

## ***Some significant changes in the new plumbing code include:***

- **Alternate engineered designs.** Provisions for alternate engineered designs are prescribed in the 2015 code meaning alternate engineered systems must be reviewed in accordance with those provisions of the code and approvals are at the discretion of the administrative authority on a case-by-case basis.
- **Backflow preventers**
  - **Fire protection systems.** Low-hazard systems must be provided with a listed double-check valve assembly. Single detector check valves are no longer acceptable. High-hazard systems must be provided a listed reduced pressure zone (RPZ) backflow assembly. Fire department Siamese connections with secondary nonpotable water sources must be provided with a rpz device.
  - **Testable devices.** All testable backflow devices must be tested and inspected annually.
    - Testable devices include RPZ backflow assemblies, pressure type vacuum breakers, spill-proof vacuum breakers and double check valve assemblies.
    - Buildings served by a community public water supply system must provide notifications to the administrative authority and the public water supplier/purveyor of all testable devices within 30 days of installation. Please coordinate with the local administrative authority and the public water supplier to ensure compliance with this rule section.
  - **Integral backflow preventers.** Integral backflow preventers may now be acceptable if the fixture with the integral backflow preventer is tested to meet the requirements of ANSI A112.18.1 for the intended application.
  - **Single-wall heat exchangers.** These are permitted provided the installation meets the design criteria of the code.
- **Fixtures**
  - Floor drains are now required in public restrooms and public laundry rooms.
  - Shower waste outlet and tailpiece must be a minimum of two inches.
  - Domestic kitchen sink drains must be two inches.
  - Faucets with two separate handles control, hot and cold water, the left-hand control of the faucet where facing the fixture fitting outlet must control the hot water. Faucets and diverters must be connected so that hot water corresponds to the left side of the fittings.
  - Shower receptors and liners must meet adopted requirements and standards.
  - Domestic dishwashers may discharge indirectly by means of a waste receptor or wye branch fitting on the tailpiece of kitchen sink *when* an approved dishwasher air gap fitting is provided on the discharge side.
  - Urinal installation separation is at minimum of 12-inch vs. the existing requirement of 15-inch from wall-to-center of fixture.
- **Hangers and supports.** The 2015 code allows plastic pipe, solvent cemented Schedule 40 PVC and ABS drain-waste-vent (DWV) pipe to have hanger spacing of 4-foot intervals for all pipe sizes in horizontal installation, unless for expansion/contraction compensation support at every 30 feet with all conditions met for the use as allowed in Appendix I.

- **Materials**

- The long-standing 35-foot rule limitation for plastic pipe used in DWV installation is removed. The 2015 code requires thermal expansion and contraction compensation of plastic pipe use in DWV be taken into consideration during design and installation as described in the installation standards of Appendix I. Installation standards for plastic ABS and PVC allow the use of offsets, expansion joints, or restraints provided conditions of proper support and movement are met. Accordingly, aboveground horizontal and vertical plastic piping must be installed with restraint fittings or a minimum 24-inch, 45-degree offset every 30 feet. For more information, refer to all applicable sections of the code that pertain to the specific material and material installation standards in Appendix I of the code.
- The 2015 code has comprehensive tables of pipe materials that are approved, while others that were acceptable under the previous code may no longer be listed as approved. Code-approved and listed materials should carefully be reviewed to ensure compliant materials are used and proper approvals are obtained for all plumbing fixtures and materials for both water and drainage applications.
- Unless prior approval is obtained from the administrative authority as an alternate material requests, all materials and fixtures used in a plumbing system must be listed to a third-party certification in accordance with the approved nationally recognized standards referenced in the code.

- **Nonpotable rainwater catchment systems**

- When designed, installed, treated and maintained to meet the requirements of the code, nonpotable rainwater catchment systems are acceptable for use to supply water to water closets, urinals, trap primers for floor drains, industrial processes, water features, vehicle washing facilities, and cooling tower makeup water.
- Required operation, maintenance, monitoring, testing and inspection of rainwater catchment systems are the responsibility of the property owner.
- Filtration and disinfection of rainwater catchment system must be provided to maintain minimum water quality for use.
- Rainwater catchment system must be designed by a Minnesota Registered Professional Engineer.
- Cross-contamination inspection and testing are required after the initial installation in the presence of the administrative authority. Thereafter, a cross-contamination test is required every 5 years and a cross-contamination inspection must be performed annually.

- **Roof drainage**

- Rainfall rate for sizing of roof drainage system remains the same which is at a minimum of 4-inches per hour.
- Sizing must include roof area and side walls draining onto roof drain.
- For sumps receiving roof drains where gravity is not possible, dual pumps are required to function alternately.
- Corrugated HDPE piping meeting ASTM F2306 for storm building sewers may be considered as an alternate under the 2015 code.

- **Sanitary drainage**

- **Drainage fixture unit (DFU) values.** Maximum drainage fixture unit allowances:
  - One DFU-type fixture is allowed on a 1-1/2-inch horizontal branch drain.
  - A maximum of eight DFU units can be connected to a two-inch horizontal branch drain (no water closet).
- Three water closets are now allowed on a 3-inch horizontal branch drain at minimum of 1/4 inch per foot.
- Horizontal drainage pipe must be sloped at  $\frac{1}{4}$  per foot when possible.
- **Sump pumps.** For public use buildings where gravity is not possible, duplex sump pumps are required for sanitary drainage regardless of any water closet discharging into the sump or receiving tank.
  - The pumps must be arranged to function alternately in normal use and independently in case of overload or failure.
  - The pumps must have an audio and visual alarm, readily accessible.
  - The lowest inlet shall have a clearance of not less than two inches from the high-water or starting level of the sump.
- **Interceptors:**
  - Grease interceptor sizing allowance for both one- and two-minute drainage period.
  - Hydromechanical grease interceptor meeting ASME A112.14.3 is an acceptable alternate plumbing appurtenance when designed and installed in accordance with the requirements of the code.
  - Sand interceptor construction and sizing requirements are very specific. The code requires a minimum of two compartments, water tight material, solid cover, vehicle loading, etc.
  - Changes in the requirements for flammable and oily interceptor include:
    - Material construction type is no longer listed, therefore, must be subject to the approval of the administrative authority.
    - Except for one- and two-family dwellings, garages of any size for repair and storage requires a flammable and oily interceptor.
    - See code for more sizing and installation requirements.

- **Testing.** Requirements in 2015 code remain consistent with the 2012 Minnesota Plumbing code.

- **Vents**

- Full size, three-inch building vents are no longer required. New building venting requires the aggregate cross sectional area of vents to not be less than the largest required building sewer.
- All floor drains, floor sinks and similar must be individually vented.
- Vertical wet venting and horizontal wet venting of a bathroom group are permitted with limitations.
- Maximum developed length of fixture vents and branch vents for each vent size are much more restrictive and must be carefully designed, installed and enforced for proper venting of the building plumbing system.
- Undiminished vent stacks and relieve vents are required for high-rise buildings of at least 10 stories or more.

- **Water supply**
  - **Flexible connectors.** Copper and stainless steel corrugated connectors may now be used at the following locations:
    - Fixture connectors at maximum of 30 inches.
    - Washing machine connectors at maximum of 72 inches,
    - Clothes washer and ice machines at maximum of 120 inches.
    - Water heater connectors at maximum of 24 inches.
  - **Push fit fittings.**
    - Copper and CPVC push fit fittings meeting ASSE Standard 1061 are approved use in water distribution system.
    - Push fit fittings for PEX tube may only be approved for use if marked with the applicable standard designation for the fittings specified for use with the tube. This means the PEX tube must be marked with both the tube standard, ASTM F876 and the fitting standard, ASSE 1061 (e.g. ASTM F876/ASSE 1061)
  - **Hose bibb.** Minimum size water supply size for a hose bibb is now 1/2-inch.
  - **Water sizing.** Water sizing is now based on three occupancy types of uses (private, public, assembly). In general, water supply fixture units (WFU) assigned to some plumbing fixtures is less than the existing code. The reduced water supply sizing is to accommodate for low flow fixtures. Examples are:
    - Water closet is assigned a 2.5 WFU for private and public use, and 3.5 WFU for assembly use.
    - Shower is assigned 2 WFU for both private and public use. Previously, public use is assigned a 4 WFU.
    - Lavatory is assigned a 1 WFU for all types of use.

The information provided is intended to highlight of some technical changes in the Minnesota Plumbing Code, and is not intended to be a comprehensive list of all code requirements. For complete requirements and code sections, see Minnesota Rules, Chapter 4714.

***Other notable items of interest:***

- Air admittance valves remain prohibited from installation in plumbing venting systems (see Minnesota Statutes, 326b.43, Subd. 6).
- For minimum number of required plumbing fixtures for the type of building occupancy, see Minnesota Rules, Chapter 1305, the Minnesota Building Code.