

BASEMENT FINISHING



BUILDING DEPARTMENT

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This handout is intended only as a guide and is based in part on the 2020 Minnesota Residential Code, Maple Grove City ordinances, and good building practice. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the permit applicant. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Department.

PERMITS AND PLANS

Building permits are required if you are finishing unfinished space in your basement, changing the use of space such as converting a recreation room to a bedroom, and for some repairs. ***If you hire someone to do the work for you, have them take out any required permits.***

Plans are required for any finishing or change of use. Plans should be neat scale drawings that include a floor plan, window sizes and locations, cross sections, and any notes that would help explain the nature and extent of your project. Once submitted, it takes about 5-10 working days before your permit will be ready, so please submit your plans and permit application well in advance of the date when work will begin.

Inspections are required of all work. When your permit is issued, you will receive an inspection record card that will tell you which inspections to call for and the number to call. Inspections are made by appointment. Requests for inspections should be made at least 24 hours in advance.

If you have any questions on the permitting process, contact the Building Department.

REQUIRED PERMITS

Building Permit for framing and finish work
Plumbing Permit for any plumbing for bathrooms, hot tubs, wet bars, etc.
Electrical Permit for receptacles, lights, electric floor heat, etc.
Mechanical Permit for gas piping, gas fireplaces, heat supply/return runs, bathroom ventilation, etc.

NOW IS THE TIME!!!!

Prior to finishing any basement space, it is advisable to address any deferred maintenance items prior to the start of work. This includes dampproofing walls, patching any cracks in concrete or masonry walls and concrete floors, and repairing any joists or studs that have been over-bored or cut without being properly supported. If you have considered installing drain tile and a sump pump, now would be the time to do that as well.

HOMES WITH RESIDENTIAL FIRE SPRINKLERS

If you are finishing or altering space in a home that has a fire sprinkler system, you must provide revised sprinkler plans and calculations showing compliance with either NFPA 13D or MRC section P2904. Non-metallic sprinkler pipe may be required to be installed only in concealed locations. If you plan to leave any sprinkler pipe exposed, be prepared to provide the manufacturer's instructions that permit exposure.

GENERAL INFORMATION

- Ceiling heights in basements should be a minimum of 6 feet 4 inches.
- Bathrooms must be provided with ventilation via a window that is at least 3.0 square feet, of which at least $\frac{1}{2}$ is openable, or a mechanical exhaust fan with a minimum rating per the 2020 Minnesota State Mechanical and Fuel Gas Code (IMC). Rigid metal duct creates much less resistance to air flow and will improve the efficiency of your bath fan.
- Toilets must be installed in a space at least 30 inches wide and at least 24 inches of clear space must be provided in front of the toilet.
- Showers should have a clear space within the stall of at least 30 inches.
- Fireplaces and stoves may be installed in basements but must be installed in strict accordance with the manufacturers written instructions and the 2020 IMC.
- Bedrooms must be at least 70 square feet in area.
- Nail plates should be installed wherever nails or screws may come in contact with electrical wiring, plumbing, or gas piping.

EGRESS WINDOWS

An egress window is required **whenever a bedroom is created** or **whenever a basement is altered** unless the dwelling has a fire sprinkler system. If an egress window is installed in a basement bedroom, an additional egress window is not required in the balance of the basement unless there are additional bedrooms. See the Emergency Escape and Rescue Opening handout for information on egress windows.

GENERAL FRAMING INFORMATION

See the 2020 MRC, at the Department of Labor and Industry Website:

<https://codes.iccsafe.org/content/MNRC2020P1/chapter-6-wall-construction> and scroll to Table R602.3(5) to determine the size, height and spacing of wood studs. Walls must have a bottom plate and at least a single top plate. Plates in contact with concrete must be treated wood, redwood, or cedar unless there is a vapor retarder under the slab. Wood used for framing soffits may be 2X2 material.

Headers in non-bearing walls may consist of a 2X4 laid flat for openings up to 8 feet wide. No cripples or blocking are required above the header provided the distance from the header to the floor joist above is not more than 24 inches. For headers in bearing walls, provide header calculations and include the size, number of ply's, span, and loading.

Do not remove any existing partitions unless you have determined that they are not load bearing partitions. If any portion of a load bearing partition is removed, a header or beam must be installed to transfer the load to a footing.

Treated wood furring strips not less than 1X2 inches may be attached directly to the interior of exterior masonry or concrete walls below grade or untreated strips may be used if an approved vapor retarder is installed between the wall and the furring strips.

Wood veneer paneling must be placed on wood framing spaced not more than 16 inches on center. Wood veneer paneling less than $\frac{1}{4}$ inch nominal thickness must have not less than a $\frac{3}{8}$ inch gypsum board backer.

DRILLING AND NOTCHING OF FRAMING MEMBERS

Drilling and notching of open web trusses or laminated veneer lumber (LVL) beams is not permitted without an approved design from the manufacturer or a structural engineer.

Drilling and notching of I-joists is permitted in accordance with the manufacturers written installation instructions. You should obtain a copy of these instructions before starting any work.

See the 2020 MRC, at the Department of Labor and Industry Website:

<https://codes.iccsafe.org/content/MNRC2020P1/chapter-6-wall-construction> and scroll to Figure R602.6(1) to see a visual diagram of requirements for notching and boring framing members. Also see the Building Department handout titled, Notching and Boring.

FIREBLOCKING

Fireblocking is required in a number of locations throughout a dwelling to impede the spread of smoke, hot gases, and flames through the framework in the event of a fire. The two most common locations where fire blocking is required in a basement are at concealed wall to ceiling intersections and at wire/pipe/duct penetrations. Anytime there is a concealed path from a stud space into the ceiling, that path must be fireblocked. Also, whenever a pipe, wire, or duct penetrates the top of a wall, the space around the penetration must be fireblocked. Fireblocking may consist of 2-inch nominal lumber, two thicknesses of 1-inch nominal lumber, $\frac{3}{4}$ -inch plywood or particleboard with joints backed with $\frac{3}{4}$ -inch plywood or particleboard, $\frac{1}{2}$ -inch gypsum board, or batts or blankets of mineral wool or glass fiber insulation. Fireblocking should be installed and inspected as part of the framing or insulation inspection.

There are a number of caulks on the market that are approved for fireblocking small areas. You may find these easier and quicker to use than the more generic methods. These materials are available at local building supply stores. Be sure the caulk that you buy is labeled as non-combustible.

Please obtain a copy of the handout on Fireblocking available from the Building Department.

INSULATION

The Minnesota Energy Code does not require basements and crawl spaces of existing homes to be insulated if the permit for the dwelling was issued before June 1, 2009. The method and type of insulation you use is up to you. Foam plastic insulation must be covered with $\frac{1}{2}$ -inch gypsum board unless the foam plastic is approved for use without the covering. Fiberglass batts are not recommended to be in contact with concrete or concrete block.

CARBON DIOXIDE AND SMOKE ALARMS

Carbon monoxide alarms must be installed outside and not more than ten feet from each sleeping room **on each floor**. Smoke 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.

COMBUSTION AIR FOR FURNACES AND WATER HEATERS

If enclosing the space housing your furnace and/or water heater, you may need to provide additional combustion air by installing an exterior combustion air duct or providing openings in the enclosing walls or doors. If you have questions regarding combustion air, contact the Building Department.

ELECTRICAL, PLUMBING, AND HEATING INSTALLATIONS

All electrical, plumbing, and mechanical work is subject to permits and inspections. Separate permits are required and may be obtained through the Building Department. If you hire someone to do electrical, plumbing, or mechanical work, have them take out the permit.