



Residential Additions

10801 Town Square Drive NE, Blaine MN 55449
Building Inspections Department
phone: 763-785-6170 | fax: 763-785-6111 | BlaineMN.gov

This handout is intended to be used as a guide it is based in part on the 2020 Minnesota State Building Code, City of Blaine ordinances and good building practices. Every attempt has been made to insure the accuracy of this handout; however no guarantees are made to its accuracy or completeness. Compliance with applicable codes and ordinances is the responsibility of the owner or contractor. Refer to applicable codes or contact your building department for specific questions.

Permits and Plans

Building permits are required when finishing rooms or adding onto your home, remodeling or changing the use of space, and for some repairs. Submit a completed application in addition to neat detailed floor plans, cross sections, window (sizes, locations, & details), and a complete explanation of the expected extent of the project. To avoid delays submit only complete and detailed plans and information with your application.

What to include in your detailed plans

- Site plan with the addition location labeled – including setbacks to other buildings and property lines.
- Footing and foundation details – material, size, and depth. Foundation drainage method, Radon (if applicable), and insulation details should be listed.
- Plan view and cross sections of addition
- Crawl space details – if applicable.
- Window details shall include the manufacturer, U-factors, and installation specifications. (Install specs shall remain on site for inspections)
- Water proofing and insulation details
- Roofing information
- Any other information that will be useful for plan review

FROST FOOTINGS FOR HOME & GARAGE ADDITIONS

The following applies to all areas in the City of Blaine that have corrected soil pads, or other areas with black organic type soils at the depth of the footings. Soils corrections must be designed by a licensed professional engineer, or provide an engineer's soils report to verify minimum bearing capacity of 1,500 PSF prior to issuance of the building permit.

With proper permits, it is permissible for the owner/occupant to complete most projects and required inspections. However, if you hire a contractor or sub-contractors, they are required to apply for any required permits. Please note that the permit cost is the same for a homeowner as a contractor.

Requests for inspections must be made at least 24 hours in advance. Permit, inspection records, manufactured truss specs, and approved plans are to be on site at all times during the construction process.

Smoke Detectors (R314)

Alarms must be located in each bedroom and on each floor of the dwelling including the basement. Alarms must be installed in accordance with the manufacturers written instructions. Where framing is exposed, alarms must be hard wired with a battery backup and must be interconnected with other hardwired alarms. When framing is not exposed or it is not feasible to hardwire a smoke alarm, battery powered detectors may be used. Interconnection may also be achieved with a wireless system.



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Carbon Monoxide Detectors (R315)

Every single family dwelling and every multi-family dwelling unit shall be provided with a minimum of 1 approved and fully operational carbon monoxide alarm installed outside and within 10 feet of each bedroom or sleeping area. If bedrooms or sleeping areas are located on separate floors, additional carbon monoxide alarms will be necessary outside and within 10 feet of these areas. All carbon monoxide alarms shall be installed according to the manufacturer's installation instructions.

Information General

Ceiling heights in basements should be a minimum of 7 feet.

Habitable rooms must be at least 70 square feet in area, not less than 7 feet in any horizontal dimension.

2015 MN Plumbing Code 4714

- The current Minnesota plumbing code can be viewed at the following website or purchased through the MN bookstore. <http://www.iapmo.org/Pages/MinnesotaPlumbingCode.aspx>
- PVC (white) & ABS (black) plumbing pipes may not be glued together. If attachment from PVC to ABS is necessary it must be done so by approved transition couplings.
- Plastic drain, waste, and vent piping shall be minimum schedule 40.
- Water supply sizing is based on fixture units, water pressure, and the total length of water supply run. For a typical bathroom with one or two sinks, one tub or shower, and one toilet – no more than 2 fixtures shall be supplied with a 1/2" supply; therefore, 3/4" piping shall be supplied to the bathroom group with 1/2" branches from this supply.
- Toilets must be installed in a space at least 30 inches wide (minimum 15" from center of toilet to finished wall or surface) and at least 24 inches of clear space must be provided in front of the toilet bowl.
- Shower compartments shall have minimum 1024 square inches and be capable of encompassing a 30 inch circle.
- Shower receptors built on site shall be tested for water tightness.
 - See 2015 MN Plumbing Code section IAPMO IS 4-2006 for installation standards
- Factory installed tile flange is required when a bathtub is to be placed against any wall.
- Anti-scald control devices - combination tub/shower and shower valve must be of the thermostatic, pressure-balancing, or combination thermostatic and pressure-balancing type in accordance with ASSE Standard 1016.
- Where plumbing fixtures come in contact with the wall or floor, the joint between the fixture and the wall or floor shall be sealed.
- All plumbing clean-outs, traps, and valves shall remain accessible.
- Concealed trap used under a shower must be an all glue type trap.
- All pipes passing through framing members within 1" of the exposed framing shall be protected by a steel plate not less than No. 18 gage in thickness. The steel nail plate shall extend along the framing member not less than 1 1/2" beyond the outside diameter of the pipe or tubing.
- New hot water supply piping that is 1/2" running 20' or more, and 3/4" running 10' or more, is to be insulated to an R-3.



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Mechanical

A separate Mechanical permit is required for the mechanical portion of the project.

Bathrooms must be provided with ventilation via a window with at least 1.5 square feet of open area or a mechanical exhaust fan with a minimum rating of 50 cfm. Flexible duct is permitted; however, rigid metal duct creates much less resistance to air flow and will improve the efficiency of your bath fan. Bath fan exhaust ducts within conditioned spaces shall be insulated to a minimum R3.3 for a minimum 3 feet from exterior wall (R-8 within unconditioned spaces). The exhaust outlet must be at least 3 feet from all operable doors, windows, and air inlets. All duct joints and seams shall be sealed.

NOTE: It is required that tape used to seal duct and duct vapor barrier shall be listed to UL 181 or equivalent.

All habitable rooms shall be provided with a heating system capable of maintaining 68 degrees Fahrenheit at a point three feet above the finished floor. For minimum furnace room dimensions see the attached information and the furnace installation instructions.

Each room shall have heat supply and cold return air. Main trunk lines are to be adequately sized to allow additional supply branch ducts to be provided to any additional finished rooms. Provide return air ducts, the same size as the supply ducts, to all rooms but the kitchen and bathroom.

Natural Light (R303)

Habitable rooms (room used for living, sleeping, eating or cooking) shall be provided with natural light by means of exterior glazed openings (windows) with an area not less than 8% of the floor area of such rooms of which half or 4% of such glazed openings shall be operable for natural ventilation.

Framing (R317)

Lumber shall be grade-stamped. The bottom wall plate shall be treated wood and securely fastened to the floor slab with nails/screws or construction adhesive. Engineered floor trusses/beams shall not be cut, notched, or altered without written approval from the manufacturer.

When installing treated lumber, verify that the hardware being used (hangers, nails and brackets) is appropriate with the particular treatment of the lumber. No electro/zinc plated or aluminum hardware is to be used with ACQ treated lumber.

R312.2 Window Fall Protection (New Windows Only)

R312.2.1 Window Sills: In dwelling units, where the lowest part of the opening of an operable window is located more than 72 inches (6 feet) above the finished grade or surface below, the lowest part of the window opening shall be a minimum of 36 inches (3 feet) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4-inch diameter sphere where such openings are located within 36 inches (3 feet) of the finished floor.

Safety Glazing (R308) (See Safety Glazing Handout)

Safety glazing is required in doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathrooms and showers. Glazing in any portion of a building wall enclosing these compartments where the bottom exposed edge of the glazing is less than 36" above the walking / standing surface.



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Safety glazing is required in fixed or operable panels adjacent to a door where the nearest exposed edge of the glazing is within a 24" arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 36" above the walking surface.

EMERGENCY ESCAPE AND RESCUE OPENINGS (R310)

Emergency escape and rescue openings are required in any room used for sleeping purposes (bedrooms) and in basements. If you are constructing a new home, the code requires that you put an emergency escape and rescue opening in each bedroom. It also requires one in the basement.

In existing homes, you must provide an emergency escape and rescue opening if you create a new bedroom or expand an existing bedroom or your basement. If you have a bedroom in the basement, the emergency escape and rescue opening in that bedroom suffices for the basement. In this case you would not need to provide another opening just for the basement.

A window used as an emergency escape and rescue opening must satisfy all four of the Minnesota Residential Code requirements:

- 1) Minimum width of opening: 20 in.
- 2) Minimum height of opening: 24 in.
- 3) Minimum net clear opening: 5.7 sq. ft. (5.0 sq. ft. for ground floor).
- 4) Maximum sill height above floor: 44 in.

The window must have a minimum net clear opening of 5.7 sq. ft. Net clear opening refers to the actual free and clear space that exists when the window is open. It is not the rough opening size or the glass panel size, but the actual opening a person can crawl through.

The window opening must be operational from the inside without keys or tools. Bars, grilles and grates may be installed over windows but must be operational without tools or keys and still allow the minimum clear opening.

Do the math

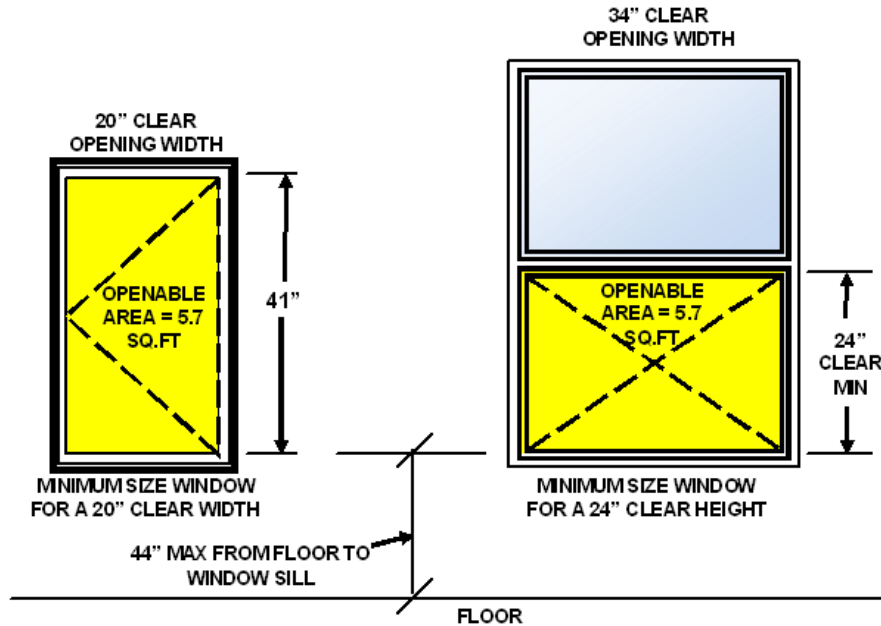
At first glance, you might assume that a 20-in. by 24-in. window would be acceptable for emergency escape or rescue. However, those dimensions would yield a net clear opening of only 3.3 sq. ft. To achieve the required net clear opening of 5.7 sq. ft., a 20-in. wide window would have to be 42 in. high. Likewise, a 24-in. high window would have to be 34 in. wide.

Because Minnesota uses a national model residential code, most window manufacturers specify which of their windows meet these standards. When purchasing a window, request an egress window when necessary.



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Stairways Width, Headroom, Landings, Handrails (R311)

Stairways shall not be less than 36" in clear width at all points above the permitted handrail height and below the required headroom height of 6'8". Handrails shall not project more than 4.5" 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" where a handrail is installed on one side and 27" where handrails are provided on both sides. **Exception:** *The width of spiral stairways shall be in accordance with Section R311.7.10.1.*

Minimum stairway headroom clearance is 6'8" measured vertically from a plane parallel and tangent to the stairway tread nosing to the above at all points.

Landings at the bottom of the stairways require 36" in the direction of travel and as wide as the stairs served.

Continuous graspable handrail required for 4 or more risers. Handrail height shall not be less than 34" or more than 38" from the tread nosing.

Under Stair Protection (R302.7)

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

Insulation Basement Walls/Attics/Ceilings/Above-Grade Walls

MN rules Chapter 1322 (Table R402.1.1 and R402.2.8)

Foundation/basement walls require R-15 insulation with a minimum of R-10 on exterior and a maximum of R-11 installed on interior (excluding closed cell spray foam). Above grade framed walls require R-20 insulation. Attic requires R-49 insulation. Ceiling without attic spaces (vaulted) or the design of the roof/ceiling assembly does not allow for the required insulation, the minimum required insulation for the assemblies shall be R-30 for a maximum of 500 sq. ft.



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Bathtub trap openings and other penetrations in the floor above should be filled with fiberglass or foam insulation (see plumbing section for more information on trap access).

Gas Fireplaces

Fireplaces and auxiliary heat sources may be installed but must be installed in accordance with the manufacturer's written instructions. Gas fireplace shall be by separate permit and will require rough in and gas line air test inspections.

Masonry and manufactured fireplaces require a separate permit.

Electrical NEC

A separate State Electrical Permit is required for any new wiring and must be obtained by the person doing the work. The State Inspector is Stephen Tokle 763-390-9255. Office hours are weekday mornings 7:00-8:30 a.m. No voicemail. A State Electrical Inspection form is available at the City of Blaine, Building Inspections Department; there is no charge for this form. You can also obtain an electrical permit on-line at www.electricity.state.mn.us