

# Municipal Inspections

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## Basement Finish Handout

*Notice: This handout is intended only as a guide to the subject matter covered herein and is based in part on the 2007 Minnesota State Building Code. 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 Minnesota Building Code or contact Municipal Inspections.*

### PERMITS AND PLANS

- A signed and completed building permit form is 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.
- Two sets of plans are required for any finishing or change of use. Plans should be legible, 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 5-7 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. Framing, plumbing, heating, and insulation may be inspected at the same time if they are all complete. Call 952-461-4777 between 8:00 a.m. and 4:30 p.m. to arrange for an inspection. Calls between 8:00 a.m. and 9:00 a.m. are guaranteed a same day inspection.
- Separate permits are required for fireplaces, and plumbing (finished bathroom).
- Electrical permits and inspections are required. For Elko New Market and New Prague electrical permits and/or electrical inspections please contact Randy Edel, State Electrical Inspector at 507-334-3748 between 7:00 – 8:30 a.m. In Montgomery the electrical inspector is Steven Kletschka at 507-334-3450.

If you have any questions on the permitting process, please do not hesitate to contact Municipal Inspections.

## **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. The exception to this is any soffit around beams and duct work may have a ceiling height of 6 foot 6 inches.
- Bathrooms must be provided with ventilation via a window of not less than 3 square feet or a mechanical exhaust fan with a minimum rating of 50 cfm intermittent ventilation, or 20 cfm continuous ventilation. 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 require separate permits and inspections. They 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 or plumbing or gas piping.

## **EGRESS WINDOWS**

- Basements and every sleeping room shall have at least one egress window. Egress windows must have a minimum net clear opening of not less than 5.7 square feet, a minimum net clear opening height dimension of not less than 24 inches, a minimum net clear width dimension of not less than 20 inches, and a finished sill height not more than 44 inches above the finished floor. See the egress window handout for information on egress windows.

## **FRAMING INSPECTION**

- Electrical rough-in inspection shall be completed and approved prior to scheduling a framing inspection.

- The inspection card, and approved plans must be posted on the site.
- 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. For stud size and spacing for bearing walls, contact the Municipal Inspections.
- Headers in non-bearing walls may consist of a 2X4 laid flat for openings up to 8 feet wide. No cripples or blocking is required above the header provided the distance from the header to the floor joist above is not more than 24 inches.
- 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.
- Drilling and notching of open web trusses or laminated veneer lumber (LVL) beams is not permitted without an approved design from the truss manufacturer or a structural engineer. Drilling and notching of I-joists is permitted by manufactures instructions.
- Notches in joists, rafters, and beams may not exceed one-sixth of the depth of the member, may not be longer than one-third of the depth of the member and may not be located in the middle third of the span.
- Notches at the ends of a joist, rafter, or beam may not exceed one-fourth the depth of the member.
- The diameter of holes bored or cut into joists, rafters, and beams may not exceed one-third the actual depth of the member. Holes may not be closer than 2 inches to the top or bottom of the member or any other hole located in the member. Where the member is also notched, the hole may be no closer than 2 inches to the notch.
- When piping or ductwork is placed in a wall requiring the cutting of the top plate by more than 50 percent of its width, a galvanized metal tie of at least 16 gage and 1 1/2 inches wide must be fastened to each plate across and to each side of the opening with not less than six 1 6d nails.

## **FIREBLOCKING AND DRAFTSTOPPING**

- Fire blocking 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 wall to ceiling intersections and at pipe/duct penetrations. Anytime there is a path from a stud space into the ceiling, that path must be fire blocked. Also, whenever a pipe, wire, or duct penetrates the top of a wall, the space around the penetration must be fire blocked. Fire blocking may consist of 2-inch nominal lumber, two thicknesses of 1-inch nominal lumber, 3/4 -inch plywood or particleboard with joints backed with 3/4 -inch plywood or particleboard, 1/2 -inch gypsum board, or batts or blankets of mineral wool or glass fiber insulation. Fire blocking should be installed and inspected as part of the

framing or insulation inspection.

- Draft stops are required whenever dropped ceilings or open web joists are used and a concealed space is created that exceeds 1000 square feet in area. A draft stop is required to subdivide the space into approximately equal areas. Draft stops can consist of 1/2 inch gypsum board, 3/8 inch plywood, or any other material which can be securely fastened in place and restrict airflow.

## **INSULATION**

- There are essentially two ways that exterior basement foundation walls can be insulated: with the use of foam plastics and various types of furring strips or with a conventional wood stud partition and fiberglass batts. Whenever foam plastics are used, they must be covered with a layer of 1/2 -inch gypsum board unless the foam plastic is approved for use without the covering. Foundations should be insulated to an R-10. A vapor retarder is required on both the warm side of the insulation and against the foundation wall. Rim joist areas must also be insulated to R-10.

## **WALLBOARD REQUIREMENTS**

- Water resistant sheetrock (green board) cannot be installed over a vapor barrier or on ceilings.
- Three fasteners are required in the field and one on the top and bottom splice on a horizontal wall board application.
- Enclosed accessible space under stairs must be protected with 1/2 inch thick gypsum wall board.
- 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.

## **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. If the basement ceiling is exposed to allow wiring to be connected to main floor smoke alarms, then those alarms are required to be hardwired with battery backup.

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**

- An often-overlooked problem with basement finishing is the confinement of fuel burning appliances and the resultant poor performance due to a lack of sufficient oxygen. 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 Municipal Inspections.

### **MECHANICAL INSPECTION**

- All rooms that have an exterior wall are required to be provided with adequate heat.
- All habitable rooms must be provided with adequate return air.
- Bath exhaust fans are required to be ducted to the outside with not less than three (3) feet from the outside opening being insulated.
- Seal all return air ducts in the furnace room.

### **PLUMBING INSPECTION**

- A homeowner may do their own plumbing or have a Master Plumber apply for the permit and do the work
- All water piping shall be soldered with an approved lead free solder, or approved cross linked polyethylene (PEX) tubing.
- Only three plumbing fixtures may be water piped from a 1/2 inch line.
- All plumbing fixtures are required to be properly vented to the atmosphere.
- Solvent welding (glue) ABS pipe (black) and PVC pipe (white) together is prohibited. A mechanical connector must be used.
- A floor drain must not be used for a shower drain unless vented.
- Accesses for bathtubs must be in place.
- Anti-scald valves are required in all shower installations.

## **FINAL INSPECTION**

- Permit cards must be posted on the job site.
- Electrical work must be completed, inspected, and approved by State Electrical Inspector prior to scheduling the final building inspection.
- The top of handrails must not be less than thirty-four (34) inches nor more than 38 inches above the nosing of the treads.
- Handrails must be continuous the full length of the stairs, having ends which are returned to the wall.
- Handles to open windows must be tightened and in place.
- All floor coverings must be installed.

All construction projects are unique. These are some general building requirements for informational purposes only. Your permit may have other building codes that could apply. Please consult Municipal Inspections if you have any questions.

To schedule inspections or any building code questions call 952-461-4777