

Top 10+ Internal Plumbing Mistakes

This is a collection of the most frequent mistakes I see when inspecting rough-in plumbing (especially when it has been completed by non-plumbers). A brief description of the mistake is noted after each, as well as the section of code which covers the specific regulation.

Maine currently uses the 2015 Uniform Plumbing Code.

1. Not considering upper floor plumbing when designing under slab plumbing {UPC 908.1, 311.2}

Vents from basement fixtures need to extend dry to roof but can be combined – see below where you can combine vents. UPC allows bathroom wet venting for combinations of fixtures within one or two bathrooms located on the same floor in dwelling units. See UPC 908.4 for details.

2. Not providing a vent for every trap {UPC 901.0, 902.0}

Every trap needs a vent, most are dry (see UPC 908.4 where wet venting allowed) to roof originating from fixture trap arm – see below where you can combine vents – also grading of combination vents.

3. Installing a sanitary Tee instead of wye or long sweep for drainage connection or back to back fittings (sinks) not directional {UPC 701.2.3} {UPC 704.1, 704.2, 706.0}

Sanitary tees may only be used on drainage piping when transitioning from horizontal (1/4" per foot) to vertical. All others must sweep in direction of flow with proper drainage fittings.

4. Trap arm too long for size of pipe {UPC 1002.2} {UPC Table 10-1}

Horizontal distance from trap weir to inner edge of vent shall be within distance in Table 10-1, but not closer than 2 times the diameter of the trap arm.

5. Clothes washer trap not within prescribed distance {UPC 804.1}

Standpipe not more than 30" or less than 18" above trap- no trap installed below floor – trap installed 6" to 18" above floor.

6. Drain piping {UPC 708.0} and vent pipe {UPC 905.1} not to grade

Drain piping can be horizontal (1/4" per foot), vertical, or 45°- vent piping shall be free of sags and be graded and connected to drip back by gravity to drain pipe it serves.

7. Not having cross section of vent equal to the sewer size {UPC 904.1}

The size of required sewer pipe is equal to the size of the vent through the roof, separate vent areas may be combined to equal sewer pipe area.

8. Connecting vents below flood height of highest fixture {UPC 905.3}

Vents should be 6" above flood-level rim of fixture before offsetting horizontally, or need to use drainage fittings and grade to drain. Vents shall rise to 6" above flood-level rim of fixture served before being connected to any other vent.

9. Combining too many fixtures on vent pipe {UPC Table 7-3, Table 7-5}

Use Table 7-3 and determine # of fixture units for each type fixture, add all fixtures on common vent, not to exceed max. # of fixtures for size of vent. Most common error is more than 24 fixture units on 2" vent pipe.

10. Vents connected "flat" rather than above horizontal centerline of sewer {UPC 905.2}

Vents connecting to horizontal drainage shall connect above horizontal centerline of the downstream drain pipe.

11. Cutting too large a hole for piping in bearing wall or joist {IRC 502.8 602.6}

See chart - Bearing Wall 40% of depth - Interior non-bearing 60% - 5/8" minimum to edge.

12. Pipe protection nail plates too small {UPC 313.9}

When piping penetrating framing member that are closer than 1" to edge a steel nail plate that extends a min. 1 1/2" beyond the outside diameter of the pipe that needs protection.

13. Installing Dishwasher w/o air gap fitting {UPC 807.4}

No domestic dishwasher shall be directly connected to drainage system or food disposer without the use of an approved dishwasher airgap fitting on the discharge side of the dishwasher. Airgaps shall be installed above the flood level of sink or drain board, whichever is higher.

14. Tapping DWV pipe for condensate or HWH pressure relief valve discharge piping {UPC 311.2}

No drainage or vent piping shall be drilled and tapped for the purpose of making connections thereto, and no cast-iron soil pipe shall be threaded. Pipe to terminate at approved drain with air-gap or exterior of building