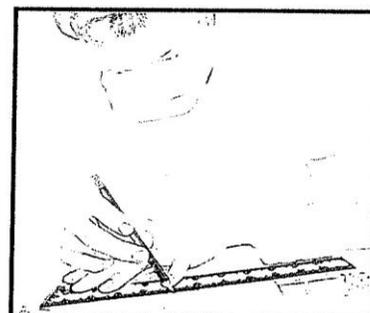
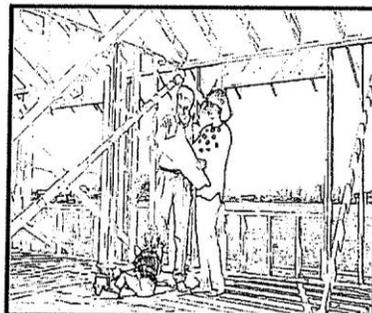
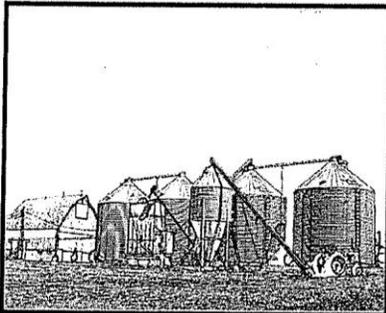
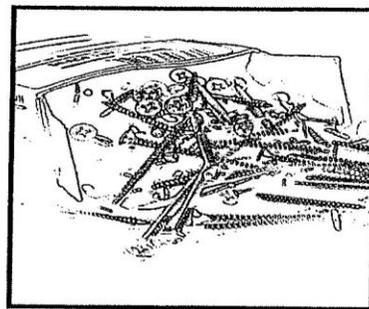
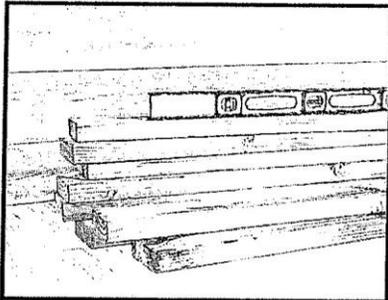
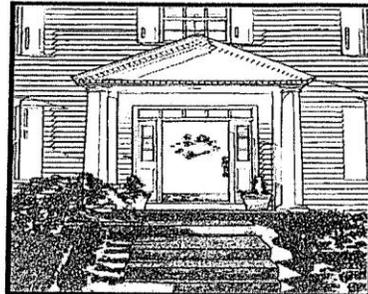
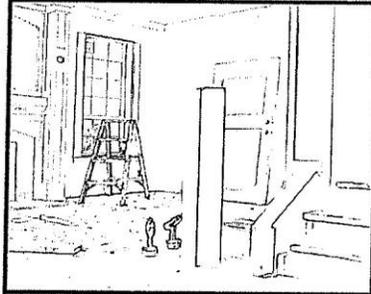
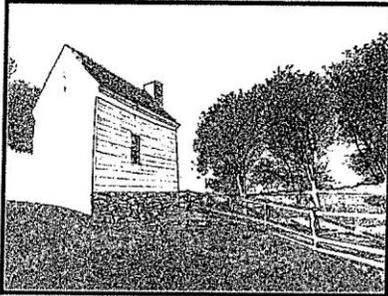


BUILDING HANDBOOK

2018 IRC



City of Hartford
Building Department
125 N. Main Ave
605-366-8962

Legal Disclaimer: The Building Handbook is provided by the City of Hartford-Building Department as an informational guide. The Building Handbook should not be used as a substitute for codes and regulations. The applicant is responsible for compliance with all code and rule requirements, whether or not described in this handbook. This Handbook is also not intended as legal advice, or a substitute for legal advice. Questions about interpretation of the codes and regulations, as any other laws, should be referred to a private attorney.

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BUILDING PERMITS

Permits' Required. Except as specified below, no building or structure shall be erected, constructed, enlarged, altered, repaired, moved, improved or converted unless a separate permit for each building or structure has first been obtained from the Building Department.

Posting of Permits: The Permit placard (red card) shall be posted on the building near the main entrance or in front of the site or house, visible from the main road or entrance.

Work exempt from permits. Permits are not required for the following work. The work must still meet the provisions of the building code and other applicable ordinances.

1. Retaining walls under 48" inches in vertical height.
2. Water tanks. (non-commercial)
3. Painting, papering, tiling, carpeting, cabinets, countertops, and similar work.
4. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.

5. Swings and other playground equipment.
6. Window awnings and window replacements with no size changes.
7. General Landscaping projects.

Work commencing before permit issuance. If work is started before a building permit is issued, there shall be a fine. Such fines are in addition to the required permit fees.

Legal and/or civil proceedings may also be commenced

Delinquent Accounts. The Building Department may refuse to issue permits or conduct inspections for any person or business whose account is delinquent.

Adopted Code: 2018 International Residential Code: applies to the design and construction of one-two family dwellings and townhouses no more than 3 (three) stories above grade.

BUILDING INSPECTIONS

Required Inspections. All construction work for which a permit is required is subject to inspection and all such construction or work must remain accessible and exposed for inspection purposes until approved. It is the responsibility of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. City of Hartford-Building Department is not liable for expense entailed in the removal or replacement of any material required to allow the inspection.

1) Footing /Foundation inspections: to be made after excavations for footings are complete, forms and reinforcing steel including concrete encased electrode or UFER ground with a minimum of 2 inches of concrete cover are in place prior to pouring. *See notes below.

2) Framing Inspection: to be made after the roof, all framing, fire blocking, and bracing are in place and all pipes, chimneys and vents are complete and the rough electrical, plumbing and mechanical systems are in place. ** See notes below

3) Final Inspection: final inspection shall be made after the permitted work is complete and prior to occupancy.

The Building Inspector will either approve that portion of the construction as completed or will notify the permit holder or agent of the permit holder that changes are necessary for compliance to the adopted building enforcement code.

Expiration. The permit shall become null and void if the building construction work is not finished within 12 months from the issuance of the city building permit.

***Footing notes:**

- 1) For Minnehaha County/City of Hartford lots, the frost depth line is 42" inches deep.
- 2) A concrete encased electrode (UFER Rod) is defined as a minimum of 20 feet of #4 or larger rebar encased in at least 2 inches of concrete installed with the footing, or at the bottom of the foundation wall.
- 3) Anchor bolts shall be spaced a maximum of 6' feet on center.

- 4) The minimum width of concrete or masonry footings for a conventional light-frame construction 2-story house with a load capacity of 3,000 psf is: 12" inches.

Building Inspections (continued)

**Framing notes:

- 1) Floor joists framing from opposite sides over a bearing support shall lap a minimum of 3" inches.
- 2) The ends of each rafter or ceiling joist shall have not less than 1 1/2 inches of bearing on wood or metal.
- 3) Studs shall not be bored or drilled with the diameter of the hole being more than 60% of the stud width.
- 4) Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and intersections with bearing partitions. End joints in top plates shall be offset at least: 24" inches.
- 5) Valley Roof flashing shall be not less than 26 gage corrosion-resistant sheet metal. 6) Roofing Ice-Guard/barriers shall extend from the eave's edge to a point at least 24 inches inside the exterior wall line of the building.

DOORS/HALLWAYS/ROOMS

Exit door required. A minimum of one exit door is required for each dwelling unit. The required exit door shall provide for direct access from the living portion of the house to the outside. It cannot provide exit through a garage.

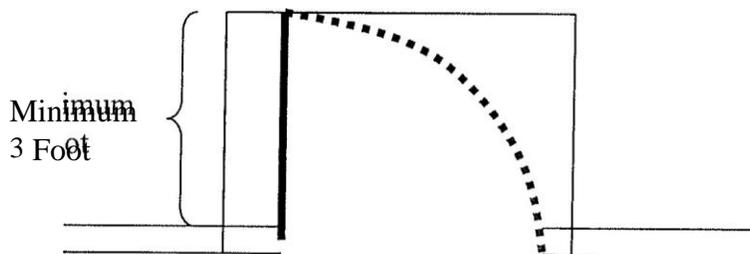
Door type and size. The exit door must be a side-hinged door. The door cannot be less than 3 feet in width/ 32 inches clear width and 6 feet, 6 inches in height. Other hinged or sliding doors do not have to meet these minimum dimensions.

Type of lock or latch. All egress doors must be readily openable from the inside. Opening the door cannot require the use of a key or special knowledge or effort.

Hallways: The minimum width of a hallway shall be not less than 36" inches.

The **Ceiling Height** in any habitable room, measured from the finish floor to the lowest projection from the ceiling, shall be a minimum of 7' foot.

Landings at doors. There shall be a floor or landing on each side of each exterior door. The floor or landing at the exterior door cannot be more than 1.5 inches lower than the top of the threshold at the interior. The exterior landing can be a maximum of 8 inches in height. The slope of the landing cannot exceed 0.25 unit vertical in 12 units horizontal (2 percent).



Exceptions:

- I. Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door provided the door, other than an exterior storm or screen door, does not swing over the stairway
2. The exterior landing at an exterior doorway shall not be more than 8 inches below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
3. The height of floors at exterior doors other than the main exit door shall not be more than 8 inches lower than the top of the threshold.
4. The width of each landing shall not be less than the door served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel.

EMERGENCY ESCAPE AND RESCUE OPENINGS

Emergency escape and rescue required. Basements and every sleeping room shall have at least one openable emergency escape and rescue window or exterior door opening for emergency escape and rescue. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Emergency escape and rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well.

Exception: Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet

Minimum opening area, height and width. All emergency escape and rescue openings shall have a minimum net clear opening of 5.0 square feet (720 sq. in.).

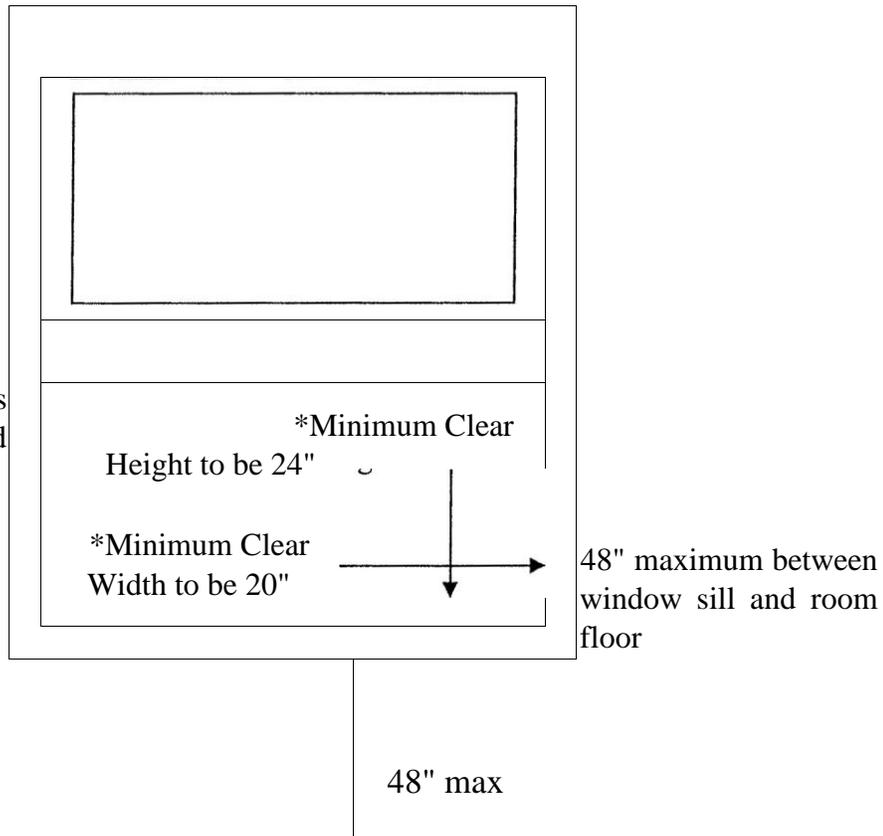
The minimum net clear opening height shall be 24 inches.

The minimum net clear opening width shall be 20 inches.

The maximum sill height shall be 48" from the floor.

Minimum clear opening to be 5.0 square feet (720 sq. in.)

20" w x 24" h Does not equal the required 720 sq. in.



Minimum Width/Height Requirements for Emergency Escape and Rescue Opening

| | | | | | | | | | | | | | | | | |
|--------|------|------|------|------|------|----------------|------|------|------|------|------|------|------|------|------|------|
| Width | 20 | 20.5 | 21 | 22 | 21.5 | 22 | 22.5 | 23 | 23.5 | 24 | 24.5 | 25 | 25.5 | 26 | 26.5 | 27 |
| Height | 36 | 35.1 | 34.2 | 32.7 | 33.5 | 32.7 | 32 | 31.3 | 30.6 | 30 | 29.4 | 28.8 | 28.6 | 27.7 | 27.2 | 26.6 |
| Width | | | 28.5 | 29 | 29.5 | ⁻³⁰ | 30.5 | 31 | 31.5 | 32 | 32.5 | 33 | | | | 34.5 |
| Height | 26.1 | 25.7 | 25.3 | 24.8 | 24.4 | 24 | 23.6 | 23.2 | 22.8 | 22.5 | 22.1 | 21.8 | 21.5 | 21.7 | 20.9 | |

Operational constraints. Emergency escape and rescue openings must be operational from the inside of the room without the use of keys, tools, or special knowledge.

Window wells. Window wells required for emergency escape and rescue must allow the door or window of the emergency escape and rescue opening to be fully opened. The horizontal dimensions of the window well must provide a minimum net clear area of 9 square feet with a minimum horizontal projection and width of 36 inches.

Ladder and steps. Window wells with a vertical depth greater than 48 inches below the adjacent ground level must be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladders or rungs shall have an inside width of at least 12 inches, must project at least 3 inches from the wall and must be spaced not more than 18 inches on center vertically for the full height of the window well.

Bars, grills, covers and screens. Bars, grills, covers, screens, or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures, or window wells that serve such openings, provided the minimum net clear opening size complies, and such devices must be releasable or removable from the inside without the use of a key, tool special knowledge or force greater than that which is required for normal operation of the escape and rescue opening.

Emergency escape windows under decks and porches. Emergency escape windows are allowed to be installed under decks and porches provided the location of the deck allows the emergency escape window to be fully opened and provides a path not less than 36 inches (914 mm) in height to a yard or court. uly

GARAGES/ATTIC ACCESS

Opening protection. A garage may not open into a room used for sleeping purposes. Openings between the garage and residence must have solid wood doors of not less than 1-3/8 inch in thickness, solid or honeycomb core steel doors not less than 1-3/8 inches thick, or 20-minute fire-rated doors.

Duct penetration. Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage must be constructed of a minimum No. 26 gage sheet steel or other approved material and have no openings into the garage.

Other penetrations. Penetrations through the required garage separation must be protected by filling the opening around the penetrating item with approved material to resist the free passage of flame and products of combustion.

Separation required. The garage must be separated from the residence and its attic area by not less than 1/2-inch gypsum board applied to the garage side. Garages beneath habitable rooms must be separated from the rooms above by not less than 5/8-inch Type X gypsum wallboard or equivalent. Type X gypsum board must be installed perpendicular to the ceiling framing and fastened at maximum 6 feet o.c. by minimum 1-7/8-inch 6d coated nails or equivalent drywall screws and shall have the joints taped. Where the separation is a floor- or a roof-ceiling assembly, the structure supporting the separation must also be protected by not less than 1/2-inch gypsum board or equivalent.

Garage to Home Entry Door: 20-minute fire rated door must be equipped with a self-closing device.

Garages located less than 3 feet from a dwelling unit on the same lot must be protected with not less than 1/2-inch gypsum board applied to the interior side of exterior walls that are within this area. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

Floor surface. Garage floor surfaces must be of approved noncombustible material. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entrance doorway.

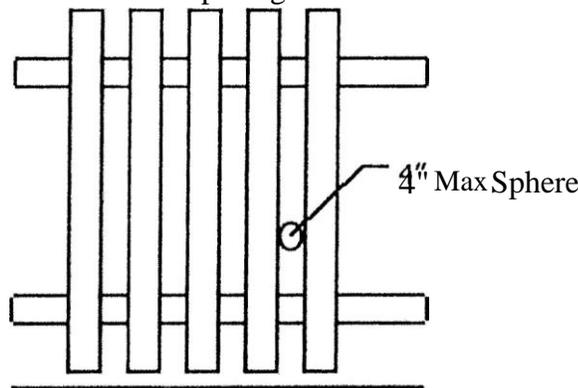
Attic Access: In buildings with combustible ceiling or roof construction, an attic access opening shall be provided to attic areas that exceed 30 square feet and have a vertical height of 30 inches or greater. The rough-framed opening shall not be less than 22" X 30" and shall be located in a hallway or other readily accessible location.

SWIMMING POOLS, HOT TUBS, AND SPAS

Requirements. Every outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa must have a barrier which complies with the following guidelines if the water depth is 24 inches or deeper. The barrier must be installed, inspected and approved prior to filling with water.

The top of the barrier shall be at least 48 inches (1,067 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 4 inches measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

Openings in the barrier shall not allow passage of a 4*inclEdiameter (102 mm) sphere.



Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then the ladder or steps shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a four inch-diameter (102 mm) sphere.

All gates or door openings through the barrier shall be equipped with self-closing and self-latching devices for keeping the door or gate securely closed at all times when the pool is not in actual use, except that the door of any dwelling that form part of the enclosure need not be so equipped.

Modifications in individual cases, upon a showing of good cause with respect to height, nature, or location of a fence, wall, gates, or latches, or the necessity thereof, may be made by the building official, provided the protection as sought hereunder is not reduced thereby. The building official may grant permission for other protective devices or structures to be used as long as the degree of protection afforded by this substitute device or structure is not less than the protection afforded by the wall, fence, gate, and latch described herein. A reasonable period within which to comply with the requirements of this section for existing swimming pools shall be allowed, which period shall not exceed 90 days after notification by the building official.

Entrapment protection for swimming pool and spa suction outlets.

General. Suction outlets shall be designed to produce circulation throughout the pool or spa. Single outlet systems, such as automatic vacuum cleaner systems, or other such multiple suction outlets whether isolated by valves or otherwise shall be protected against user entrapment.

Suction fittings. Except for surface skimmers, all Pool and Spa suction outlets shall be provided with a cover that conforms with ANSI/ASME A1 12.19 or a 12"x12' drain grate or larger, or an approved channel drain system.

Atmospheric vacuum relief system required. All pool and spa single or multiple outlet circulation systems shall be equipped with atmospheric vacuum relief should grate covers located therein become missing or broken. Such vacuum relief systems shall include at least one approved or engineered method of the type specified herein, as follows:

1. Safety vacuum release system conforming to AS A1 12.19.17, or
2. An approved gravity drainage system.

Dual drain separation. Single or multiple pump circulation systems shall be provided with a minimum of two (2) suction outlets of the approved type, a minimum horizontal or vertical distance of three (3) feet shall separate such outlets. These suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum relief-protected line to the pump or pumps.

Pool cleaner fittings. Where provided, vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least six (6) inches and not greater than twelve (12) inches below the minimum operational water level or as an attachment to the skimmer(s).

SECURITY/HOUSE ID

Doors. Exterior dwelling doors and doors between the house and garage shall be provided with hardware such that an individual cannot gain entry from the exterior by pushing or pulling, or by manipulating an exposed lock mechanism.

Strike plate installation. In wood frame construction, an open space between trimmers and wood doorjambs shall be solid shimmed by a single piece extending not less than 12 inches above and below the strike plate. Strike plates shall be attached to wood with not less than four No. 8 by 3-inch screws, which shall have a minimum of 3/4-inch penetration into the nearest stud. Strike plates, when attached to metal, shall be attached with not less than four No. 8 machine screws.

Hinges. When hinges are exposed to the exterior, at least one of the three required hinges shall be equipped with non-removable hinge pins or a mechanical interlock to preclude removal of the door from the exterior by removing the hinge pins. Not less than three 4 1/2-inch steel butt hinges shall be symmetrically fastened to both the door and frame with not less than four No. 9 by 3/4-inch wood screws or to metal with not less than four No. 8 machine screws. In wood construction, an open space between trimmers and wood doorjambs shall be solid shimmed extending not less than 6 inches above and below the plate.

Locking hardware. Single-swinging doors and the active leaf of doors in pairs, shall be equipped with an approved exterior key-operated deadbolt. The deadbolt shall have a minimum one-inch throw and must be actuated by a key from the exterior and a knob or thumb turn on the interior. When projected, the deadbolt shall become locked against return by end pressure. Sliding doors must be provided with a locking mechanism activated from the interior.

Windows. Window assemblies defined as units composed as a group of parts that closes an opening in a wall to control light, air, and other elements shall be provided with a latching device activated from the interior, which is intended to resist opening a movable sash from the exterior.

Approved numbers or addresses shall be provided for all new residential buildings in such a position as to be plainly visible and legible from the street or road fronting the property. The minimum height of the numbers shall be 4" inches.

Fire Assembly: It is required that under-stair protection (1/2") sheetrock be installed in an enclosed accessible closet/space under the stair stringer sand walls.

SMOKE ALARMS

New Construction: Smoke Alarms are required in each sleeping room, in each hallway of a set of bedrooms and on every level of house. Smoke Alarms must be interconnected and can use wireless capabilities.

Where the ceiling height of a room is open to the hallway serving a bedroom exceeds that of a hallway by 24 inches or more, smoke detectors shall be installed in the hallway. Hallways less than 4 feet in length are exempt of the requirement of a smoke detector.

Alterations, repairs and additions: When alterations, repairs and additions requiring a permit occur with a valuation in excess of \$10,000 or more or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Power Source: In new construction, the required smoke alarms shall receive their primary power from the building wiring is served from a commercial source. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs and additions.

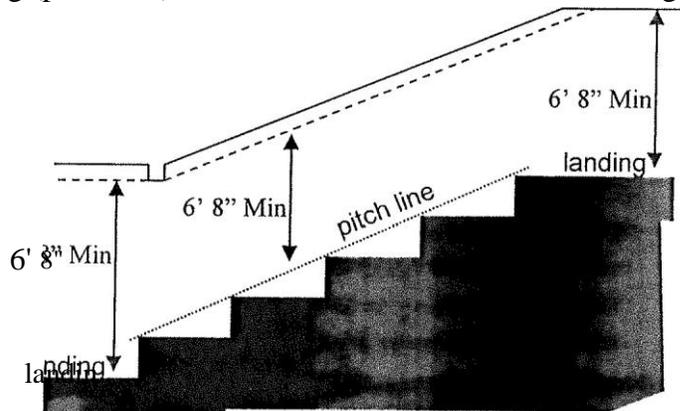
Carbon Monoxide Detectors

Carbon Monoxide Detectors are required in the hallway of a set of bedrooms and on every level of a house which has habitable square footage if the house has an attached garage or fuel fired appliance. A bedroom which has a fuel fired appliance is required to have a carbon monoxide detector in that bedroom.

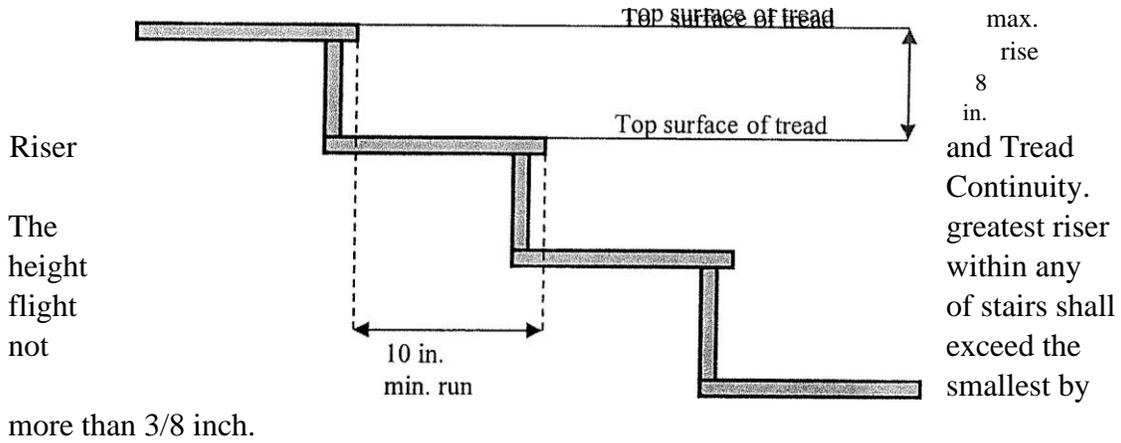
STAIRWAYS

Width. Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height. The width of spiral stairways shall be in accordance with spiral stairway provisions. Handrails shall not project more than 4.5 inches on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5 inches where a handrail is installed on one side and 27 inches where handrails are provided on both sides.

Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (80" inches total) measured vertically from the sloped plan adjoining the tread nosing (pitch line) or from the floor surface of the landing or platform.

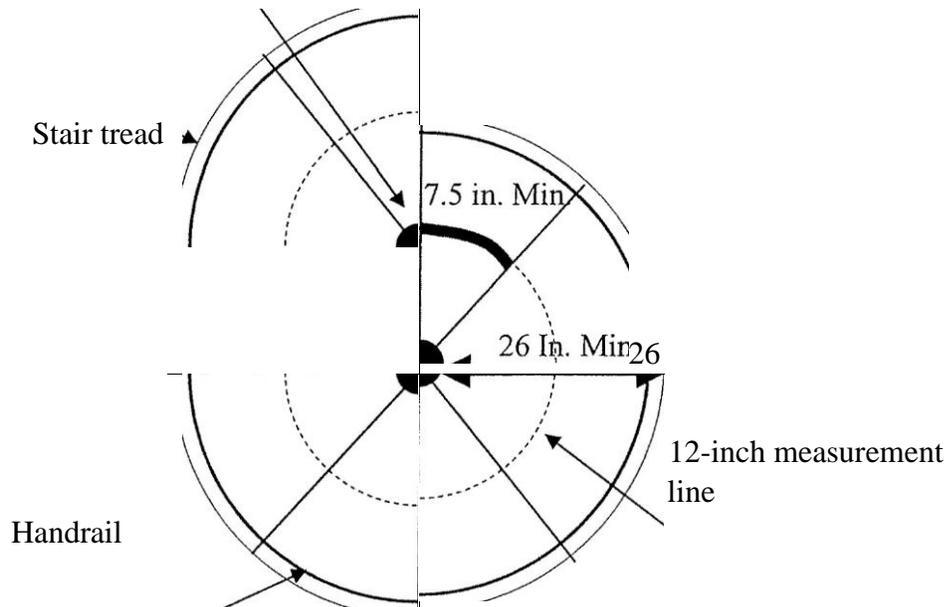


Riser Height and Tread Depth. The maximum riser height shall be 8 inches, measured vertically between the leading edges of the adjacent treads. Open risers are permitted. The minimum tread depth shall be 10 inches, measured horizontally between the vertical planes of the foremost projection of the adjacent treads and at a right angle to the tread's leading edge.



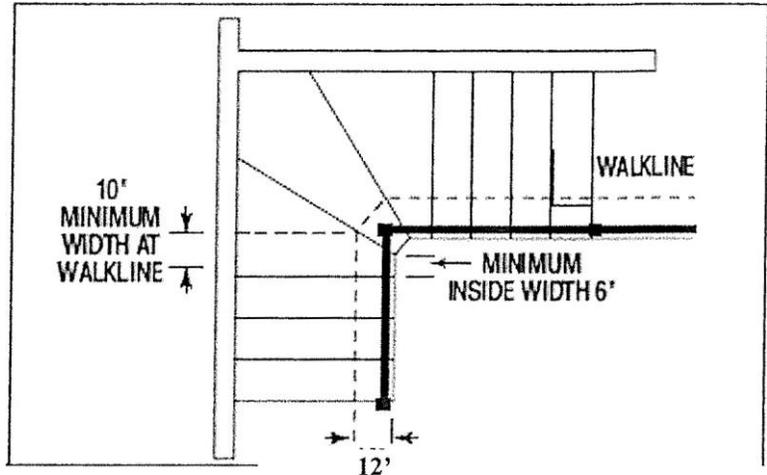
Spiral Stairways. Spiral stairways are permitted. The minimum width shall be 26 inches with each tread having a 7 1/2-inch minimum tread depth at 12 inches from the narrower edge. All treads shall be identical, and the rise shall be no more than 9 1/2 inches. A minimum headroom of 6 feet 6 inches shall be provided.

Central support pole

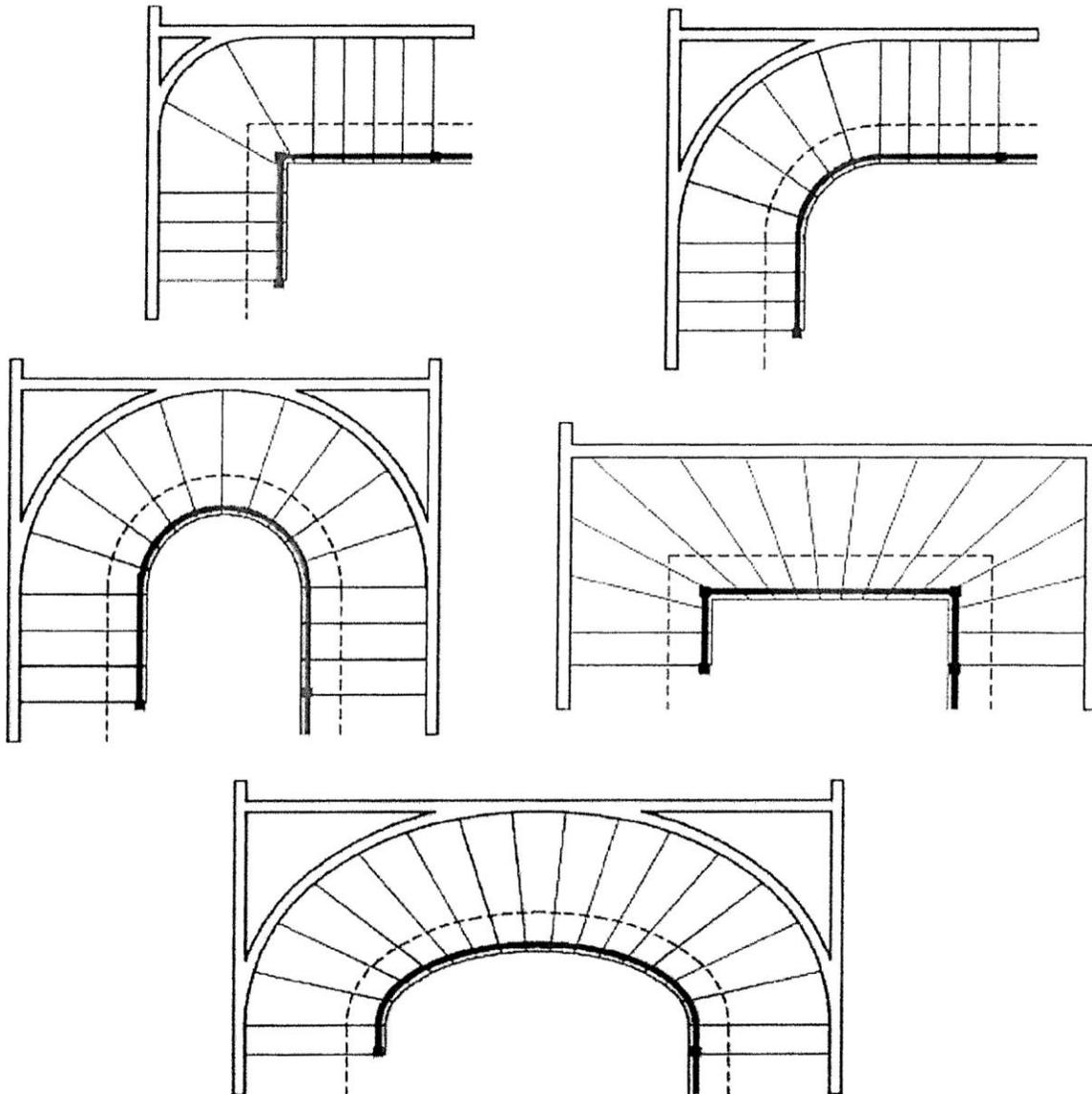


Winders and Circular Stairs.

Winders are permitted. The width of the tread at a point not more than 12 inches from the side where the treads are narrower is not less than 10 inches and the minimum width of any tread is not less than 6 inches. The read depth of a circular stair at any walking line shall be uniform, measured at a consistent distance from a side of the stairway.



ALTERNATE WINDER DESIGNS

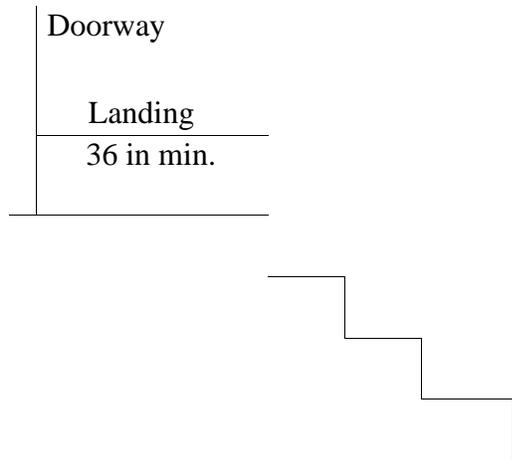


Landings for stairways. There shall be a floor or landing at the top and bottom of each stairway. The width of each landing shall not be less than the width of the stairway

served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

A flight of stairs shall not have a vertical rise larger than 12 feet between floor levels or landings.

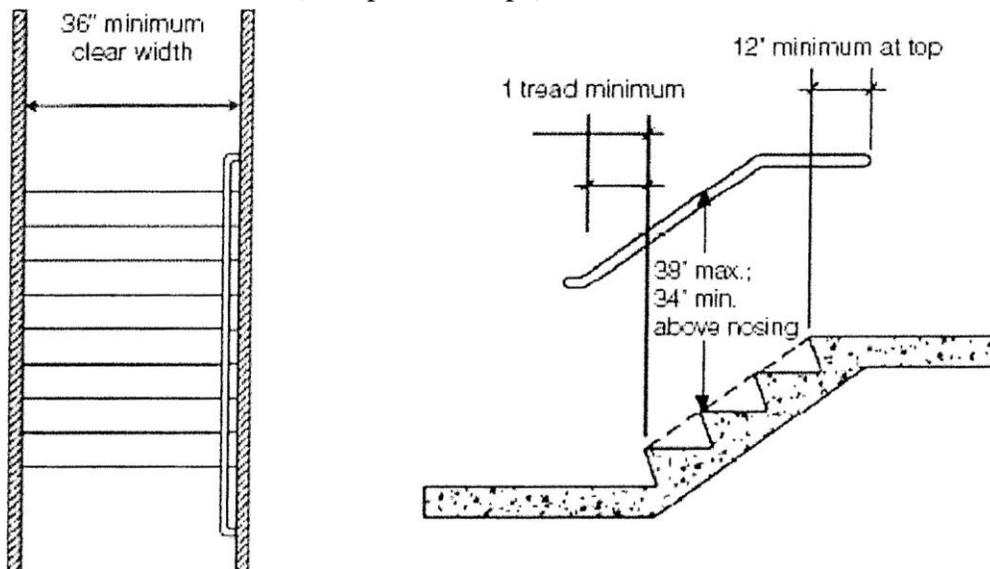


Stairway walking surface. The walking surface of treads and lands of stairways shall be sloped no steeper than one unit vertical in 48 inches horizontal (2 percent slope).

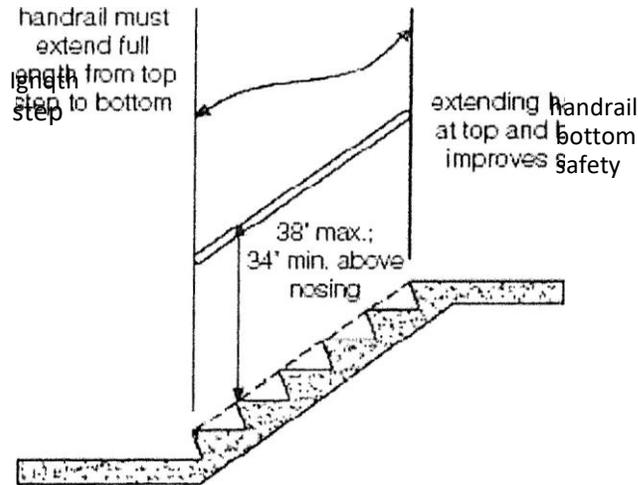
Under stair protection. Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2-inch gypsum board.

HANDRAILS

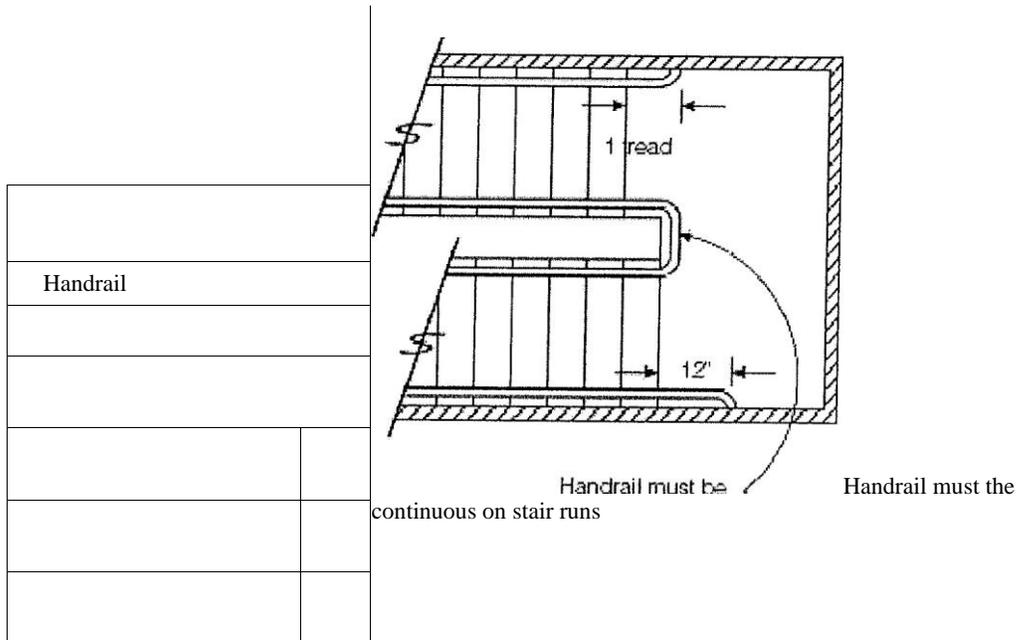
Number of handrails — Handrails shall be provided on at least one side of each continuous flight with four or more risers. (This rule also applies to exterior stairs.) On ramps, a handrail is required on at least one side if the ramp slope exceeds 1 unit vertical to 12 units horizontal (8.33 percent slope).



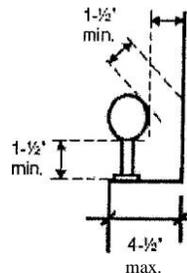
Height — Handrails shall be mounted so that the top of the handrail is between 34 and 38 inches above the stair tread at the nosing. The ends must be returned back to a wall or newel post.



Continuity — Handrails shall extend the full length of the flight or ramp. They cannot be interrupted by newel posts, except at a turn. They shall start at least directly above the top riser and extend to at least the top of the lowest riser. The ends of the handrails must either be "returned," or end in safety terminals. (A "return," for example, is where the end of the handrail turns into the adjacent wall.) At the lowest tread, a newel post, volute, turnout or starting easing is permitted in the handrail.



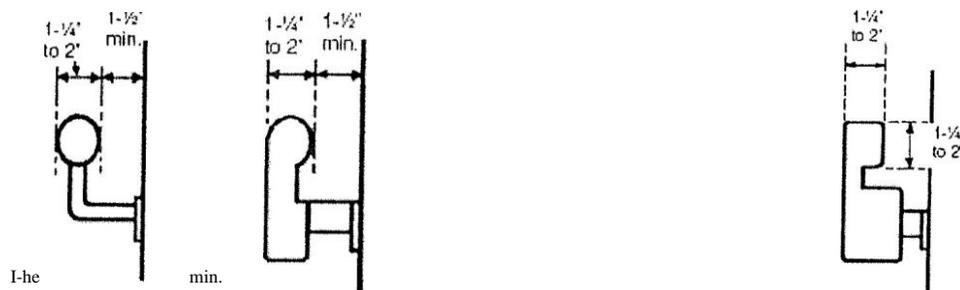
Newel post edge may be at landing nose



Handrail grip size — A handrail that is round in cross section must be between 1 1/4 to 2 inches in diameter. If a handrail is not round, it must provide an equivalent surface that is easily grasped. There are two alternate types:

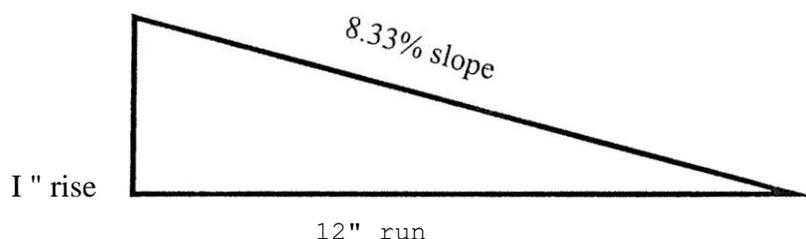
- Handrails with a perimeter dimension between 4 and 6 1/4 inches, with a maximum cross section of 2 1/4 inches.
- Handrails with a perimeter dimension greater than 6 1/4 inches must have a graspable finger recess area.

Clearance — The handrail must also be far enough away from the wall so it can be easily grasped. The minimum clear distance is 1 1/2 inches between the handrail and the wall.



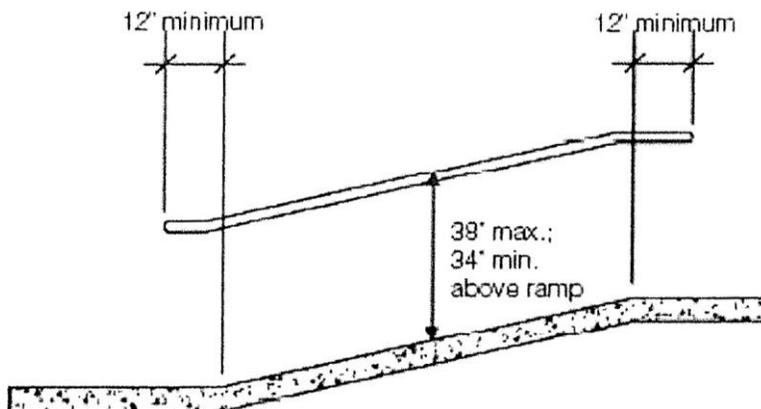
RAMPS

Maximum Slope. When planning a ramp, first measure from the ground to the base of the doorway to find out how much elevation is needed. The ramp shall not have a gradient greater than 1 in 12. Therefore, for every inch of rise, the ramp requires 12 inches of run (8.33% slope). Where it is technically infeasible to comply because of site constraints, for every one inch of rise, ramps may have 8 inches of run. (12.5 % slope).



Landings required. A minimum 3 ft. X 3 ft. landing shall be provided at the top, at the foot, and where doors open onto ramps. Ramps are allowed to change directions, provided that level landings are installed

Handrails required. Ramps which have a gradient greater than 8.33% or I: 12 or one ft. rise in 12 ft. of run shall have handrails on at least one side of the ramp. Handrails shall be mounted so that the top of the handrail is located between 34 and 38 inches above the finished surface of the ramp. Hand rail grip size shall be consistent with stairway requirements. The clear space between the handrail and any adjoining wall shall be a minimum of 15 inches. Handrails shall be continuous for the full length of the ramp and handrail ends shall be returned or end in newel posts or safety terminals.



Glazing

Identification. Each pane of glazing installed in hazardous locations shall be provided with a manufacturer's designation specifying who applied the designation, designating the type of glass and the safety glazing standard with which it complies, which is visible in the final installation. The designation shall be acid etched, sandblasted, ceramic fired, laser etched, embossed or be of a type which once applied cannot be removed without being destroyed.

Hazardous locations:

- 1) Glazed in all fixed and operable panels of swinging, sliding and bifold doors.
- 2) Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.
- 3) Glazing in an individual fixed or operable panel that meets all of the following conditions:
 - 3.1 The exposed area of an individual pane is larger than 9 square feet, and
 - 3.2 The bottom edge of the glazing is less than 18 inches above the floor, and
 - 3.3 The top edge of the glazing is more than 36 inches above the floor, and
 - 3.4 One or more walking surfaces are within 36 inches, measured horizontally and in a straight line, of the glazing.
- 4) All glazing in railings regardless of area or height above a walking surface.
- 5) Glazing in enclosures, walls, or fences facing hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers where the bottom exposed edge of the glazing is less than 60 inches measured vertically above any standing or walking surface, measured horizontally outward to 60 inches.
- 6) Glazing in walls and fences adjacent to indoor or outdoor swimming pools, hot tubs, and spas where the bottom edge of the glazing is less than 60 inches above a walking surface and within 60 inches, measured horizontally and in a straight line, of the water's edge.
- 7) Glazing where the bottom exposed edge of the glazing is less than 36 inches above the plane of the adjacent walking surface of stairways, landings and ramps shall be considered a hazardous location.
- 8) Glazing adjacent to the landing at the bottom tread of a stairway where the glazing is less than 36 inches above the landing and within 60 inches horizontally of the bottom tread shall be considered hazardous.

GUARDS

Guards are required for porches, balconies, ramps or raised floor surfaces which are located more than 30 inches above the floor or grade below. The guards shall be a minimum 36 inches in height. If a fixed bench is installed, the 36" guard will be measured vertically from the bench seat level.

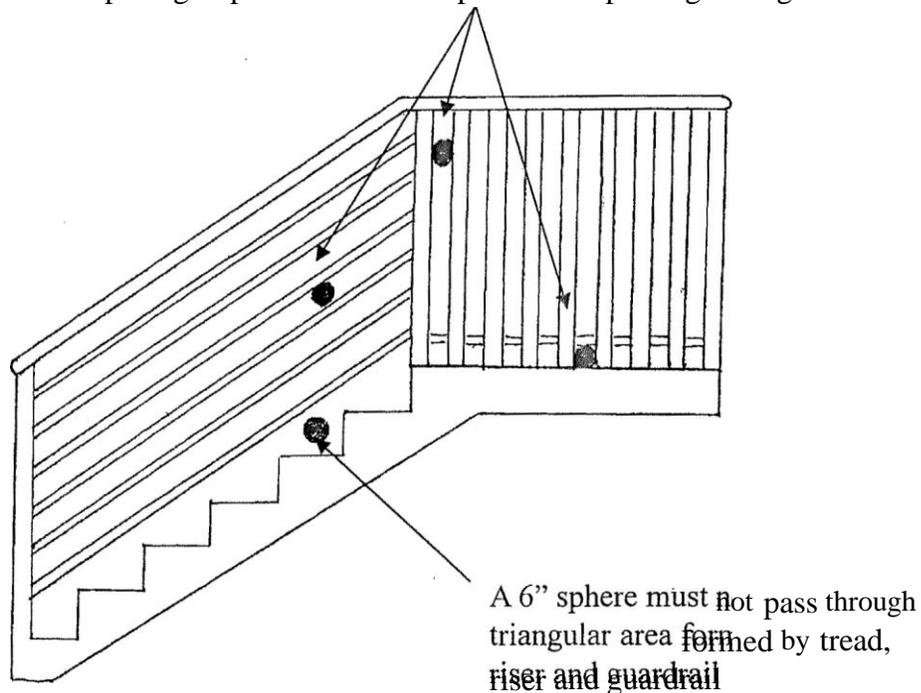
Open sides of stairs with a total rise of more than 30 inches above the floor or grade below, shall have guards not less than 34 inches in height when measured vertically from the nosing of the treads.

Guards are required on porches and decks which are enclosed with insect screening where the walking surface is located more than 30 inches above the floor or grade below.

Guard in-fill components (except the handrail), balusters, and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot.

Opening limitations. Where guards are required on open sides of stairways, raised floor areas, balconies, and porches, intermediate rails or ornamental closures are required which are close enough together so that a sphere of 5 inches or more in diameter will not pass through. On an open stairway, in the triangular space formed by the riser, tread, and bottom rail of the guard a sphere of 6 inches shall not pass through.

Spacing to prevent a 5-inch sphere from passing through



SNOW LOADS

WIND SPEED

Roofs must be designed for a minimum ground snow load of 40 pounds per square foot. In no case shall the live load be less than the following:

Roof slopes of 3/12 or shall carry a snow load of 30 pounds per square foot.

Roof slopes of 3/12 or greater shall carry a snow load of 25 pounds per square foot.

Roof slopes of $\frac{1}{4}$ per 12 inches shall be designed to carry an additional 5 pounds per square foot in addition to the live load due to snow.

All Structures in City of Hartford-Building Department must be built to withstand a 115-mph basic wind speed.

COMMON RESIDENTIAL CODE REQUIREMENTS

The section outlines pertinent code items required for residential projects. Additional items may be required depending on the specific project. Remember that these guidelines are not substitutes for codes and regulations. You are responsible for ensuring that your project complies with the specific requirements of all relevant codes and regulations as adopted by City of Hartford-Building Department.

- 2018 International Building Code (IBC) as adopted by City of Hartford-Building Department
- 2018 International Residential Building Code (IRC) as adopted by City of Hartford-
- 2018 International Existing Building Code (IEBC) as adopted by City of Hartford1, Building Plans. Residential building plans should include the following:
 - Site Plan
 - Foundation Plan
 - Floor Plans, including labeled use of all rooms
 - Roof and floor framing plans including existing framing affected by additions or alterations

2 Building Separation Requirements. Proximity to property line-

- 1-hour wall is required if less than 3' to property line.
- No openings (doors and windows) in walls less than 3' to property line.
- Eaves closer than 4' to property line must be finished on the underside with at least 1/2" gypsum sheathing or equivalent.

3. Garage/Dwelling Separation Requirements.

- 1/2" regular gypsum bard required on garage side walls between garage and dwelling.
- Garage ceilings where dwelling above requires 5/8" type "X" gypsum board. Supporting structure requires h" regular gypsum board.
 - ° 1-3/8" thick (Min.) solid core (solid wood, solid or honey comb steel) or 20- minute fire rated door required between garage and dwelling.
- No separation required at carports (2 sides open).
 - o No openings allowed from garage into a sleeping room.

d. Life Safety Requirements.

Stairs

- Minimum width = 36"
- Maximum 8" rise
- Minimum 10" run
- Minimum 6'8" head room
- Handrail 34"-38" above tread nosing
- Handrail grasping dimension 1-1/4" minimum — 2" maximum

- For winding stairs provide a minimum 10" tread at 12" from the narrowest point and a minimum 6" tread at the narrowest point.

5. Decks/Guardrails

- Guard (guardrail) required for walking surfaces 30" above adjacent grade or floor below.
- 36" high required minimum
- 5" maximum clear space between intermediate rails

6. Smoke Alarms

- Smoke detectors required when permit required, or when one or more bedrooms added.
- Must be powered by interconnected building wiring and have battery back* up in new construction and additions.
- May be battery-powered in alterations except when wiring can be installed without removal of interior finishes.
- Required in sleeping rooms, outside sleeping areas, and other floors (including basements). Any alarm must be clearly audible in all bedrooms.
- Battery-powered okay in existing buildings not being remodeled.

7. Emergency Escape and Rescue

Basements and every sleeping room must meet these requirements:

- 5' minimum net clear open area
- 20" minimum clear open width
- 24" minimum clear open height
- 48" maximum sill height
- Window wells require minimum 3'x3' but must permit full opening of window. Ladder escape okay.