

City of Crystal Lake

Community Development Department

100 W. Woodstock Street
Crystal Lake, IL 60014
www.crystallake.org



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BASEMENT FINISHING / ALTERATION

Please provide the following information when applying for a permit:

- Apply online using [City of Crystal Lake ez APP](#)
OR submit a [Building Permit Application](#)
Applications are available at City Hall or online at the City's website, www.crystallake.org.
- [Contractors List](#)
- Two sets of building plans. Plan sets should include the following information: Existing floor plan, proposed floor plan, electrical layout, structural components, and any plumbing changes. **Construction documents to be drawn to scale.**
- A copy of plumber's license and State of Illinois Plumbing Contractor Registration (if applicable).
- An original copy of plumber's letter of intent on company letterhead with corporate seal or notarized (if applicable).

Inspections:

Please schedule all inspections by 4:00 P.M. the day before the inspection.

The following inspections are needed for a basement remodel/alteration:

- Under-slab plumbing (if applicable)
- Rough Plumbing, Electrical, Framing, and HVAC (one inspection)
- Insulation
- Above ceiling (before installation of drop ceiling tiles or drywall)
- Final inspection (after all work is completed)

Please provide the following when requesting an inspection:

- Inspection type
- Address
- Date and time frame (am or pm)
- Permit number
- Name and telephone number of homeowner/contractor requesting an inspection

General Requirements:

- All habitable rooms shall have a minimum of 70 square feet of floor area with a minimum dimension of 7 feet in any horizontal direction.
- The minimum ceiling height for any habitable room shall be 7 feet from the finished floor.

Exceptions:

- 1) The ceiling may project lower than the required ceiling height under beams and girders by 6 inches.
- 2) Bathrooms shall have a minimum ceiling height of 6 feet 8 inches.

- Sleeping rooms in basements shall have an egress window and rescue opening.
 - The maximum sill height of this opening shall be 44 inches above the floor.
 - The minimum net clear opening area shall be 5.7 square feet.
 - The minimum height of the net clear opening shall be 24 inches.
 - The minimum width of the net clear opening shall be 20 inches.
 - The rescue opening shall be operable from the inside of the room without the use of keys, tools, or special knowledge.
 - The window well shall have a minimum area of 9 square feet with a minimum horizontal projection of 3 feet.
 - A grate or cover is required on all window wells.
 - A ladder is required where the depth of the window well is greater than 44 inches.
- Enclosed accessible space under stairs shall have walls, under stair surfaces and any soffits on the enclosed side with ½ inch gypsum board.

Carpentry:

- Stairs shall have a graspable handrail installed on one side. The handrail must be between 34-38 inches in height and have the ends returned to a wall or newel post.
 - Note:** Handrail height shall be measured vertically from the tread nosing.
- The handrail must be continuous from the bottom nosing to the top nosing of the stairway.
- Stairs shall have guardrails on open sides of stairs with a height greater than 30 inches above the floor or grade.
- Stair guardrails must be a minimum of 36 inches in height with intermediate rails not more than 4 3/8 inches apart.
- Please contact the Community Development Department for boring or notching regulations of structural members.
- Fire blocking shall be installed to cut off all concealed draft openings (both vertical and horizontal) and form an effective fire barrier between stories. Fire blocking shall be provided in the following locations:
 - Vertically at the ceiling and floor levels.
 - Horizontally at intervals not exceeding 10 feet.
 - All interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
 - In concealed spaces between stair stringers at the top and bottom of the run.
 - At openings around vents, pipes, ducts, cables, and wires at ceiling and floor levels.

Please consult the Community Development Department for approved materials for fire blocking.

Electrical:

- All dwellings undergoing permitted alterations must comply with the current smoke detector requirements. Smoke detectors are required in the following locations:
 - In every bedroom
 - Outside of the bedroom areas
 - One on each floor of the dwelling.
- The smoke detectors must be hard-wired, interconnected and have battery backup.
- A carbon monoxide detector is required within 15 feet of every bedroom.
- The use of NM (Romex) wiring is prohibited for use in Crystal Lake.
- Outlets shall be spaced so that no point along the wall line is farther than 6 feet from an outlet.
- The outlets shall be placed within 6 feet from doors and openings
- Outlets in habitable rooms shall be no more than 12 feet apart.
- All outlets in bedrooms shall be arc-fault protected.
- An exhaust fan capable of moving 50cfm shall be installed in all bathrooms and terminate to the exterior of the dwelling with an approved fitting.
 - Note:** A 20cfm exhaust fan may be installed if it operates continuously.

- A 20 amp GFCI protected receptacle supplied by #12 copper wire shall be installed within 36 inches of every bathroom lavatory.
- Outlets within 6 feet of a wet bar shall be GFCI protected.
- Electrical panels shall be properly labeled.
- All existing electrical junction boxes shall remain accessible or be removed prior to concealing them.
- Electrical panel working clearance shall be maintained. An area 30 inches wide by 36 inches deep by 78 inches high area shall be present around the panel.

Plumbing:

- Plumbing not completed by the homeowner must be completed by a licensed plumber who is registered in the State of Illinois.
 - A letter of intent must be submitted prior to work being performed. The letter of intent must be on company letterhead with a corporate seal or the letter must be notarized.
 - Letter of intent must contain the address of the proposed work, license and registration numbers and statement of completing work at said address.
 - The letter of intent must be an original. **No copies, faxes, or e-mails will be accepted.**
- Vents must be properly connected to existing vents or terminated through the roof.
- Plumbing cleanouts must remain accessible. Concealed cleanouts must be accessible through the means of access panels.
- Shower valves shall have an automatic mixing device with a maximum temperature setting of 115 degrees F.

Heating and Cooling:

- Combustion air shall be provided for the furnace, water heater, and clothes dryer by one of the following methods:
 - Louvered doors – A net free opening of one square inch per 1,000 Btu/h of all equipment must be provided.
 - Hi-low vents – At least two hi-low vents (grills) are required. One vent must be located no more than 1 foot from the ceiling and one vent no more than 1 foot from the floor. A minimum of one square inch of net free opening per grill shall be provided for every 1,000 Btu/h of all of the gas appliances.
 - Combination - Louvered doors and hi-low vents.

*Only 25 percent of the louvered area counts as net free opening when wood and 75 percent when metal unless listed by the manufacturer.

*If a 90 percent efficient furnace and hot water heater are installed in the furnace room with a fresh air pipe terminated to the exterior, the requirement for combustion air openings is not applicable.
- The space in which the appliance is installed shall be accessible by an opening or door and an unobstructed passageway measuring not less than 24 inches wide and large enough to allow the removal and replacement of the largest appliance.
- A 30-inch by 30-inch level working space is required on the control side of all appliances for inspection, service, repair, and replacement. The height of the working space shall be the height of the appliance but not less than 30 inches.

Insulation:

- Compliance with the current International Energy Conservation Code required.
- The walls in conditioned basement areas shall be insulated from the top of the basement wall down to 10 feet below grade or to the basement floor, whichever is less.
- The walls in unconditioned space shall meet the required above unless the floor above is insulated in accordance with the energy code.

- Insulation and Fenestration Requirements

Climate Zone	Basement Wall	Crawl Space Wall
5	15/19 *	15/19 *

* 15/19 means R-15 continuous insulated sheathing on the interior or exterior of the home or R-19 Cavity insulation at the interior of the basement wall.

- A vapor barrier is required to be installed on the “warm-in-winter” side of the wall. The vapor barrier must have a perm rating of one or less.

Please note that the information provided in this handout is general in nature. If you have specific questions or need additional information, please contact a Community Development Department representative at (815) 356-3605 or building@crystallake.org.