

VILLAGE OF ALGONQUIN

Community Development

Typical Finished Basement Requirements

Based on the 2006 International Residential Code, 2002 National Electrical Code, 2014 Illinois Plumbing Code, 2015 Illinois Energy Conservation Code and Algonquin Building Code Amendments.



Finished basements shall be constructed in accordance with this handout and the 2006 International Residential Code, 2002 National Electrical Code, 2014 Illinois Plumbing Code, 2015 Illinois Energy Conservation Code and Algonquin Building Code Amendments.

This handout is not a copy of the code, and all requirements may not be covered in this handout.

Contents

General Building Requirements	2
Emergency Egress Requirements.....	2
Stair Requirements.....	3
Insulation and Fire Blocking Requirements.....	4
Electrical Requirements.....	5
Plumbing Requirements.....	6

Questions call 847-658-2700 (option 3)

General Requirements

Single-Family Dwelling: In no case shall a finished basement be used as a separate dwelling unit or rented out for such use.

Minimum Room Size: Habitable rooms, excluding hallways, laundries, storage spaces and bathrooms shall have an area of not less than 70 square feet and shall not be less than 7 feet in any direction.

Sleeping Rooms: Rooms more than 70 square feet and with dimensions no shorter than 7 feet in any direction, regardless of the labeling and whether a closet is provided, will be treated as a sleeping room. A smoke alarm, escape window and AFCI-protected circuits are required.

Ceiling Height: Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms, and basements shall have a ceiling height of not less than 7 feet. Beams and girders spaced not less than 4 feet on center shall be permitted to project not more than 6 inches below the required ceiling height. Ceiling heights in basements without habitable space shall have a ceiling height of not less than 6 feet 8 inches clear except for under beams, girders, ducts, or other obstructions where the clear height may be 6 feet 4 inches. The required height shall be measured from the finished floor to the lowest projection from the ceiling.

Hallways: Hallways shall not be less than 36 inches in width.

Smoke Alarms: A minimum of one 110-volt interconnected battery-backup smoke alarm, wired in a general lighting circuit is required on all levels including the basement, inside all sleeping rooms, and outside of sleeping rooms within 15 feet of the sleeping room door.

Carbon Monoxide Alarm: A minimum of one carbon monoxide alarm is required outside of sleeping rooms within 15 feet of the sleeping room door.

Emergency Escape and Rescue Opening Requirements

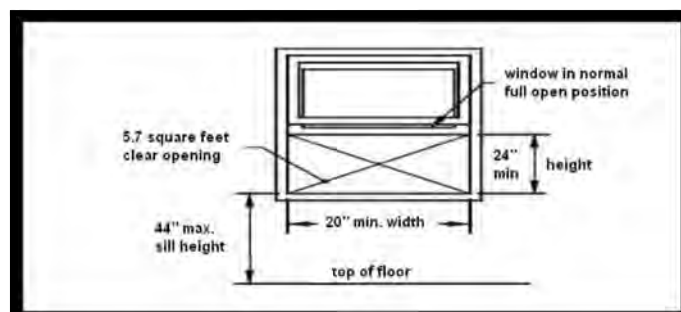
The basement and every sleeping room in the basement shall have at least one operable emergency escape and rescue opening. Where basements contain one or more bedrooms, emergency escape and rescue openings are required in each bedroom but shall not be required in adjoining basement areas.

Emergency Escape and Rescue Openings-Examples

- A 36-inch wide door at grade level opening directly to the outside or to an outside stair to grade.
- A window at or above grade.
- A window below grade opening to an approved window well.
- A door opening to an approved bulkhead enclosure.

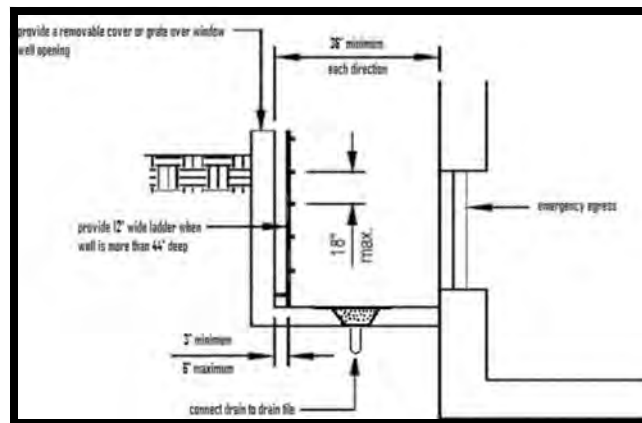
Opening requirements

- The minimum opening size shall have a net clear opening of 5.7 square feet. Grade floor openings shall have a minimum net clear opening of 5.0 square feet. The maximum sill height shall be not more than 44 inches above the floor.
- The opening shall be operational from inside the room without the use of keys, tools or special knowledge.
- The minimum net clear opening height shall be 24 inches.
- The minimum net clear opening width shall be 20 inches.
- Bars, grills, covers, screens, or other devices placed over emergency escape and rescue openings, window wells or bulkhead enclosures shall be releasable or removable from the inside without the use of a key, tool, special knowledge or force greater than required for normal operation of the emergency escape and rescue opening.



Emergency Escape Window Well Requirements

- When the escape window is in the full open position, the net clear horizontal dimensions of the window well shall be 9 square feet with a minimum horizontal projection and width of 36 inches. The required ladder or steps shall be permitted to encroach a maximum of 6 inches into the required dimensions of the window well.
- Window wells with a vertical depth greater than 44 inches below the adjacent ground level shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladder rungs shall have an inside width of at least 12 inches, shall project at least 3 inches from the window well and shall be spaced not more than 18 inches on center vertically for the height of the window well.
- All basement window wells shall be provided with drainage consisting of a vertical drain pipe connected to the foundation drainage system with an approved "T"-type connector.



Stair Requirements

- **Steps:** The minimum run shall be 10 inches nosing to nosing and the maximum rise shall be 7¾ inches.
- **Handrails:** Handrails having minimum and maximum heights of 34 inches and 38 inches respectively, measured vertically from the nosing of the treads, shall be provided on at least one side of stairways of three or more risers. Required handrail for winders shall be located on the side where the tread is narrower. Spiral stairways shall have the required handrail located on the outside radius. All required handrails shall be continuous the full length of the stairs. Handrails shall be permitted to be interrupted by a newel post at a turn. Ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1½ inches between the wall and the handrail. The use of a volute, turnout or starting easing shall be permitted over the lowest tread.
- **Headroom:** The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.
- **Stairway Lighting:** All stairs shall be provided with illumination for the treads and the landings at the top and bottom of the stairs. A switch for the light(s) shall be located at the top and bottom of the stairs.
- **Stair Protection:** Enclosed accessible space under the stairs shall have walls, under stair surfaces and any soffits protected on the enclosed side with ½-inch gypsum board. Unenclosed accessible space under the stairs shall also have adjacent walls, soffits and under stair surfaces protected on the stair side.

Insulation and Fire Blocking Requirements

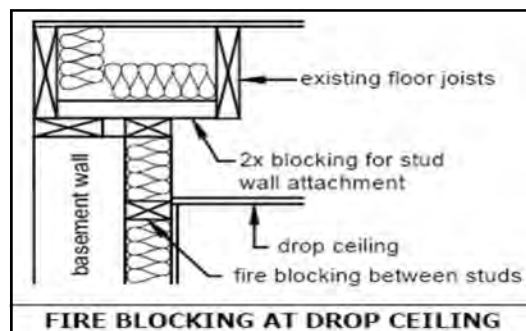
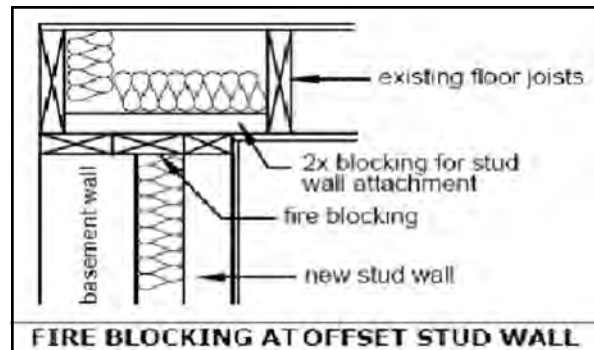
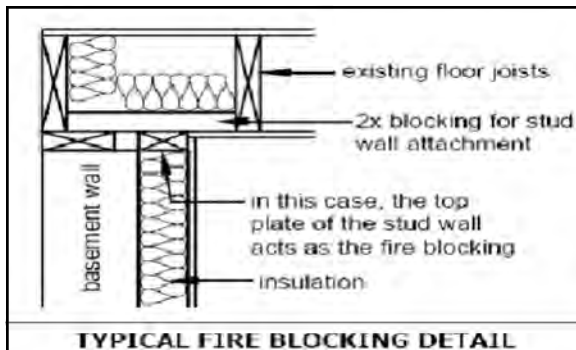
Insulation: All walls forming the perimeter of habitable rooms shall be insulated by a minimum of R-13 insulation when the entire perimeter is not finished or insulated. All exposed insulation materials including facings such as vapor barriers shall have a flame spread index not to exceed 25 with an accompanying smoke-developed index not to exceed 450 when tested in accordance with ASTM E 84.

Fireblocking: Shall be provided to cut off all concealed draft openings and to form an effective fire barrier between stories. Provide fireblocking in the following locations:

- In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor level.
- At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, dropped ceilings, etc.
- Batts of un-faced fiberglass insulation may be used to fireblock gaps 1-inch or less and openings around vents, pipes, and ducts at the ceiling and floor level (shall be stuffed tightly).

Fire Blocking Material: Fireblocking material shall consist of one, or a combination of, the following materials:

- 2x lumber (2x4, 2x6, etc..).
- Two thicknesses of 1x lumber (1x4, 1x6 etc..) with staggered joints.
- One thickness of 23/32-inch plywood or OSB with joints backed with the same material.
- One thickness of 3/4-inch particleboard with joints backed same material.
- 1/2-inch gypsum board.
- 1/4-inch (6.4 mm) cement-based millboard
- Batts of un-faced fiberglass insulation.

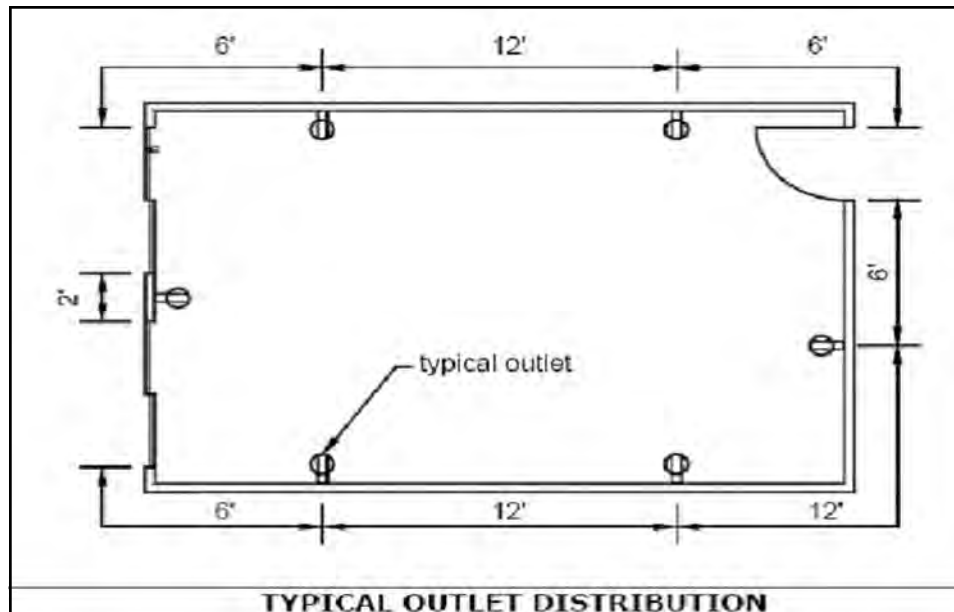


Mechanical Requirements

- There shall be sufficient ready access and working clearance to all mechanicals, service points, and shut-offs.
- There shall be sufficient clearance to the front of furnace and water heater for service (typically 36 inches or per the manufacturers instructions).
- Provide a full-louvered door or other means to provide sufficient combustion air to furnace/water heater room containing fuel-fired appliances.
- Provide supply air to and return air from all habitable rooms or provide heating facilities capable of maintaining a room temperature of 68 degrees F at a point 3 feet above the floor when the outside temperature is -4 degrees F.
- Provide an exhaust fan vented directly to the outside, not to an enclosed space or soffit. Vent duct shall terminate at a proper exterior backdraft damper.

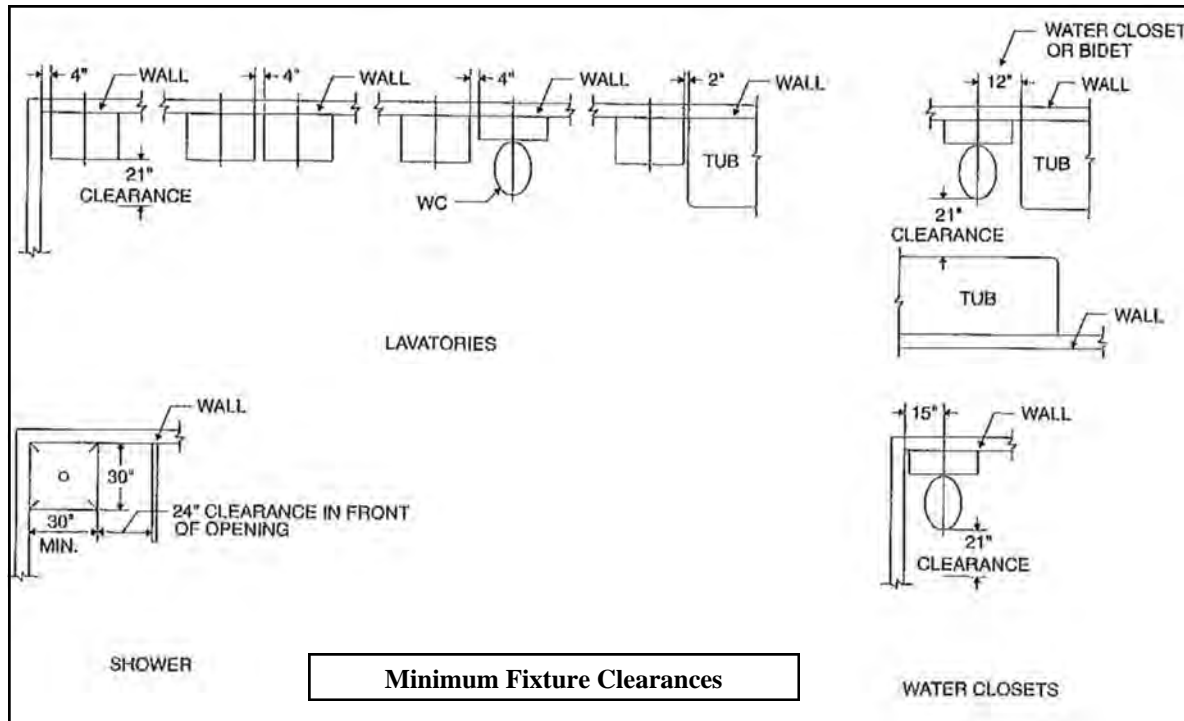
Electrical Requirements

- A minimum 200-amp electric service shall be provided for single-family dwellings with finished basement space.
- A minimum 400-amp electric service shall be provided for single-family dwellings over 4,000 square feet of habitable space, including finished basement space.
- "BX" and "Romex" wiring methods are not permitted.
- Receptacle outlet spacing to follow 2'/6'/12' rule.
- Hallways more than 10 feet in length shall have at least one outlet.
- No more than ten receptacle outlets or light fixtures per circuit permitted.
- All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere receptacle outlets installed in dwelling unit (basement) bedrooms shall be protected by an arc-fault circuit interrupter(s).
- Locate switches a minimum of five feet from edge of any tub, shower, whirlpool, spa etc.
- Receptacle outlets within six feet of a wet location, at each bathroom lavatory, and all countertops within an area serviced by a sink shall be GFCI-protected.
- All bathrooms and laundry rooms shall be provided with at least one GFCI-protected outlet.
- All clothes closets of any size shall be provided with a minimum of one light fixture with a fully enclosed bulb. The minimum clearance for all recessed and surface mounted fluorescent fixtures shall be 6 inches. The clearance for a surface mounted incandescent fixture shall be 12 inches, and 6 inches for a recessed incandescent fixture.



Plumbing Requirements

- See diagram for fixture clearances.



References

For requirements not shown in this handout, please consult the following codes.

All codes are available to view at the Community Development Department in the Algonquin Village Hall.

- 2006 International Residential Code: available for purchase through the International Code Council. 800-786-4452

<http://www.iccsafe.org/Store/Pages/Product.aspx?category=0&cat=ICCSafe&id=3100X06>

- 2002 National Electrical Code: available for purchase through the National Fire Protection Association. 800-344-3555

http://www.nfpa.org/catalog/product.asp?pid=7002SB&title=Code-70-2002-National-Electrical-Code-2002-Softbound&category_name=&target_pid=7002SB&source_pid=7011SB&link_type=edition_change

- 2014 Illinois Plumbing Code: available for viewing here:

<http://www.ilga.gov/commission/jcar/admincode/077/07700890sections.html>

- Algonquin Building Code Amendments Chapter 23: available for viewing here:

http://www.algonquin.org/egov/documents/1379509737_36569.pdf



Village of Algonquin Community Development

Finished Basement Permit Submittal

Incomplete permit submittals will not be reviewed. Please check to make sure you have completed the following prior to applying for a permit.

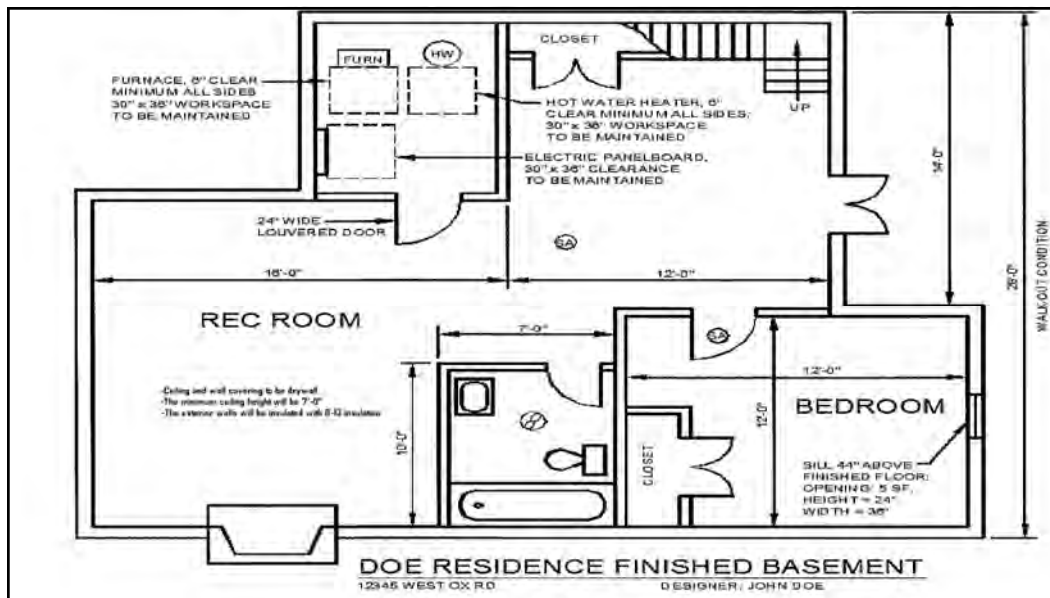
Application:

- Owner information must be completed
- Contractor information must be completed (plumbing must be done by a licensed plumber or property owner)
- Construction cost must be calculated (if unsure please estimate materials and labor)
- Square footage must be calculated
- Describe improvements (be as detailed as possible)
- Sign the permit application (owner or agent)

Building Plans:

- All plans must be drawn to scale. Minimum scale $\frac{1}{8}'' = 1'-0''$. All dimensions must be shown.
- Minimum sheet size: $8\frac{1}{2}'' \times 11''$
- Name of the owner and address of the project.
- Full layout of basement including unfinished space. Label all rooms as to use and include dimensions of each.
- Ceiling height and covering shall be included.
- Wall construction shall be indicated including type of insulation, R-value and wall covering/finish.
- An electrical layout shall be included consisting of outlet, lighting, switch, smoke and carbon monoxide alarm locations.
- All means of egress including escape windows shall be clearly shown. Please indicate the openable area dimensions of the escape window(s) and the sill height above the floor.
- Location of stairs, furnace, water heater and electrical panel.
- All plumbing fixtures must be shown.

Sample Floor Plan



Common Electrical Symbols
To be used on Electrical Layout

Outlet	
Light	
Switch	
Smoke Alarm	