Dealing with Existing Buildings

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What are we Going to Talk About?

- Applicability and relationship Existing Building Code to buildings undergoing repair, improvements, additions or change of use
- Major topics addressed include:
  - Non-structural provisions
  - Regulation of additions, alterations and repairs
  - Change of occupancy considerations
  - Compliance alternatives
  - Applications of the Existing Building Code
101.4.2
Buildings previously occupied

- The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Fire Code, or the International Property Maintenance Code, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

Definitions
202

- REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage.

- ADDITION. An extension or increase in floor area or height of a building or structure.
Definitions
202

- ALTERATION. Any construction or renovation to an existing structure other than a repair or addition.
- Alterations are classified as Level 1, Level 2 and Level 3.

Definitions
202

- CHANGE OF OCCUPANCY. A change in the use of the building or a portion of a building.
- A change of occupancy shall include any change of occupancy classification, any change from one group to another group within an occupancy classification or any change in use within a group for a specific occupancy classification.

Compliance Methods
301.1

- The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant.
Prescriptive compliance method
301.1.1

Repairs, alterations, additions and changes of occupancy complying with Chapter 4 of this code in buildings complying with the International Fire Code shall be considered in compliance with the provisions of this code.

Work area compliance method
301.1.2

Repairs, alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.

Performance compliance method
301.1.3

Repairs, alterations, additions, changes in occupancy and relocated buildings complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.
Prescriptive Compliance Method
Chapter 4

The provisions of this chapter shall control the alteration, repair, addition and change of occupancy or relocation of existing buildings and structures, including historic buildings and structures as referenced in Section 301.1.1.

- Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

Additions
402.1

- Additions to any building or structure shall comply with the requirements of the IBC for new construction.
- Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are no less conforming with the provisions of this code than the existing building or structure was prior to the addition.
- An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the IBC.

Alterations
403.1

- Except as provided by Section 401.2 (materials) or this section, alterations to any building or structure shall comply with the requirements of the code for new construction.
- Alterations shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the alteration.

- Exceptions:
  1. An existing stairway shall not be required to comply with the requirements of Section 1009 of the IBC where the existing space and construction does not allow a reduction in pitch or slope.
  2. Handrails otherwise required to comply with Section 1012.12 of the IBC shall not be required to comply with the requirements of Section 1012.6 of the IBC regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.
Repairs
404.1

- Buildings and structures, and parts thereof, shall be repaired in compliance with Section 401.2 and 404.
- Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter.
- Routine maintenance required by Section 401.2, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

Change of Occupancy
407.1

- No change shall be made in the use or occupancy of any building unless such building is made to comply with the requirements of the International Building Code for the use or occupancy.
- Changes in use or occupancy in a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change.

Change of Occupancy
407.1

- Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.
Accessibility for Existing Buildings

410

- Applies to:
  - maintenance,
  - change of occupancy,
  - additions and
  - alterations to existing buildings
    - including those identified as historic buildings.

410.4 Change of occupancy

- Existing buildings that undergo a change of group or occupancy shall comply with this section

Partial Change of Occupancy

410.4.1

- Where a portion of the building is changed to a new occupancy classification... use:

  410.6 – Alterations
  410.7 – Alterations for primary function
  410.8 – Alterations Scoping
Complete Change in Occupancy

- Complete Change in Occupancy
- Where an entire building undergoes a change of occupancy:
  - shall comply with Section 410.4.1 and shall have all of the following accessible features:

410.4.2 Change of occupancy

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

- Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.
Definitions

202

• TECHNICALLY INFEASIBLE. An alteration of a building or a facility that has little likelihood of being accomplished because
  • the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame,
  • or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

410.5 Additions

• Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 410.7.

410.6 Alterations

• A building, facility or element that is altered shall comply with the applicable provisions in Chapter 11 and ICC A117.1, unless technically infeasible.
  • Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.
410.6 Alterations Exceptions

1. The altered element or space is not required to be on an accessible route, unless required by Section 410.7.

410.6 Alterations Exceptions

2. Accessible means of egress required by Chapter 10 of the IBC are not required to be provided in existing buildings and facilities.

410.6 Alterations Exceptions

3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provision for a Type B dwelling unit and shall comply with the applicable provisions in Chapter 11 and ICC/ANSI A117.1.
410.6 Alterations Exceptions

4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

410.7 Alterations affecting an area containing a primary function

Where an alteration affects:
• Accessibility to a primary function
• or contains an area of primary function
Then the route to the primary function area shall be accessible.

Primary Function Definition

PRIMARY FUNCTION. A primary function is a major activity for which the facility is intended.
• Examples of primary function:
  • customer service lobby of a bank,
  • dining area of a cafeteria,
  • meeting rooms in a convention center,
  • offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out.
Primary Function Definition

- Examples of what is NOT primary function:
  - Mechanical rooms,
  - boiler rooms,
  - supply storage rooms,
  - employee lounges or locker rooms, janitorial closets,
  - entrances,
  - corridors,
  - restrooms

410.7 Alterations

- The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

410.7 Alterations Exceptions

- 1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
410.7 Alterations Exceptions

2. This provision does not apply to alterations limited solely to
   • windows,
   • hardware,
   • operating controls,
   • electrical outlets &
   • signs.

3. This provision does not apply to alterations limited solely to
   • mechanical systems,
   • electrical systems,
   • installation or alteration of fire protection systems &
   • abatement of hazardous materials.

4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.
410.7 – Alterations Affecting an Area Containing a Primary Function

- Exception 5
  - "This provision does not apply to altered areas limited to Type B dwelling and sleeping units."

410.8 Scoping for alterations

- The provisions of Sections 410.8.1 through 410.8.14 shall apply to alterations to existing buildings and facilities.

410.8.1 Entrances

- Accessible entrances shall be provided in accordance with Section 1105.
410.8.1 Entrances - Exception

- Where an alteration includes alterations to an entrance,
- and the building or facility has an accessible entrance,
- the altered entrance is not required to be accessible, unless required by Section 410.7.
- Signs complying with Section 1111 of the IBC shall be provided.

410.8.2 Elevators

- Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1.
- Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

410.8.3 Platform lifts

- Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.
410.8.4 Stairways and escalators in existing buildings.

- In alterations, change of occupancy or additions where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the IBC.

410.8.5 Ramps

- Where steeper slopes than allowed by Section 1012.2 of the IBC are necessitated by space limitations, the slope of ramps in or providing access to existing buildings or facilities shall comply with Table 410.8.5.

410.8.10 Toilet rooms

- Where it is technically infeasible to alter existing toilet and bathing facilities to be accessible, an accessible family or assisted use toilet constructed in accordance with 1109.2.1 of the IBC is permitted.

- The family or assisted use facility shall be located on the same floor and in the same area as the existing facilities.
410.8.13 Thresholds

- The maximum height of thresholds at doorways shall be ¾ inch.
- Such thresholds shall have beveled edges on each side.

Classification of Work
Chapter 5

- Repair
- Alteration
  - Level 1
  - Level 2
  - Level 3
- Change of Occupancy
- Additions
- Historic Building
- Relocated Building

Work area

501.2

- The work area, as defined in Chapter 2, shall be identified on the construction documents.

WORK AREA.
- That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.
Alterations – Level 1
Chapter 7

- Level 1 alterations include removal, replacement or covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve same purpose.

Alt. Level 1 Conformance
701.2

- An existing building or portion thereof shall not be altered such that the building becomes less safe than its existing condition.
  - Exception: Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the IBC.

Alt. Level 1 Building Elements/Materials
702

- All newly installed interior finishes to comply with flame spread requirements of IBC
- New carpeting used as interior floor finish material to comply with radiant flux requirements of IBC
- Newly installed interior trim materials must comply with IBC
Fire Protection

703

- Alterations shall be done in a manner that maintains the level of fire protection provided.

Means of Egress

704

- Alterations shall be done in a manner that maintains the level of protection provided for the means of egress.

Accessibility

705

- A building, facility or element that is altered shall comply with the applicable provisions in Sections 705.1.1 through 705.1.14, Chapter 11 of the International Building Code and ICC A117.1 unless it is technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent that is technically feasible.

- A facility or element that is constructed or altered to be accessible shall be maintained accessible during occupancy.
706 Reroofing

- Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the IBC.

- Exception: Reroofing shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal in Section 1507 of the IBC for roofs that provide positive roof drainage.

706.2 Structural and construction loads

- Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

Energy Conservation 708

- Level 1 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the IECC or IRC.

- The alterations shall conform to the energy requirements of the IECC or IRC as they relate to new construction only.
Alterations – Level 2
801

- Level 2 alterations include reconfiguration of space, addition or elimination of any door or window, reconfiguration or extension of any system, or installation of any additional equipment.

In addition to requirements of Chapter 7, all work to comply with Level 1 provisions.

All new construction elements, components, systems, and spaces to comply with IBC.

Existing vertical openings
803.2.1

- All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protective.

- 14 Exceptions!
Supplemental shaft and floor opening enclosure requirements - 803.2.2

- Where the work area on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 803.2 shall apply to vertical openings other than stairways throughout the floor.
  - Exception: Vertical openings located in tenant spaces that are entirely outside the work area.

Supplemental stairway enclosure requirements - 803.2.3

- Where the work area on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the work area shall, at a minimum, be enclosed with smoke-tight construction on the highest work area floor and all floors below.
  - Exception: Where stairway enclosure is not required by the IBC or the International Fire Code.

Interior finish 803.4

- The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the IBC.
  - Exception: Existing interior finish materials that do not comply with the interior finish requirements of the IBC shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer’s instructions to achieve the required rating.
Supplemental interior finish requirements - 803.4.1

- Where the work area on any floor exceeds 50 percent of the floor area, Section 703.4 shall also apply to the interior finish in exits and corridors serving the work area throughout the floor.
  - Exception: Interior finish within tenant spaces that are entirely outside the work area.

Guards 803.5

- The requirements of Sections 803.5.1 and 803.5.2 shall apply in all work areas.
  - Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards.
  - Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with the IBC.

803.6 Fire-resistance ratings

- Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the IBC has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code.
  - The building is required to meet the other applicable requirements of the IBC.
Fire Protection
804
- Requirements limited to work areas in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.
  - Automatic Fire Sprinklers
  - Standpipes
  - Fire Alarm and Detection

Corridor ratings
804.1.1
- Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the International Building Code. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairwell landings serving the floor and the intermediate landings immediately below.

Fire Sprinklers - Groups A, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2
804.2.2
- Work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:
  1. The work area is required to be provided with automatic sprinkler protection in accordance with the IBC as applicable to new construction;
  2. The work area exceeds 50 percent of the floor area

Exceptions
- The building has sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump.
Mixed uses
804.2.2.1

- In work areas containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 704.2.2, such protection shall not be required throughout the work area provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

Standpipes
804.3

- Where the work area includes exits or corridors shared by more than one tenant and is located more than 50 feet above or below the lowest level of fire department access, a standpipe system shall be provided.
- Standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access.
- Standpipe systems shall be installed in accordance with the IBC.

Means of Egress
805

- The requirements of this section shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.
Means of Egress  
805.2

- Means of egress shall comply except:
  1. Where the work area and the means of egress serving it comply with NFPA 101.
  2. Means of egress conforming to the requirements of the IBC under which the building was constructed shall be considered compliant means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life.

Minimum number of exits  
805.3.1

- Every story utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the IBC. In addition, the exits shall comply with Sections 705.3.1.1 and 705.3.1.2.
  - Single-exit building
  - Fire escapes

Main entrance—Group A  
805.3.3

- All buildings of Group A with an occupant load of 300 or more shall be provided with a main entrance capable of serving as the main exit with an egress capacity of at least one half of the total occupant load. The remaining exits shall be capable of providing one half of the total required exit capacity.
  - Exception: Where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.
Two Egress Doorways Required

805.4.1

- Occupant load and travel distance.
  - In any work area, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet shall have a minimum of two egress doorways.
  - Exceptions:
    1. Storage rooms having a maximum occupant load of 10.
    2. Where the work area is served by a single exit in accordance with Section 705.3.1.1.

- Group I-2.
  - In buildings of Group I-2 occupancy, any patient sleeping room or suite of patient rooms greater than 1,000 square feet within the work area shall have a minimum of two egress doorways.

Door swing

805.4.2

- In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.
- Where the work area exceeds 50 percent of the floor area, door swing shall comply with Section 805.4.2 throughout the floor.
  - Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

Door closing

805.4.3

- In any work area, all doors opening onto an exit passageway at grade or an exit stair shall be self-closing or automatically closing by listed closing devices.
  - Exceptions:
    1. Where exit enclosure is not required by the IBC.
    2. Means of egress within or serving only a tenant space that is entirely outside the work area.
- Where the work area exceeds 50 percent of the floor area, doors shall comply with Section 705.4.3 throughout the exit stair from the work area to the level of exit discharge.
Panic hardware

805.4.4

- In any work area, and in the egress path from any work area to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware.

- Where the work area exceeds 50 percent of the floor area, panic hardware shall comply with Section 805.4.4 throughout the floor.
  * Exception: Means of egress within a tenant space that is entirely outside the work area.

Corridor doors

805.5.1

- Corridor doors in the work area shall not be constructed of hollow core wood and shall not contain louvers.

- All dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be at least 13/8-inch solid core wood or approved equivalent and shall not have any glass panels, other than approved wired glass or other approved glazing material in metal frames.

- All dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be equipped with approved door closers. All replacement doors shall be 1¾-inch solid bonded wood core or approved equivalent, unless the existing frame will accommodate only a 13/8-inch door.

  * Exceptions:
    1. Corridor doors within a dwelling unit or sleeping unit.
    2. Existing doors meeting the requirements of HUD Guideline on Fire Ratings of Archaic Materials and Assemblies (IEBC Resource A) for a rating of 15 minutes or more shall be accepted as meeting the provisions of this requirement.
    3. Existing doors in buildings protected throughout with an approved automatic sprinkler system shall be required only to resist smoke, be reasonably tight fitting, and shall not contain louvers.
    4. In group homes with a maximum of 15 occupants and that are protected with an approved automatic detection system, closing devices may be omitted.
    5. Door assemblies having a fire- protection rating of at least 20 minutes.

Dead-end corridors

805.6

- Dead-end corridors in any work area shall not exceed 35 feet.
  * Exceptions:
    1. Where dead-end corridors of greater length are permitted by the IBC.
    2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet in buildings equipped throughout with an automatic fire alarm system installed in accordance with the IBC.

  * In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet in buildings equipped throughout with an automatic sprinkler system installed in accordance with the IBC.

  * In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet on floors equipped with an automatic sprinkler system installed in accordance with the IBC.
Means-of-egress lighting 805.7

- Means of egress in all work areas shall be provided with artificial lighting in accordance with the requirements of the IBC.
- Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 805.7.1.
  - Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

Exit Signs 805.8

- Means of egress in all work areas shall be provided with exit signs in accordance with the requirements of the IBC.
- Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 805.8.1.
  - Exception: Means of egress within a tenant space that is entirely outside the work area.

Handrails 805.9

- Every required exit stairway that is part of the means of egress for any work area and that has three or more risers and is not provided with at least one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the run of steps on at least one side. All exit stairways with a required egress width of more than 66 inches shall have handrails on both sides.
- Handrails shall be designed and installed in accordance with the provisions of the IBC.
Guards
805.11

- The requirements of Sections 805.11.1 and 805.11.2 shall apply to guards from the work area floor to, and including, the level of exit discharge but shall be confined to the egress path of any work area.
- Every open portion of a stairway, landing, or balcony that is more than 30 inches above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.
- Guards required in accordance with Section 805.11.1 shall be designed and installed in accordance with the IBC.

Accessibility
806.1

- A building, facility, or element that is altered shall comply with Section 705.

Electrical
808

- All newly installed electrical equipment and wiring relating to work done in any work area shall comply with all applicable requirements of NFPA 70 except as provided for in Section 808.3.
Reconfigured or converted spaces
809.1

- All reconfigured spaces intended for occupancy and all spaces converted to habitable or occupiable space in any work area shall be provided with natural or mechanical ventilation in accordance with the IMC.

Exception: Existing mechanical ventilation systems shall comply with the requirements of Section 709.2.

Altered existing systems
809.2

- In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured, or extended shall provide not less than 5 cfm per person of outdoor air and not less than 15 cfm of ventilation air per person; or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.

Minimum Plumbing Fixtures
810.1

- Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the IPC based on the increased occupant load.
Energy Conservation

811

- Level 2 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the IECC or IRC. The alterations shall conform to the energy requirements of the IECC or IRC as they relate to new construction only.

Alterations – Level 3
Chapter 9

- Level 3 alterations applicable where work area exceeds 50 percent of aggregate area of building.

Compliance

901.2

- In addition to the provisions of this chapter, work shall comply with all of the requirements of Chapters 7 and 8.
- The requirements of Sections 803 (Building Elements), 804 (Fire Protection), and 805 (Means of Egress) shall apply within all work areas whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.
- Exception: Buildings in which the reconfiguration of space affecting exits or shared egress areas as specified in Section 705.2 shall not be required to comply with this chapter.
Working with Existing Buildings

Existing shafts and vertical openings  903.1

- Existing stairways that are part of the means of egress shall be enclosed in accordance with Section 803.2.1 between the highest work area floor and the level of exit discharge and all floors below.

Interior finish  903.3

- Interior finish in exits serving the work area shall comply with Section 803.4 between the highest floor on which there is a work area to the floor of exit discharge.

Automatic sprinkler systems  904.1

- Automatic sprinkler systems shall be provided in all work areas when required by Section 804.2 or this section.
  - High-rise buildings.
  - Rubbish and linen chutes.
Fire alarm and detection systems
904.2

- Fire alarm and detection shall be provided in accordance with Section 907 of the International Building Code as required for new construction.
  - Manual Fire Alarms
  - Automatic Fire Detection

Means of Egress
905

- Shall comply with the requirements of Section 805 except as specifically required below.
- Means of egress from the highest work area floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the IBC.
- Means of egress from the highest work area floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the IBC.

Accessibility
906.1

- A building, facility or element that is altered shall comply with Sections 705 and 806.
Energy Conservation

908.1

- Level 3 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the IECC or IRC.
- The alterations shall conform to the energy requirements of the IECC or IRC as they relate to new construction only.

Change of Occupancy

Chapter 10

- A change in the use of the building or a portion of a building.
- A change of occupancy shall include any change of occupancy classification, any change from one group to another group within an occupancy classification or any change in use within a group for a specific occupancy classification.

Change of Occupancy

Chapter 10

- Various levels of change of occupancy addressed:
  - Repair or alteration work where change of occupancy does not involve classification change per IBC
  - Partial change of occupancy where portion of existing building changed to new occupancy
  - Certificate of occupancy issued where change of occupancy occurs resulting in different classification
1001.2.1 Change of use

Any work undertaken in connection with a change in use that does not involve a change of occupancy classification or a change to another group within an occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 5 and to the requirements of Sections 1002 through 1011.

Exception: As modified in Section 1205 for historic buildings.

1001.2.2 Change of occupancy classification or group

Where the occupancy classification of a building changes, the provisions of Sections 1002 through 1012 shall apply. This includes a change of occupancy classification and a change to another group within an occupancy classification.

Where the occupancy classification or group of a portion of an existing building is changed, Section 1012 shall apply.

Special Use and Occupancy 1002

Where the character or use of an existing building or part of an existing building is changed to one of the following special use or occupancy categories as defined in the IBC, the building shall comply with all of the applicable requirements of the IBC:

1. Covered mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
10. Ambulatory care facilities.
Where the occupancy of an existing building or part of an existing building is changed to one of the following special occupancies as described in NEC, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy shall comply with the applicable requirements of NEC whether or not a change of occupancy group is involved:

1. Hazardous locations.
2. Commercial garages, repair, and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.
5. Bulk storage plants.
7. Health care facilities.
9. Theaters, audience areas of motion picture and television studios, and similar locations.
10. Motion picture and television studios and similar locations.
11. Motion picture projectors.

Where the occupancy of an existing building or part of an existing building is changed, all unsafe conditions shall be corrected without requiring that all parts of the electrical system comply with the NEC.
Service upgrade 1008.3

- Where the occupancy of an existing building or part of an existing building is changed, electrical service shall be upgraded to meet the requirements of the NEC for the new occupancy.

Mechanical requirements 1009.1

- Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to different kitchen exhaust requirements or to increased mechanical ventilation requirements in accordance with the IMC, the new occupancy shall comply with the intent of the respective IMC provisions.

Increased Plumbing Demand 1010.1

- Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the IPC, the new occupancy shall comply with the intent of the respective IPC provisions.
Light and ventilation
1011.1
- Light and ventilation shall comply with the requirements of the IBC for the new occupancy.

Change of occupancy classification
1012
- The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification.
- This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the IBC.

Compliance with Chapter 9
1012.1.1
- The requirements of Chapter 8 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 1012.1.1.1 and 1012.1.1.2.
## Change of occupancy classification without separation - 1012.1.1.1

- Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the IBC, and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the IBC for the separate occupancy, the entire building shall comply with all of the requirements of Chapter 9 applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

## Change of occupancy classification with separation - 1012.1.1.2

- Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the IBC, and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the IBC for the separate occupancy, that portion shall comply with all of the requirements of Chapter 9 for the new occupancy classification and with the requirements of this chapter.

## Fire sprinkler system 1012.2.1

- Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the IBC that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the IBC, such system shall be provided throughout the area where the change of occupancy occurs.
Fire alarm and detection system
1012.2.2

Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the IBC that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the IBC, such system shall be provided throughout the area where the change of occupancy occurs.

Existing alarm notification appliances shall be automatically activated throughout the building.
Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs in accordance with Section 907 of the IBC as required for new construction.

Interior finish
1012.3

In areas of the building undergoing the change of occupancy classification, the interior finish of walls and ceilings shall comply with the requirements of the IBC for the new occupancy classification.
Means of egress 1012.4

- Hazard categories in regard to life safety and means of egress shall be in accordance with Table 1012.4.
- When a change of occupancy classification is made to a higher hazard category (lower number) as shown in Table 1012.4, the means of egress shall comply with the requirements of Chapter 10 of the IBC.
  - Exceptions!

Change of use to equal or lower hazard category - 1012.4.2

- When a change of occupancy classification is made to an equal or lesser hazard category (higher number) as shown in Table 1012.4, existing elements of the means of egress shall comply with the requirements of Section 905 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the IBC.
  - Exception: Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

Means of egress 1012

- Egress capacity shall meet or exceed the occupant load as specified in the IBC for the new occupancy.
- Existing stairways shall comply with the handrail requirements of Section 705.9 in the area of the change of occupancy classification.
- Existing guards shall comply with the requirements in Section 805.11 in the area of the change of occupancy classification.
Heights and area

1012.5.1

- When a change of occupancy classification is made to a higher hazard category as shown in Table 1012.5, heights and areas of buildings and structures shall comply with the requirements of Chapter 5 of the IBC for the new occupancy classification.
- When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 1012.5, the height and area of the existing building shall be deemed acceptable.

Exception

Fire barriers

1012.5.3

- When a change of occupancy classification is made to a higher hazard category as shown in Table 1012.5, fire barriers in separated mixed-use buildings shall comply with the fire resistance requirements of the IBC.
  - Exception: Where the fire barriers are required to have a 1-hour fire-resistance rating, existing wood lath and plaster in good condition or existing ½-inch-thick gypsum wallboard shall be permitted.

Exterior wall ratings

1012.6.1

- When a change of occupancy classification is made to a higher hazard category as shown in Table 1012.6, exterior walls shall have fire-resistance and exterior opening protectives as required by the IBC.
  - Exception: A 2-hour fire-resistance rating shall be allowed where the building does not exceed three stories in height and is classified as one of the following groups: A-2 and A-3 with an occupant load of less than 300, B, F, M, or S.
- When a change of occupancy classification is made to an equal or lesser hazard category, existing exterior walls, including openings, shall be accepted.
Opening protectives
1012.6.3

- Openings in exterior walls shall be protected as required by the IBC.
- Where openings in the exterior walls are required to be protected because of their distance from the property line, the sum of the area of such openings shall not exceed 50 percent of the total area of the wall in each story.

Exceptions:
1. Where the IBC permits openings in excess of 50%.
2. Protected openings shall not be required in buildings of Group R occupancy that do not exceed three stories in height and that are located not less than 3 feet from the property line.
3. Where exterior opening protectives are required, an automatic sprinkler system throughout may be substituted for opening protection.
4. Exterior opening protectives are not required when the change of occupancy group is to an equal or lower hazard classification in accordance with Table 1012.6.

Vertical Shafts
1012.7

- Vertical shafts shall be designed to meet the IBC requirements for atriums or the requirements of this section.

Stairways
1012.7.2

- When a change of occupancy classification is made to a higher hazard category as shown in Table 1012.4, interior stairways shall be enclosed as required by the IBC.

Exceptions:
1. In other than Group I, an enclosure shall not be required for openings serving only one adjacent floor and that are not connected with corridors or stairways serving other floors.
2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if the openings are not more than three stories by 1-hour fire-resistance-rated construction or approved wired glass set in steel frames and all exit corridors are sprinklered. The openings between the stairway and the corridor are to have at least one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic water-supply systems.
3. Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with the IBC.
Other vertical shafts
1012.7.3

Interior vertical shafts other than stairways, including but not limited to elevator hoistways and service and utility shafts, shall be enclosed as required by the IBC when there is a change of use to a higher hazard category as specified in Table 1012.4.

Exceptions:
1. Existing 1-hour interior shaft enclosures shall be accepted where a higher rating is required.
2. Vertical openings, other than stairways, in buildings of other than Group I occupancy and connecting less than six stories shall not be required to be enclosed if the entire building is provided with an approved automatic sprinkler system.

Partial change in occupancy (Accessibility) 1012.8.1

Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 705, 806 and 906, as applicable.

Additions 1101

An addition to a building or structure shall comply with the International Codes as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter.

Where an addition impacts the existing building or structure, that portion shall comply with IIEBC.
Heights and Areas
1102

- No addition shall increase the height of an existing building beyond that permitted under the applicable provisions of Chapter 5 of the IBC for new buildings.

Energy Conservation
1106

- Additions to existing buildings shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction.

Compliance Alternatives
Section 1401

- Intent
  - Maintain or increase current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with IBC.
Compliance Alternatives
1401.2

- Structures existing prior to 
  the date in which there is 
  work involving additions, 
  alterations or changes in 
  occupancy shall be made to 
  conform to the requirements 
  of this chapter or the provisions 
  of Chapters 5 through 13.

- The provisions of Sections 
  1401.2.1 through 1401.2.5 
  shall apply to existing 
  occupancies that will continue 
  to be, or are proposed to be, in 
  Groups A, B, E, F, I-2, M, R 
  and S.

- These provisions shall not 
  apply to buildings with 
  occupancies in Group H or I-1, 
  I-3 or I-4.

Acceptance
1401.3

- For repairs, alterations, 
  additions and changes of 
  occupancy to existing 
  buildings that are 
  evaluated in accordance 
  with this section, 
  compliance with this 
  section shall be accepted 
  by the building official.
  - Hazards must be abated
  - Must comply with IFC and 
    IPMC

Investigation and Evaluation
1401.4

- The owner shall have a structural analysis of the existing 
  building made to determine adequacy of structural 
  systems.

- The analysis shall demonstrate that the building with the 
  work completed is capable of resisting the loads 
  specified in Chapter 16 of the IBC.

- The results of the investigation and evaluation as 
  required in Section 1401.4, along with proposed 
  compliance alternatives, shall be submitted to the code 
  official.

- Building official to determine compliance in accordance 
  with evaluation process
Evaluation Process
1401.5

- Three categories of evaluation
  - Fire safety
  - Means of egress
  - General safety

Evaluation Process
1401.6

- Building evaluation considers following elements:
  - Building height
  - Building area
  - Compartmentation
  - Tenant and dwelling unit separation
  - Corridor walls
  - Vertical openings
  - HVAC systems
  - Automatic fire detection
  - Fire alarms systems

Evaluation Process (continued)
Section 1401.6

- Building evaluation considers following elements:
  - Smoke control
  - Means of egress capacity and number
  - Dead ends
  - Maximum travel distance to an exit
  - Elevator control
  - Means of egress emergency lighting
  - Mixed occupancies
  - Sprinklers
  - Incidental use
Building Score
Section 1401.7 – 1401.9

- Data entered into Summary Sheet (Table 1401.7) and building score determined
- Values in Table 1401.8 are mandatory safety scores based on occupancy and evaluation categories
- Mandatory score then subtracted from building score for each category
- Where final score in each category equals zero or more, building in compliance for that category
- Compliance in all three categories required for acceptance
Compliance Alternatives

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