

Plumbing Requirements

This handout is a compilation of the standard requirements based on the State Plumbing Code and City Ordinance for projects of this type. This information sheet does not contain all of the specific codes for construction and should only be used as a guide. The permit applicant is responsible for meeting all code requirements applicable to each project.

PERMITS: A building permit is required for additions, interior remodel of existing structures and to finish all basements. The building permit does not cover modifications to existing or roughed-in plumbing, heating or electrical systems. Additional permits will be required for these additional aspects of construction. The applicant for said permits will be responsible to assure compliance with all applicable codes.

INSPECTIONS: New plumbing systems or parts of existing plumbing systems that have been altered, extended, or repaired, shall be tested and approved by the Plumbing Inspector before the plumbing system is put into use. The Plumbing Inspector shall perform the final inspection and witness the test.

COVERING OF WORK: No building drainage or plumbing system or part thereof shall be covered until it has been inspected, tested and approved. If any building drainage or plumbing system or part thereof is covered before being regularly inspected, tested and approved, it shall be uncovered upon the direction of the Inspector.

TESTING: The air tests shall be applied to the plumbing drainage system in its entirety or in sections. Sections which are found satisfactory need not be retested after completion of the entire system unless considered necessary by the Plumbing Inspector. In addition, RPZ annual testing is required.

ROUGH PLUMBING: Plumbing drainage and venting systems shall be air tested upon completion of the rough piping. The air test shall be made by attaching the air compressor or testing apparatus to any suitable openings, and closing all other inlets and outlets to the system by means of proper test plugs. Air shall be forced into the system until there is uniform pressure of five pounds per square inch on the portion of the system being tested. The pressure shall remain constant for 15 minutes without the addition of air.

FINISHED PLUMBING: After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proven gas and water tight by plugging the stack openings on the roof and the building drain where it leaves the building, and air introduced into the system equal to the pressure of a one inch water column. Such pressure shall remain constant for fifteen minutes without the introduction of additional air.

SUPPORT: Horizontal support plastic pipe shall be at 48-inch intervals and every change in direction.

VALVES TO BE ACCESSIBLE: All water supply control valves shall be placed so as to be accessible.

CONTROL VALVE DESIGN: Except in single fixtures, control valves on all water lines shall be full-way type and the same size as the line on which they are installed.

ACCESS TO WATER HEATERS: Every water heater installation shall be readily accessible for inspection, repair or replacement. The appliance space shall be provided with an opening or doorway of sufficient size to provide such access.

FIXTURES: Fixtures must be set level and in proper alignment with reference to adjacent walls. No water closet may be set closer than 15 inches from its center to any side wall or partition. At least a 24 inch clearance must be provided in front of water closet. Where fixtures come in contact with the wall or floor joints shall be caulked.

ACCESS PANELS: Fixtures having concealed slip joint connections shall be provided with an access panel or utility space or other convenient access so arranged as to make the slip joint connections accessible for inspection and repair.

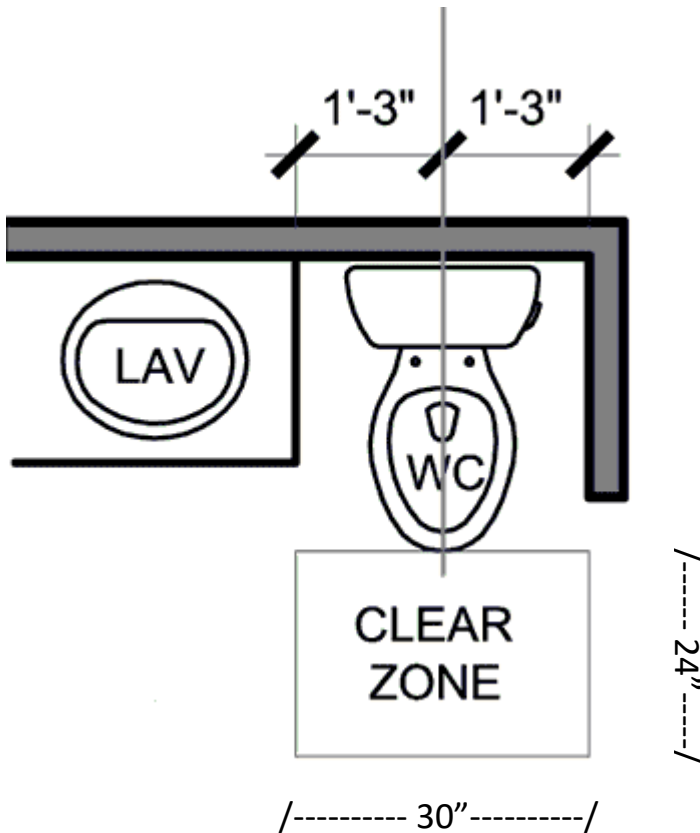
LAWN-IRRIGATION, HAND HELD SHOWERS, HOSE BIBS, etc.: A potable water system shall be protected against back-flow and back-siphon by providing and maintaining at each outlet:

- A. An air gap as specified herein between the potable water outlet and the flood level rim of the fixture it supplies, between the outlet and any other source of contamination.
- B. A back-flow preventer device or assembly to prevent the drawing of contamination into the potable water system.
- C. Hose bibs must meet ASSE 1019 standard.
- D. Reduced pressure zone backflow devices (RPZ) must be tested yearly.
- E. Lawn Irrigation Pressure Vacuum Breakers (PVB) must be tested yearly.

This information is a guide to the most common questions and problems. It is not intended, nor shall it be considered, a complete set of requirements.

2015 Minnesota Plumbing Code, Section 312.9 **18 Gauge Steel Nail Plates** are required when copper or plastic piping comes within 1 inch of the edge of framing and plates must extend at least 1 1/2 inch past the outside diameter of the piping.

2015 Minnesota Plumbing Code, Section 402.5 **Toilet Installation**



2015 Minnesota Plumbing Code, Section 402.2 Where fixtures come in contact with the wall or floor they shall be water tight (**Caulked**).

2015 Minnesota Plumbing Code, Section 408.0 **Shower Requirements:**

- Valves shall be installed at the point of use arranged so the shower head does not discharge directly at the shower entrance and in accordance with **ASSE 1016**.
- **Drains shall be minimum 2"**.
- Shower Compartments regardless of shape shall have a **minimum finished interior of 1024 square inches** and shall also be capable of encompassing a 30 inch circle to a point 70 inches above the shower drain.
- Shower doors shall have a minimum of 22 inch opening.
- Shower receptors built on site be tested and inspected to be water tight.
- Hand held shower head shall be protected from backflow with an approved atmospheric vacuum breaker.
- Built on site shower receptors shall be water tight. (**With drain plugged water shall be filled to top of threshold and remain full for 24 hours without the addition of water and witnessed by the Plumbing Inspector**).

2015 Minnesota Plumbing Code, Section 409.4 Whirlpool bath tub faucets hot water shall be limited to 120 degrees with a device in accordance with **ASSE 1070**.

2015 Minnesota Plumbing Code, Section 414.0 **Dishwashing Machines**. Shall discharge through an air gap fitting into the tail piece of the kitchen sink drain through a wye fitting.

- Replacements of domestic dishwashers where there are no alterations, no changes to the existing plumbing system, and no modification to the design, and where the system was installed to code at the time it was installed, would not require the additional air gap fitting for this work. It is reasonable to consider this as repair and replacement work without altering the design of the existing plumbing system. The reconnection of the discharge drain line must be fastened as high as possible under the countertop, and using existing rough-ins of the existing plumbing system.
- **Remodeling of the kitchen including sink replacements, altering the water and/or drainage piping will require an air gap fitting.**

2015 Minnesota Plumbing Code, Section 501. **Hot Water Heaters**

- Pex piping shall not be installed within 18 inches of the water heater
- Fresh air intake from outdoors required when replacing water heater(Atmospheric Vent)
- Relief drains shall be galvanized steel, hard drawn copper, cpvc or polypropylene piped to within 18 inches of the floor (plastic piping needs to be secured to water heater within 6 inches of drain outlet).
- Refer to Installation manual for venting clearances.
- Class C venting requires 6" clearance to combustibles, Class B venting requires 1" clearance to combustibles.
- Full way shutoff valve required on inlet.
- Gas shutoff valve shall be within 6 feet of appliance.
- Copper and stainless flexible connectors shall not exceed 24 inches of water heater.

2015 Minnesota Plumbing Code, Section 603.5.6 Lawn Sprinklers vacuum breakers (**PVB**) shall be tested on an annual basis.

2015 Minnesota Plumbing Code, Section 603.5.7 **Wall Hydrants and Hose bibbs** require a vacuum breaker listed to ASSE 1019. Hose bib shall be 1/2" minimum size.

2015 Minnesota Plumbing Code, Section 609.10 **Water Hammer Arrestors** shall be installed on the water lines to quick closing valves such as:

- Dishwashing Machines
- Ice Machines
- Clothes Wash machines

2015 Minnesota Plumbing Code, Section 611.0 **Water Conditioning Equipment** shall discharge through an air gap in accordance with Table 603.3.1 and the manufacturer's specifications. (Air Gap Water Softeners. 3/4" supply = 1 1/2" gap, 1" supply = 2" gap).

Table 611.4 Sizing of residential Water Softeners	
Required size of softener connections (inches)	Number of bathroom groups served
3/4"	Up to 2 (An additional toilet and lav permitted)
1"	Up to 4 (Over four bathroom groups requires an engineered softener system)
Installation of kitchen sink and dishwasher, laundry tray, and automatic clothes washer permitted without additional size increase.	

2015 Minnesota Plumbing Code, Table 703.2. **1 1/2 inch pipe can have maximum of one fixture unit** draining into it on horizontal piping. (Lavatory is the only fixture rated to 1 fixture unit. All other sinks shall have 2" drain, drain does not start until after vent.

2015 Minnesota Plumbing Code, Section 705.7.2 **Solvent Cement Joints in PVC** shall use primer purple in color. **PVC support shall be ever 4' and at every change in direction.**

2015 Minnesota Plumbing Code, Section 708.0 Horizontal drainage piping shall be run in practical alignment and a uniform slope of not less than **1/4 inch per foot.**

2015 Minnesota Plumbing Code, Section 707.4 **Cleanouts**

- Each horizontal drainage pipe shall provide a clean out at its upper most terminals.
- Each 100 feet of horizontal piping.
- Cleanouts shall be installed on horizontal drain lines over 5 feet in length.(When below first floor).
- Should be installed where new piping connects with old piping to facilitate testing.
- Shall be provided in a drainage line for each aggregate change in direction exceeding 135 degrees.

2015 Minnesota Plumbing Code, Section 710.1 **Backwater Valves** shall be installed on drainage piping that is located on a floor level that is lower than next upstream manhole cover (street).

2015 Minnesota Plumbing Code Section 705.11.3 Where connecting plastic pipe to other types of piping materials; an approved listed adapter or transition fitting and **listed for specific transition intended shall be used.**

2015 Minnesota Plumbing Code, Section 1001.0 **Fixture venting a trap arm length**

- Only one trap per vent
- Horizontal change in direction after vent can only be 90° total

Trap ARM PIPE Dia. (inches)	Dist. Trap to Vent Minimum	Length Maximum
1 1/4"	2 1/2"	30"
1 1/2"	3"	42"
2"	4	60"
3"	6	72"
4"	8	120"
Exceeding 4"	2 x Diameter	120"