# Building Code Interpretations*

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*As referenced by the Chicago Building Department, Chicago Department of Construction and Permits, Chicago Fire Department and Mayor’s Office for People With Disabilities.

Updated, 10-6-06
Access to a Public-Way from the Rear Exit for Single Family Units & Multiple Dwelling Units

The rear exit of a single-family unit or a multiple dwelling unit building shall have access to a street or public way by means of an unobstructed open path. That path shall not be less than 36 inches wide. A minimum 44 inches wide access (path) to a street or public way is required for the multiple dwelling unit buildings where the width of the rear exit stairway is required to be minimum 44 inches in accordance with the Section 10(13-160-220)(b).

Alterations Exit Requirements – Assembly & Institution Occupancies

Section 34(13-196-010) requires buildings to comply with the applicable provisions of the code at the time of its construction or at the time of its alteration. An alteration is defined in section 2(13-4-010) as “any change in the occupancy classification or any change or modification of construction or space arrangement in any existing building…”

The entire assembly unit or institution unit space must conform to all new construction requirements of Chapter 10(13-160) regarding number, width, location, access to, and enclosure when one of the following occurs:

1) The occupancy of an existing building or portion thereof is changed to an assembly unit or an institution unit.

2) An existing assembly unit or an institution unit undergoes an architectural and/or a structural renovation or alteration which involves 50% or more of the square footage of the institutional or assembly space.

Existing fire escapes may be permitted where such exits now serve the existing building. A supervisor of plan examiners, prior to the plan submission, must review any situation in which bringing the existing life safety features of the building up to the current code requirements is unreasonable or a hardship.

Assembly Occupancy, Classification

The occupancy content of the entire space including all rooms and/or floors that are under one management or ownership shall be summed up together for the determination of small or large assembly unit.

This interpretation does not apply to the Wrigleyville rooftop clubs.

Atrium

Atriums are permitted in fire resistive buildings that comply with all of the Chapter 13-76 (High Rise Code) and have an Atrium Smoke Control System meeting national standard requirements (BOCA 1990) as follows: Not less than six air changes per hour shall be exhausted from an atrium with a volume of less than 600,000 cubic feet, and not less than four air changes when the volume is more than 600,000 cubic feet. The minimum exhaust is 40,000 cfm.

The following information shall be provided on plans:
1. The total area and the total volume open to the atrium.
2. The opening sizes with the cfm and direction of flow (exhaust/supply).

3. The supply openings are sized for 50% of the exhaust capacity.
4. The exhaust shall be at the top of the atrium and the intake at the bottom.
5. Smoke detectors are to be located at the ceiling of the atrium and at the perimeter of the atrium on each floor within 15 feet.
6. The Atrium Smoke Control System must be activated by any of the following: the activation of the sprinkler system, or smoke detectors in atrium area, or by the manual switch at fire alarm panel.

See Section 13-76-100 Exceptions

Origin: Chicago Fire Department
Automatic Sprinkler System Required in Basement Areas of Night Clubs or Restaurant

Every existing and new building occupied as a nightclub or restaurant with an occupancy count of more than 100 persons located in the basement shall be equipped with an approved automatic sprinkler system. The sprinkler system can be limited only to the basement level. The occupancy count shall be in accordance with the Section 3(13-56-300).

If the occupant load of the basement level is 100 persons or less, than a sprinkler system per this section is not required in the basement level.

See Sections 13-56-(300, 310, 320) Occupancy Content, Assembly Units and Open Air Assembly Units, Other Occupancies Occupancy Content; 15-16-030 Special Requirements

Origin: Department of Construction and Permits.

Basement Level, One Exit

One exit shall be permitted from any basement level having an area not exceeding 2,000 square feet and used either for storage purposes or to house equipment used in the operation of a building such as pumps, boilers or furnaces, with only incidental human occupancy.

A basement area of less than 800 sf within a duplex dwelling unit or as a self-contained dwelling unit may have a single exit of a private interior stair to the upper level of a duplex or to an exit at grade level

See Sections 13-160-(040, 050) Types of Exits Allowed for Story above or below Grade, Minimum Number of Exits

Origin: Chicago Fire Department

Bathroom Doors in School Corridors

Section 3(13-80-030) requires all rooms in an institutional occupancy to be separated from the exit corridor by 1-hour fire-rated walls and fire-rated doors.

There is no such code section for school/assembly occupancies, requiring all rooms to be separated from the exit corridor.

School administrators are very concerned about the security threat to students that a door to a bathroom may present. School personnel require the visual advantage that a clear opening provides. There is also not much of a fire load in a bathroom as compared to a school classroom, hence the need for a door on a bathroom is not as apparent as it would be for a classroom.

Therefore, in order to work with the security concerns of school administrations, and since the code is not clearly requiring this separation, doors will not be required from bathrooms to the corridors in schools.

See Sections 13-84-050 Special Enclosures and Separations; 13-80-030 Special Enclosures and Separations

Origin: Chicago Fire Department and Department of Construction and Permits

Buildings Equipped with an Automatic Sprinkler System

In order for any existing or new building to be considered fully protected by an automatic sprinkler system, all rooms or areas of the building must have sprinklers. However, Section 9(15-16-350) allows the omission of sprinklers in certain rooms or areas of a building where the application of water to the contents in the room or areas of a building may cause hazard. The following is a list of these locations:

1. Rooms or vaults dedicated for electrical transformers, CECO vaults.
2. Dedicated main building switchboard rooms.
3. Generator rooms, supplying electrical power to the building.
4. Dedicated electrical closets or rooms where voltage exceeds 600 volts.
5. Elevator machine rooms.
6. Elevator shafts. (Sprinklers are required at bottom of the elevator pit for all newly installed sprinkler systems).
7. Freezers under 200 sq ft in area.
8. Rooms containing chemicals that may cause serious life or fire hazard upon the application of water.
When a building is protected by a required standard or High-Rise Fire Alarm System, the above elevator machine and electrical rooms or areas shall be protected by an appropriate detection.

Note that the electrical code Section 18-27-110.26(f)(1)(c) requires higher temperature sprinkler heads in electrical closets and distribution rooms that are required to have sprinklers and are not included on the above list.

See Sections 15-16-350 Location and Arrangement of Sprinklers; 18-27-110.26 Spaces About Electrical Equipment

Origin: Department of Construction and Permits

Change of Occupancy

When the occupancy of an existing building or portion thereof is so changed resulting in an occupancy class two or more hazard index numbers higher than its present occupancy class, as defined in Section 34(13-200-170), the entire building shall meet the requirements of Municipal Code of Chicago for new construction.

See Sections 13-200-(120, 170, 200) Change in Occupancy, Requirements for a Change in Occupancy to any other than Residential, Increase of Two or More Hazard Index Numbers

Origin: Chicago Fire Department

Clarifications on Section 13-172, Light and Ventilation: Part I Date: 8/19/99

Effective immediately, the Department of Buildings hereby establishes the following rules for the application of Chapter 12(13-172), Light and Ventilation. This memo rescinds a previously issued memo on the same subject dated 7/26/99 and shall apply both to buildings being proposed as new construction and to those intended as alteration of existing buildings. These rules are promulgated as part of a pilot of the expansion of this Chapter.

Any building reviewed for permit, utilizing borrowed light and ventilation (air) or courts for access to light and air, shall meet the following minimum standards in addition to the code requirements delineated in Chapter 12(13-172):

A. BORROWED LIGHT AND AIR
   1. The ceiling height between the source of natural light, and the remote room borrowing the light and/or air, shall be no less than 10 feet at its lowest point. The head of the window which is the source of light being borrowed shall be no less than 9'-0" above the finished floor.
   2. Not more than two rooms may borrow light or ventilation in one dwelling unit.
   3. The room borrowing light shall be adjacent to the room with the natural light source, except that an intervening enclosed closet, bathroom or kitchen facility may be permitted if the total enclosed depth (dimension perpendicular to the plane of the windows) of the intervening space is not over seven feet. The space above the enclosed area shall be left open to satisfy requirements of sections 12(13-172-070) and 12(13-172-090). (See Fig. 1.)

B. COURTS AND YARDS
   1. Every court shall have a minimum length (dimension parallel to the plane of the window) at least 50% greater than the total width of the window openings transferring the required natural light and ventilation. The total width of the windows shall be measured from end to end of the bank of windows without deduction for any solid piers or walls between the openings. Required courts and yards shall be open to the sky. (See Fig. 2.)
   2. The required width (dimension perpendicular to the plane of the windows) of an inner or outer court or yard need not exceed 15 feet regardless of the width calculated in accordance with Section 12(13-172-130)
See Sections 13-172(010, 020, 030, 040, 050, 060, 070, 080, 090, 100, 110, 120, 130, 140, 150) Light and Ventilation; 13-4-010 Definitions

Clarifications on Section 13-172, Light and Ventilation: Part II Date: 8/1/05

Effective immediately, the following clarifications shall apply to the Chapter 12(13-172), Light and Ventilation, of the Chicago Building Code. This memo is a supplement to the memo dated August 19, 1999 regarding the same subject and shall apply both to buildings being proposed as new construction and to existing buildings intended to be altered. This memo does NOT replace the memo dated August 19, 1999. Both memos work in conjunction with each other.

Any building being reviewed for permit as of the date of this memo utilizing borrowed light and ventilation (air) shall meet the following minimum standards in addition to the code requirements delineated in Chapter 12(13-172).

- Natural Light and Ventilation shall be required for all dwelling units as required by Table 18-28-403.3 Ventilation Requirements for Private Dwellings. The phrase "living, dining, and sleeping rooms" used in Chapter 12(13-172) shall be interpreted as "Habitable Room" as defined in Chapter 2(13-4). Any room or space over 70 square feet shall be considered "Habitable" except for kitchen and baths.
- Multi-purpose rooms - defined in 12(13-172-030) - are only allowed in buildings permitted prior to April 1, 1998. Nothing in Chapter 12(13-172) shall be interpreted to imply that a multi-purpose room may be used in a building permitted after that date.
- The required open space between the room with the natural light or ventilation source and the room borrowing the light or ventilation shall not be located such that a door installed between the rooms, even if not indicated on the plans, would block the light/air between the two rooms.
If a space is an alcove or part of another room that has direct access to natural light and ventilation, that space does not require either independent or "borrowed" natural light and ventilation. Use common sense to determine whether a space is an adjoining area instead of a separate room. The following criteria gives guidelines:

- More than half of the open side of the adjoining space must overlap with the main room for it to be considered part of the main room.
- If the adjoining space is separated from the main space by a corridor, it is a separate room.
- The adjoining space must have no more than three (3) walls. Any partition over 4'6” above finish floor level is considered a wall.
- The room with the direct access to light and ventilation must have enough natural light and ventilation to address the needs of the entire square footage.

See Sections 13-172-(010, 020, 030, 040, 050, 060, 070, 080, 090, 100, 110, 120, 130, 140, 150) Light and Ventilation; 13-4-010 Definitions

Clarification-Wood Framing into Masonry Walls

Questions have arisen recently regarding the acceptable method of framing wood floor members - solid joists and trusses - into load bearing masonry walls in townhouse buildings. These walls typically are required to provide a three-hour separation between units or three-hour protection in exterior walls. Similar questions have also arisen regarding wood framing into masonry walls, which are required to have a four-hour rating.

**Condition A – Framing members In-line**

A three-hour fire separation can be provided between the ends of wood joists or trusses if the common bearing wall is expanded slag or pumice, of at least 10" nominal (9-5/8" actual) thickness, the joists bear on the wall at least 3" on each side, and 4" nominal (3-5/8 actual) separation is provided between the ends. The space between the ends shall be filled with 3-5/8" thick expanded slag or pumice* masonry units and the space around the joist or truss ends shall be slushed with mortar.

A four-hour separation can be provided similarly if the wall thickness is increased to 12" nominal (11-5/8” actual) and the separation between joist ends is at least 4-3/4”.

**Condition B – Framing members Staggered**

A three-hour separation can be provided in an 8" (7-5/8” actual) expanded slag or pumice* masonry wall if the separation between ends of joists or trusses measured diagonally provides 4” actual separation between ends and the intervening space is treated as described in Condition A.

A four-hour separation can be provided when the minimum distance between joist ends is 4-3/14” actual.

*Expanded slag or pumice as used above refers to aggregate type used in the concrete masonry unit.

See Sections 13-60-100 Fire-Resistive Requirements of Types of Construction: 13-140-(010, 020, 030, 040, 050, 060, 070, 080, 090, 100, 110, 120, 130, 140, 150, 160, 170) Masonry Construction

Combined Detection and Voice Communication

The voice communication circuits and the fire detection circuits of a High Rise Fire Alarm System can share the same conduit or approved raceway, and also utilize common control equipment and power supplies.

This ruling conforms to the requirements of the Article 760 of the Chicago Electrical Code. It facilitates the common use of the conduit system and eliminates the current requirement of redundant conduits and power supplies for voice communication and fire detection.

The maximum 40% conduit fill requirements per Section 18-27-760.82, and the two-hour enclosure requirement of the voice communication risers per Section 13-76-080(f) are still required.


Convenient Stairway Enclosures

The following stairway enclosure requirements apply to the convenient stairways that serve the floor levels that are occupied by one tenant or the floor levels served are under control of one management or ownership:

One hour enclosure is required for the stairways that serve any two or three floors of a building and two hour enclosure is required when four or more levels are served. The one hour stairway enclosure walls can have fixed wired glass...
vision panels, provided each light does not exceed 1,296 square inches in area having a maximum dimension of four feet, six inches and is installed in a 16 gauge steel frame. One and two hours fixed ceramic glass is also permitted in one and two hour stairway enclosures. The dimensions allowed are strictly by manufacturers specifications.

When serving only two floors, a complete stairway enclosure is required only on one level, upper or lower, with one hour walls and 1½ hour self-closing "B" label door. A note is required on the plans that the stair door is not permitted to be held open. Enclosure on both levels is required when stair doors are held open by magnetic door hold open devices and smoke detectors that are installed in accordance with the Section 7(15-8-180)(c).

Except in Residential and Institutional occupancies, the enclosure of a stairway serving only the second floor from the ground floor is not required in buildings of Fire Resistive Construction.

Compliance with the High Rise Chapter 13-76 and installation of atrium smoke control system is required if stairway enclosure is not provided for non-required stairways.

See Sections 15-8-(140, 180) Stairway Enclosures, Protection of Openings; 13-60-020 Type I Fire Resistive Construction; 13-80-030 Special Enclosures and Separations

Convenient Stairways, No Enclosure Required

Stairway enclosure shall not be required for the stairway serving any two floors in buildings of Type I-A, I-B, and I-C construction with the following conditions:

1. The entire building is protected by an automatic sprinkler system.
2. The open stairway is not used as a required exit, except where permitted by the Section 7(15-8-140)(b) & (c).
3. The occupancy of the floors served by the open stairway is not Hazardous Use, Multiple Dwellings, or Institutional Use.
4. All shafts within 100 feet horizontal distance from the unenclosed stairway opening, on both levels, have one (1) hour enclosure, except the shafts for pipes and ducts passing from one floor to the other as per section 7(15-8-160).

This ruling is based on the fact that Section 7(15-8-140)(b) allows a stairway between two floors, between the ground floor and the second floor, without any enclosure, and with the life safety features and restrictions in place, it can be any two floors of the building.

See Sections 15-8-(140, 160) Stairway Enclosures, Enclosure of Pipe Shafts and Ducts; 13-60-020 Type I, Fire-Resistive Construction

Definition of "approved station"

Rule 1 The ‘approved station’ shall be defined as including a constantly-attended location either on the premises, such as a doorman or security station having the ability to unlock the stairway doors, or an off-site service which is capable of taking appropriate action when a building attendant is not available.

See Section 13-196-084 Stairwell Re-entry in Existing Buildings

Definition of Travel Distance

Per Section 10(13-160-120), travel distance is defined as the distance from a point in a floor of a building to a vertical exit, a horizontal exit or an outside exit measured along the line of travel.

Travel distance is measured to the nearest exit. The travel distance numbers, as established in Section 10(13-160-140), are applied to the nearest exit and not to all required exits.

The code does not set limits for travel distance to a secondary exit. This interpretation is consistent with the Life Safety Code NFPA 101.

See Sections 13-160-(120, 140) Definition, Types of Exits Allowed for Story Above or Below Grade

Origin: Chicago Fire Department
**Depth of Basement, Existing Building**

The code Section 5(13-48-020)(d) was amended on 10-02-1995 requiring the basement levels to be more than 4 feet below grade. The intention of this change was to require only the new construction projects or new building additions to have deeper basements. It was not intended to be applied to the basement levels of existing buildings.

The following shall be regarded as a basement, not a story, in all existing buildings built before 10-02-1995 that are not increasing the number of stories.

1) The floor level shall be at least one foot below grade.
2) The ceiling height of the level shall not be more than seven feet above grade.

The number of stories shall be taken as the actual number of stories above grade in accordance with the Section 5(13-48-020)(d). The code requirements for the mezzanine floors and enclosed monitor spaces shall remain unchanged for all existing and new buildings. This will not apply to any addition to a pre-10-02-1995 building.

The intention of this interpretation is to not inadvertently require buildings originally intended as two story building into three stories (or three stories to four) when there is no other impact to the exiting requirements.

See Sections 13-48-020 Application of Height Limitations; 13-160-040 Types of Exits Allowed For Story Above or Below Grade.

*Origin: Department of Construction and Permits*

**Direction in Line of Travel**

Section 10(13-160-090) requires that vertical exits in institutional and assembly units to be arranged as to discharge occupants at grade level in direction of travel to the outside. The code does not define direction of travel. So it was determined many years ago that a single 90 degree turn from the stair enclosure would be acceptable. This single turn has been acceptable for many years and many buildings have been built in this manner.

This memo is intended to clarify any misunderstanding there may be in reference to Section 10(13-060-090).

See Section 13-160-090 Discharge in Line of Travel

*Origin: Chicago Fire Department*

**Electro-Magnetic Locks on Egress Doors**

Section 10(13-160-269) of the Municipal Code of Chicago allows the use of electro-magnetic locking devices on the egress doors of certain types of occupancies. This code section is addressing the delayed egress type of electro-magnetic lock.

Access control on egress doors via a non-delay type electro-magnetic lock, also known as “Mag-Lock,” can be installed in buildings of the occupancies listed in Section 10(13-160-269). Plans must be submitted to the Department of Construction Permits for the installation of Electro-Magnetic Locks and obtain all the required permits before any installation begins.

All installations of Electro-Magnetic Locks without delayed egress must meet the following requirements:

1) All Electro-Magnetic Locking Devices within a building shall unlock immediately upon the actuation of the building Fire Detection System or the building Automatic Sprinkler System.

2) All Electro-Magnetic Locking Devices within a building shall unlock immediately upon a trouble signal or abnormal condition in any supervisory circuit of the building, Fire Detection System or Automatic Sprinkler System rendering the system partially or completely inoperative. All Electro-Magnetic Locking Devices shall remain unlocked until the Fire Detection System or the Automatic Sprinkler System is restored to normal operation.

3) All Electro-Magnetic Locking Devices shall unlock immediately upon loss of electrical power to any devices that controls the lock/unlock status of the Electro-Magnetic Lock.

4) The Mag-Lock shall unlock immediately upon the loss of normal electrical power to the building and shall remain unlocked until normal building power is restored. Mag-Locks are not permitted to have a secondary power supply or to have battery backup. The controlling devices for the Mag-Locks are permitted to have backup power. (For example the Fire Detection System)

5) The following devices are required on the egress side of the door:

5.1 A UL listed motion detector, or a UL listed Lock, or a UL listed Panic Device with a built in switch to allow egress at any time.
5.2 And; an emergency pneumatic bypass push button switch located within 5 feet of the door opening, and in plain view, 42" above the finished floor. This switch should be clearly marked “Push to Exit” and must interrupt power to the Mag-Lock bypassing all other releasing or controlling devices for a minimum of 30 seconds, allowing a person enough time to push the button and proceed through the door.

Electrified dead bolts or magnetic shear locks are not permitted and are not addressed in this section. The installation of Electro-Magnetic Locks shall also be subject to a final inspection and field test.

See Section 13-160-269 Electro-Magnetic Locking Devices

Enclosure of Heating Plants & Boilers

Code Section 7(15-8-200) clarifies when a fire-rated enclosure is not required for heating plants and boilers. Steam boilers with a pressure rating exceeding 15 psi. are not included in this section, but instead are covered under Section 7(13-8-210). Heating plants with pressure ratings less than 15 psi can be viewed as forced air furnaces.

The enclosure of furnaces or boilers shall not be required for one story business, mercantile, industrial or storage units having a floor area not exceeding 3000 sq. ft. This section refers to the size of the unit or tenant space and not to the building size. Therefore, a storage occupancy that only occupies any one story of a building (this could be a multi-story building) and with a tenant area not exceeding a 3000 sq. ft. is not required to have a fire-rated enclosure around its furnace. This shall be the same for a business, mercantile, or industrial occupancy that meets this unit size requirement.

See Sections 15-8-(190, 200) Enclosure of Heating Plants and Boiler Rooms, Protection not Required; 13-108-080 Heating

Enclosure of Pipe Shafts and Ducts

Per code Section 7(15-8-160), when pipes and ducts pass through floor openings less than nine square feet in area, no fire-rated enclosure is required regardless of the construction type of the building. All that is required is that the openings between the floor and the pipes or ducts be filled with non-combustible materials.

On building plan reviews, only a general note stating compliance with this code section will be required. A detailed drawing is not needed, nor is it required by code. This shall be for any pipe, flue or duct passing through a floor opening that is less than nine square feet in area.

See Sections 15-8-160 Enclosure of Pipe Shafts and Ducts; 13-112-200 Conveyors and Ducts

Exits in Existing Buildings

Every existing building shall have not less than the minimum number of required exits, as prescribed in Section 10(13-160-050).

In existing buildings, the required interior or exterior stairways (except fire escapes) that are minimum 36 inches wide shall be permitted under the following conditions:

1. The occupancy served by the stairway is not Institution Use.
2. The space or floor served by the stairway has an occupancy count that does not necessitate the stairway to be wider than 36 inches. The occupancy count shall be based on actual space provided and determined by dividing by the numbers that are provided in Sections 3(13-56-310) and 3(13-56-320).
3. If the stairway is the original building stairway or the stairway was built with approved building permit drawings.
4. When the change of occupancy of an existing building or building floor served by stairway did not result in two or more hazard index numbers higher than its present occupancy class, as defined in Section 34(13-200-170).

Existing stairways must be reconstructed to provide a minimum 44 inches in width when the stairways do not meet any one of the above listed conditions.

See Sections 13-56-(310, 320) Assembly Units and Open Air Assembly Units, Other Occupancies Occupancy Content 13-60-(050, 210, 300, 580, 590, 620) Minimum Number of Exits, Capacity of Exits, Treads and Risers, Exterior Stairs, Treads and Risers, Construction; 13-200-170 Requirements for a Change in Occupancy to any Other than Residential

Origin: Chicago Fire Department
Exterior Stairway Serving Second Floor of a Single-Family Residence

The code Section 10(13-160-050)(o)(2) accepts an exterior stairway serving the second floor of a single-family residence, as part of the required exits from the third floor. The code Section 10(13-160-050)(c) requires a second exit from the second floor of a single-family residence with an area over 1500 sf. Furthermore, the addition of a second exit intrinsically improves the safety of a building and an exterior stair has the advantage of moving the occupants immediately outside the building. Therefore, an exterior stairway serving the second floor of a single-family unit shall be permitted.

See Section 13-64-090 Stairway Location

Origin: Department of Construction and Permits

Fire Limits, Prohibited Construction Types

The prohibition of Type II, Type III and Type IV construction shall be limited to the dense downtown business district area bounded by Roosevelt Street (1200) on the South, Division Street (1200) on the North, Lake Michigan on the East, and Halsted Street (800) on the West. This ruling shall apply to all new additions and new construction projects only.

All exceptions using any of the above construction types must be approved by a supervisor of the plan examiners on a case by case basis.

See Sections 13-116-(010, 020, 030, 040, 050, 130, 140) Fire Limits, Prohibited Construction, Projections Beyond Main Building Walls, Types IV-A and IV-B Building Locations, Type II Locations, Exceptions, Construction; 13-60-(030, 070) Type II Non-Combustible Construction, Type IV Combustible Frame Construction

Origin: Chicago Fire Department

Fire-Rated Windows and Energy Code

Fire-rated windows are required by code to protect openings in buildings per code Section 7(15-8-110). These windows provide a 45 minute fire rating which includes a hose stream test. These windows can be required along interior lot lines or near fire escapes, exterior stairs and other locations. Fire-rated windows protect the building’s exposure from fire, and also protect the building’s occupants and firefighters when using a fire escape during a fire incident.

It is agreed that, whenever the Municipal Code requires fire rated windows to be installed, this life safety requirement must be met. The new Energy Code will not supersede this requirement.

See Sections 15-8-110 Protection of Openings; 18-13-802.2.3 Windows and Glass Doors

Origin: Chicago Fire Department

Framing into Walls

This memorandum is to clarify how floors and roofs are framed into walls. The walls can be constructed of masonry, steel stud or wood stud. There has been confusion about what method is acceptable.

The recessing of floor/roof framing members into walls has always been a common construction practice. Fire cuts of floor framing members are provided to prevent a structural collapse. Floor/roof framing of member roofs, supported by only a metal hanger or a ledger board, is much more of a hazard than recessing a floor into a wall. Ledger boards and hangers have no fire rating. Therefore, it shall be acceptable to recess a floor or a roof-framing member into an interior or exterior wall.

See Sections 13-140-(010 through 170) Masonry Construction; 15-8-(070, 080) Exterior Walls, Exterior Walls Construction

Origin: Chicago Fire Department
Guide to Porch and Deck Design and Construction

Introduction
The Chicago Building Code defines a porch as “an unheated roofed portion of a building, generally containing a stair used for ingress (entering) and egress (exiting) and a floor area, and separated from the principal portion of the building by a fire rated wall and unrated doors and windows.” A deck is defined as “an open, unroofed structure used in conjunction with a principal building or installed on the roof of a building. A deck other than a roof deck may be classified as attached or detached depending upon its relationship to the principal building.” Simply said, a porch has a roof and stairs, whereas a deck does not have a roof but may have stairs. Regardless of whether a porch or a deck, both are designed and built in a similar manner and serve many of the same functions.

The purpose of this Guide to Porch and Deck Design and Construction is to provide the homeowner with the “tools” he or she needs to build a porch or deck that meets the requirements of the Chicago Building Code. If you own the building you live in, the building is three stories high or less and the building has no more than six units, you can likely use this Guide to get your building permit and you won’t need a design professional to prepare your plans. Whether you build it yourself or hire a contractor, the Guide is a step-by-step handbook to properly design, permit and build your porch or deck. Inside, you will find:

- terms used to define components of a porch and deck
- how to select the proper materials
- how to select the proper size components
- how the elements of a porch and deck go together
- how to obtain a building permit
- how to have your porch or deck inspected during construction
- how to maintain your porch or deck after it is built

If you don’t want to follow these plans, or if you own multiple buildings or buildings greater than three stories in height or with more than six units, you must hire a State of Illinois Licensed Architect or Structural Engineer to assist you with the design and permitting of your porch or deck project.

The best porch or deck designs mean nothing if they are not properly built and maintained. Your safety, and the safety of those who use your porch or deck, is entirely dependent on good construction, proper maintenance and common sense. Please note the following important points:

- When contracting for work, insist on a written contract with a fixed cost that includes these plans initialied by you and your contractor.
- Only use new materials from reputable suppliers; reusing old materials jeopardizes porch and deck safety.
- Frequently check on your work and insist on quality workmanship – whether performed by you or your contractor – and remove and replace all work of inferior quality.
- Insist on inspections at key points of the project to ensure compliance with the Chicago Building Code.
- Check your porch or deck annually and replace deteriorated members and components.
- Properly treat and waterproof the wooden members of your porch or deck to extend their life.
- Educate those who use your porch or deck on proper use and control the number of people who use it.

By following these simple guidelines, your porch or deck will serve you, your friends, and your guests for many years.

If you have questions concerning this Guide, call the City of Chicago’s Department of Construction and Permits at (312) 744-7328 between 8:30 AM and 4:30 PM, Monday through Friday, or e-mail us at DCAPhelp@cityofchicago.org.

Step One: Can I Use This Guide?
Before progressing any further, you need to determine if you are eligible to obtain a permit for your porch or deck project through the use of this Guide. Check the boxes next to each of the following statements that apply to you:

- You are the owner and you live in this building.
- You are replacing an existing porch or deck.
- The building is either one or two units wide.
- The building has three stories or less above ground level.
- The story height, as measured from finished floor to finished floor, is 12 feet or less for each level.
- The total area for all units above ground level combined is less than 6,250 square feet (not including basement floor space).

If you checked the boxes for all of the above statements, you may use this Guide to acquire a permit for your porch or deck project and you should continue to Step Two. If you could not check all of the boxes, you will be required to hire a licensed architect or structural engineer to assist you with the design and permitting of your porch or deck project.

Step Two: How Many Units Wide is the Building?
1. How many units wide is the building? (This refers to the side of the building to which the porch or deck is to be attached.

   - 1
   - 2

Step Three: Specify Building Construction Type
At this time, it will be necessary to determine the construction type of the building to which the porch or deck will be attached. If the exterior of the building is wood, vinyl or aluminum siding, or stucco, then the building is frame construction. If the exterior is masonry block (typically 8” high by 16” long, but may vary), then the building is masonry construction. If the exterior is common brick (typically 21/4” high by 8” long, but may vary), then the building is most likely ma-
sonry construction, but could possibly be frame construction with a decorative brick veneer.

If you are fortunate enough to have plans of your building, then you should be able to verify the construction type from the plans. If you do not have plans, and your exterior is common brick, you will have to do some investigation to determine the type of wall construction you have. The possibilities are:

- Masonry Block Wall with Brick Facing (No Cavity) (masonry construction)
- Masonry Block Wall w/ Air Cavity and Brick Veneer (masonry construction)
- Multiple Wythe Solid Brick Wall (masonry construction)
- Wood Frame Wall with Brick Veneer (frame construction)

The most reliable way to determine the wall construction is to physically remove a brick from the wall to see what is directly behind it. It is recommended that you hire a masonry contractor that is experienced in this type of work to perform this task and to repair the wall when done.

If you have a Wood Frame Wall with Brick Veneer, this Guide cannot be used and you will be required to hire a licensed architect or structural engineer to assist you with the design and permitting of your porch or deck project.

1. What type of construction is your building?
   - □ Frame Construction
   - □ Masonry Construction

Porch Configurations
Based on whether you have a building that is one unit wide or two units wide, and whether your building is frame construction or masonry construction, you will be able to determine which of the four following configurations of porch or deck you will be able to construct.

These configurations are:

- Type A: For one unit wide buildings of frame construction
- Type B: For one unit wide buildings of masonry construction
- Type C: For two unit wide buildings of frame construction
- Type D: For two unit wide buildings of masonry construction

Three-dimensional views of these four configurations can be found on the following two pages. It is important to note that these views show three-story porches with stairs and the optional roof included. If you have a one-story or two-story building and/or do not desire a roof and/or do not require stairs (if you are building a deck rather than a porch), then the depictions shown will still generally apply.

Now that you have determined which type of porch or deck you will be building, you must complete and submit the appropriate Volume 2 of this Guide as your permit application. If you are building a Type A porch or deck, you must complete Volume 2A. If you are building a Type B porch or deck you must complete Volume 2B. If you are building a Type C porch or deck, you must complete Volume 2C. If you are building a Type D porch or deck, you must complete Volume 2D.

If you wish to build a deck without stairs, you must have at least two existing exit routes to ground level other than via the new deck. If you don’t have two other exit routes to ground level, you must build a deck or porch with a stair system.

Note: Stairs to a rooftop deck are not allowed with these designs.
NOTE - IF A PORCH OR DECK HAS THREE STORIES, THE VERTICAL DIMENSION FROM EXISTING GROUND LINE TO THE FIRST STORY OF THE PORCH OR DECK MUST NOT EXCEED 6’-0”.

TYPE A — ONE-UNIT WIDE BUILDING — FRAME CONSTRUCTION

TYPE B — ONE-UNIT WIDE BUILDING — MASONRY CONSTRUCTION
NOTE - IF A PORCH OR DECK HAS THREE STORIES, THE VERTICAL DIMENSION FROM EXISTING GROUND LINE TO THE FIRST STORY OF THE PORCH OR DECK MUST NOT EXCEED 6'-0".

TYPE C—TWO-UNIT WIDE BUILDING — FRAME CONSTRUCTION

NOTE - IF A PORCH OR DECK HAS THREE STORIES, THE VERTICAL DIMENSION FROM EXISTING GROUND LINE TO THE FIRST STORY OF THE PORCH OR DECK MUST NOT EXCEED 6'-0".

TYPE D — TWO-UNIT WIDE BUILDING — MASONRY CONSTRUCTION
Appendix A: Glossary of Terms

Whatever project you do – build a porch or deck or repair your car – it is important to use the correct “jargon” or terminology. In this way, you can communicate with others to make certain that you are talking about the same thing. The people who sell materials for porches and decks and those who build them use certain words to describe what they are doing. In this section, we define the most commonly used terms and phrases that are used in this Guide and in the industry. If you refer to the three-dimensional porch/deck configuration drawings on the previous two pages, you will see where some of the various elements of a porch or deck are found.

Balusters. Vertical members (usually 2x2’s and with no more than 4” clear spacing between members) used in guards or railings to fill the spaces between support posts.

Beam. A horizontal member that is used to transfer or carry the load from one member into another. Beams typically support joists and are typically supported by columns and walls. Sometimes, beams are called “lookouts” or “girders”.

Beam Pocket. An opening in the building wall that supports the end of a beam that runs perpendicular to the wall.

Bollard. A device, commonly consisting of a steel pipe anchored into the ground and filled with concrete that is used to protect vulnerable structures from damage by vehicles.

Brick Facing. Load bearing brick that is placed directly against the outside of a masonry block wall.

Brick Veneer. Non-load bearing brick facing that is placed outside of a masonry block wall or a framed wall that is not a primary part of the structure and has an air space behind it. It is usually tied to the support structure with metal ties.

Bridging. See Joist Bracing.

Building Permit. A document issued by the City of Chicago that gives a building owner legal permission to make an improvement to their property. Obtaining a permit requires the submittal of an application, and in many cases, a fee.

Carriage Bolt. A steel bolt with threads for a nut that provides a high strength connection by through-bolting.

Cell. The hollow space inside of a masonry block, which may or may not be filled with grout and reinforcing.

Column. A vertical member, continuous or in spliced sections, that is used to support the levels of a porch, deck, landing or stairway. A column transfers the load from the levels of the deck to the ground below. Sometimes, columns are called “uprights” or “posts”.

Common Brick. Brick that is typically 2 ¼ inches high by 8 inches long in profile, although larger sizes are occasionally used. It is used in a variety of applications and may also be considered “Face Brick” if it has a higher quality exposed face.

Concrete. A material that is a mixture of water, sand and stone, which is mixed with cement. Cement serves as the “glue” that binds the sand and stone together and provides great strength.

Deck or Decking. The floor surface you walk upon on the porch or deck. Decking can either be individual boards laid closely together and attached to the joists or it can be “tongue in groove” decking, which provides a closed surface. Plywood is not an acceptable decking material.

Department of Buildings (DOB). The City of Chicago's Department of Buildings, which is a regulatory agency dedicated to advancing public safety through vigorous enforcement, community partnership and use of creative technical solutions making Chicago a safe place to live, work, and build.

Department of Construction and Permits (DCAP). The City of Chicago's Department of Construction and Permits, which is dedicated to encouraging development and renovation in the City through the issuance of Building Permits.

Downspout. A hollow metal tube that connects the gutters to the ground.

Face Brick. See Common Brick.

Fasteners. A general term referring to all mechanical connectors such as bolts, nuts, screws, and nails.

Flashing. Sheet metal or aluminum that is used as a means of waterproofing openings in a building. Flashing is used at a ledger beam connection.

Footing. The concrete pad that supports the column pedestal. The footing extends into the ground where it spreads out the weight of the porch or deck. Footings should be made of concrete and extend to a depth of at least 36 inches below the top of soil.

Frame Construction. Wall construction that consists of vertical wood studs as the primary means of structural support for the building.

Grout. A thin mortar mix that is commonly used to seal cracks and to fill the cells in reinforced masonry block.

Guard or Guardrail. Guards are used to enclose the edges of porches, decks, and stairways. Guards are always a minimum of 42 inches in height. Guards also may be known as porch or deck rails and handrails.

Gutter. If a porch has a roof, it should have a gutter. Gutters catch the rainwater that accumulates on the roof, collecting it along the low edge, and redirecting it down to the ground through a downspout.

Hex Bolt. A steel bolt with a hexagon-shaped head and threads for a nut that provides a high strength connection by through bolting.

Hot-Dip Galvanizing. A process by which steel is made resistant to corrosion (rusting) by being dipped in a liquid form of zinc to provide a weatherproof coating.

Joist. Members that span from beam to beam, spaced relatively close to one another, which support the decking.

Joist Bracing. Also known as “Bridging”, this is used to brace long joist spans against rotation. Joist bracing may consist of solid wood pieces, diagonal metal lacing, or diagonal wood lacing.
Joist Hanger. Joist hangers are prefabricated metal pieces that simplify the connection of joists to beams or ledgers.

Lag Bolt or Lag Screw. A steel fastener that is threaded and is used to connect wood members together without requiring a nut on the opposite end of the connection.

Landing. A large horizontal surface between stair runs.

Ledger. Beams that transfer or carry loads from joists to the building face. Most often, ledgers are attached to the building face by means of bolts into brick or lag screws into wood.

Masonry Block. Also known as “Concrete Masonry Unit” or “CMU”, this is most commonly 8 inches high by 16 inches long in profile (although a wide variety of sizes are available). Masonry blocks typically have two large hollow cells that are sometimes reinforced by inserting reinforcing bars and filling solid with grout.

Masonry Construction. Wall construction that consists of masonry block and/or common brick as the primary means of structural support for the building.

Multiple Wythe Solid Brick. Multiple layers of brick placed together to form one solid wall.

Nosing. Stair treads should extend slightly past the face of the riser. This is called the nosing. Nosing is used to make certain that the back of your foot clears the face of the riser.

Pedestal. A vertical concrete piece that spans between the bottom of a wood column and the footing. A Pedestal may be circular, square, or rectangular, and may be reinforced or unreinforced.

Pier. Similar to a Pedestal, but without a footing underneath.

Plywood. A wood product that is made up of thin layers of processed wood “sandwiched” between wood sheets and glued together.

Porch. An unheated roofed portion of a building, generally containing a stair used for ingress and egress and a floor area, and separated from the principal portion of the building by a fire rated wall and unrated doors and windows.

Pressure Treated Lumber. Also known as “Wolmanized Lumber”, this is chemically treated wood which is much more resistant to rot than untreated wood. There are several varieties of chemical treatment available, which are described in more detail in Appendix B: Materials for Construction.

Redi-Mix Concrete. Concrete that is purchased from a supplier and delivered in large batches directly to the construction site.

Reinforcement. Steel bars that are used to strengthen concrete structures.

Rim Joist. The horizontal joist that runs around the outside of a building of frame construction between the floor of one story and the ceiling of the story below.

Riser. Stairways are composed of risers – the vertical surface or face of each step – and treads – the horizontal surface you step on when walking up and down a stairway. Risers and treads should be of a consistent height and width to minimize the likelihood of tripping.

Sheathing. Plywood sheets used on roofs and in walls are called sheathing. Sheathing spans between the roof joists or studs to provide a surface to which you can attach your roofing material or siding.

Siding. The exterior finish material used on the outside of a building of frame construction, generally consisting of wood, aluminum, or vinyl.

Southern Yellow Pine. The most commonly used species of wood for porch and deck construction in the Chicago area. It has good strength properties, a pleasant visual appearance, and accepts pressure treatment well.

Splice. The connection of two members in a straight continuous line.

Story Height. The vertical measurement between finished floor levels of a building.

Stair Stringer. Stair stringers span diagonally between the floors of a porch or deck. They support the risers and treads of a stairway.

Stucco. A plaster coating made mostly from Portland cement, sand, and lime that is used as a finish coat and typically has a swirled pattern.

Stud. A vertical structural member that is typically a wood 2x4 used in frame construction.

Tread. Stairways are composed of treads – the horizontal surface you step on when walking up and down a stairway, and risers – the vertical surface or face of each step. Risers and treads should be of a consistent height and width to minimize the likelihood of tripping.

Unit. Refers to a single apartment in a multi-family building.

“Wolmanized Lumber”. Although a brand name, used generically to mean pressure treated lumber used in porch and deck construction.

Wythe. A single continuous vertical wall of brick. A multiple wythe brick wall consists of multiple layers of brick to form one wall.

Appendix B: Materials for Construction

A strong, durable porch or deck requires strong, durable materials. In this Appendix, you will learn about the types of materials that are to be used for the construction of your porch or deck.

Wood

Wood is the most commonly used material for porch and deck construction since it is easily cut and drilled, and it is durable when properly protected. Other materials, such as steel or steel and wood in combination, are also used for some larger porches and decks, but are beyond the scope of this Guide.

Wood comes in many species, sizes and shapes. The most commonly used species of wood for porch and deck construction in the Chicago area is Southern Yellow Pine. This is the material recommended for use for the porches and decks shown in this Guide. Many other wood species do not have the same
strength properties as Southern Yellow Pine, and would result in a weaker porch or deck, the grain of Southern Yellow Pine is aesthetically appealing, especially when natural finishes and stains are used. It is also easily pressure treated due to its unique cellular structure and does not require any type of perforation of the wood to accept chemical preservatives.

“Wolmanized” or pressure treated wood resists the rot to which untreated wood is susceptible. Pressure treated wood will retain its strength 10 to 20 times longer than untreated wood. The most commonly currently available wood preservative treatment is chromated copper arsenate, or “CCA”. After December 31, 2003, the Environmental Protection Agency (EPA) will only permit alkaline copper quat (ACQ) or copper azole (CA) preservative treatment for new exterior porch and deck applications. The American Wood Preservers’ Association (AWPA) has developed standards for treated wood.

Treated wood carries a mark or label indicating it as such. The mark or label describes the relative strength of the lumber and the amount of preservative used for treatment measured in pounds of preservative per square foot of wood. All treated columns and beams used in this Guide shall be UC4A and all other members shall be UC3B or UC4A. Preservative retention shall be 0.40 pounds of preservative per square foot of timber.

All wood is “graded” as to quality and comes with a quality mark or “label” from an agency accredited by the American Lumber Standard Committee (ALSAC). The Southern Pine Inspection Bureau (SPIB) along with several other accredited organizations are authorized to inspect and grade mark Southern Yellow Pine lumber for compliance with SPIB. These marks are most commonly found on the ends of the member and are either a stamp or a tag. These grade marks ensure that the lumber is in compliance with the grade requirements and moisture content for that particular piece of wood. Commonly used grades for Southern Yellow Pine are (from highest to lowest quality) Dense Structural Select, Dense Structural, No. 1, No. 2, and No. 3. For the porches and decks shown in this Guide, No. 1 Southern Yellow Pine or better must be used for the columns, and No. 2 Southern Yellow Pine or better must be used everywhere else.

**Fasteners**

All fasteners used shall be stainless steel or shall have a hot-dipped galvanized coating. If galvanized fasteners are used, all components of that connection shall be galvanized, as contact with stainless steel may degrade the galvanized coating.

**Common Nails:**

Common nails are available in different thickness and lengths and are referred to as “# penny.” The figure below shows the common thickness or gauge (D) and length (L). For example, a 16d “16 penny” nail has a gauge thickness (D) of 8 and a length (L) of 3 ½”. Stainless steel or hot-dipped galvanized nails will be used for attaching joist hangers, spiking wood members together, bridging, and securing other miscellaneous members. Use only common nails; exposed tips of nails shall be clinched.

**Figure:** Sample Grade Marks for Wood Members
**Decks**

Decks are also designated by a # and length and similar to nails, the # refers to the thickness. Deck screws are considered self-tapping and pre-drilling is not required. Deck screws (#8 size minimum) shall be used to attach decking members. The advantage of using deck screws over nails is that over time, the nails may pop up above the deck surface and will require continued maintenance. Screws shall be driven flush with the top of the deck surface. Stainless steel or hot-tipped galvanized steel decking screws which are 2 ¼” to 3 ½” long shall be used to fasten the deck boards to the joists.

**Concrete**

Concrete is the primary material used in the footings that support your porch or deck. You can mix your own concrete using prepackaged concretes such as “Sackrete” or “Quickrete”, or you can purchase your concrete as Redi-mix. When using prepackaged concretes, it is important to strictly adhere to the amount of water added to the dry mix. By adding too much water, the concrete will lose strength. By adding too little water, you will not have proper mixing of the stone, sand, and cement. Redi-mixed concrete purchased from a supplier has the advantage of being able to provide a large amount of concrete in a short time. The amount of water in Redi-mixed concrete is also important for workability and strength. All concrete shall be thoroughly mixed prior to placement and shall have an air entrainment agent added to it to provide 5 to 8% air in the mix to help resist freeze-thaw cycles.

Regardless of the method you use, once you start pouring the concrete you must continue pouring each footing until it is completed. Stopping and returning later to complete the footing means that you will have “cold joints” between the pours of concrete. Cold joints reduce the strength of the footing and are not acceptable. When ordering concrete either pre-packaged or Redi-mix, you should request a concrete that will achieve a compressive strength of at least 3,500 pounds per square inch measured at 28 days after placement.

**Reinforcement Bars**

Reinforcement bars shall be ASTM A615, Grade 60 steel. If splices are used, the minimum splice length shall be 30 times the bar diameter (in inches).

**Masonry**

Masonry is a general term that refers to any brick or block products used commonly in wall construction. If you have a masonry building, the beam pocket construction will require masonry work.

Masonry Units shall comply with applicable ASTM standards. Mortar shall be Type M or S, with f’m= 1,150 psi. No Calcium chloride shall be used.

**Metal Construction Connectors by Simpson Strong Tie (or Equal)**

Metal construction connectors shall be used to make many of the connections required on your porch or deck. They are used in a variety of locations including beam-to-column connections, joist-to-beam connections, and column-to-pier connections. All metal construction connectors shall be either hot-dipped galvanized or stainless steel.

**Flashings and Sealants**

Flashings used for beam pocket/masonry construction shall be aluminum (30 GA. minimum thickness) placed over CCW-705 Self-Adhering Vapor/Air Barrier System by Carlisle Coatings and Waterproofing Inc., or equal system. Follow manufacturers instructions for the vapor barrier insta-
loration. Attach flashing with fasteners that will not cause corrosion and lap flashing in a fashion that will not allow water penetration. The flashing shall be lapped a minimum of 6" horizontally and 3" vertically. Install the flashing working from the bottom up. All areas of the existing construction exposed to weather shall be flashed, and small openings such as holes in wood for bolting shall be sealed with sealant. The sealant shall be 100% Silicone Rubber Sealant with a 50 year durability guarantee. Gaps larger than 1/8" must be flashed unless noted otherwise on the plans.

**Structural Steel**

All structural steel shall be ASTM A-36 (minimum) constructed according to the American Institute of Steel Construction, Inc. specifications. All structural steel shall be coated with a rust prohibited primer with a minimum dry thickness of 3 mils.

**Appendix C: Structural Design Issues**

The details and guidelines presented in this Guide have been developed using sound engineering design and practical judgment. The materials that are specified should be commonly available and easy to obtain. Some of the connection details presented may seem to be very conservatively designed and incorporate more bolts or screws than typically encountered in a porch or deck. Also, the main framing members may seem to be heavier than typically observed in many porches. This is because many existing porches and decks have not been thoroughly designed to the standards required by the applicable design codes.

This Guide presents standard configurations and design details that have been properly engineered to support the 100 pound per square foot live load that is required by the City of Chicago’s Building Code. The live load design must be carried through all elements of the porch or deck, including the joists, beams, columns, footings, stairways, beam pockets, ledgers, and connections. Cheating on any element of the structure will consequently increase the risk of failure for the structure as a whole. Therefore, it is imperative that all of the details and material specifications presented in this Guide be followed.

Published codes that were used to develop this Guide include the following:

- Chicago Building Code
- International Building Code
- National Design Specification for Wood Construction

**Appendix D: Unacceptable Details**

This Appendix highlights several poor details that are commonly found in existing porch and deck construction. These details should be avoided since they compromise the structural integrity of the porch system. They are provided as an example of how NOT to build your porch or deck. This Guide, if followed, will result in a porch or deck that will be structurally sound for years to come if properly maintained.

In Figure D.1, the beam improperly frames into the notched column. A notch into the column is not allowed since it weakens the column. All beams and joists shall be run adjacent to the column and thru-bolted to it.

![Figure D.1: Beam Improperly Framing Into Column](image1)

In Figure D.2, only one bolt is shown attaching the beam to the column. This provides an unstable connection. A minimum of two fasteners are used in all framing connections, and in most cases a beam seat angle is used. The details in this Guide should be followed regarding the number of bolts required.

![Figure D.2: Beam Improperly Fastened to Column](image2)

In Figure D.3, the beam should be supported by a beam seat angle. The connection is also too close to the edge of the beam to properly transfer the load to the column.

![Figure D.3: Beam Improperly Fastened to Column](image3)

In Figure D.4, the beam pocket is formed directly above a window (shown) or door. This could result in possible failure.

![Figure D.4: Beam Improperly Fastened to Column](image4)
of the lintel (the framing member above the opening), and subsequently, the porch or deck.

Figure D.4: Beam Pocket Over Opening

In Figure D.5, both members of the built-up beam are spliced at the same location along one column. Only one member should be spliced at a column location. Also, beam splices should only occur at column locations and not at midspan. The beam splice should be centered over both the steel angle and the 6x6 column (not off center as shown). Finally, column splices should not occur at the level of the beams and joists. They should be above or below the deck level.

Figure D.5: Improper Beam to Column Connection

In Figure D.6, the horizontal cuts in the column are overcut. This increases the chances of future problems with splitting. At splices, stair stringers, and all sawcut members, it is very important that an exact cut is made!

Figure D.6: Improper Column Splice Cuts

In Figure D.7, the footing pedestal is completely below ground as shown. The footing pedestal should extend a minimum of 1” above the ground surface to prevent decay at the base of the wood column.

Figure D.7: Improper Footing Placement

In Figure D.8, the 6x6 column is shown as split completely through. Always use good quality wood members with as few defects as possible.

Figure D.8: Column Checked or Split

In Figure D.9, the joist hanger is shown with several unused nail holes. All of the nail holes provided in the hanger must be
used. It is important that the manufacturer’s specifications are followed.

Figure D.9: Improper Joist Hanger Fastening

For the full text and graphics of Volumes 2-A, 2-B, 2-C and 2-D, visit www.ChicagoCodes.com.

Health Clubs & Fitness Centers Policy

This establishes values for assembly uses which are not specified in Table 13-56-310(b) to calculate occupancy.

In fitness centers and health clubs, the occupancy content for running tracks or for exercise areas primarily occupied by fixed equipment shall be calculated at 40 square feet per person (gross). Recreation areas (i.e., for aerobics, yoga, etc.) shall be calculated at 20 sq. ft. per person, and locker rooms shall be calculated at 6 sq. ft. per person, net area (not including the floor area covered by lockers). Swimming pools shall be calculated at 15 sq. ft. per person, which is consistent with 77 IL. ADM. Code 820, the Illinois Swimming Pool and Bathing Beach Code, Section 820.200 (b), and pool deck areas shall be calculated at a rate of 50 square feet per person (gross). In accordance with Section 3(13-84-410), an occupancy sign shall be obtained and posted in each space, stating the maximum number of persons which may occupy that area.

Origin: Department of Buildings

Intent of Guards

The purpose of this meeting was to clarify DCAP's interpretation of, as well as the intent of, CBC sections relating to Guards. The items below assume that the elevation differential between the windowsill and exterior grade directly below exceeds 24”. This information is not intended to replace or amend the Chicago Building Code. The attendees concurred on the following items.

1. AUTHORITY
Windows with sills at or below 24” AFF require Guards. DCAP Architectural Examiners have the authority to determine if a particular window or curtain wall system satisfies the intent of a Guard per CBC. The Architectural Examiner will require the manufacturer's specifications and structural load calculations to verify that the entire window meets CBC 13-52-100 Thrusts on Handrails and Guards.

2. THRUST CRITERIA
The thrust criteria listed in CBC 13-52-100 Thrusts on Handrails and Guards shall apply to all parts of the Guard including the balusters.

3. WINDOWS
A. Windows with sills at or below 24” AFF require Guards. If it is determined by DCAP that the design of a particular window meets the intent of a Guard, and the window is operable, then the window design must also meet the criteria listed in CBC 13-124-335 Openings in Guards. This states that a 4-inch sphere cannot pass through any opening up to a height of 34” AFF and that a 8” sphere cannot pass through any opening from a height of 34” AFF up to 42” AFF.

B. If it is determined by DCAP that a particular window (fixed or operable) does not meet the intent of the Guard, then a separate Guard must be installed at that window. The Guard must meet all the CBC criteria including CBC 13-52-100 Thrusts on Handrails and Guards and CBC 13-1 24-33 5 Openings in Guards.

C. Windows (fixed and operable) with sills higher than 24” AFF do not require Guards. Additionally, operable windows with sills higher than 24” AFF have no CBC limitation on the maximum allowed clear opening.

4. MEETING THE INTENT OF THE CODE
Architects and Building Owners are ultimately responsible for being code compliant and ensuring the public safety. However, as DCAP Examiners we will review Guard related issues to ensure that the intent of the code is met.
The design shall prevent persons from accidentally going over, under or through a Guard.

Therefore, the Guard designs shall be scrutinized to ensure that they are not merely code compliant but also logical, rational solutions, in accordance with the intent described above.

Light and Ventilation Requirements, Existing Buildings

All existing residential buildings that were built or converted before the year 1957 can receive the required natural light and ventilation from the window openings that are minimum two feet six inches (2' - 6") from the interior lot line. This ruling applies to all existing conditions where the footprint or the ground floor size of the buildings remains unchanged. Minimum three (3) feet setback from the interior lot line of the wall containing the windows is required for all new ground floor additions.

Lintels, Fire Protection

The bottom flange of the lintel over the exterior wall window opening need not be fire protected regardless of the exterior wall opening size.

Materials and Installation Standards for Retrofit Fire Protection Systems

On December 15, 2004, the city codes were changed to require most pre-1975 high-rise buildings to be retrofitted with automatic sprinklers. Landmark and non-transient residential high-rise buildings were excluded from this requirement. Instead, a life safety evaluation will be required to be performed on these buildings.

Code Section 34(13-196-207) lists materials and installation standards that existing pre-1975 high-rise buildings can use to retrofit the building with sprinklers. This code section can be used for any pre-1975 high-rise that decides to retrofit the building with automatic sprinklers. This code section can be applied if the building is not required by code to retrofit with automatic sprinklers.

Maximum Travel Distance, Permitted Increase

The last sentence of the code Section 10(13-160-150) states that ‘If travel distance is increased pursuant to this Section, an increase in exit capacity under Section 10(13-160-210)(d) shall not be permitted.’ This restriction applies only to part ‘b’ of the section.
Minimum Number of Exits From the Second Floor of a Single-Family Residence

In single-family dwelling and townhouse units two exits are required from the second floor if the area of that floor is over 1500 square feet. Given that sprinklers are allowed to be substituted for the second exit from the third floor of a single family and townhouse unit per Section 10-(13-160-050)(m), sprinklers can also be substituted for the second exit from the second floor. This will be limited to floors with area up to 2000 sf.

See Section 13-160-050 Minimum Number of Exits

Origin: Department of Construction and Permits

Mixed Construction Types

When two or more types of construction occur in the same building, the entire building shall be classified by the lowest construction type that occurs in the building. Whereas, the Type I, Fire Resistive Construction being the best construction type and Type IV, Combustible Frame Construction being the lowest construction type among the listed construction types in the Section 6(13-60-010). (For example, if the original construction was III-B and an IV-A addition is constructed as permitted per CBC, the entire building would then be viewed as Type IV-A construction.)

Frame porches that are permitted to be attached to an ordinary construction type building, in accordance with the Section 7(15-8-320), shall not be considered as constituting mixed construction type.

See Sections 13-60-(010, 020, 030, 040, 050, 060, 070, 080) Classification of Buildings by Construction Type; 15-8-320 Porches

Origin: Department of Construction and Permits

Occupancy Content Calculation for Health Clubs and Fitness Centers

The Committee on Building Standards and Tests voted yesterday to recommend that, henceforth, the following policy be adopted regarding the review of plans for health clubs and fitness centers:

In fitness centers and health clubs, the occupancy content for running tracks or for exercise areas primarily occupied by fixed equipment shall be calculated at 50 square feet per person. Recreation areas (i.e., for aerobics, yoga, etc.) shall continue to be calculated at 20 sq. ft. per person, and locker rooms shall be calculated at 6 sq. ft. per person, net area (not including the floor area covered by lockers). Swimming pools shall be calculated at 15 sq. ft. per person, which is consistent with 77 ILL. ADM. Code 820, the Illinois Swimming Pool and Bathing Beach Code, Section 820.200 (b), and pool deck areas shall be calculated at a rate of 50 square feet per person. In accordance with Section 3(13-84-410), an occupancy sign shall be obtained and post-ed in each space, stating the maximum number of persons that may occupy that area.

The Committee has reviewed applications for a number of these projects recently, because the existing Chicago Building Code, Section 3(13-56-310) defines occupant load figures for various types of assembly occupancies, but does not have a specific reference for either a) fitness areas with fixed equipment or b) running tracks, so these areas are required by default to be calculated at 6 square feet per person, which is the value listed in the table for "other assembly uses." This value seems inappropriate for either of these uses. The committee believes that the above-cited criteria are sufficient to assure the public's health, safety and welfare, without burdening owners and engineers with the additional step of review by the Committee. Projects which all outside the criteria should continue to be referred to the Committee on Building Standards and Tests.

See Sections 13-56-310 (a, b) Assembly Units and Open Air Assembly Units; 13-84-410 Building Capacity Signs to bePosted

Origin: Department of Buildings

Occupancy Content, Floor Area Per Person

The occupancy content shall be based on the actual use of the room or space. It shall be determined by the dividing of the net floor area by the floor area per person established in Sections 3(13-56-310) and 3(13-56-320). The following numbers are provided to clarify the content of the table provided in Section 3(13-56-310).

1. Seating areas with chairs and tables – 15 sq. ft. per person.
2. Standing areas, dance floors – 6 sq. ft. per person.
3. Conference rooms, lecture halls, classrooms – 20 sq. ft. per person.
4. Kitchen, food preparation areas – 100 sq. ft. per person.
5. Gymnasiums, Prayer halls with no seating, auditoriums without fixed seats, Recreation rooms – 20 sq. ft. per person.
6. Roof Decks – 20 sq. ft. per person
7. Day care space with children under 2 years of age – 55 sq. ft. per person.
Parking Garages in Residential Buildings

Parking garages which are intended for use in residential buildings by building occupants and their guests shall be allowed in buildings of any construction type regardless of the height of the building. The building, however, must meet the height and area restrictions for a residential use of the intended construction type per Chapter (13-48).

Section 5(13-48-100) shall not be applied to the garage portion of the building. The garage must be utilized exclusively by the building occupants and their guests.

This shall be allowed per the authority given to the building and fire commissioners in Section 3(13-56-250). The garage shall be viewed as an auxiliary use to the building. A garage is an indispensable use to a residential building. Most residential buildings could not be built without a garage. The mixed occupancy separations per table 3(13-56-80) of four hours shall still be applicable. The auxiliary use area restriction shall not be applicable since this is an indispensable use to the building. This shall be per the judgment of both the building and fire commissioners, which code section 3(13-56-250) allows.

This decision is rendered to clarify for all parties an interpretation that is already in place and that has been followed by inspectors and examiners for a number of years. This is not a new interpretation, but it is intended to clarify any recent misinterpretation of Sections 5(13-48-100) and 3(13-56-250).

Policy for Calculation of Occupancy Content in Health Clubs and Fitness Centers

The following is intended to clarify the joint Department of Buildings/Bureau of Fire Prevention policy on the calculation of occupancy content in health clubs and fitness centers. This policy establishes values for assembly uses which are not specified in Table 13-56-3(b).

In fitness centers and health clubs, the occupancy content for running tracks or for exercise areas primarily occupied by fixed equipment shall be calculated at 50 square feet per person. Recreation areas (i.e., for aerobics, yoga, etc.) shall continue to be calculated at 20 sq. ft. per person, and locker rooms shall be calculated at 6 sq. ft. per person, net area (not including the floor area covered by lockers).

Swimming pools shall be calculated at 15 sq. ft. per person, which is consistent with 77 ILL. ADM. Code 820, the Illinois Swimming Pool and Bathing Beach Code, Section 820.200 (b), and pool deck areas shall be calculated at a rate of 50 square feet per person. In accordance with Section 3(13-84-410), an occupancy sign shall be obtained and posted in each space, stating the maximum number of persons that may occupy that area.

Policy for Code Interpretation of Mezzanines

See Sections 13-56-(310, 320) Assembly Units and Open Air Assembly Units, Other Occupancies Occupancy Contents

Origin: Department of Construction and Permits

Phased Construction Permitting

This is to confirm that when a Project is under the Phase Construction Permitting Program where an Owner/Applicant applies for permits sequentially-typically for new construction/erection (i.e.; Foundation/Caissons, Superstructure and Base Building Build-Out) the method for the assessment of architectural fees shall be the following

Foundation/Caisson Permit – by volume
Superstructure Permit – by volume
Base Building Build-Out – by estimated costs

See Sections 13-32-(300, 310) Payment to Director of Revenue, Permit Fees

Origin: Department of Buildings
The following is intended to clarify the joint Department of Buildings/Bureau of Fire Prevention policy on the definition of a mezzanine.

**A mezzanine** is defined in Chapter 2(13-4) as: an intermediate floor placed in any story of a building and limited in area as required elsewhere in this code.

A story is likewise defined as: the space between any two floors or between the top most floor and the ceiling.

Based on these definitions, it is clear that the intention of the code is to define a mezzanine as something contained between the floor and the ceiling of the larger space of which it is a part.

To assist in the consistent interpretation of mezzanines to qualify for the height limitation exemption described in 13-8-020, the following standards for openness and for calculation of floor area are established:

**Openness:** The mezzanine must be open to the larger room below, with the exception of small closets and/or bathrooms that may be enclosed on the mezzanine level.

**Area calculation:** Only the unenclosed floor area under a ceiling where the ceiling is at least 7'-6" above the level of the mezzanine finished floor (h) may be considered as the floor area of the story in which the mezzanine occurs. Portions of the floor area that have a ceiling height less than (h + 7'-6") may not be included in the calculation. Also, portions of the lower floor area that are closed off from the mezzanine by partitions may not be included in the area calculation. Under the mezzanine, floor area that is not closed off by partitions may be included in the area calculation.

The following cartoon sections illustrate this concept.

1. The area of a mezzanine is limited in accordance with section 5(13-48-020)(d) to 20% of the area of the unenclosed floor below, or 8000 square feet in one-story buildings of Type II, III-A or III-B construction when unlimited areas are permitted.

**Policy for Emergency Ladders**

Emergency ladders may be approved in lieu of required exit stairs on a case-by-case basis only at the Commissioner’s discretion. All of the following conditions must be met:

1. Only buildings issued a permit before October 1995 where a fully conforming exit stair is not practical due to Landmarks regulations or site constraint will be considered.
2. The building includes not more than 6 DU’s and each ladder serves only a single unit.
3. Each ladder serves a level not more than 20’ above grade or above a deck (for which a permit has been issued) with a stair to grade.
4. Access to the ladder is through a gate or through a window with a maximum 24” sill height and a minimum operable area 24” wide and 36” high.
5. Every ladder is supported at grade or by the deck and includes wall brackets for stability.
6. Each request for approval must include complete specifications including ladder width, rung size and spacing, and if collapsible, operation information.
7. A continuous and unobstructed minimum 3’ wide exit path at grade to a public way must be provided. 
   
   **NOTE:** A spiral stair may be acceptable without the Commissioner’s approval. The stair must be a minimum of 6'-0” in diameter, may not exceed 30'0” in height above grade, may serve only 2 dwelling units, and must meet the requirements of 10[13-160-300(d)] and 3[13-64-090].


Origin: Department of Buildings
Policy on the Use of Machine Roomless (MRL) Elevators

The following is intended to clarify the Department of Buildings' policy on the use of machine roomless (MRL) elevators.

Rule 101.6 is part of ASME A17.1, which has been adopted by reference into the Chicago Building Code.

Consistent with the rule's title, Rule 101.6 shall be interpreted to mean that elevator machine rooms or control rooms shall not be located in the hoistway. This shall not be interpreted as a prohibition against the use of machine room-less elevators, which are engineered to have the elevator machine mounted on the rails in the hoistway.

The Elevator Bureau reports to the Department of Buildings Commissioner that they have inspected equipment using this new technology, and have no concerns regarding the safety of installing the equipment directly in the hoistway, provided that the installation conforms to all other applicable sections of the code.

See Sections 18-30-100 Hoistways, Hoistway Enclosures and Related Construction for Electric Elevators; 18-27-620.37 Wiring in Hoistways and Machine Rooms

Origin: Department of Buildings

Power Operated Sliding Doors

Per code Section 10(13-160-250), exit doors must swing in the direction of exit travel unless it is one of the listed exceptions. Power operated sliding doors that break away into swing doors comply with this code section.

Power operated sliding doors shall break away to the full open position to provide instant egress at any point in the door's movement.

For exterior power operated sliding doors which are required to swing out to the exterior, the operating slider is not required to be on the exterior face of the assembly. Code Section 10(13-169-250) does not make this requirement.

If the operating slider is on the exterior face of the door assembly, the operation track could have a build up of snow, ice and dirt. This would prevent the doors from sliding properly and thus, affect its break-away capability.

Power operated sliding doors which break away at any point in the door's movement shall be acceptable. The operating slider is not required to be on the exterior face of the assembly.

See Sections 13-160-(240, 250) Door, Swing of Doors

Origin: Department of Construction and Permits

Private Garage, One per Building

The code allows an attached private garage to be of a maximum 800 sq ft in size (600 sq ft for frame construction) on the grade or lower level of a building. Only one private attached garage is permitted per building, except in town-homes, rowhouses or in a similar condition where a dwelling unit occupies a portion of a building from the top to the bottom. The occupancy classification shall be a Class H-3 garage once this limit is exceeded.

Each building that is separated by a four (4) hour building separation wall as defined by the Section 7(15-8-010) shall be permitted to have one private garage.

See Section 13-96-250 General Requirements; 15-8-010 Fire Walls

Origin: Department of Construction and Permits
Protection of Openings per Code Section 7(15-8-110)

Building inspections have recently shown that many existing buildings do not comply with Section 7(15-8-110). Any building plan that is reviewed must show compliance with the Section 7(15-8-110).

Section 7(15-8-110) requires fire-rated windows for buildings on interior lot lines, near fire escapes and other locations. All design professionals must be aware of situations when fire rated windows are required per Section 7(15-8-110).

See Sections 15-8-110 Protection of Openings; 13-160-(400, 600) Opening Protectives

Origin: Chicago Fire Department

Remote Power Supply Control Unit

Remote power supplies or the power boosters can be utilized to expand the power capability of a fire alarm control panel for notification appliance circuits (NAC). The NAC remote power supply units shall be UL listed and shall meet all the installation requirements of NFPA-72 and Article 760 of the Chicago Municipal Code.

The NAC power supply shall be monitored and activated from the addressable fire alarm loop, and shall not be activated from the notification appliance output of the fire alarm panel. They shall also comply with the following requirements:

1. The NAC power supply control unit shall be connected and controlled on a class "A" addressable fire alarm system loop.

2. The NAC power supply control unit shall contain self-diagnosing circuitry to alert the fire control panel when a fault or trouble condition occurs.

3. The power control unit's output circuits can be class "B" with an end of line resistor or Class "A" loop out and back to the unit.

This new policy of NAC power supply acceptance shall apply to the existing as well as new fire alarm systems. The fire alarm systems can now be expanded without excessive cost to the building owners.

See Sections 18-27-(760.15, 760.41) Fire Alarm Circuit Requirements, Power Sources for PLFA Circuits; 13-196-200 Standard Fire Alarm System Requirements

Origin: Chicago Fire Department

Requirements for Parking Lift Applications

Following are the requirements for submitting an application for mechanical parking lifts:

Application
- Must be signed and sealed by an architect or a structural engineer licensed by the state of Illinois.
- Must be signed by the owner.
- Building information and construction classification must be completely filled out.
- The general contractor's name and license number must be listed.
- The electrical contractor's name and license number must be listed.

Submittals
- The completed application form.
  - Description of work to indicate "installation of parking lift for unit number ___"
- The completed electrical application form
- A complete set of drawings detailing the installation prepared by and bearing the seal of an architect or structural engineer licensed by the state of Illinois.
  - provide floor plans, electrical plans, sections indicating clearance heights
  - indicate location of instructions and safety features
  - indicate location of all equipment components and access areas for service
- Structural calculations must be provided indicating the capacity of the structure to carry the additional load. Owner responsible for verification of impact of multiple installations on the structure.
- Product literature
  - Certification from the manufacturer that the equipment meets the requirements of the city of Chicago parking lift ordinance, specifically that the equipment is in compliance with the referenced standards as outlined in the ordinance.
  - All dimensions, weights, etc. to be in English system, not metric.
  - The actual product model number must be specified.
  - Indicate the location of instructions and safety warnings on the equipment.
Acceptable Use
- Owner must verify that the unit will be owner-operated only.
- If the parking lift is to be installed inside a building controlled by a condominium association, an approval letter from the condominium association must be included.
- If the parking lift is to be installed inside a building controlled by a management company, an approval letter from the management company must be included.

Routing
- Zoning

Residential Duplex Units, Exits

In a corridor type residential building, except from the basement, 1st and 2nd floor units complying with the Section 10(13-160-050)(d), access to the common exit corridor must be provided from both levels of the duplex unit.

When two exits are required from each level of a duplex unit, the private interior stairs shall be considered as one of the required exits from the upper level of the duplex provided access to two building stairs are provided from the lower level of the duplex unit. Therefore, access to only one building/common stairs will be required from the upper level of the duplex unit.

In multiple Dwellings, when only one exit stair is provided for the basement, 1st or 2nd floor space in accordance with the Section 10(13-160-050)(d), this one exit stair shall be dedicated for one residential unit and shall not be shared by other residential units, unless the shared stairway is open to the outside atmosphere.

Unless otherwise listed as one of the exception, traveling up the stairs from any floor that is above the grade level shall not be permitted for exiting.

Residential Roof Decks, Occupancy Content

The floor area per person ratio to be used for residential roof decks is 20 sq. ft. per person, per Section 3(13-56-310).

This is for residential roof decks, which are to be used only by the residents of the building.

Architects have tried to use the floor area per person ratio of 125 sq. ft. per person for these residential roof decks. This approach has not been acceptable.

Section 3(13-56-300) lists the floor area per person ratio to use for different occupancies for rooms or spaces in a building.

The Code does not list what ratio to use for a space that is not in a building. Although a roof deck is not a space in a building, the closest listed occupancy in Section 3(13-56-300) would be recreation room. Therefore, 20 sq. ft. per person will be used to determine occupancy for residential roof decks.

See Sections 13-160-(040, 050, 060) Types of Exits Allowed for Story above or Below Grade Level, Minimum Number of Exits, Arrangement and Location of Exits

Origin: Chicago Fire Department
Retail Occupancy in Residential Buildings

Retail occupancy shall be permitted on the ground floor of residential buildings of all construction types except in buildings of Type IV, frame construction.

The Zoning code mandates commercial space on the ground floor in many areas of the city. To facilitate construction of new residential buildings, the ground floor retail and commercial occupancy has been viewed as an auxiliary use to the residential building.

Section 5(13-48-100) shall not be applied to the ground floor retail space. The building, however, must meet the height and area restrictions for a residential use of the intended construction type per Chapter 13-48.

See Sections 13-48-(010, 020, 030, 040, 050, 060, 070, 080, 090, 100) Height and Area Limitations; 13-56-270 Height and Area Limitations

Origin: Chicago Fire Department

Roof Deck, Exits

Except for the roof deck no higher than the roof of a single story building (including a private garage), all roof decks must have access to two exit stairs. Private roof decks shall be identified on plans as private for a residential unit and can utilize the private stairs from the residential unit below as one of the required exit stairs. The second exit can be the common building stairs that extends to the roof deck level.

When private roof deck (used exclusively by one residential unit) is located at the same level or story as the enclosed residential unit, only the enclosed portion of the residential unit excluding the roof deck is required to comply with the exiting requirements of the Section 10(13-160-050).

See Sections 13-160-(050, 060) Minimum Number of Exits, Arrangement and Location of Exits; 15-8-321 Decks

Origin: Chicago Fire Department

Size of Fire-Rated Windows

Sections 7(15-12-160) through 7(15-12-250) address all of the requirements needed for fire-rated windows. Depending on the type of window being used, Code Sections 7(15-12-210) and 7(15-12-220) give the maximum size restrictions for that specific type of window.

However, Code Section 7(15-12-240)(b) also allows windows of other sizes to be used, provided that these windows meet all of the required test standards that the code requires.

Therefore, fire-rated windows of any size can be used provided that the actual window being used meets all of the required test standards. These test standards are stated in Code Sections 7(15-12-170) through 7(15-12-200).

Without special testing, the use of fixed wire glass vision panels is permitted in one hour fire rated interior walls, provided each pane does not exceed 1,296 square inches in area having a maximum dimension of four feet, six inches and is installed in a 16 gauge steel frame. Wire glass when used for the exterior wall opening protection shall not exceed 720 square inches per piece and shall be in a 16 gauge steel frame.


Origin: Chicago Fire Department

Skylights and Sloped Glazing

The use of laminated glass roof panel in atria and skylights has been approved in many installations. Tempered glass has not been approved since it fragments and falls when a concentrated (impact) load is applied.

Therefore, only wire glass or laminated safety glass shall be specified for all skylights and sloped glazing applications.

Tempered glass maybe used in double glazed installations, only with wire glass or laminated safety glass as the lower layer.

See Sections 15-8-520 Skylights and Monitors; 13-124-370 Standard

Origin: Chicago Fire Department
Sliding Exit Doors

Sliding doors are permitted within a dwelling unit such as for the bedroom, bathroom, closet, etc. The required exit for a dwelling unit can also be of sliding type when the unit entry door is an exterior door or where fire rating is not required for the unit entry door.

The primary entrance to a tenant space within a multi-tenant office or mercantile occupancy building that is used as a showroom or for sales, is permitted to be a sliding door when the clear entrance opening is at least 44 inches wide. A note shall be added on plans that are submitted for approval for the "sliding doors shall remain open during occupancy."

A sliding door is permitted from a room or space used as an individual office with an occupancy load of 10 persons or less or a maximum of 300 sf.

See Sections 13-160-250 Swing of Doors

Stair Railings and Guardrails

Per Section 33(13-124-320), guards shall be required at every point of danger including at all edges of every floor, balcony, mezzanine or other space used or intended for human occupancy which is at a height of more than 2'-0" above the floor, ground or pavement directly below.

Questions have arisen whether guardrails set at 42” are required at the stairs in addition to the 34” – 38” handrails set. Only the handrail set is required inside a typical enclosed stairs and the handrails need not be extended to 42” to meet the guardrail requirements. Guardrails are only required at the stair landings when the stairs are open or when the stair landings are unusually larger inside an enclosed stairs.

See Sections 13-124-(310, 320, 330) Guards Required, Where Required, Type of Guards; 13-160-(320, 640) Handrails, Fire Escape Stairways

Stairway Landings

The width of landings shall not be less than the width of stairways they serve. Every landing shall have a minimum dimension measured in the direction of travel equal to the width of the stairway in accordance with the Section 10(13-160-210)(e).

The application of Section 10(13-160-310)(b) that permits the length of a landing in the direction of travel to be 48 inches maximum shall be limited only to the stairway that has a straight run. This ruling shall apply to new construction only and not to stairways in existing buildings.

See Sections 13-160-(290, 300, 310, 350, 590) Stairs, Treads and Risers, Landings, Head Room, Treads and Risers

Stairway Serving the Roof Deck

Given that a roof deck is not enclosed space, the requirement of an enclosed stair to such a roof level per Section 10(13-160-040)(d) is not applicable. Section 10(13-160-330)(a)(4) requiring non-combustible stairs for buildings of four stories or more is not applicable either. Only the height of the enclosed floor space or the number of stories shall be the factor for the enforcement of the above mentioned sections.

However, the vertical distance from grade to the roof deck level served by an exterior stairway shall not exceed 45 feet.

The roof deck level shall not be considered as enclosed space even when it is served by the enclosed stairways or elevators and the enclosed stair/elevator lobby does not exceed 5 feet in width. This ruling is consistent with the meaning of Section 5(13-48-020)(d). This interpretation does not apply to Wrigley Field Rooftop Clubs as specified by the Section 5(13-48-020)(e).

See Sections 13-160-(040, 330) Types of Exits Allowed For Story Above or Below Grade, Construction; 13-48-020 Application of Height Limitations

Origin: Department of Construction and Permits
**Stairwell Enclosure, Nonessential Openings**

Section 7(15-8-180) does not prohibit the penetration of electrical conduit into the stair enclosure. These conduits can be used to power the lighting within the stairwell or the building fire alarm system. The conduits that penetrate the stair enclosure shall be fire stopped properly with a non-combustible material. However, the HVAC air ducts are not permitted to cut through a stairwell enclosure, with or without openings within the stairwell.

See Sections 15-8-(140,180) Stairway Enclosures, Protection of Openings; 18-27-560.7 Lighting Outlet Requirements

**Stairwell Re-Entry Ordinance**

It was the clear intention of the Chicago City Council in December, 2003, to require that all doors in stairwell enclosures in high-rise buildings be immediately unlocked to prevent persons from being trapped in a stairwell. The ordinance amendment passed on that date provides two alternatives for compliance, and requires that either Option 1 or Option 2 be implemented immediately.

The following Rule is hereby established for the consistent interpretation and application of Section 13-196-084 of the Chicago Building Code

A property owner or manager who chooses to install a fail-safe electronic lock-release system in accordance with Option 2 has two alternatives for compliance, until the electronic lock-release system is installed and operational: either to initially employ all of the transitional measures A through E as described in Option 2, or else initially maintain all of the doors in an unlocked condition, as described in Option 1, while the electronic lock-release system is being installed.

The use of the word “may” in the second paragraph of Option 2 indicates only that the text that follows “may” is an alternative path toward immediate compliance; it does not indicate any alternative to immediately complying with either Option 1 or Option 2.


**Substitution of Second Exit, Dwelling Units**

Building inspections have revealed that the intention of the Section 10(13-160-050)(m)(1)&(2) allowing emergency exit for a dwelling unit by passing through a part of other dwelling unit is being circumvented. Either the glass panels were removed for security purposes or obstructions were provided for the privacy purposes.

Section 3(13-64-060)(a) prohibits exiting for a dwelling unit to pass through a part of other dwelling unit. Therefore, substitution of second exit for a dwelling unit as prescribed in Section 10(13-160-050)(m)(1)&(2) shall not be permitted for all new projects.

All exceptions must be approved by a supervisor of the plan examiners on a case-by-case basis.

See Sections 13-160-050 Minimum Number of Exits; 13-64-060 Room Arrangement

**Type III-B Construction, One-Hour Floor System**

In Type III-B construction, the required one-hour fire rating of the beams and the columns can be attained by simply enclosing or boxing the columns and beams with a minimum two layers of 5/8 inches thick Type X gypsum board. Beams that are completely enclosed within a one-hour listed floor assembly are acceptable.

When insulation within a one-hour floor system is added for the sound/acoustical purposes or to separate an unheated space, an additional 5/8 inches thick Type X gypsum board shall be added to the listed floor/ceiling assembly. This is because there is not a specific UL assembly indicating a floor with insulation, therefore, an additional layer of Type X gypsum board is accepted.

See Sections 13-60-(010, 060, 100, 110, 180) Construction Types, Type III-B and Type III-C Ordinary Construction, Fire-Resistive Requirements of Types of Construction, Exceptions to Fire Protection, Columns and Bearing Walls
**Underground Warm Heating Ducts**

Effective today, all under-the-slab and underground warm air heating ducts shall be installed in a trench so as to provide a minimum of 2” of concrete cover on all sides. See Sections 18-28-604.1 through 18-28-604.9 Insulation; 18-13-503.3.3 Duct and Plenum Insulation

**Use of Combustibles in Type III Construction Roof Assemblies**

Code Section 7(15-12-030) “Use of Combustibles” was revised on May 17, 2000, in conjunction with other code sections to allow the use of Exterior Insulation Finishing Systems (EIFS) on buildings. The intention of this revision was to allow this combustible insulation on the exterior walls of buildings of construction Types I, II & III. Previously, per Chapter 13-60, exterior walls of those construction types were required to be constructed entirely of noncombustible materials with the applicable fire ratings.

The revision of Code Section 7(15-12-030) was intended to require only the structural components to be noncombustible and fire-rated. EIFS is not a structural component so it was not required to be noncombustible. It was not intended to change the requirements of Chapter 13-60 to now require a noncombustible roof assembly in Type III construction. Type III construction has always been allowed to have a combustible roof assembly with an applicable fire rating when required. Therefore, buildings of Type III construction are NOT required to have noncombustible roof assemblies.

See Sections 15-12-030 Use of Combustible; 13-60-(010, 020, 030, 040, 050, 060) Construction Types, Type I Fire Resistive Construction, Type I Non-combustible Construction, Type III Exterior Protected Construction, Type III-A Heavy Timber Construction, Type III-B and Type III-C Ordinary Construction; 15-8-(070, 080, 081) Exterior Walls, Exterior Wall Construction, Exterior Insulating and Finish System

**Use of Combustible Materials for the Enclosure of the Space Heating Equipment Rooms in Types III & IV Construction**

In building Types III and IV construction, the use of wood is permitted for the interior framing of the walls, floors and ceilings in accordance with the Sections 6(13-60-060), 6(13-60-070) and 7(15-8-260)(c). Therefore, wood framing or wood studs shall be permitted for the enclosure of space heating equipment rooms located in the buildings of Types III and IV construction. The hourly fire rating shall be in accordance with the Sections 7(15-8-210) and 7(15-8-220).

See Sections 13-60-(060, 070) Type III-B, and Type III-C, Ordinary Construction and Type IV Combustible Frame Construction; 15-8-(210, 220, 260) Two-Hour Protection Requirements, One-Hour Protection Requirements, Fire-Resistive Requirements

**Visual and Audible Fire Alarm Devices**

Installation Height Policy: Section 9(15-16-1280) requires that the audible fire alarm be installed at 96” from the finished floor. MOPD requires that the Visual Fire Alarm be installed at a height of 80” or 6” from the ceiling. Per the Illinois Accessibility Code, Appendix D Bulletin #2 – Visual Alarms, Mounting: Provisions contained require mounting.

Per agreement with DCAP, Fire and MOPD, the Visual Alarm (strobe) can also be installed at 96” above the finished floor, thus enabling the installation of a single combination visual and audible device. In areas where the ceiling height does not allow for 96” mounting height, the combination device shall be mounted 6” below the ceiling plane. As a result of this agreement there will no longer be a requirement to install and wire two separate devices and electrical back boxes at each location.

See Section 15-16-1280 Alarm Sounding Devices

Origin: Chicago Fire Department
**Venting of Elevator Shafts**

From this date forward, the requirement in the Elevator Code regarding elevator shaft venting shall be waived for hoistways of non-residential and non-institutional buildings of more than three stories. If there are currently buildings which have been cited for this omission or whose certificate of occupancy is being withheld for lack of venting, please take the appropriate action to approve such installations.

See Sections 13-172-060 Light and Ventilation Required; 13-96-970 Ramps, Hoistways and Elevator Shafts Enclosures; 15-8-150 Elevators and Escalators Enclosures

*Origin: Department of Buildings*

**Wood Frame Balcony**

An unprotected wood frame balcony shall be permitted on buildings of construction Types III and IV. They must conform to the requirements of the Section 7(15-8-322). The Code Section 7(15-8-310) shall not be applicable to building construction Types III and IV.

See Sections 15-8-(310, 322) Balconies and Bay Windows, Balconies; 13-60-100 Fire-Resistive Requirements of Types of Construction

*Origin: Chicago Fire Department*

**Wood Framing into Masonry Walls (3 hr. and 4 hr. Fire Rated)**

Questions have arisen regarding the acceptable method of framing wood floor members – solid joists and trusses – into load bearing masonry walls in townhouse buildings. These walls typically are required to provide a three-hour separation between units or three-hour protection in exterior walls.

Similar questions have also arisen regarding wood framing into masonry walls which are required to have a four-hour rating.

*Origin: Department of Construction and Permits*