

Basement finish or remodel in one and two-family dwellings

Any proposed basement finish or remodel must comply with all the following requirements. The requirements herein must be met for finished or remodeled basement space to be considered habitable space as defined in the Minnesota Residential Code (MRC). If the requirements are not or cannot be met the space may be finished as non-habitable space.

General basement finish requirements

Smoke alarms

Per Section R314 of the IRC, see attached State of Minnesota guidelines for placement and use of smoke alarms. When alterations, repairs or additions requiring a permit occur, 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, the smoke alarms shall be interconnected and hard wired.

Exceptions:

1. Interconnection and hardwiring of smoke alarms in existing areas shall not be required to be hardwired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.
2. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding are exempt from the requirements of this section.
3. Permits involving alterations or repairs to plumbing, electrical, and mechanical are exempt from the requirements of this section.

At least one detector shall be provided:

- in each sleeping room
- in the hallway outside the sleeping rooms within the immediate vicinity of the bedrooms
- on each level including basements and habitable attics

Hard wiring of smoke alarms in existing areas shall not be required where the alterations of repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring without the removal of interior finishes. IRC 314.4 & HMC 244.915

Carbon monoxide alarms

R315.1 Carbon monoxide alarms. Dwelling units shall have an approved and operational carbon monoxide alarm installed when one of the following conditions occur:

1. Fuel-fired appliances are installed; or
2. Have attached garages.

Installation. Carbon monoxide alarms shall be installed outside and not more than 10 feet from each separate sleeping area or bedroom. Alarms shall be installed on each level containing sleeping areas or bedrooms. (MN Stat. 299F.50)

Combination carbon monoxide and smoke alarms complying with the applicable standards are permitted and are commonly installed outside of bedroom areas in residential construction as an acceptable method for satisfying both smoke alarm and carbon monoxide alarm provisions in the MRC.

Emergency escape and rescue openings

Basements and every sleeping room shall have not less than one operable emergency escape and rescue opening. New sleeping rooms created in an existing basement shall be provided with emergency escape and rescue openings, unless the entire basement area, including all portions of the means of egress to the level of exit discharge, and all areas on the level of exit discharge that are open to the means of egress are protected with an automatic sprinkler system in accordance with IRC Section P2904 or NFPA 13D. Where basements contain one or more sleeping rooms, an emergency egress and rescue opening shall be required in each sleeping room, but not be required in adjoining areas of the basement.

Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way. Emergency escape and rescue openings installed under decks and porches shall be fully openable and provide a path not less than 36 inches in height to a yard or court.

Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 square feet. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. The net clear height of the opening shall be not less than 24 inches, and the net clear width shall be not less than 20 inches. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge.

Where a window is provided as the emergency escape and rescue opening, it shall have a sill height of not more than 44 inches above the floor. Where the sill height is below grade, it shall be provided with a window well. The horizontal area of the window well shall be not less than 9 square feet, with a horizontal projection and width of not less than 36 inches. The area of the window well shall allow the emergency escape and rescue opening to be fully opened. Window wells with a vertical depth greater than 44 inches shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Window wells shall be designed for proper drainage by connecting to the building's foundation drainage system or by an approved alternative method. Where bars, grilles, covers, screens or similar devices are placed over emergency escape and rescue openings, area wells, or window wells, the minimum net clear opening size shall comply with Sections R310.2.1 through R310.2.3, and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge or force greater than that required for the normal operation of the escape and rescue opening.

Zoning requirement: window wells shall be located not less than 2 feet from any side or rear lot line.

Ceiling height

Habitable spaces including bedrooms and the exit path to the stairway or exterior door shall have a ceiling height of not less than 6 feet 4 inches measured from the finished floor to the lowest projection from the ceiling including beams, girders, ducts, or other obstructions. In existing basements where a 6-foot 4-inch ceiling height cannot be obtained, it is considered non-habitable space. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

Bathrooms in existing basements shall have a minimum ceiling height of 6 feet 4 inches at the center of the front clearance area for water closets, bidets, or sinks. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6 feet 4 inches above a minimum area 30 inches by 30 inches at the wall where the showerhead is placed. The ceiling may have slopes or soffits that do not infringe on the height required for the plumbing fixture.

Stairways in existing basements shall have a minimum headroom in all parts of the stairway not less than 6 feet 4 inches measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

Room area

Habitable rooms, including bedrooms, shall have a floor area of not less than 70 square feet and shall be not less than 7 feet in any horizontal dimension. Portions of a room with a sloping ceiling measuring less than 5 feet or a furred ceiling measuring less than 7 feet from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required habitable area for that room.

Stairways

The code limits the slope of stairs and provides minimum requirements for stair dimensions, clearances, uniformity, and graspable handrails to improve stairway safety and prevent injuries from falls.

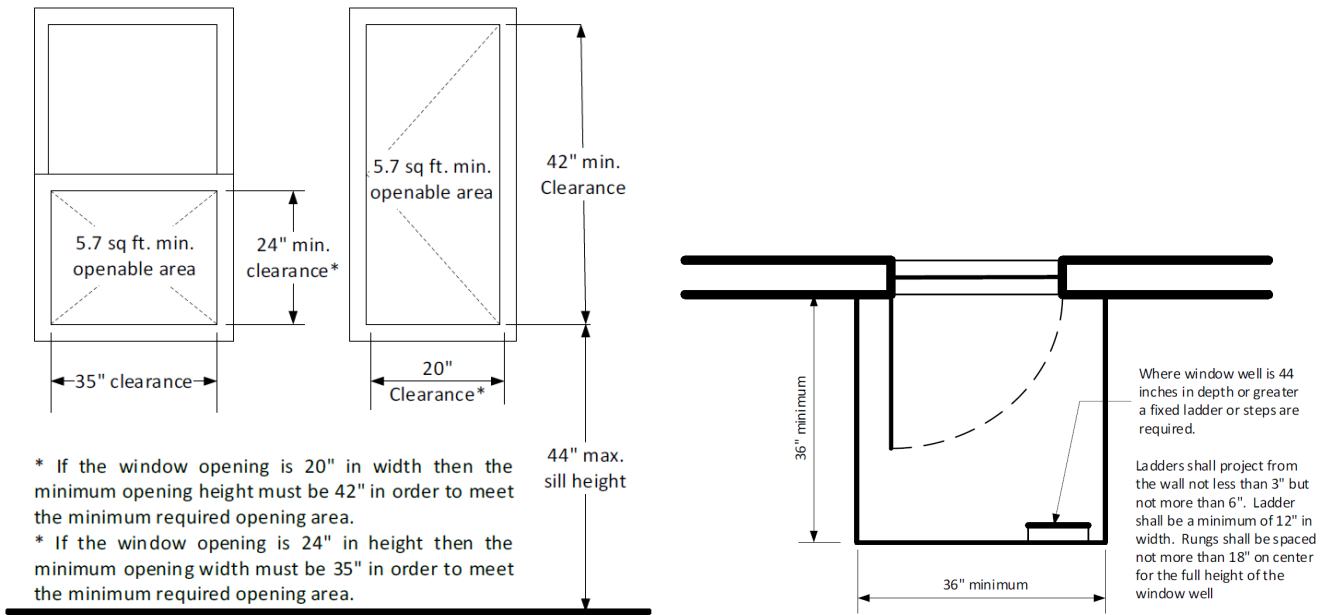
Stairways in existing basements shall have a minimum headroom in all parts of the stairway not less than 6 feet 4 inches measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

Interior stairways shall be provided with an artificial light source to illuminate the landings and treads.

Enclosed space under stairs that is accessed by a door or access panel shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch gypsum board.

Requirements for new bedrooms in existing basements

- 1) Every bedroom must have an exterior door or at least one emergency escape and rescue window (aka egress window) meeting all the following requirements:
- 5.7 ft² (821 in²) overall minimum net clear opening (measured in the open position – see illustration)
 - Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet.
 - 20” minimum net clear opening width
 - 24” minimum net clear opening height
 - Maximum height from finished floor to finished sill of escape-rescue window is 44”.



Bars, grilles, grates or similar devices may be installed on emergency escape windows, doors or window wells, provided:

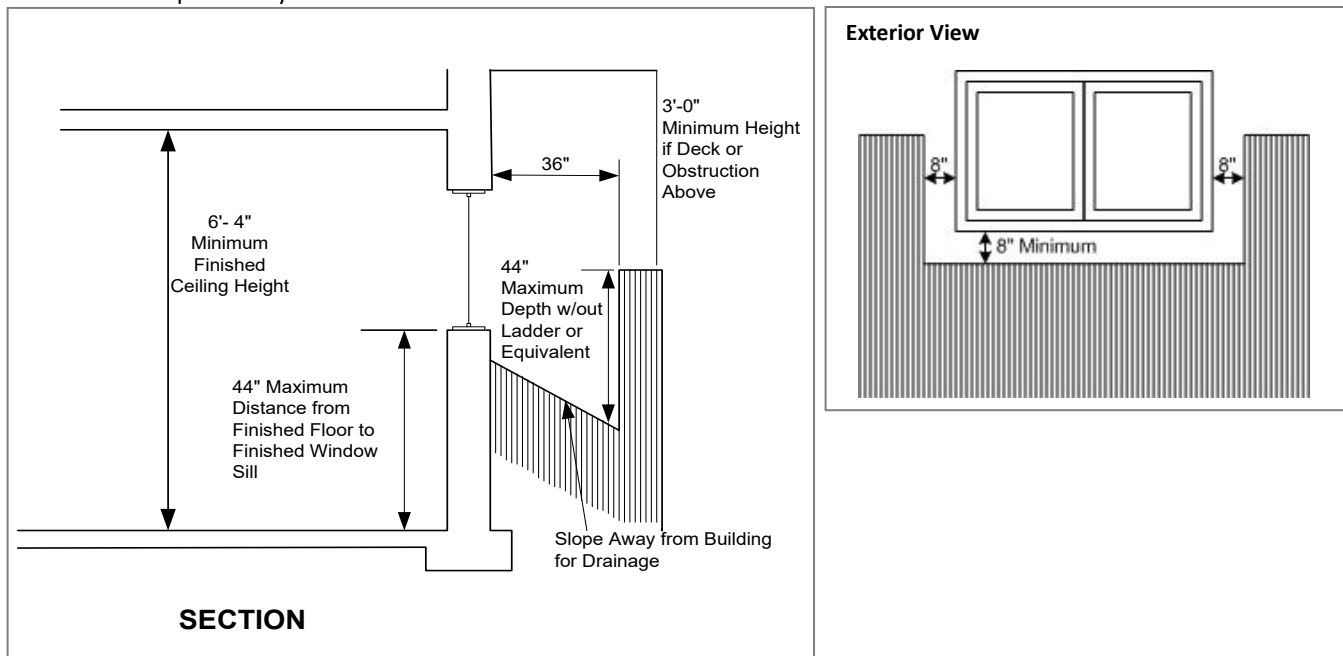
- The devices are equipped with approved release mechanisms which are open able from the inside without the use of a key or special knowledge or effort; and
- The building is equipped with smoke detectors installed in accordance with Section 314.
- Specific security grill systems require approval by the Department of Inspections prior to installation.

Escape and rescue windows with a finished sill height below the adjacent ground elevation shall have a window well. Window wells at escape or rescue windows shall comply with IRC R310:

- The clear horizontal dimensions shall allow the window to be fully opened provide a minimum accessible net clear opening of 9 square feet with a minimum dimension of 36 inches.
- Window wells with a vertical depth of more than 44 inches shall be equipped with an approved, permanently affixed ladder or stairs that are accessible with the window in the fully open position. The ladder or stairs shall not encroach into the required dimension of the window well by more than 6 inches.
- If there is a deck or other obstruction above the window well, a 36 inches minimum height above exterior grade must be kept open.

- Window well must extend at least 8" beyond each side of the window to provide a wood/earth separation and prevent rot per IRC Chapter 317.
- Window wells require a minimum 2-foot setback (zoning) measured from the window well edge to a side or rear property line.

2) Smoke alarms and carbon monoxide (CO) alarms shall be installed per general basement finish requirements above. It shall be the owner's responsibility to maintain the alarms.



- 3) Bedrooms, as well as the exit path to the stair or the exterior door, shall have a ceiling height of not less than 6 feet 4 inches measured from the finished floor to the lowest projection from the ceiling including beams, girders, ducts, or other obstructions. In existing structures where a 6-foot 4-inch ceiling height cannot be obtained, it is considered non-habitable space.
- 4) Minimum size of bedroom is 70 square feet, with the least dimension being 7 feet.
- 5) Natural light and ventilation requirements: a minimum of 8% of the floor area of each bedroom must be provided in window glass area. Natural ventilation shall be through windows, doors, louvers or other approved openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The minimum open area to the outdoors shall be 4 percent of the floor area being ventilated.
- Natural ventilation exception: A mechanical ventilation system capable of providing 0.35 air change per hour in the room or a whole-house mechanical ventilation system is installed capable of supplying outdoor ventilation air of 15 cubic feet per minute per occupant based on two occupants for the first bedroom and one occupant per each additional bedroom.
 - Natural light exception: artificial light capable of producing an average illumination of 6 foot-candles over the area of the room at a height of 30 inches above the floor level.
- 6) Required heating: Every dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68 degrees F at a point 3 feet above the floor and 2 feet from exterior walls in all habitable rooms (303.9).

7) Fuel-fired appliances shall not be located in or obtain combustion air from sleeping rooms, bathrooms or closets (303.3).

8) Stair Requirements:

Existing stairs (including stairways improved by increasing the floor opening size and reconstructing the stair) serving finished habitable space (bedroom, home occupation, or group family day care) in basements shall meet the following minimum:

- Housing maintenance code requirements 244.960 and/or 2015 MN IRC 311.7:
- Stair width: 30" minimum
- Stair headroom: 6'4" minimum (R305.2.2)
- Stair rise: 8" maximum
- Handrail: 30" – 38" in height
- Stair run: 9" minimum
- Guardrail: 36" minimum height with intermediate openings less than 4" if new or alterations to existing required.

Newly constructed stairways must meet current 2015 MN IRC R311.7