



BASEMENT FINISHING
City of Grand Rapids
Building Safety Division
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This handout is intended only as a guide and is based in part on the 2007 Minnesota State Building Code, Grand Rapids 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 owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Safety Division.

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 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 Division 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 would include damp proofing 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.

GENERAL INFORMATION

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

Non-bearing wood framed walls may be 2X4 studs at 16 or 24 inches on center. Walls must have a bottom plate and at least a single top plate. Plates in contact with concrete floors must be treated wood, redwood, or cedar unless there is a vapor retarder under the slab. For stud size and spacing for bearing walls, contact the Building Safety Division. 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, contact the Building Department.

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 1/4 inch nominal thickness must have not less than a 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. The Building Safety Division has a handout on Cutting, Notching and Boring framing members that should be used as a guide for repairs.

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 also a number of approved caulks on the market that are approved for fireblocking small areas. You may find these quicker and easier 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 new Minnesota Energy Code does not require basements and crawl spaces of existing homes to be insulated. The method and type of insulation you use is entirely up to you. If you use foam plastic insulation, it must be covered with $\frac{1}{2}$ -inch gypsum board unless the foam plastic is approved for use without the covering.

SMOKE ALARMS

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 you are 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 any questions regarding the issue of combustion air, please contact the Building Safety Division.

GYPSUM WALLBOARD

See the handout on "Gypsum Wallboard" for gypsum wallboard installation.

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 Safety Division. If you hire someone to do electrical, plumbing, or mechanical work, have them take out the permit.

