2012 International Building Code Update with Maryland Amendments

Based on the 2012 *International Building Code®,* (IBC®) and COMAR 05.02.07

DHCD
Maryland Code Administration
Description

- The *International Building Code®* (IBC®) continues to establish minimum regulations for building systems using prescriptive and performance-related provisions. It is founded on principles that make use of new materials and new building designs.

- This course will identify important changes in the IBC from 2009 to 2012 edition. Participants will be presented with those changes that will most impact their use of the code when they adopt the 2012 IBC. The learner will receive an overview of the most important code changes.
Goal

- Participants will be able to use this document to identify changes between the 2009 and 2012 IBC, allowing them to apply theses code requirements to design, plan submittals and/or inspection.

- Apply the Maryland Amendments to the 2012 IBC and identify critical dates for implementation and enforcement by local Maryland Jurisdictions.
Objectives

Upon completion, participants will be better able to:

- Identify the most significant differences between the 2009 IBC and the 2012 IBC.
- Explain the differences between the current and previous edition.
- Identify changes in organization and code requirements.
- Identify the applicability of design, plan review and inspection requirements.
Chapters are divided for code development purposes and this handout as follows:

- General Issues, Chapters 1-5,* 6, 12, 13, 27-34
- Fire Safety, Chapters 7-9, 14, 15,* 26
- Means of Egress, Chapters 10-11*
- Structural, Chapters 16-23,* 24, 25
- COMAR 05.02.07

*Bold items are covered in this handout; not all chapters have significant changes covered in this handout.
Marginal Markings within the codebook

- **Solid vertical lines** indicate a technical change from the requirements of the 2009 edition.
- **Arrows** indicate where a section, paragraph, item in a list, exception or table has been deleted.
- **A single asterisk** [*] indicates that text or a table has been relocated elsewhere in the code.
- **A double asterisk** [**] indicates that the section or table immediately following has been relocated here from a different section.
The new Code Development Process

Highlights of the plan include:

- Maintains 3-year publication cycle
- Maintains the ICC Governmental Consensus Process
- Divides the codes into two groupings for purposes of Code Development and Final Action Hearings – one group heard each year.
- An unveiling of all the new codes at the Annual Conference in the third year
- Holding Code Development Hearings at the same central location every April/May
- Holding all Final Action Hearings at the Annual Conference at locations which will continue to rotate through the four quadrants of the U.S. in late October/early November.
The two groups of codes and deadlines for proposals are:

- **Group A Codes** –
  - IBC, IFGC, IMC, IPC, IPSDC
  - Proposals due January 3, 2012

- **Group B Codes** –
  - Admin, IEBC, IECC, IFC, IGCC, IPerfC, IPoolC, IPMC, IRC, IWUIC, IZC.
  - Proposals due January 3, 2013

Each grouping having Code Development and Final Action Hearings occurring in the spring and fall of the same year during the first two years of the publication cycle.
The content of sections that begin with a letter designation is maintained by another code development committee:

- [A] = Administrative
- [B] = Building
- [E] = Energy Conservation
- [EB] = Existing Building
- [F] = Fire
- [FG] = Fuel Gas
- [M] = Mechanical
- [P] = Plumbing
The International Building Code is further divided into 4 committees:

- General
- Fire Safety
- Means of Egress
- Structural

You can tell be the bracketed letters what committees hear sections in the IBC:

- Administrative – Chapter 1
- Fire – Chapters 9 and 27 as well as parts of 4, 10, 30 and 33
- Plumbing – Chapter 29
Maryland Provisions

- Three Part Process

1. Annotated Code of Maryland
2. COMAR 05.02.07
3. Local Adoption, Implementation and Enforcement
Enabling legislation that creates the framework for the Maryland Building Performance Standards.

- Public Safety Article
- TITLE 12. BUILDING AND MATERIAL CODES; OTHER SAFETY PROVISIONS
- SUBTITLE 5. MARYLAND BUILDING PERFORMANCE STANDARDS
Duties of the Maryland Codes Administration (COMAR)

- Must adopt as part of the Standard (MBPS) the IBC, the IRC and the IECC within 12 months of the issuance by ICC.

- Amendments to the IBC and IRC may not be more stringent than the provisions found in those documents.

- Amendments to the IECC must not lessen any of the IECC requirements.
Local Jurisdiction Amendments

- Local Amendments must not prohibit the minimum implementation and enforcement set forth in §12-505
  - Review and accept plans
  - Issuance of building permits
  - Inspection of the work authorized by building permit
  - Issuance of appropriate occupancy certificates
Local Jurisdiction Amendments

- Local Amendments must not prohibit the minimum implementation and enforcement set forth in §12-505
  - Review and accept plans
  - Issuance of building permits
  - Inspection of the work authorized by building permit
  - Issuance of appropriate occupancy certificates
- Weaken energy conservation and efficiency provisions of the Standards
Local Jurisdiction Implementation and Enforcement

- Local jurisdictions **SHALL** implement and enforce the most current version of the standards and any local amendments.

- No later than 6 months after adoption by the State.
Key Maryland Dates

- COMAR adoption of the 2012 IBC:
  - January 1, 2012
- Local implementation and Enforcement:
  - July 1, 2012
- Local amendments to Maryland Codes Administrations:
  - 15 days prior to local effective date
  - Or 5 days after emergency local adoption
COMAR 05.02.07.03 B. Terms

- New term “High performance home” has the meaning stated in Public Safety Article, §12-509(a), Annotated Code of Maryland

§ 12-509. Encouragement of high-performance homes

(a) "High-performance home" defined. -- In this section, "high-performance home" means a new residential structure that meets or exceeds the current version of:

(1) the Silver rating of the International Code Council's 700 National Green Building Standards; or

(2) the Silver rating of the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) for Homes Rating System.
Chapter 1. Add note to Chapter 1 of the IBC: Local jurisdictions are responsible for the implementation and enforcement of the Maryland Building Performance Standards. Refer to each local jurisdiction for local amendments to Chapter 1 of the IBC. Each local jurisdiction having authority shall establish, on or before the application date in Regulation .06 of this chapter, implementation and enforcement procedures that include:

- Review and acceptance of appropriate plans;
- Issuance of building permits;
- Inspection of work authorized by the building permit;
- Issuance of use and occupancy certificates.
2. Chapter 1. Delete Exception in Section 101.2 Scope and replace with the following;

- Exception: 1 Detached one and two family dwellings and multiple single family dwellings (townhomes) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code.

- Exception 2. Existing buildings undergoing repair, alterations or additions, and change of occupancy shall comply with the Maryland Building Rehabilitation Code set forth in COMAR 05.16

- Exception 3. Maintenance of residential structures and premises shall comply with the Minimum Livability Code COMAR 05.02.03.
3. All of the provisions in the Appendices are adopted as part of the IBC except those in Appendices A, B, D, E and K.

4. Chapter 9. Add note to section 901.1 Scope. Fire protection system requirements of Chapter 9 may be concurrently covered in the State Fire Prevention Code, Public Safety Article, §§6-101 – 6-202, Annotated Code of Maryland, and COMAR 29.06.01. The State Fire Prevention Code is enforced by the State Fire Marshal or authorized fire official.
5. Add note to Section 1001.1 General: Means of Egress requirements of Chapter 10 may be concurrently covered in the State Fire Prevention Code, Public Safety Article, §§6-101 – 6-202, Annotated Code of Maryland, and COMAR 29.06.01. The State Fire Prevention Code is enforced by the State Fire Marshal or authorized fire official.

6. Chapter 11. Chapter 11 of the IBC related to accessibility requirements is hereby replaced with the Maryland Accessibility Code set forth in COMAR 05.02.02. A local jurisdiction may adopt and enforce the requirements of Chapter 11 of the IBC to the extent the requirements meet or exceed the requirements set forth in COMAR 05.02.02.
Chapter 24. The requirements of Safety Glazing set forth in Public Safety Article, Title 12, Subtitle 4 Annotated Code of Maryland, are in addition to Chapter 24, Section 2406 of the IBC related to safety glazing. In the event of a conflict between Chapter 24 of the IBC and the Annotated Code of Maryland, the requirements of the Annotated Code of Maryland prevail.
8. Chapter 27. Electrical. Add note to Section 2701.1
Scope: The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable electrical requirements, refer to the local electrical code and the National Electrical Code as adopted and enforce by the State Fire Marshal, authorized fire officials, or building officials pursuant to the provisions of the Public Safety Article, title 12, Subtitle 6, Annotated Code of Maryland.
9. Chapter 28 Mechanical Systems. Add note to Section 2801.1 Scope: The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the mechanical systems, refer to the local mechanical code and the mechanical code adopted pursuant to the provisions of the Business Regulations Article, §9A-205, Annotated Code of Maryland.
10. Chapter 29 Plumbing Systems. Add note to Section 2901.1 Scope: The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the plumbing systems, refer to the local plumbing code and the plumbing code adopted pursuant to the provisions of the Business Occupations and Professionals Article, Title 12, Annotated Code of Maryland.
11. Chapter 30. The provisions of Chapter 30 of the IBC relate to elevators and conveying systems and are in addition to and not instead of the requirements set forth in the Public safety Article, Title 12, Subtitle 8, Annotated Code of Maryland. IN the event of a conflict between the IBC and the Annotated Code of Maryland, the provisions of the Annotated Code of Maryland prevail.
12. Chapter 34. Add the following exception to section 3401.1 Scope

Exception: Any rehabilitation work undertaken in an existing building defined in COMAR 05.16 shall comply with the requirements of the Maryland Building Rehabilitation Code set forth in COMAR 05.15
New Section added as follows:

E. The Department encourages:

(1) Home builders to construct new high performance homes; and

(2) Local jurisdictions to amend these standards to allow builders to construct high performance homes.
COMAR Modifications to the IRC and IECC

- Additional modifications are made as part of the Maryland Building Performance Standards to the IRC and the IECC. Those modifications are part of the Update Classes for the IRC and IECC are being offered by the Maryland Codes Administration through the International Code Council.
Chapters 1-5

General Issues
Changes in Chapter 1
Scope and Administration

- Clarify hierarchy between the IBC and its referenced standards and the extent of a referenced standard’s application.
  - The applicable portions of the referenced standards are considered a part of the code.
- Where conflicts exist, the code provisions are to be applied over those of a referenced standard.
Overview of Changes in Chapter 2 Definitions

- All definitions of terms have been moved to Chapter 2.
- The defined terms continue to be listed in their previous locations within the chapters to remind the code user that a definition can be found in Chapter 2.
- All defined terms are *italicized* throughout the code text.
- Revised terms shown in this handout will be discussed with the relevant Chapter and revisions.
Terms

- **Awning, Canopy, Cornice, Marquee:**
  - **Revised** to clarify the distinction between these structural elements.

Canopies (top) and Awnings (bottom)

Marquees

Cornices
Chapter 2 Changes

How do you think the reorganization of the definitions from specific chapters to Chapter 2 will impact your use of the IBC?
Overview of Changes in Chapter 3
Use and Occupancy Classification

- Revised throughout to provide section numbering consistency within each distinct occupancy, and for provisions which state that certain conditions are not within the occupancy category.
- Most of the provisions in these sections are not new, but the result is new section numbers.
Assembly

- 303.1 Assembly Group A
  - 303.1.1 Small buildings and tenant spaces (NEW)
  - 303.1.2 Small assembly spaces (NEW)
  - 303.1.3 Associated with Group E occupancies (NEW)
  - 303.1.4 Accessory to places or religious worship (NEW)
Section 303.3

- Assembly Group A-2
  - A casino gaming floor (NEW)
  - Restaurants include the associated kitchen
Section 306.2

- Group F-1, Moderate-hazard factory industrial
  - Classification of a commercial kitchen based upon the kitchen’s lack of a relationship to a dining facilities.
Section 305.2

- Group E, Day care facilities
  - Day care facilities associated with places of worship; and
  - Those providing care for 5 or fewer children;
  - Classified according to the primary occupancy.
Section 307.4

- Group H-2, High Hazard
  - “Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.” (NEW)
Moved to Chapter 2

- New or revised terms to clarify 24-hour care occupancies -
  - Ambulatory care facility
  - Care suite
  - Custodial care
  - Detoxification facilities
  - Foster care facilities
  - Group home
  - Hospitals and psychiatric hospitals
  - Incapable of self-preservation
  - Nursing homes
  - Personal care service
Sections 308.3 & 310.6

- Groups I-1 and R-4
  - *Custodial care* for persons who reside at the facility.
  - Must be capable of self-preservation
  - The list of 8 example facilities is the same for I-1 and R-4.
  - The distinction between these two occupancies is that I-1 is for facilities caring for more than 16 persons; R-4 is for facilities caring for more than 5 but no more than 16.
Section 308.4

- Institutional Group I-2
  - Medical care for persons who reside at the facility.
  - May be incapable of self-preservation.
  - All 5 examples are defined terms.
  - Care for more than 5 persons.
Sections 308.3.1, 308.4.1 & 310.5.1

- 5 or fewer residents
  - These sections allow for home care for 5 or fewer persons receiving medical, custodial or personal care provided the building is sprinklered with an NFPA13D system.
Section 310.6

- **Group R-4, Residential**
  - The allowance for constructing Group R-4 supervised residential facilities under the *International Residential Code* has been eliminated.
Section 402.1

- Covered and open mall buildings
  - Clarifies how the provisions that were originally developed for covered mall conditions apply to open mall buildings.
  - The whole of Section 402 has been reorganized around main topics.
  - Technical revisions applying to open malls have been made in most sections.
Section 402.1.2

- Open mall building perimeter line (NEW)
  - Requires the establishment of a line around the perimeter of areas which will be considered part of the open mall and areas which are not, since open malls are usually a collection of structures versus one structure.
  - Establishment of this line is essential to the application of Section 402.
Section 403.6.1

- **Fire service access elevator**
  - The minimum number of fire service access elevators required in buildings over 125 feet in height has been increased from one to two.
  - The design and construction standards for fire service access elevators are found in Section 3007.
Section 3007
Section 406.4

- Public parking garages
  - Public parking garages as those parking structures that fall outside of the scope of Section 406.3, Private Parking Garages.
  - Public parking garages are either
    - open parking garages (Section 406.5) or
    - enclosed parking garages (Section 406.6).
Section 406.5

- Section 406.5.2
  - Openings (for open parking garages)

- Section 406.5.2.1 (NEW)
  - Specifies a clear horizontal space adjacent to openings located ‘below grade’.

- Section 406.5.5
  - Method for determining the amount of openings required to receive allowable area and height increases.
Section 406.5.2.1 Openings below grade

Parking garage openings below grade

Grade at retaining wall

Exterior wall of open parking garage

Bottom of lowest required natural ventilation opening

HCL $\geq 1.5 \, D$

D

HCL

International Code Council®
Section 407.4.3

- Group I-2 care suites
  - Provisions addressing the means of egress for care suites in hospitals.
  - Relocated from Chapter 10.
Moved to Chapter 2

- **Technical production areas** *(NEW)*
  - New term applies to the back stage and production areas of a stage and theater.
  - Other antiquated terms related to stages were deleted – gridirons, fly gallery, pinrail
Section 410.6

- The means of egress provisions for *stages*, *platforms* and *technical production areas* have been combined with provisions previously in Section 1015.6.
Section 412.4.6.2

- Separation of maximum single fire areas (for aircraft hangers)
Section 419

- Live/work units
  - Means of egress and plumbing facilities requirements for the non-residential portion of a live/work unit are now regulated based upon the specific function of the non-residential space rather than those of the Group R-2 occupancy.
Section 422

- **Ambulatory care facilities**
  - Separation requirements for a multi-tenant or mixed-occupancy building that include an *ambulatory care facility*.
  - A fire partition, that forms a smoke compartment, is required between the care facility and those nonrelated spaces where the ambulatory care facility is intended to have at least four care recipients *incapable of self-preservation* at any one time.
Section 422

Ambulatory care facility (ACF)  Separate tenant space

Smoke compartment 1  22,500 sf max.  Smoke compartment 2  22,500 sf max.  Smoke barrier

Fire partition required where ACF has ≥ 4 care recipients incapable of self preservation

Minimum of two smoke compartments where ACF exceeds 10,000 sf

Ambulatory care facility
Section 424

- Children’s play structures (NEW)
  - Regulations for children’s play structures, previously limited in application only to covered mall buildings, are now applicable where such structures are located within any occupancy.
  - The provisions also apply were such structures are in the pedestrian mall area of an open mall.
Section 506.2

- Building area modifications (frontage increase)
  - Allowable building areas can be increased based on the extent the buildings' facades (frontage) are facing open spaces and public ways.
  - The methods for determining the width of the open space and the averaging of the width have been clarified.
Section 506.2

Allowable area frontage increase
Section 507.8

- Group H occupancies in Unlimited area buildings
  - Limitations placed on Group H occupancies permitted in unlimited area buildings to aid in consistent application
Section 509

- Incidental uses
  - Clarified the concept of incidental uses by eliminating the previous relationship permitted them to be considered non-separated accessory uses with the mixed-occupancy provisions.
  - While many of the provisions regulating incidental uses parallel those of accessory uses, incidental uses are not distinct occupancies but are often support spaces for the primary occupancy.
Chemistry Lab/Classroom

- Separated from remainder of building by minimum 1-hour fire barriers, or
  - Provided with automatic sprinkler system
  - Classified as a portion of Group E
  - Limited to 10% of story's floor area

School lab/classroom regulated as incidental use
Table 509

- **Incidental uses**
  - Waste and linen collection rooms in Group B ambulatory care facilities (as well as Group I-2) must be separated from the remainder of the building by minimum 1-hour fire-resistance-rated fire barriers and/or horizontal assemblies.
### Table 509

**Incidental Uses**

<table>
<thead>
<tr>
<th>Room or Area</th>
<th>Separation and/or Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnace room where any piece of equipment is over 400,000 Btu per hour input</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Refrigerant machinery room</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Hydrogen cutoff rooms, not classified as Group H</td>
<td>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</td>
</tr>
<tr>
<td>Incinerator rooms</td>
<td>2 hours and automatic sprinkler system</td>
</tr>
<tr>
<td>Paint shops, not classified as Group H, located in occupancies other than Group E</td>
<td>2 hours; or 1 hour and provide automatic sprinkler system</td>
</tr>
<tr>
<td>Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Laundry rooms over 100 square feet</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Group I-3 cells equipped with padded surfaces</td>
<td>1 hour</td>
</tr>
<tr>
<td>Waste and linen collection rooms located in either Group I-2 occupancies or ambulatory care facilities</td>
<td>1 hour</td>
</tr>
<tr>
<td>Waste and linen collection rooms over 100 square feet</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies</td>
<td>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.
Chapters 1-5 Review

2. What is the key difference between Group I-1 occupancies and Group R-4 occupancies?

Group I-1 classification is for facilities caring for more than 16 persons and Group R-4 classification is for facilities caring for more than 5 but no more than 16 persons.

3. Which section provides for facilities that care for 5 or fewer persons?

Section 310.5.1.
Chapters 7-9, 14, 15

Fire Safety
Section 706.2

- A double fire wall in lieu of a single fire wall that satisfies the intended objective of structural stability.
Section 706.6.2 (NEW)

- Address conditions where a sloped roof occurs on one or both sides of a fire wall parapet.
Section 709.4

- Smoke barriers to extend to the shaft at elevator lobbies and areas of refuge. Shaft acts as ‘fourth wall’ of compartment.
Sections 712 and 713

- Reorganized the shaft enclosure provisions into two sections, 712, Vertical openings and 713, Shaft enclosures.
- Elevator hoistway pressurization provisions relocated to Chapter 9.
- Places the emphasis on the presence of vertical openings rather than on shaft enclosures.
- Recognizes that the use of shaft enclosures is just one of many acceptable protective measures that can be utilized to address the hazards related to vertical openings.
Moved to Chapter 2

- Revised to clarify penetrations of walls and horizontal assemblies.
  - L rating
  - Membrane penetration
  - Membrane penetration firestop system
  - Through penetration
  - Through penetration firestop system,
Sections 714.4.1.1.2 & 714.4.1.2

- Through-penetration firestop system.
  - T ratings now allows those floor penetrations of horizontal assemblies by floor, tub, and shower drains that are concealed and protected by the ceiling membrane.

- Membrane penetrations
  - The ceiling membrane of a 1-hour or 2-hour fire-resistance-rated floor/ceiling or roof/ceiling assembly is now permitted, under specific conditions, to be interrupted by a double wood top plate of a fire-resistance-rated wall assembly.
4. In the 2012 Code, what option to a single fire wall is now prescribed and what is the significance of this option?

Section 706.2 allows for a double fire wall in accordance with NFPA 221. This option allows for an alternative firewall design using two walls with communicating openings allowed in both walls as allowed for fire walls. Under the previous IBC these were looked upon as two exterior walls with no openings allowed.
5. In the 2012 Code, what are the horizontal continuity requirements for smoke-barriers used to enclose elevator lobbies?

Exception 2 to Section 709.4 allows smoke-barrier enclosures of lobbies to be continuous to construction qualifying as smoke-barriers other than the building exterior walls, such as other smoke-barriers or the elevator shaft enclosure.
6. The wood double top plate of a 1 hour fire rated partition is proposed to penetrate the ceiling membrane of a 2 hour horizontal assembly in order to secure the partition to the bottom chord of the wood trusses. In reviewing the exceptions to Section 714.4.1.2, does this installation meet the code?

No. Exception 7 of Section 714.4.1.2 addresses this installation and requires the wall fire rating to at least equivalent to the horizontal assembly fire rating. Therefore, the fire rating of the wall would need to be increased to a minimum of 2 hours.
7. In accordance with Section 716.5, what are the marking requirements for a door vision panel with an area of 150 square inches intended for installation in a 1 hour fire resistance rated shaft enclosure?

D-H-T-60 or D-H-T-W-60. Section 716.5 references Table 716.5, which contains the marking requirements for glazing used for door vision panels related to the size of the panel.
Section 803.12

- High density polyethylene (HDPE) and Polypropylene (PP)
  - Require that polypropylene be tested using the room corner burn test versus the typical Steiner tunnel test, to result in a more accurate evaluation of the flame spread hazards for this type of plastic.
Section 901.4.6

- Pump and riser rooms (NEW)
  - Rooms housing fire protection system risers or fire pumps and their components must have adequate space to facilitate their maintenance.
  - This section does not require the construction of a room to house fire protection systems – however, if a room is provided, this section requires that it be adequately sized to accommodate maintenance operations.
Sections 903.2.4, 903.2.7 and 903.2.9

- Group F-1, Group M and Group S-1
  - New sprinkler thresholds for the storage or display and sale of upholstered furniture or mattresses in Group F-1 (2,500 square feet), M (5,000 square feet) and S-1 (2,500 square feet) occupancies.
  - Tied to the area of the occupancy rather than building fire area.
Section 903.2.11.1.3

- Basements

  - Require the installation of an automatic sprinkler system in basements over 1,500 sq. ft. in area where obstructions such as walls, partitions or similar elements are introduced which could obstruct the application of hose streams from the exterior.

  - When obstructions such as walls or partitions are installed in a basement, the ability to apply hose streams through the exterior openings and reach the entire basement area is reduced or eliminated.
Sections 904.1.1 and 906.2.1

- Certification of service personnel for fire extinguishing equipment (NEW)
- Certification of service personnel for portable fire extinguishers (NEW)
  - Ensure that fire extinguishing systems and portable fire extinguishers are properly maintained by certified personnel
  - The personnel qualification requirements are specified by the applicable NFPA standards.
Section 904.3.2

- Fire extinguishing system actuation
  - Revised to correlate the requirements with NFPA 17 and NFPA 17A
  - When multiple adjacent hazards are required to be protected, they must be protected by a single fire extinguishing system.
  - Exception allows for multiple system installations to protect such hazards but requires simultaneous discharge of all systems.
Section 907.2.1

- **Group A**
  - Determination of the fire alarm requirements
  - Three separate situations:
    - (1) mixed use buildings,
    - (2) multiple assembly areas
    - (3) where the assembly use occurs in and is a part of a Group E occupancy.
  - The occupant load “due to the assembly occupancy” would need to be 300 or more before the manual fire alarm system is required.
Section 907.2.9.3

- **Group R-2 college and university buildings.** *(NEW)*
  - Group R-2 college and university buildings to have an automatic smoke detection system with an occupant notification system.
  - The location for the detectors include common spaces outside of dwelling and sleeping units, laundry rooms, mechanical rooms, storage rooms and all interior corridors serving sleeping units and dwelling units.
  - The context strongly suggests that the buildings would be those owned/operated by a college or university.
Section 908.7

- Carbon monoxide alarms. (NEW)
  - Added carbon monoxide alarms in all new and existing residential and institutional occupancies
  - Consistent with including carbon monoxide detectors in all new construction of one- and two-family dwellings that had been added to the IRC in the 2009 edition.
  - Carbon monoxide alarms are only required when the Group R or I occupancy contains a fuel-burning appliance or has an attached garage.
Chapter 14 Exterior Walls

Polypropylene Siding (NEW)

- Minimum material testing, labeling and installation requirements.
- Certification of flame spread testing.
- Minimum installed fire separation distance.
- Minimum installation requirements.
Chapter 14 Exterior Walls

Metal Composite Materials (MCM) (NEW)

- Two options –
  - (Option 1) MCM systems as exterior walls installed on buildings up to 75 feet in height of all occupancies except Group A-1, A-2, H, I-2 or I-3.
  - (Option 2) MCM systems as exterior walls installed on buildings up to 75 feet in height for all occupancies.

High-pressure decorative exterior-grade compact laminates (HPL) (NEW)

- HPL used as an exterior wall covering.
Chapter 15

Added installation of underlayment for buildings located in high-wind areas based on the nominal design wind speed. with the following roofing materials:

- asphalt shingles
- clay and concrete tiles,
- metal roof panels,
- metal roof shingles,
- mineral-surfaced roll roofing,
- slate shingles,
- wood shingles,
- wood shakes.
Section 1507.2.8.1
High Wind Attachment
Moved to Chapter 2

- **Revised** to coordinate with provisions in Chapter 15 for rooftop structures and similar elements.
  - Mechanical equipment screen
  - Penthouse
  - Roof deck
  - Rooftop structure
8. A permit applicant wants to incorporate a polypropylene material as an interior finish. Can the requirements of the traditional test method, ASTM E84, be used to qualify the material for use based on flame spread and smoke development performance?

- No. Section 803.12 requires testing of polypropylene used as an interior finish to comply with Section 803.1.2. This section requires testing in accordance with NFPA 286, which is a larger scale room corner fire test.
9. For any occupancy, or Group, what are the minimum test requirements for interior floor covering materials?

- **Testing for compliance with DOC FF-1 “pill test” or ASTM D2859; see section 804.4.1.**
10. Consider a multiplex cinema that contains four theaters, each with an occupant load of 150. The theaters are separated from each other by sound-proof partitions having a sound transmission rating of 70. The partitions are constructed as fire partitions in accordance with IBC Section 708. Is a manual fire alarm system required?

- Yes. (Section 907.2.1) Since the theaters are not separated by 2-hour fire barriers in accordance with IBC Section 707.3.9, the aggregate occupant load of all of the assembly spaces would be combined to arrive at a total occupant load of 600. As such, a manual fire alarm system would be required in all of the assembly spaces.
Chapters 10-11

Means of Egress
Section 1001.4

- Fire and Safety evacuation plans
Section 1004.1.2 and Table 1004.1.2

- **Areas Without Fixed Seating**
  - Revised to clarify that the occupant load is based on the function of the space, rather than the use or occupancy of the building.

- **Museums and Exhibit Galleries**
  - Occupant load at 30 square feet per occupant.
### Table 1004.1.2 Excerpt

**TABLE 1004.1.2**

**MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

<table>
<thead>
<tr>
<th>FUNCTION OF SPACE</th>
<th>OCCUPANT LOAD FACTOR&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly</td>
<td></td>
</tr>
<tr>
<td>Gaming floors (keno, slots, etc.)</td>
<td>11 gross</td>
</tr>
<tr>
<td>Exhibit Gallery and Museum</td>
<td>30 net</td>
</tr>
<tr>
<td>Mall buildings—covered and open</td>
<td>See Section 402.8.2</td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.0929 m².

<sup>a</sup> Floor area in square feet per occupant.
Sections 1005.1 through 1005.6

- Means of Egress Sizing
  - Exit width/capacity requirements are now presented in a more logical and organized layout.
  - Reduced exit width factors have been established for sprinklered buildings provided with an emergency voice/alarm communication system, and
Section 1005.7

- Encroachments
  - Clarify door encroachment into required egress width
    - The maximum encroachment is measured to the door itself, and does not include hardware.
  - Other encroachments into the required width, such as protruding objects, trim (i.e., wainscoting) and handrails along hallways.
  - This section is referenced from corridors, aisles, exit passageways and exit discharge.
Sections 1007.2 & 1007.3

- **Continuity and components**
  - Exterior areas of assisted rescue are an option for the accessible route, rather than an exception.

- **Stairways**
  - Limited exit access stairways between floors can count as part of an accessible means of egress.
  - Exit access steps between levels on the same story can **not** count as part of an accessible means of egress.
Sections 1007.7 through 1007.7.5

- Exterior area for assisted rescue
  - Exterior areas for assisted rescue at grade level can be located next to a large opening, such as a garage door, when protected by a wing wall.
  - Exterior areas of assisted rescue can be located at the exit stairway on upper levels in outdoor facilities.

Protection options for exterior area for assisted rescue
Section 1008.1.2

- Door swing

  - Occupant load used to determine the door swing requirement is not to be based on an assigned or distributed occupant load, but on the entire occupant load of the space served by the door.
Sections 1008.1.9.8 & 1008.1.9.9

- **Access controlled egress doors**
  - This was a different type of locking mechanism for an egress door, not a different type of door. A new reference standard has been added, UL 294.

- **Electromagnetically locked egress doors**
  - Electromagnetically locked egress doors may now be used at locations that require panic hardware provided the operation of the hardware releases the magnetic lock by interrupting the power to the electromagnet.
Moved to Chapter 2

- Revised to reflect changes to the means of egress provisions which, among other things, clarifies the distinction between exit access and exit elements.
  - Corridor,
  - Exit,
  - Exit access doorway,
  - Exit access ramp,
  - Exit access stairway,
  - Interior exit ramp
  - Interior exit stairway
Sections 1009, 1009.2 & 1009.3

- **Scoping (NEW)**
  - Stairway provisions are applicable to all stairways including required means of egress stairways and “convenience” stairways that are not a portion of a required means of egress.

- **Interior exit stairways (NEW)**
  - Coordinated with exit access travel distance and number of exits.
  - Interior exit stairways are required to be enclosed in accordance with Section 1022.

- **Exit access stairways (NEW)**
  - Exit access stairways are required to be enclosed unless specifically exempted in this new section.
  - If the exit access stairway is open, its use as part of the required means of egress is limited by the travel distance and number of exit requirements.
  - Section 1009.3.1 through 1009.3.1.8 includes protection requirements consistent with Chapter 7 for vertical opening protectives.
Section 1010.2

- Enclosure for exit access ramps (NEW)
  - Interior exit access ramps are handled the same as interior exit access stairways in accordance with Section 1009.3.
Section 1011.2

- Floor-level exit signs in Group R-1 (NEW)
  - Where general-use exit signs are required in Group R-1 occupancies, low-level exit signs must also be provided in the means of egress serving the guest rooms.
Sections 1012.2, 1012.3.1 & 1012.8

- **Handrail Height**
  - The transition pieces of a continuous handrail are now permitted to exceed the maximum permitted handrail height. The use of the new exceptions will permit a more gradual variation in the height even though it will allow for portions of the handrail to exceed the normal 38-inch maximum height—the belief being that a “continuous” handrail is more important than staying within the height limitation.

- **Type I handrails**
  - **Added** a minimum cross-section dimension for the graspability of noncircular Type I handrails.

- **Projections**
  - An intermediate handrail on a stair or in an aisle is considered as a permitted projection and not as a reduction in the required egress width.
Section 1013.3

- **Guard Height**
  - The height of the guard is to be measured from the floor surface, even when a fixed seat is provided adjacent to the guard.
  - With the new exception, the minimum required height for guards in Group R-3 occupancies and within individual Group R-2 dwelling units has been decreased from 42 inches to 36 inches.
  - However, in these residential situations the height for the guard would be measured from any adjacent fixed seat.
Section 1013.8

- Guards at Operable Windows
  - Relocated from Chapter 14.
  - The minimum window sill height at which a guard is not required has been increased from 24 inches to 36 inches.
Table 1015.1

- Spaces with one exit or exit access doorway
  - Sections dealing with exiting from care suites in Group I-2 relocated to Section 407.
  - Added Group I-2 to the table to address areas that are not covered in care suites in Section 407.

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>MAXIMUM OCCUPANT LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, E, F, M, U</td>
<td>49</td>
</tr>
<tr>
<td>H-1, H-2, H-3</td>
<td>3</td>
</tr>
<tr>
<td>H-4, H-5, I-1, I-2, I-3, I-4, R</td>
<td>10</td>
</tr>
<tr>
<td>S</td>
<td>29</td>
</tr>
</tbody>
</table>

1015.1.1 Three or more exits or exit access doorways. Three *exits* or *exit access doorways* shall be provided from any space with an *occupant load* of 501 to 1,000. Four *exits* or *exit access doorways* shall be provided from any space with an *occupant load* greater than 1,000.
Section 1015.6

- Day care means of egress (NEW)
  - New section dealing with day care facilities to clarify the footnote that was deleted from Table 1015.1.
  - Rooms where infants or toddlers are cared for are limited to 10 children maximum when the room has only one exit.
  - Spaces that house older children (Group E) can use the 49 maximum occupant load in Table 1015.1.
Section 1016

- Clarify measurement of exit access travel distance.
  - The measurement would be from any point on the floor to the closest doorway leading to an exit stairway or ramp.
  - When exit access stairways or ramps are part of the route, they will be included in the exit access travel distance.
  - The exceptions being open parking garages and outdoor stadiums.
Table 1018.2

- Minimum corridor width
  - Moved the requirements for corridor width into table format.

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>WIDTH (minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any facilities not listed below</td>
<td>44 inches</td>
</tr>
<tr>
<td>Access to and utilization of mechanical, plumbing or electrical systems or equipment</td>
<td>24 inches</td>
</tr>
<tr>
<td>With a required occupancy capacity less than 50</td>
<td>36 inches</td>
</tr>
<tr>
<td>Within a dwelling unit</td>
<td>36 inches</td>
</tr>
<tr>
<td>In Group E with a corridor having a required capacity of 100 or more</td>
<td>72 inches</td>
</tr>
<tr>
<td>In corridors and areas serving gurney traffic in occupancies where patients receive out-patient medical care, which causes the patient to be incapable of self-preservation</td>
<td>72 inches</td>
</tr>
<tr>
<td>Group I-2 in areas where required for bed movement</td>
<td>96 inches</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.
Section 1018.6

- **Corridor continuity**
  - Where a corridor leads to an open exit access stairway, the corridor continuity requirements would still be applicable down the stairway and continue in a corridor leading to an exit on the adjacent floor.
Section 1019.4

- Egress balcony location (NEW)
  - Egress balconies, as an element of exit access, must be separated from the lot lines by a minimum distance of 10’-0”.
  - This is consistent with what was previously indicated in Section 1027.3.
Section 1021  
Number of Exits and Exit Configuration

- Each story has to have a certain number of means of egress.
- This can be via exits or access to exits on an adjacent floor via an exit access stairway or ramp.
- The exceptions allow for open parking garages and outdoor stadiums to use open exit access stairways from any level all the way to the level of exit discharge.
Section 1021.2

- Exits from stories
  - The main body of the section allows for single exits or single exit access from floors that meet the occupant load/number of dwelling units and travel distances specified in Table 1021.2(1) and 1021.2(2).
  - For new Exception 3 see Section 1021.2.3.
  - Per new Exception 7, in limited circumstances exits are now permitted to be arranged where they serve a portion of a story instead of requiring that all of the required exits from the story to be accessible to all of the occupants.
Table 1021.2(1)

- Table 1021.2(1) Stories with one exit or access to one exit for R-2 occupancies (NEW)
  - Added a table to address single means of egress for floors that contain 4 or fewer apartment units (i.e. dwelling units).
  - For dormitory or group homes (i.e., sleeping units, use Table 1021.2(2)).

### Table 1021.2(1)

**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

<table>
<thead>
<tr>
<th>STORY</th>
<th>OCCUPANCY</th>
<th>MAXIMUM NUMBER OF DWELLING UNITS</th>
<th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement, first, second or third story</td>
<td>R-2&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>4 dwelling units</td>
<td>125 feet</td>
</tr>
<tr>
<td>Fourth story and above</td>
<td>NP</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.
NP – Not Permitted
NA – Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
b. This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1021.2(2).
Table 1021.2 (2)

- Table 1021.2(2) Stories with one exit or access to one exit for other occupancies (NEW)
  - Added a table to address single means of egress for floors that contain uses other than Group R-2 dwelling units.
<table>
<thead>
<tr>
<th>STORY</th>
<th>OCCUPANCY</th>
<th>MAXIMUM OCCUPANTS PER STORY</th>
<th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>First story or basement</td>
<td>A, B&lt;sup&gt;b&lt;/sup&gt;, E, F&lt;sup&gt;b&lt;/sup&gt;, M, U, S&lt;sup&gt;b&lt;/sup&gt;</td>
<td>49 occupants</td>
<td>75 feet</td>
</tr>
<tr>
<td></td>
<td>H-2, H-3</td>
<td>3 occupants</td>
<td>25 feet</td>
</tr>
<tr>
<td></td>
<td>H-4, H-5, I, R-1, R-2&lt;sup&gt;ac&lt;/sup&gt;, R-4</td>
<td>10 occupants</td>
<td>75 feet</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>29 occupants</td>
<td>100 feet</td>
</tr>
<tr>
<td>Second story</td>
<td>B, F, M, S</td>
<td>29 occupants</td>
<td>75 feet</td>
</tr>
<tr>
<td>Third story and above</td>
<td>NP</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.

b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.

c. This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, use Table 1021.2(1).
Section 1021
Number of exits and exit configuration

- **1021.2.1 Mixed occupancies**
  - A ratio equation to be used to determine if a single exit is allowed to serve the combined occupant load from different occupancies.

- **1021.2.3 Single-story of multi-story dwelling units (NEW)**
  - Allows for individual dwelling units to have a single exit out of the unit.
  - This could be used for Group R-2 or R-3 for dwelling units such as apartments within apartment buildings, apartments within mixed use buildings, or townhouses type units.

- **1021.3.1 Access to exits at adjacent levels (NEW)**
  - Coordinate with the open exit access stairway provisions in Section 1009.3 and the exit access travel provisions in Section 1016.1.
Section 1022
Interior exit stairways and ramps

- 1022.2 Construction
  - Open stairway exceptions that had previously been located under this section moved to Section 1009.3 as exit access stairways and ramps.
  - Exit stairways and ramps are required to be enclosed with fire barriers.

- 1022.5 Penetrations
  - Penetrations of the outside membrane of a fire barrier utilized to enclose an interior exit stair or ramp are now permitted provided the penetration is properly protected.
Section 1026.5

- **Exterior ramps and stairways location**
  - Exterior ramps and stairways, as an open exit element, must be separated from the lot lines by a minimum distance of 10’-0”.
  - This is consistent with what was previously indicated in Section 1027.3.
Section 1028

- Assembly
  - Revised reference throughout code.
  - Requirements in this section to apply to spaces used for assembly purposes rather than Group A.
  - Provisions for aisle accessways between tables moved from 1017 to 1028.
  - The aisle and aisle accessway provisions are applicable to all assembly spaces, regardless of the use of the building.
Section 1028.1.1.1 (NEW)

- Spaces under grandstands and bleachers
- Spaces beneath grandstands and bleachers to be adequately separated to protect the assembly seating area from any potential hazards.
Section 1029

- Emergency escape and rescue openings
  - Scope emergency escape and rescue openings to coordinate with Group R-2 in the tables for single exit floors and Group R-3.
  - Sprinkler requirements in other uses matched with exceptions so no longer needed.
4. Chapter 11. Chapter 11 of the IBC related to accessibility requirements is hereby replaced with the Maryland Accessibility Code set forth in COMAR 05.02.02. A local jurisdiction may adopt and enforce the requirements of Chapter 11 of the IBC to the extent the requirements meet or exceed the requirements set forth in COMAR 05.02.02.
Section 1101.2 & E102.1

- Provides a general reference to ICC A117.1-2009 for technical provisions for accessibility.
  - Other general references to the standard throughout Chapter 11 and Appendix E have been removed as redundant.
  - The only time the standard will be referenced elsewhere will be when a specific technical requirement is referred to (i.e., 1107.2).
Sections 1103.2.3 & 1104.3.1

- **Employee work areas exception**
  - Where an employee work area is required to be lower than the floor, such as a service pit in a garage, is not required to meet the approach, enter and exit requirements.

- **Employee work areas circulation path**
  - Expanded the exception for common use circulation paths within employee work areas from areas of less than 300 square feet to areas less than 1,000 square feet.
  - This is consistent with the federal 2010 ADA Standard for Accessible Design.
Section 1107.6.1.1

- Accessible unit facilities (NEW)
  - Where an Accessible unit has multiple bathrooms, only one bathroom must be accessible.
  - At least one bedroom in the unit must have space to allow wheelchair clearance next to the bed.
  - Beds in hotel rooms must be on legs instead of platforms so that a lift can be used to move someone who cannot self-transfer into the bed.
Sections 1108.2 & 1108.2.7.2

- **Assembly area seating**
  - Access to performance areas and assistive listening devices may be required in spaces without fixed seating.

- **Ticket windows (NEW)**
  - In large facilities, such as arenas and stadiums, ticket windows are required to provide assistive listening systems.
  - The intent is to assist the communication between the ticket sales persons and customers who may be hard of hearing.
Section 1108.2.7.3

- Public address systems
  - Captioning of audible public announcements is required for assembly spaces having a public address system and 15,000 or more seats.
  - The requirements for the system are in Chapter 9.
Section 1108.2.9

- Dining and drinking areas
  - Expanded the provisions to include service areas that serve drinks only.
Section 1109.1

- The exception references the provisions for Chapter 10 of the ICC A117.1 for Accessible units as well as Type A and Type B units.
Section 1109.2 & 1109.5

- Children’s provisions
  - New exception for toilet rooms allows for children's toilets and lavatories to meet accessibility requirements.
  - New exceptions for drinking fountains specifically allow for both wheelchair and standing drinking fountains to be designed for children.
Section 1109.6

- **Saunas and Steam Rooms (NEW)**
  - Steam rooms and saunas must be accessible.
  - Technical requirements are found in ICC A117.1.
Section 1110.4 through 1110.4.2

(NEW)

- Variable Message Signs (VMS).
  - VMS are signs that are on video screens or made up of small lights to form the letters and numbers in a message.
  - They are commonly used to provide information in transportation facilities to indicate gates, times and route information.
  - When provided in transportation facilities or emergency shelters, these signs must meet the new requirements in ICC A117.1-2009 for these types of signs.
  - The text resolution and sizes are based on a 20-200 vision and the distance that a person would be viewing the sign.
Appendix E109.2.2.1

- Raised character and Braille signs
  - Revised for consistency with the ICC A117.1.
  - The term ‘tactile’ has been revised throughout A117.1 to indicate where raised letters and/or Braille are required.
11. If operable windows are provided in a apartments, what is the minimum sill height?

- For all apartments 2nd floor and above, the minimum sill height is 36 inches unless the window has an opening control devices or will not open more than 4 inches (1013.8, 1013.8.1).
12. Assume a sprinklered, two story office building with and occupant load of 200 per floor. Could two open stairways serve as the means of egress for the 2nd floor? How would you measure the travel distance?

- Yes, open exit access stairways can serve as the required means of egress (Section 1009.3, Exception 1; 1021.2). The travel distance would extend from any point on the second floor, down the stairs, and to the exit door leading to the outside (1016.3).
13. The exceptions for the accessibility to employee work stations and the shared route within employee work areas now allow what square footage?

- Employee work areas that are required to be raised has been expanded from 150 to 300 square feet (1103.2.3).
- The area where common use employee circulation paths are confined has been increased from 300 square feet to 1,000 square feet.
- These new values are consistent with the federal accessibility regulations in the 2010 ADA Standard for Accessible Design.
14. When evaluating the capacity for doors, corridors, aisles or stairway width, is there a reduction per occupant permitted in sprinklered buildings?

- Yes, provided there is also an emergency/alarm communication system (1005.3.1, 1005.3.2, 1018.2).
Chapters 16-25, Appendix M

Structural Provisions
Section 1604.5

Risk category (NEW)

- New definition replaces Occupancy category for the application of seismic design standards in Chapter 16.
- The new term is intended to stop confusion with occupancy groups established in Chapter 3.
- Established as Category I, II, III or IV in Table 1604.5
- The higher the risk category the more essential the facility be operational after a disaster.
- Used for high-wind, seismic, high-rise design.
Section 1605.2 & 1605.3

- Load combinations using strength design or load and resistance factor design
  - Since the wind load maps are now based on ultimate design wind speeds that result in a strength level wind load, W, a wind load factor of 1.0 is used for strength load combinations.

- Load combinations using allowable stress design
  - Since the wind load maps are now based on ultimate design wind speeds that result in a strength level wind load, W, a factor of 0.6 is now applied for allowable stress.
### Table 1607.1

- **MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, \( L\_o \), AND MINIMUM CONCENTRATED LIVE LOADS \( g \)**

- Stage floors live load was increased from 125 psf to 150 psf.
- Platforms live load decreased from 125 psf to 100 psf.
- “Recreational uses” new subheading for - bowling alleys, pool rooms, dance halls and ballrooms, gymnasiums, reviewing stands, grandstands and bleachers, and stadiums and arenas with fixed seats,
- Footnote “m” has been added to clarify that a live load reduction is not permitted unless specific exceptions apply and the footnote has been added at each specific use where a live load reduction is, in fact, restricted.
- The concentrated load on stair treads has been relocated from a footnote to the table, itself, and a clarification is added that the concentrated load need not act concurrently with the uniform live load.
Table 1607.1

- **Live load, roof**
  - Defined in Chapter 2
  - Table revised due to the growing use of roofs as assembly areas and landscaping.
<table>
<thead>
<tr>
<th>OCCUPANCY OR USE</th>
<th>UNIFORM (psf)</th>
<th>CONCENTRATED (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apartments (see residential)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Access floor systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office use</td>
<td>50</td>
<td>2,000</td>
</tr>
<tr>
<td>Computer use</td>
<td>100</td>
<td>2,000</td>
</tr>
<tr>
<td>3. Armories and drill rooms</td>
<td>150\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>4. Assembly areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed seats (fastened to floor)</td>
<td>60\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>Follow spot, projections and control rooms</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td>Lobbies</td>
<td>100\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>Movable seats</td>
<td>100\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>Stage floors</td>
<td>150\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>Platforms (assembly)</td>
<td>100\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>Other assembly areas</td>
<td>100\textsuperscript{m}</td>
<td>—</td>
</tr>
<tr>
<td>5. Balconies and decks\textsuperscript{h}</td>
<td>Same as occupancy served</td>
<td>—</td>
</tr>
<tr>
<td>6. Catwalks</td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td>7. Cornices</td>
<td>60</td>
<td>—</td>
</tr>
<tr>
<td>8. Corridors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First floor</td>
<td>100\textsuperscript{m}</td>
<td>Same as occupancy served except as indicated</td>
</tr>
<tr>
<td>Other floors</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>Table 1607.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>9. Dining rooms and restaurants</td>
<td>100 m</td>
<td></td>
</tr>
<tr>
<td>10. Dwellings (see residential)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>11. Elevator machine room grating (on area of 2 inches by 2 inches)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>12. Finish light floor plate construction (on area of 1 inch by 1 inch)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>13. Fire escapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On single-family dwellings only</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>14. Garages (passenger vehicles only)</td>
<td>40 m</td>
<td></td>
</tr>
<tr>
<td>Trucks and buses</td>
<td>Note a</td>
<td></td>
</tr>
<tr>
<td>15. Handrails, guards and grab bars</td>
<td>See Section 1607.7</td>
<td></td>
</tr>
<tr>
<td>16. Helipads</td>
<td>See Section 1607.8</td>
<td></td>
</tr>
<tr>
<td>17. Hospitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridors above first floor</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Operating rooms, laboratories</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Patient rooms</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>18. Hotels (see residential)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>19. Libraries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridors above first floor</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Reading rooms</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Stack rooms</td>
<td>150 m</td>
<td></td>
</tr>
<tr>
<td>20. Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy</td>
<td>250 m</td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>125 m</td>
<td></td>
</tr>
<tr>
<td>21. Marquees</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>22. Office buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridors above first floor</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>File and computer rooms shall be designed for heavier loads based on anticipated occupancy</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Lobbies and first-floor corridors</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Offices</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>(continued)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCCUPANCY OR USE</td>
<td>UNIFORM (psf)</td>
<td>CONCENTRATED (lbs.)</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>23. Penal institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cell blocks</td>
<td>40</td>
<td>—</td>
</tr>
<tr>
<td>Corridors</td>
<td>100</td>
<td>—</td>
</tr>
<tr>
<td>24. Recreational uses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bowling alleys, poolrooms and similar uses</td>
<td>75&lt;sup&gt;m&lt;/sup&gt;</td>
<td>—</td>
</tr>
<tr>
<td>Dance halls and ballrooms</td>
<td>100&lt;sup&gt;m&lt;/sup&gt;</td>
<td>—</td>
</tr>
<tr>
<td>Gymnasiums</td>
<td>100&lt;sup&gt;m&lt;/sup&gt;</td>
<td>—</td>
</tr>
<tr>
<td>Reviewing stands, grandstands and bleachers</td>
<td>100&lt;sup&gt;c, m&lt;/sup&gt;</td>
<td>—</td>
</tr>
<tr>
<td>Stadiums and arenas with fixed seats (fastened to floor)</td>
<td>60&lt;sup&gt;c, m&lt;/sup&gt;</td>
<td>—</td>
</tr>
<tr>
<td>25. Residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One- and two-family dwellings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uninhabitable attics without storage&lt;sup&gt;i&lt;/sup&gt;</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>Uninhabitable attics with storage&lt;sup&gt;i, j, k&lt;/sup&gt;</td>
<td>20</td>
<td>—</td>
</tr>
<tr>
<td>Habitable attics and sleeping areas&lt;sup&gt;k&lt;/sup&gt;</td>
<td>30</td>
<td>—</td>
</tr>
<tr>
<td>All other areas</td>
<td>40</td>
<td>—</td>
</tr>
<tr>
<td>Hotels and multifamily dwellings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private rooms and corridors serving them</td>
<td>40</td>
<td>—</td>
</tr>
<tr>
<td>Public rooms&lt;sup&gt;m&lt;/sup&gt; and corridors serving them</td>
<td>100</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>26. Roofs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All roof surfaces subject to maintenance workers</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Awnings and canopies:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fabric construction supported by a skeleton structure</td>
<td>5 nonreducible</td>
<td></td>
</tr>
<tr>
<td>All other construction</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Ordinary flat, pitched, and curved roofs (that are not occupiable)</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Where primary roof members are exposed to a work floor, at single panel point of lower chord of roof trusses or any point along primary structural members supporting roofs:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over manufacturing, storage warehouses, and repair garages</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>All other primary roof members</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Occupiable roofs:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof gardens</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Assembly areas</td>
<td>100&lt;sup&gt;m&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>All other similar areas</td>
<td>Note 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>27. Schools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classrooms</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Corridors above first floor</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>First-floor corridors</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>First-floors</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>28. Scuttles, skylight ribs and accessible ceilings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>29. Sidewalks, vehicular drive ways and yards, subject to trucking</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250&lt;sup&gt;d,m&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8,000&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
### Table 1607.1

**MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, \( L_0 \), AND MINIMUM CONCENTRATED LIVE LOADS**

<table>
<thead>
<tr>
<th>OCCUPANCY OR USE</th>
<th>UNIFORM (psf)</th>
<th>CONCENTRATED (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Stairs and exits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One- and two-family dwellings</td>
<td>40</td>
<td>300 ( ^f )</td>
</tr>
<tr>
<td>All other</td>
<td>100</td>
<td>300 ( ^f )</td>
</tr>
<tr>
<td>31. Storage warehouses (shall be designed for heavier loads if required for anticipated storage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy</td>
<td>250 ( ^m )</td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>125 ( ^m )</td>
<td></td>
</tr>
<tr>
<td>32. Stores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First floor</td>
<td>100</td>
<td>1,000</td>
</tr>
<tr>
<td>Upper floors</td>
<td>75</td>
<td>1,000</td>
</tr>
<tr>
<td>Wholesale, all floors</td>
<td>125 ( ^m )</td>
<td>1,000</td>
</tr>
<tr>
<td>33. Vehicle barriers</td>
<td>See Section 1607.8.3</td>
<td></td>
</tr>
<tr>
<td>34. Walkways and elevated platforms (other than exitways)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>35. Yards and terraces, pedestrians</td>
<td>100 ( ^m )</td>
<td></td>
</tr>
</tbody>
</table>

**For SI:** 1 inch = 25.4 mm, 1 square inch = 645.16 mm\(^2\),
1 square foot = 0.0929 m\(^2\),
1 pound per square foot = 0.0479 kN/m\(^2\), 1 pound = 0.004448 kN,
1 pound per cubic foot = 16 kg/m\(^3\).
a. Floors in garages or portions of buildings used for the storage of motor vehicles shall be designed for the uniformly distributed live loads of Table 1607.1 or the following concentrated loads: (1) for garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds acting on an area of 4.5 inches by 4.5 inches; (2) for mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds per wheel.

b. The loading applies to stack room floors that support nonmobile, double-faced library book stacks, subject to the following limitations:
   1. The nominal bookstack unit height shall not exceed 90 inches;
   2. The nominal shelf depth shall not exceed 12 inches for each face; and
   3. Parallel rows of double-faced book stacks shall be separated by aisles not less than 36 inches wide.

c. Design in accordance with ICC 300.

d. Other uniform loads in accordance with an approved method containing provisions for truck loadings shall also be considered where appropriate.

e. The concentrated wheel load shall be applied on an area of 4.5 inches by 4.5 inches.

f. The minimum concentrated load on stair treads shall be applied on an area of 2 inches by 2 inches. This load need not be assumed to act concurrently with the uniform load.

g. Where snow loads occur that are in excess of the design conditions, the structure shall be designed to support the loads due to the increased loads caused by drift buildup or a greater snow design determined by the building official (see Section 1608).

h. See Section 1604.8.3 for decks attached to exterior walls.

i. Uninhabitable attics without storage are those where the maximum clear height between the joists and rafters is less than 42 inches, or where there are not two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches in height by 24 inches in width, or greater, within the plane of the trusses. This live load need not be assumed to act concurrently with any other live load requirements.
Table 1607.1—continued

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, $L_o$, AND
MINIMUM CONCENTRATED LIVE LOADS

j. Uninhabitable attics with storage are those where the maximum clear height between the joists and rafters is 42 inches or greater, or where there are two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches in height by 24 inches in width, or greater, within the plane of the trusses.

The live load need only be applied to those portions of the joists or truss bottom chords where both of the following conditions are met:

i. The attic area is accessible from an opening not less than 20 inches in width by 30 inches in length that is located where the clear height in the attic is a minimum of 30 inches; and

ii. The slopes of the joists or truss bottom chords are no greater than two units vertical in 12 units horizontal.

The remaining portions of the joists or truss bottom chords shall be designed for a uniformly distributed concurrent live load of not less than 10 lb./ft².

k. Attic spaces served by stairways other than the pull-down type shall be designed to support the minimum live load specified for habitable attics and sleeping rooms.

l. Areas of occupiable roofs, other than roof gardens and assembly areas, shall be designed for appropriate loads as approved by the building official. Unoccupied landscaped areas of roofs shall be designed in accordance with Section 1607.12.3.

m. Live load reduction is not permitted unless specific exceptions of Section 1607.10 apply.
Section 1607.6 & 1607.7

- **Helipads**
  - Introduced the term “helipad” is as a means of specifying the loads associated with helicopter landing areas.

- **Heavy vehicle loads**
  - Revision of requirements for structures that support heavy vehicles loads. They are now to be designed using the same vehicular loads specified by the jurisdiction for the design of roadways and bridges. The requirements specifically apply to fire truck and emergency vehicles, heavy vehicle parking garages, forklifts and moveable equipment.
Moved to Chapter 2

- *Hurricane prone regions, and Wind-born debris regions*
  - Revised to clarify the application of Chapter 16 provisions for hurricane and wind loads.

- **Wind speed:** $V_{ult}$ and $V_{asd}$ *(NEW)*
  - $V_{ult}$ Ultimate design wind speeds;
  - $V_{asd}$ Nominal design wind speeds.
Figures 1609A, 1609B & 1609C

- **Ultimate Design Wind Speeds**
  - Revised due to research over the past 10 years, indicating that the hurricane wind speeds specified in the IBC and ASCE 7 have been overly conservative.
  - Separate wind speed maps: Risk Category I, Risk Category II, as well as Risk Categories III and IV
  - The use of multiple wind speed maps based on risk category eliminates some confusion regarding the recurrence interval associated with the previous map.
  - These wind maps are based on ultimate design wind speeds that result in a strength level wind load ,W.
Figures 1609A, 1609B, 1609C
Section 1609.3.1

Wind speed conversion

- Revised to provide a conversion between the mapped ultimate wind speed and nominal wind speed.
  - Because many IBC requirements are driven by the wind speed, it was necessary to include this conversion so that the IBC provisions triggered by wind speed were not affected.
  - The mapped wind speed of the IBC is referred to as “ultimate design wind speed” and is designated $V_{ult}$.
  - The wind speed that is comparable to the former basic wind speed of the IBC is now referred to as the nominal design wind speed, $V_{asd}$.
  - The conversion can be computed using the equation or merely looked up in table.
  - This nomenclature is unique to the IBC, and it is important to note that ASCE 7 refers to the mapped wind speeds as basic wind speed which corresponds to the IBC’s ultimate design wind speed, $V_{ult}$. 

Figures 1613.3(1) - 1613.3(6)

- Risk-Targeted Maximum Considered Earthquake Ground Motion Response Accelerations
  - Updated the seismic ground motion maps to reflect the 2008 maps developed by the United States Geological Survey (USGS) National Seismic Hazard Mapping Project and the technical changes adopted for the 2009 NEHRP Recommended Seismic Provisions for New Buildings and Other Structures (FEMA P750).
  - These updates are part of the ongoing federal effort to make the most current earthquake hazard information available to users of the IBC.
Moved to Chapter 2

- **Ice sensitive structure (NEW)**
  - Revised to clarify the application of Section 1614 which addresses atmospheric ice loads.
Sections 1704 & 1705

- Special inspections, contractor responsibility and structural observations
  - General requirements related to special inspections as well as structural observations and contractor responsibility are consolidated into Section 1704.

- Required verification and inspection
  - Moved all required special inspections to Section 1705.
  - Specific items requiring special inspection combined with the additional special inspections and testing requirements based on seismic or wind resistance.
Section 1705.16

- **Fire-resistant penetrations and joints (NEW)**
  - Where penetration firestop systems and fire-resistant joint systems are used in high-rise buildings as well as in buildings that are assigned to Risk Category III or IV, special inspection in accordance with ASTM E 2174 for penetration firestop systems or ASTM E 2393 for fire-resistant joint systems must be provided.
  - Although the proper application of firestop and joint system requirements is very important in all types and sizes of buildings, the requirement for special inspection has been introduced for specific building types that represent a substantial hazard to life in the event of a system failure or that are considered to be essential facilities.
Section 1905.1.9

- ACI 318, Section D 3.3
  - Modified the seismic requirements of ACI 318 Appendix D in recognition that, rather than anchor strength, the failure of a wood sill plate or cold formed steel track typically controls the capacity of the connection of light-frame shear walls to a concrete foundation.
Section 2206 & 2210.2

- **2206 Composite Structural Steel and Concrete Structures**
  - Coordination with AISC 341
  - Requirement that composite structures of concrete and structural steel that are utilized as seismic-force-resisting systems in buildings that are classified as Seismic Design Category D, E or F must provide substantiating evidence demonstrating that they will perform as intended by AISC 341 has been deleted because these structures are now addressed in the 2010 edition of ASIC 341.

- **2210.2 Seismic requirements for cold-formed steel structures (NEW)**
  - Clarify seismic parameters and references a new cold-formed steel design standard, AISI S110, Standard For Seismic Design Of Cold-Formed Steel Structural Systems – Special Bolted Moment Frames.
Sections 2305 & 2306

- Lateral-Force-Resisting Systems
- Allowable Stress Design
  - Coordinate with the 2008 edition of the AF&PA standard, Special Design Provisions for Wind and Seismic (SDPWS) for lateral design of wood structures.
  - Thus design values for nailed diaphragms and shear walls have been removed from the tables because the values are in AF&PA SDPWS.
  - Design values for stapled shear walls and diaphragms remain in the code.
Table 2308.12.4 & Section 2307.12.4.1

- Wall Bracing in Seismic Design Categories D and E
  - Specify the minimum percentage of wall bracing in lieu of specifying the minimum length of wall bracing per 25 feet of wall.
  - Footnote “a” has been revised to state that the 2:1 h/w ratio limitation does not apply to alternate braced wall panels (also see Section 2308.12.4.1).

- Alternative bracing (NEW)
  - Alternate braced wall panels constructed in accordance with Section 2308.9.3.1 or 2308.9.3.2 are permitted to be substituted for a braced wall panel that is required by Table 2308.12.4.
### Table 2308.12.4

**WALL BRACING IN SEISMIC DESIGN CATEGORIES D AND E**

*Minimum Percentage of Wall Bracing per each Braced Wall Line*

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>SHEATHING TYPE</th>
<th>$S_{DS} &lt; 0.50$</th>
<th>$0.50 \leq S_{DS} &lt; 0.75$</th>
<th>$0.75 \leq S_{DS} \leq 1.00$</th>
<th>$S_{DS} &gt; 1.00$</th>
</tr>
</thead>
<tbody>
<tr>
<td>One story</td>
<td>G-P</td>
<td>43</td>
<td>59</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>S-W</td>
<td>21</td>
<td>32</td>
<td>37</td>
<td>48</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Minimum length of panel bracing of one face of the wall for S-W sheathing or both faces of the wall for G-P sheathing; h/w ratio shall not exceed 2:1. For S-W panel bracing of the same material on two faces of the wall, the minimum length is permitted to be one-half the tabulated value but the h/w ratio shall not exceed 2:1 and design for uplift is required. The 2:1 h/w ratio limitation does not apply to alternate braced wall panels constructed in accordance with Section 2308.9.3.1 or 2308.9.3.2.

b. G-P = gypsum board, fiberboard, particleboard, lath and plaster or gypsum sheathing boards; S-W = wood structural panels and diagonal wood sheathing.

c. Nailing as specified below shall occur at all panel edges at studs, at top and bottom plates and, where occurring, at blocking:
   - For $\frac{1}{2}$-inch gypsum board, 5d (0.113 inch diameter) cooler nails at 7 inches on center;
   - For $\frac{5}{8}$-inch gypsum board, No. 11 gage (0.120 inch diameter) at 7 inches on center;
   - For gypsum sheathing board, $1\frac{3}{4}$ inches long by $\frac{7}{16}$-inch head, diamond point galvanized nails at 4 inches on center;
   - For gypsum lath, No. 13 gage (0.092 inch) by $1\frac{1}{2}$ inches long, $\frac{19}{64}$-inch head, plasterboard at 5 inches on center;
   - For Portland cement plaster, No. 11 gage (0.120 inch) by $1\frac{1}{2}$ inches long, $\frac{7}{16}$-inch head at 6 inches on center;
   - For fiberboard and particleboard, No. 11 gage (0.120 inch) by $1\frac{1}{2}$ inches long, $\frac{7}{16}$-inch head, galvanized nails at 3 inches on center.
Appendix M (NEW)

- Tsunami Hazard Zones
  - By adopting this appendix, a community has the ability to restrict buildings and structures that would present a higher than usual risk in a tsunami hazard zone.
  - This applies to buildings that are designated as Risk Category III or Risk Category IV and that are within the community’s Tsunami Hazard Zone, unless either of two exceptions applies.
  - Risk Category III structures are high occupancy buildings that represent a substantial hazard to human life in the event of failure, and Risk Category IV structures are designated as essential facilities, either because of their role in a community’s response and recovery from a disaster or because they contain significant amounts of hazardous materials.
  - An exception allows structures that have been designed and constructed to meet the vertical evacuation tsunami refuge criteria specified in FEMA P646. These structures can provide areas of refuge for communities in which evacuation out of the inundation zone is not feasible.
15. The term that replaces “occupancy category” is ____________________.

- Risk category (1604.5).
16. A load factor of __________ is applied to the wind effect, W, when using load factor and resistance design.

- 1.0 (1605.2).
17. The term “helipad” refers to a __________.

- Helicopter landing area (1607.6).
18. Nomenclature, $V_{asd}$, refers to ____________ which is used as the threshold for requirements that are based on wind speed.

- **Nominal design wind speed** (Chapter 16).
19. All items that require special inspection are located in what section of Chapter 17?

- Section 1705.
20. Name either of two classes of structures requiring special inspections for fire-resistant penetrations.

- Either high-rise buildings or structures that are classified as Risk Category III or IV (3408.4).
21. What reference standard contains the allowable capacities of wood-framed diaphragms and shear walls that are fastened with nails?

- AF&PA SDPWS (2306).
For more information

- Significant Changes to the International Building Code.
  - Book
  - 6-hour classroom training
- There is also a 3-hour classroom IBC update course available.
Maryland Codes Administration

100 Community Place
Crownsville, MD 21032
410-514-7220 or 1-800-756-0119
Maryland Code Administration Information Portal

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