Building

2012 IBC & 2012 VCC

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- 303.1.3 Assembly rooms associated with Group E Occupancies
- 303.3 and 306.2 Commercial kitchens
- 307.1 and Table 307.1(1) Combustible dusts
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- 509 incident Use
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- 706.6.2 Buildings with Sloped Roofs
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- 907.2.9.3 Group R-2 College and University Buildings
- 907.5.2.2.4 Emergency Voice/Alarm Communication
- 908.7 Carbon Monoxide Alarms
- 911 Fire Command Center
- 1001.4 Fire Safety Evacuation Plan (Deleted)
- 1004.1.2 and Table 1004.1.2 Floor Area Per Occupant
- 1008.1.2 Door Swing
- 1009.3 Exit Access Stairways
- 1012.3.1 Type 1 Handrail
- 1016.2.2 Group F-1 and S-1 Increase (2015 IBC)
- 1021.1 Number of Exits
- 1022 Interior Exit Stairs
- ICC A117.1 (2009)
- 1104.3.1 Employee Work Area Circulation Path Exception 1
- Tables 1106.1(1) and 1106.1(2)
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- IBC Scoping to Coordinate with ADA, ABA
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- 2012 IECC and 2012 IBC Chapter 13
- 1404.12 Polypropylene Siding (New Section)
- 1405.18 Polypropylene Siding (New Section)
- 1502.1 Definitions
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- 1704.2.3 Statement of Special Inspections
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- 2303.1.1.2 End-Jointed Lumber
- 2306 Allowable Stress Design
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- Tables 2308.8(1) and 2308.1(2) Allowable Floor Joist Spans
- Tables 2308.10.2(1) and 2308.10.2(2) Allowable Ceiling Joist Spans
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- 2603.5.5 Vertical and Lateral Flame Propagation
- 2603.4 Thermal Barrier
- 2603.7 Interior Finish in Plenums
- 3109.1 General
- IBC Chapter 34: Existing Structures
- IBC Chapter 35: Referenced Standards
<table>
<thead>
<tr>
<th>Chapter 2: Definitions – New terms added</th>
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<td>• Marina</td>
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<td>• Unsafe building or structure</td>
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<td>• 24 Hour Basis</td>
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</table>
Chapter 2: Definitions – New terms added

- Swimming Pool

303.1.3 Assembly Rooms Associated with Group E Occupancies

- A Use Groups contained within Group E Occupancies are considered the same as accessory areas to religious worship

303.3 and 306.2 Commercial Kitchens

- Further expanded to clarify some differences that make commercial kitchens capable of two different Use Groups.

Table 1604.5 Risk category of buildings and other structures

- “Occupancy category” changed to “Risk category”

| RISK CATEGORY | Buildings and other structures that represent a low risk.
|---------------|-----------------------------------------------------
| 1             | - Agricultural facilities.
|               | - Certain temporary facilities.
|               | - Minor storage facilities

303.6 Use Group A-5

- Swimming pools now included in group
**Table 307.1(1) Consumer Fireworks and Permissible Fireworks**

- Permissible fireworks brought into VCC from VSFC
- Sprinkler quantity increase removed for 1.4G and retained for permissible

**308.3 Use Group I-1**

- Now has Condition 1 and 2

**308.3 Use Group I-1 Condition 1**

- Social Service non-licensed or licensed
- Care recipients can self-evacuate
- Up to 5 people needing assistance on level of discharge

**308.3.2 Use Group I-1 Condition 2 Licensed**

- DSS licensing required
- Only one staff member allowed to assist a resident during evacuation
- Up to 5 may need assistance in evacuation

**308.4 Use Group I-2**

- 24 hour basis taken out of facility definitions and placed in code text
- "Child" care replaced with "Foster" care
- More than 5 people need assistance in evacuation
### 310.6 Use Group R-4
- Group R-4 now incorporates Condition 1 and Condition 2
- Similar to new I-1 conditions
- 5-16 occupants (I-1 over 16)

### 402.1 Open Mall Buildings
- "Open mall" added to more sections and reorganized
- 402.1.2 Open mall building perimeter "line" added to define the area of the open mall

### 402.4.3, 402.5 Open Mall Buildings
- Added opening minimums for roof and floors
- Added sprinkler protection under circulation balconies

### 403.6.1: High Rise Buildings (over 120 ft)
- Fire service access elevator required
  - Increased from 1 to 2 elevators
  - Elevator capacity ≥ 3,500 lbs

### 412.4.6.2 Hangar Fire Area Calculations
- Now allow ancillary use within same area without being included in area calculations of Section 706
- Must be separated with 1-hour fire barrier per Section 707
### 419 Live/Work Units
- Redefined in 202
- Clarifies egress requirements are based on occupancy
- Clarifies work space plumbing requirements

### 424 Children’s Play Structures
- Now stand alone section
- Applies to all occupancies
- 5 foot egress path required
- NFPA 289 added

### 408.9 I-3 Smoke Controls (in windowless buildings)
- Renamed Smoke Control
- Compartments with operable or breakable windows exempt
- Added specific locations
- Added performance criteria

### 414.6.2 Other Regulations (tanks)
- Provides hierarchy of regulations as it pertains to storage tanks subject to Virginia State Water Control Board

### 420 Groups I-1, R-1, R-2, R-3, R-4
- VA added R-4 and I-1 condition 2 to section
- Smoke barrier requirement added for I-1 condition 2
- Refuge area added for I-1 condition 2
- Partially 2015 IBC changes
408.9 I-3 Smoke Controls (in windowless buildings)
- Required for
- Any story with persons receiving care, treatment
- Sleeping areas
- Any other floor with an occupant load over 50

420.4 Smoke Barriers in Group I-1 Condition 2
- Smoke barriers per 709 create smoke compartments
- 22,500 square foot maximum area
- 200 feet maximum travel to smoke barrier door

420.4.1
Refuge area shall be provided in I-1 condition 2
- Care Recipient: 30 sqft 15 sqft
- Other Occupant: 6 sqft 6 sqft

427.1 Short Term Holding Areas
- Provides for holding areas without requiring I-3 occupancy designation
- Must meet I-3 provisions for sally ports, Stair/ramp provisions, locks, security glazing
- Allowed in all groups except E

427.1 Short Term Holding Areas
- Maximum 20 detainees per area, 80 per building
- Separate areas with smoke partitions
- Fire alarm & detection required
- Sprinkler over 12K
- 10% area limit
501.2 Addressing Multiple Buildings in a Complex
- Code official must require additional address numbers in additional locations

504.2 Automatic Sprinkler System Increase
- I-1 condition 2 continued:
  - Sprinkler increase for building height is not permitted for I-1 condition 2

505.2.2 (formerly 505.3) Mezzanines and Platforms, Means of Egress
- 505.3 has been changed to 505.2.2
- Means of Egress has been consolidated in Chapter 10

507.1 Unlimited Area Buildings – Accessory Occupancies
- Accessory occupancies now allowed in unlimited area buildings

508.2.3 Accessory Occupancies
- Accessory occupancies are no longer limited to the story restriction (2015 IBC)
509 Incidental Uses
- Incidental uses are now unique “ancillary” functions
- Table 509 protection mandatory
- Not a standard occupancy, cannot be treated as mixed use
- 10% area limit

701.2 Multiple Use Fire Assemblies
- Fire rated assemblies serving more than one function must meet requirements for all functions served

703.7 Fire Resistance Assembly Marking
- Only required when there is concealed floor, roof or ceiling space
- Also required whenever protected openings or penetrations are required

705.2 Projections
- State amendment rescinded
- ICC language used

<table>
<thead>
<tr>
<th>FIRE SEPARATION DISTANCE (FSD)</th>
<th>MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 feet to less than 2 feet</td>
<td>Projections not permitted</td>
</tr>
<tr>
<td>2 feet to less than 5 feet</td>
<td>24 inches</td>
</tr>
<tr>
<td>5 feet or greater</td>
<td>40 inches</td>
</tr>
</tbody>
</table>

705.2.3 Combustible Projections
- Combustible Projections Rate 1 hour
- Within 5’ of fire separation line
- If protected openings are required
- If no openings permitted
State exception to 705.2

- Decks or open porches exempt from projection limitation for groups R-3 and R-4

State exception to 706.5.2

- Decks or open porches exempt from projection limitation for groups R-3 and R-4

705.6 Structural Stability

- Added fire resistance requirements for structural elements that brace walls >30'

706.6.2 Buildings with Sloped Roofs

- Adds requirements for vertical continuity for certain interior walls

709.5 (I-1 condition 2)

- I-1 condition 2 continued
- Cross corridor door in smoke barrier center mullion exemptions expanded to I-1 con. 2
### 714.4.1.2 Through-Penetration Firestop System
- Added exception for tub/shower drain floor only penetrations from having a T (temperature) rating

### 714.4.1.2 Membrane Penetrations
Added exceptions:
- 6 - allows noncombustible items cast into concrete building elements in certain cases
- 7 - allows the ceiling membrane of 1 & 2 hour fire resistance-rated horizontal assemblies to be interrupted with certain provisions

### 715.4 Exterior Curtain Wall/Floor Intersection
- Exception to allow E 119 tested material in addition to E 2307 for glass curtain walls void protection

### 716.3 Marking Fire-Rated Glazing Assemblies
- Marking added to opening protection table 716.5
- Marking added to fire window table 716.6
- New marking definition table 716.3 added

### 715.5.4 (‘09) Wired Glass deletion
- Wired glass no longer exempt from NFPA 257 testing, consistent with NFPA 80
716.3.1 Smoke and Draft Control
Smoke rated S Label doors
- No longer required for rated corridors
- Required for smoke barriers only

716.7.1.1 Light Kits, Louvers and Components
Added section providing for the approval of 3rd party listed instructions for installation of:
- light kits
- louvers
- components

806.1.2 Combustible Decorative Material
- New 10% exemption #2
- Allows NFPA 701 compliant hangings up to 75% of wall
- Ceiling suspended material
- Same basic exemption as #1
- Hung 12" maximum from wall

901.8 Pump Riser and Room Size
Added section addresses room design
- Working clearances
- Remove largest piece of equipment

901.8 Pump Riser and Room Size
If care provided on floor above Level of exit discharge
- Sprinkle entire floor
- Sprinkle all floors below
- Fire areas don’t matter
903.2.4 Group F-1
- Added requirements for areas >2,500 sqft used to manufacture upholstered furniture or mattresses

903.2.6 Group I
- 13D Exception modified to require:
  - Hydraulic design info sign on riser
  - The system must be supervised and monitored
  - The system must be maintained/inspected per 13R in NFPA 25

903.2.6 Group I
- Day care sprinkler Exceptions added:
  - #3 sprinkler exemption for day care at level of exit discharge with exit doors from each care room

903.2.6 Group I
- If care provided on floor above Level of exit discharge
  - Sprinkle entire floor
  - Sprinkle all floors below
  - Fire areas don’t matter

903.2.8 Group R
- 13D Sprinkler now allowed for:
  - All R-3
  - R-4 condition 1
  - Any care facility with 5 or fewer in a single family dwelling
903.2.8 Group R

- 13R Sprinkler allowed for R-4 cond. 2 if:
  - Attics sprinkler if used for living, storage, fuel fired equipment
  - If attics not used for above protect with FRT, Non-combustible construction, or heat detection

905.3.8 Rooftop Gardens and Landscaped Roofs

- Standpipe shall extend to rooftop gardens

907.2.9.3 Group R-2 College and University Buildings

- Fire alarm system shall now include smoke detection in college dorms
- Exempt if all units exit to exterior or an exit

907.2.9.3 Group R-2 College and University Buildings

- Common spaces outside of units
- Laundry, mechanical, storage rooms
- Interior corridors serving units

907.5.2.2.4 Emergency Voice/Alarm Communication

- Voice/alarm in stadiums, arenas and grandstands must be captioned per chapter 11 when 15,000 or more seats are provided
**908.7 Carbon Monoxide Alarms**

- Now includes Groups E and I
  - Group E
    - In classrooms with fuel fire appliances, garage or engine shop

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**908.7 Carbon Monoxide Alarms**

- Group E exempt from rooms:
  - 100 feet from CO source, or
  - 2 stories away from CO source
- Neither case connected by duct work to source

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**911 Fire Command Center**

- Requirement for approved building information card
- USBC CHANGE - Larger fire command center may be needed based on building size
  - Determined by building official

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**1001.4 Fire Safety Evacuation Plan (Change removed)**

- VA deleted 2012 addition requiring fire safety and evacuation review
- Still in VSFC

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**1004.1.2 and Table 1004.1.2**

- "Exhibit gallery and museum" added to table
- Mall added to table with reference back to 402.8.3
1008.1.2 Door Swing

- Language "serving a room or area containing" added

1008.1.9.9 Sensor Release of Locked Egress Doors

- New section added for sensor released doors
- Manual release unlocks with direct power interruption
- Listed per UL294
- Loss of power unlocks
- Fire alarm/sprinkler unlocks

1009.3 Exit Access Stairways

- All unenclosed stairways are now exit access stairways per 1009.3
- All exceptions that allow unenclosed stairways located in 1009.3
- Enclosure of exit access stairs per 1009.3.1

1012.3.1 Type 1 Handrail Graspability

- Min cross-section dimension limited to 1"

1016.2.2 Group F-1 and S-1 Increase (2015 USBC)

- New section added allows 400 foot travel
- 1 story group F-1 and S-1
- 24 foot minimum to bottom of roof/ceiling
- NFPA 13 sprinkler
### 1021.1 Number of exits
- 1021 further refined to establish when exits versus exit access components are required from a story

### 1022 Interior exit stairs
- All interior exit stairs are now required to be enclosed. No exemptions from enclosure

### ICC A117.1 (2009)
- Ensure latest version of reference is used (2009)

### 1104.3.1 Employee work area circulation path Exception 1
- Minimum work area exception threshold increased from 300 sf to 1,000 sf

### Tables 1106.1(1) and 1106.1(2)
- Increase the number of parking spaces
  - Groups A, B, E, M, R-1, R-2, and I
  - Plus 1 starting at 125 spaces
### 1109.16 and 1109.16.1 Dwellings containing Universal design features

- Residential Universal design added
- Optional
- A117.1 type C
- 5 state A117.1 amendments added to 1109.16.1

### 1109.2 and 1109.5 Toilet Facilities and Drinking Fountains (Children)

- Children's' toilets, lavatories and drinking fountains
- May comply with children's A117 provisions
- This includes required fixtures

### IBC Scoping to coordinate with ADA

- Increased scoping to include:
  - Saunas
  - Steam rooms
  - Variable message signs in transportation facilities and emergency shelters

### 1203.6 Smoking Areas in Restaurants (new section)

- The previous MOA for smoking areas in restaurants has been codified
  - Structural separation
  - Separate ventilation
  - See Virginia Indoor Clean Air Act

### 2012 IECC and 2012 IBC Chapter 13

- New for 2012:
- Commercial Energy provisions are only located in IECC Chapter 4 [CE]
### 1404.12 Polypropylene Siding

- Section adds requirements for installation and use of polypropylene siding
- 10 foot minimum fire separation distance required

### 1405.18 Polypropylene Siding

- Section adds detailed requirements for installation and use of Polypropylene siding

### 1502.1 Definitions

Added term:
- Photovoltaic Modules/Shingles

### 1505.8 Photovoltaic Systems

- Added section addresses installed photovoltaic systems when adhered or attached to roof coverings

### 1507.16 Roof Gardens and Landscaped Roofs

- Adds requirement for fire resistance in accordance with Table 601
1510.3 Recovering Versus Replacement
- Adds exception to allow existing ice barrier to remain and be covered if in good condition

Table 1604.5 Risk Category of Buildings and Other Structures
- “Occupancy Category” changed to “Risk Category”

<table>
<thead>
<tr>
<th>RISK CATEGORY</th>
<th>NATURAL</th>
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<tbody>
<tr>
<td>I</td>
<td>Buildings and other structures that represent a low hazard</td>
</tr>
<tr>
<td></td>
<td>Agricultural facilities.</td>
</tr>
<tr>
<td></td>
<td>Certain temporary facilities.</td>
</tr>
<tr>
<td></td>
<td>Minor storage facilities</td>
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</tbody>
</table>

Figures 1609 Wind Loads (Wind Speed Maps 1609 A-C)
- Maps now incorporate importance factors of Categories I-IV
- Design winds speed changed from Basic wind speed to Ultimate design wind speed Vult and Nominal design wind speed Vasd
- Vult and Vasd are required to be provided on the plans

Figures 1609 Wind Loads (Wind Speed Maps 1609 A-C)
- Values have changed
  - Richmond risk 1 was 90 MPH now 105 Vult and 81 MPH Vasd
  - Vult is for strength design method
  - Vasd is for Allowable stress design method
  - Load combinations per 1605 also changed

1704.2.3 Statement of Special Inspections
Exception added for:
- cold-formed steel light frame construction built per 2211.7 (prescriptive design)
### 1704.3.3 Wind Requirements in the Statement of Special Inspections

In high wind regions identified in 1705.10, statement of special inspections shall identify:
- Main windforce resisting system
- Wind-reinforcing components

### 2205.2 and 2210.2 Seismic requirements for structural steel structures

Deleted seismic requirements for Seismic Design Category "A" Steel Structures

### 2303.1.1.2 End-jointed lumber

- End-jointed lumber used in assemblies required to have a fire-resistance rating shall be marked "Heat resistant adhesive" or HRA

### 2306 Allowable Stress Design

- Nail pattern for wood diaphragm and shear walls now only contained in NDS

### 2308.2 Limitations (to conventional light-framed construction)

- Limits for use based on 40 PSF Floor Live load limit not applicable to slab on grade
- Allows for prescriptive wood design of any 1 story slab on grade commercial building
- No longer limited to group R by 40 psf load
Tables 2308.8(1) and 2308.8(2) Allowable floor joist spans

- Revised maximum spans for Southern Pine due to reduced allowable design values

Example: 40psf LL, 20psf DL, Max Deflection = L/360, #2 S.P., 2x10 @ 16” OC
  - Old Span = 16’ 1”
  - New Span = 14’ 0”

Tables 2308.10.2(1) and 2308.10.2(2) Allowable Ceiling Joist Spans

- Revised maximum spans for Southern Pine due to reduced allowable design values

Example: Uninhab. Attic, 20psf LL, 10psf DL, Max deflection = L/240, #2 S.P., 2x8 @ 16” OC
  - Old Span = 17’ 5”
  - New Span = 15’ 3”

Tables 2308.10 (1-6) Allowable rafter spans

- Revised maximum spans for southern pine due to reduced allowable design values

Example: 20psf LL, 20psf DL, no ceiling (Max. Deflection = L/180), #2 S.P., 2x10 @ 19.2” OC
  - Old Span = 18’ 4”
  - New Span = 16’ 0”

2603.5.5 Vertical and Lateral Fire Propagation (foam wall insulation)

- New state exception for the NFPA 285 fire propagation test requirement
- Applies to the existing flammability test requirement for exterior walls with foam plastic insulation or other plastic elements
- Applies to construction types I-IV (not V) and 2 stories or greater

2603.5.5 Vertical and Lateral Fire Propagation (foam wall insulation)

Multiple NFPA 285 tests are not required when:

- Wall assemblies have variable non-combustible components
  - Example: CMU changes to pre-cast
  - Wall assemblies have variable non-plastic combustible components permitted by code

Example: wood blocking in windows
### 2603.5.5 Vertical and Lateral Fire Propagation (foam wall insulation)
- NFPA 285 fire propagation test exemptions:
- Sprinklered buildings
- 1" concrete covering insulation each face with no air space; or,
  1" concrete covering each face with 1" air space and E84 flame index of 25 or less

### 2603.4 Thermal Barrier
- Thermal barriers for foam plastic
- 1/2" gypsum still acceptable
- For other materials the E119 material test method changed to the NFPA 275 assembly test

### 2603.7 Interior Finish in Plenums
- Updated requirements for foam plastic insulation installed in plenums

### 2603.7 Interior Finish in Plenums
- Option 1: Foam FS≤75, SD≤450, thermal barrier
- Option 2: Foam FS≤25, SD≤50, foam tested per IBC 803.1.2 (NFPA 286 room corner test), no thermal barrier required
- Option 3: Foam FS≤75, SD≤450, .016 inch thick steel

### 3109.1 General
- Refers to ISPSC for swimming pools, pool enclosures, and aquatic recreational facilities
# Chapter 34: Existing Structures
- Entire chapter deleted from USBC
- All provisions referenced to VRC

# Chapter 35: Referenced Standards
- ADDED ASTM E329-02 for special inspection testing agencies
- Revised ASME A17.1/BSA44 elevator standards to the 2010 edition
- Revised ASME A18.1 lift standards to the 2011 edition