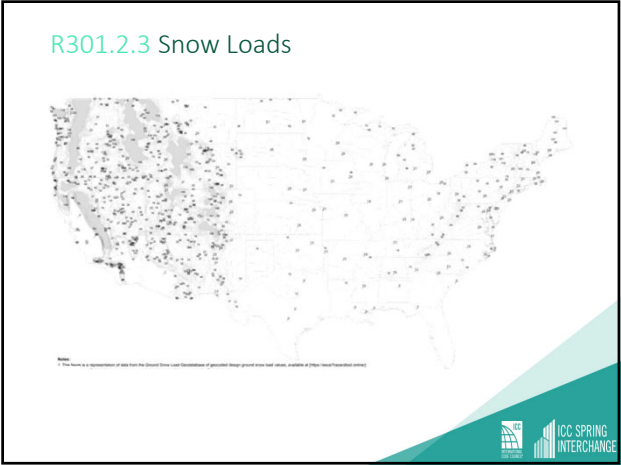
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Chapter 3 Reorganization

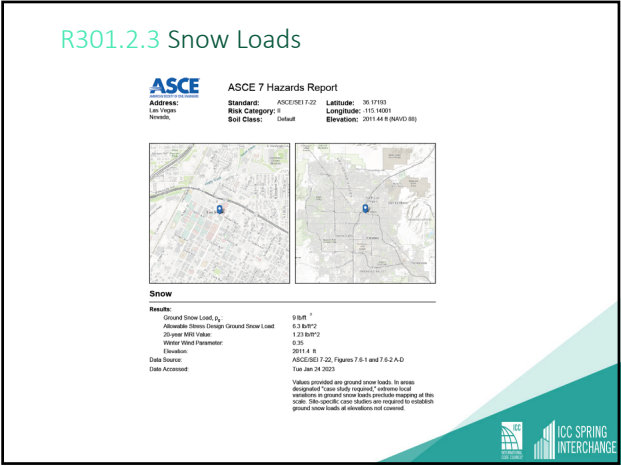
Section R320 Accessibility	Section R325 R307 Toilet, Bath And Shower Spaces
Section R321 Elevators And Platform Lifts	Section R326 R327 Swimming Pools, Spas And Hot Tubs
Section R322 R308 Glazing	Section R327 R324 Solar Energy Systems
Section R323 R303 Light, Ventilation And Heating	Section R328 Energy Storage Systems
Section R324 R306 Sanitation	Section R329 Stationary Engine Generators
	Section R330 Stationary Fuel Cell Power Systems



84



85



86

R302.1 Exterior walls

Fire Separation Distance


- Dwellings and townhouses on the same lot shall be assumed to have an imaginary lot line between them.
- Where a new dwelling or townhouse is to be erected on the same lot as an existing-dwelling or townhouse, the location of the assumed imaginary line to the existing dwelling or townhouse must meet Section R302.

87

R302.2 Shared Accessory Rooms

- Separated from each individual dwelling unit per Table R302.3.2.
- Openings between the shared accessory room and dwelling unit comply with Section R302.3.2.1.
- Attachment of gypsum board complies with Table R702.3.5

SEPARATION	MATERIAL
From the dwelling units and attics	<ul style="list-style-type: none"> ≥ 1/2-inch gypsum board or equivalent Accessory room side wall
From habitable rooms above or below the accessory room	<ul style="list-style-type: none"> ≥ 5/8-inch Type X gypsum board or equivalent
Structures supporting floor/ceiling assemblies used for separation required by this section	<ul style="list-style-type: none"> ≥ 1/2-inch gypsum board or equivalent



88

R202, R314.3, R325.1, R326 Sleeping Lofts

SLEEPING LOFT.

- A space on an intermediate level or levels between the floor and ceiling of a story, open on one or more sides to the room in which the space is located, and in accordance with Section R326.




89


R202, R314.3, R325.1, R326 Sleeping Lofts

R326.1 Sleeping lofts.

- Where provided
- Sleeping lofts shall comply with Sections R326.2 through R326.5.
- Considered a portion of the story below.
- Such sleeping lofts shall not contribute to the number of stories as regulated by this code.

Exception:
Sleeping lofts need not comply with Section R326 when:

- Maximum depth < 3 feet
- Floor area < 35 square feet
- Not provided with a permanent means of egress



90

R202, R314.3, R325.1, R326 Sleeping Lofts

R326.2 Sleeping loft limitations.

- Sleeping lofts shall comply with the following conditions:
 1. Floor area < 70 square feet (6.5 m).
 2. Ceiling height ≤ 7 feet (2134 mm) for > ½ of the sleeping loft floor area.
- Additional details for ceiling height, area, egress and stairway requirements.



91


R320.3 Care Facilities

R320.1 Dwelling units or sleeping units.

R320.2 Live/work units.

R320.3 Care facilities.

- Where permitted
- May use IRC for design
- Must be accessible per Chapter 11 of the *International Building Code* in the care facility portion of the building.





92

R321.1 Elevators and Hoistways

R321.1.1 Private Residence Elevators.

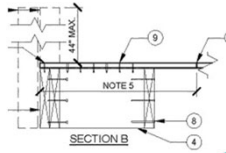
- The design, construction, and installation of private residence elevators installed within a residential unit or providing access to one individual dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.

93

R502.11 Guard Attachment to Floor Framing

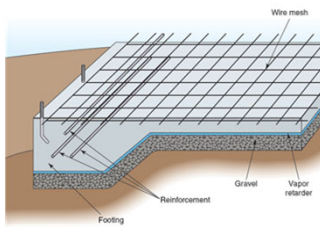
- Guards must transfer loads from the top of the railing to the floor or deck below.
- There hasn't been a prescriptive solution within the IRC.
- Both top and side mounting of guards may be done if sufficient material exists for fastener embedment.
- I-joists and trusses may not be used to fasten and brace guards unless specifically designed for the connection.



94

R506.2.3 Vapor Retarder

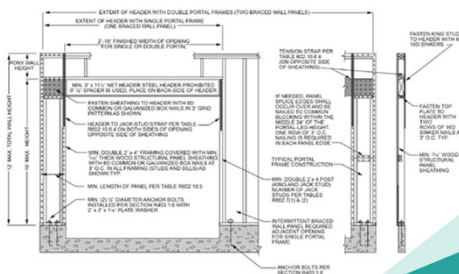
- Vapor retarder may be 6 mil polyethylene or 6 mil approved vapor retarder
- Returns to 2018 IRC requirement



95

R602.10.6 Methods PFH, PFG and CS-PF

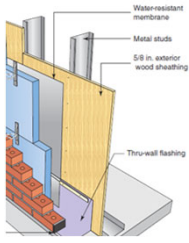
- Note added
Header shall not extend over more than one opening.




96

R703.2 Water-resistive Barrier

- Provide a continuous WRB behind the exterior wall veneer and deck ledgers



Water-resistive membrane
Metal studs
5/8 in. exterior wood sheathing
Thru-wall flashing

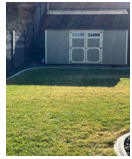



97

R703.2 Water-resistive Barrier

Exception:
WRB not required in unconditioned detached tool sheds, storage sheds, playhouses, and other similar accessory structures if:



1. Exterior wall covering is limited to siding that is attached direct to studs.
2. Exterior walls are uninsulated.
3. Interior side of exterior walls has no wall covering or wall finishes.

98

R905 Wind Resistance


- Roof cladding must have wind loads considered in high wind regions

99

R908.3 Roof Replacement

- Where roof sheathing is water soaked or damaged, it must be replaced, even when under ice barrier materials
- Where sheathing is undamaged, ice barrier materials may remain on the roof and covered by new underlayment

100

Appendix AJ Existing Buildings

- Appendix expanded
 - Now specifically addresses repairs, alterations and additions
 - Addresses habitable attics, stairs and relocated buildings
 - Considers structural loads





101

Appendix AZ Accessory Dwelling Units (ADUs)

- Appendix on ADUs is added
 - Contains limits to ADU location
 - Conditions where they may be built





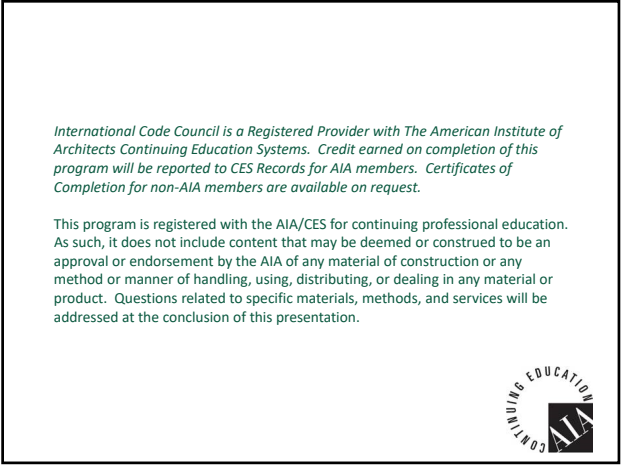
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