

International Plumbing Code

SUBJECT: Size of Fixture Supply and Gridded and Parallel Water Distribution System Manifolds

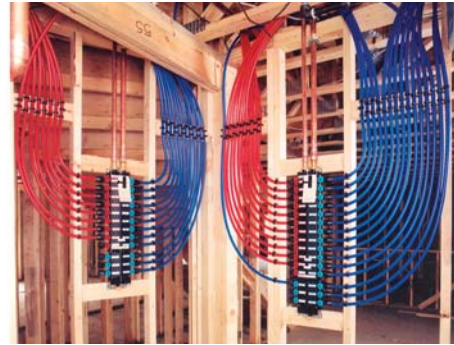
CHANGE TYPE: Modification

202 General definitions

GRIDDED WATER DISTRIBUTION SYSTEM. A water distribution system where every water distribution pipe is interconnected so as to provide two or more paths to each fixture supply pipe.

604.5 Size of fixture supply. The minimum size of a fixture supply pipe shall be as shown in Table 604.5. The fixture supply pipe shall not terminate more than 30 inches (762 mm) from the point of connection to the fixture. A reduced-size flexible water connector installed between the supply pipe and the fixture shall be of an approved type. The supply pipe shall extend to the floor or wall adjacent to the fixture. The minimum size of individual distribution lines utilized in gridded or parallel water distribution systems shall be as shown in Table 604.5.

604.10 Gridded and Parallel Water Distribution System Manifolds. Hot water and cold water manifolds installed with gridded or parallel connected individual distribution lines to each fixture or fixture fittings shall be designed in accordance with Sections 604.10.1 through 604.10.3.

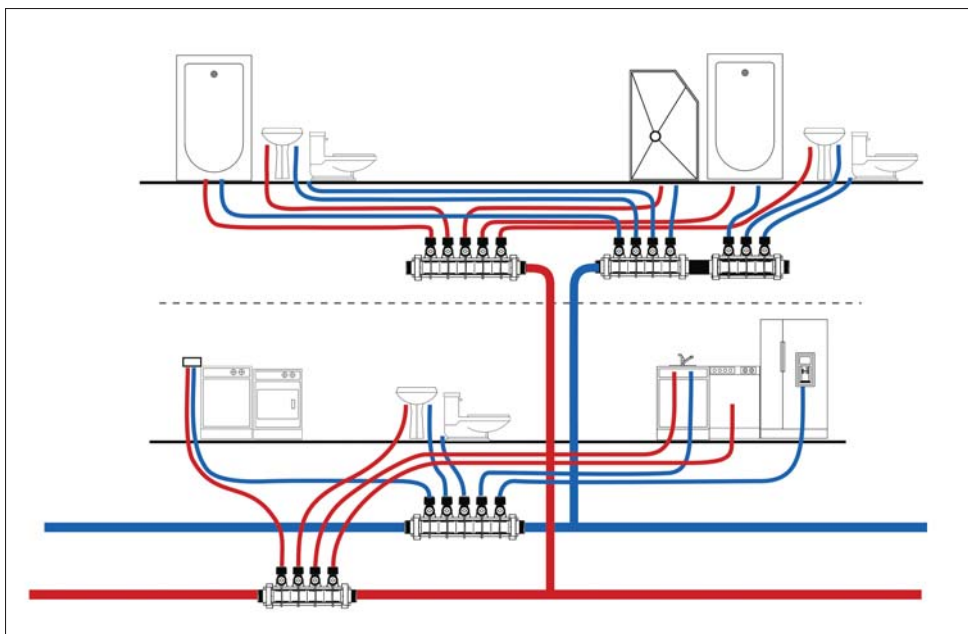


Parallel PEX system.

CHANGE SIGNIFICANCE: Gridded water distribution systems have been added to the code as an accepted alternative to other systems used by installers

A cross-linked polyethylene (PEX) water piping manufacturer expressed his opinion that a gridded water distribution system may be more hydraulically efficient than a parallel distribution system or branch line layout. The grid also balances the pressure throughout the system, so the plumbing fixture that is the farthest from the water service may have practically the same available pressure as the one closest to the water service. This will eliminate complaints of insufficient pressure at plumbing fixtures that are distant from the water service pipe. The grid reduces the coefficient of friction loss by splitting the water into small volumes that are moving at lower velocities. At the connection to a fixture supply pipe, the water arrives from two or more directions, depending upon its location in the grid.

The manufacturer further stated that without a code clarification some plumbing officials are requiring that the plans be stamped by an engineer, increasing the installation cost for these systems. Gridded layouts are hydraulically designed by computer. The output shows the most efficient paths to each plumbing fixture and fixture fitting and documents the volume and pressure available at each fixture supply pipe. The gridded water distribution concept originated in residential sprinkler installations having PEX piping. ♦



Gridded and parallel water distribution systems.