



## Basement Finishing

Building Code requirements and informational handout

1. Minimum ceiling height when altering existing basements = 6 feet 4 inches, [R305.2.1](#).
2. Heat in all habitable rooms sustainable at 68 degrees 3-feet off the floor, 2-feet from exterior walls, [R303.9](#). System must be balanced after installing heat ducts and cold air returns.
3. [Smoke alarms](#) shall be provided throughout the home on each level, in each bedroom and in the immediate vicinity outside of bedrooms. They must be hardwired and interconnected if access can be provided without removal of interior wall or ceiling finishes, [R314](#).
4. [Carbon monoxide alarm](#) shall be installed within 10-feet outside of bedrooms, [R315](#).
5. Basements and every sleeping room require an [emergency escape and rescue opening](#) that opens directly into a public way or to a yard or court that opens to a public way, [R310](#).
6. [Egress window](#) minimum net clear openings are: 5.7 total square feet (5 square feet if at grade level) 24-inch height, 20-inch width and maximum sill height of 44-inches from floor, [R310.1.1](#). *Replacement windows are exempt from these requirements when window is not smaller in size with same operating style that provides equal or greater opening of existing window, [R310.1.5](#).*
7. [Window wells](#) require at least 9 square feet of net clear area with a minimum horizontal projection and width of 36-inches. An attached ladder or steps is required when the vertical depth below grade exceeds 44-inches. The ladder or rungs shall be at least 12-inches wide, project at least 3-inches from the wall and spaced not more than 18-inches apart, [R310.2](#). *A window well drainage system is required when not in well drained soils, [R310.2.2](#).*
8. Bathroom with no openable window requires an exhaust fan. Exhaust duct must be insulated to minimum R-3.3 with vapor retarder for first 3-feet from exterior wall, [R303.3](#) and Energy code [R403.2.1](#).
9. Stairs with four or more risers require a continuous full-length handrail with no sharp edges on one side with a minimum 1 ½-inch space between the handrail and wall or guard, [R311.7](#).
10. Enclosed accessible space under stairs shall be protected on the enclosed side with ½-inch gypsum board, [R302.7](#).

11. Wood in contact with concrete or masonry that is in direct contact with the ground must be treated or separated from the concrete or masonry by an impervious moisture barrier, [R317](#).
12. Minimum insulation requirements: exterior above ground walls R-20, foundation walls R15 (R-10 with exception) rim R-10, [Energy Code Table R402.1.1 and R402.2.8](#).

**State Plumbing Code requirements:**

1. All new plumbing shall be inspected, tested and approved prior to being covered.
2. Refer to attached [Plumbing Code Check list](#) for additional requirements.

**Inspections Required:**

1. Plumbing rough-in (DWV + water lines)
2. Heating rough-in (may include fireplace)
3. Electrical rough-in by electrical inspector (sticker in light switch box)
4. Framing, (can be done with plumbing and heating rough-in after electrical rough-in is passed)
5. Insulation, (after framing is passed)
6. Plumbing final (may include fireplace)
7. Heating final (diffusers installed in all duct openings)
8. Electrical final (sticker in or on electrical panel)
9. Building Final, (can be done with plumbing and heating final after electrical final is passed)

## Plumbing checklist for residential bathroom remodel

2015 MN State Plumbing Code

1. New and parts of existing plumbing shall be inspected and tested before using, [MN Rule 1300.0215](#).
2. When it is impractical to air test new parts added to existing piping a deviation to the air test requirement may be granted by local authority having jurisdiction, [4714.0110 Subpart 3](#).
3. Plumbing fixtures shall be sealed where they come in contact with the floor, [402.2](#).
4. Minimum water closet clearances: 15 inches center to sides, 24 inches in front, [402.5](#).
5. Minimum size branch lines shall be ½ inch for bath tubs, lavatory and water closet, [Table 610.3](#).
6. Insulate hot water pipe to R-3: ½ inch pipe 20 feet or longer, ¾ inch pipe 10 feet or longer, [R403.4.2](#).
7. Air admittance valves for venting are not authorized for use per [MN State Statute 326B.43 Subp 6](#).
8. PVC pipe fittings shall have purple primer applied before applying approved solvent cement, [705.7.2](#)
9. Approved transition fittings shall be used to connect different materials, [705.11.3](#).
10. Horizontal drainage piping shall be installed in practical alignment at uniform slopes, [708.1](#).
11. **Minimum slope** for horizontal drainage piping: = ¼ inch per foot, [708.1](#).
12. All vent and branch vent pipes shall be pitched to drain back to a soil or waste pipe, [905.1](#).
13. Horizontal piping shall be supported every 4-feet or less for alignment and to prevent sagging, [313](#).
14. Underground piping shall be laid on a firm bed except where otherwise supported, [313.3](#).
15. A shower or combination shower-bath requires an anti-scald type shower control valve, [408.3](#).
16. Each plumbing fixture shall have its own shut off valve, [606.5](#) and be accessible, [606.6](#).
17. Each plumbing fixture shall have its own accessible trap, [4714.0100 \(S\)](#).
18. Underground non-accessible traps shall have all fittings glued, [4714.0100 \(S\) + 315.1](#).
19. All pipe or tubing with less than 1-inch space from the outside of the stud must be protected with 18-gauge steel plates extending at least 1 ½-inch beyond the outside pipe or tube diameter, [312.9](#).

**Note:** This checklist is a guide only and does not include all plumbing requirements. The MN State Plumbing Code can be viewed online at: [www.iapmo.org/Pages/MinnesotaPlumbingCode.aspx](http://www.iapmo.org/Pages/MinnesotaPlumbingCode.aspx)