

IPA DEBATE CLUB QUESTION 9

Many times it is observed that watersupply pipes are made to run on the toilet floors. Is it advisable to do this and what are the precautions to be adopted ?

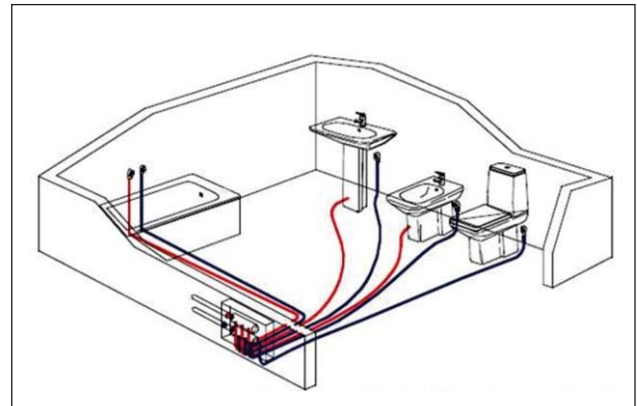
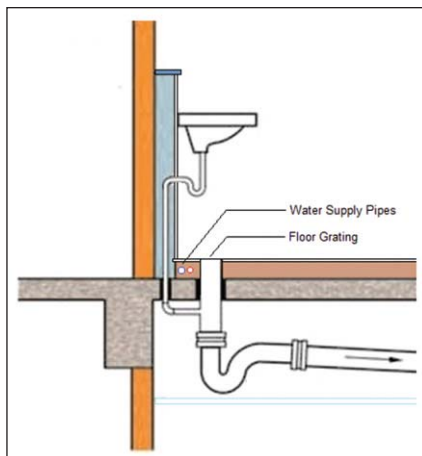


RESPONSES

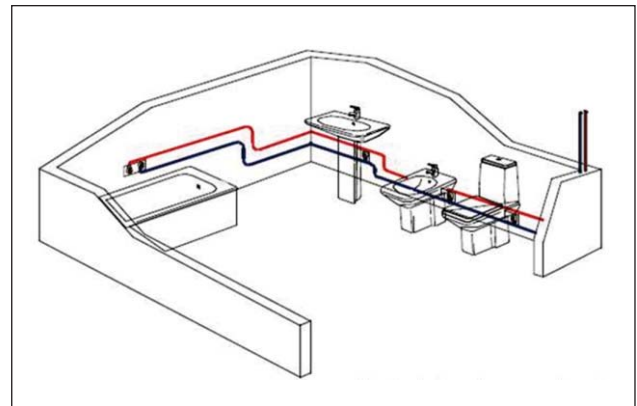
Response 1

EARLIER, water supply pipes were generally of Galvanized Iron (GI). With intermittent water supply they were subjected to corrode fast. When lain under toilet floor, the water supply was subjected to contamination. Three factors caused the contamination. 1. Wastewater leaking from the tiles particularly in bathing area, 2. Loose floor inlet on the nahnhi trap (without a hob), and 3. Leaking drainage pipes laid in the sunken toilet floor. For this reason, we grew with the notion that water supply pipes shall not be laid under toilet floor.

NOW, the materials and techniques have changed. 1. In most cases plastic or multi-layer pipes are used for water supply. These pipes and fittings are not subject to corrosion. 2. Further, if the tiles are laid with sealant joints, wastewater leaking through tiles below the toilet floor is not possible, and 3. In case of non-sunken toilet floors the ceiling hung plumbing completely eliminates the possibility of leakage of drainage pipes (See Figure below).



Under floor parallel connection



Above floor series connection

Subhash Deshpande
IPA National Executive Committee Member
IPA Technical Committee Member

Response 2

Generally, the way plumbing installations are done in India, it is not considered a good practice - reasons being (i) possibility of water supply pipes getting damaged by other agencies (like tile/ stone layers) after the installation of pipework but before the completion of all the works in the toilet, (ii) opening of joints of the pipework laid under the floor at a later stage because of a no. of reasons like high pressure, water hammering, poor workmanship etc. Rectification will require ripping off the entire floor and redoing it after repair/ replacement of the pipework. By the time all such repair works are done, a lot of damage would have been done to the structural slab and perhaps, would have created a lot of nuisances for the occupants a floor below if it happens in one of the upper floors of a multi-storied building.

But technically and practically, it is very much possible to

lay water supply pipes under the toilet floor. It requires (i) the selection of the right piping system (material and jointing technique) - piping systems are available in which joints can be completely avoided below the floor as these pipes are available in longer lengths or as coils and are relatively flexible. All joints are done after bending the pipes vertically on the walls, (ii) a perfect workmanship, proper protection of laid pipework when other agencies are still working on the same space and retesting before the final finishing layer of the floor is laid.

Such practice is followed in many countries. In India also, such piping systems are being laid underfloor for circulating hot water for radiant heating of the space.

Mukesh Asija

Chapter Chair, IPA Delhi Chapter
IPA Technical Committee Member

Response 3

Water supply pipes running on the toilet floors is not advisable in general due to possibility of contamination as drainage pipes also laid under the floor. As per NBC water supply lines and drainage lines to be separated vertically and horizontally by specified distance which is not practically possible under the toilet floors.

Option 1: Water supply pipes shall be taken below the toilet false ceiling and the pipe can be made to run along the wall by core cutting and grouting with master stop cock control.

Option 2: Under unavoidable circumstances if water supply pipes is made to run on the floors need to ensure that pipe sleeve (one size larger than the required diameter) to be laid and in the pipe sleeve, water supply pipe shall be taken without any joint. Before finishing the floor with tiles water

pressure testing (Hydro testing) to be done as per recommendations (one and half times working pressure as per code). Material of the pipe sleeve shall be non-breakable materials and non-corrosive materials.

Precautions to be adopted:

- Water proofing of sunken toilet floor to be done with utmost care
- Hydro test of water supply pipes using pressure pump before closing the sunken portion of toilet
- Weep hole pipe is compulsory requirement for weep water discharge in the sunken toilet.

Dr. S. Virapan

IPA National Executive Committee Member
Technical Committee Member

Response 4

We can lay water supply line in toilet floor, but one has to select correct piping system for the same. It will not be advisable to lay all types of pipes in floor. In India we get flexible pex piping which can be laid in PVC tubes and can be pulled out like electrical cables for any future maintenance. These pipes do not have any in between fittings so no chance of leakages in the flooring.

Pipes which are rigid and need fitting for any change of direction shall not be laid in floor as it can leak in future due to various reasons and it will not be readily accessible when laid in floor.

Nilesh Gandhi

Chapter Chair, IPA Pune Chapter
IPA Technical Committee Member



Sharat V. Rao
Convener, IPA Technical Committee
Managing Editor, IPT
IPA National Joint Secretary

Conclusion:

Water supply pipes can be allowed to run in the sunken portion of the toilet subject to following precautions

1. Selection of the proper pipe material preferably without any joint. Flexible pipes like PEX fit perfectly in this category.
2. Ensuring proper workmanship, protecting the pipes from external damage especially during waterproofing. A protective shield around the pipework will be beneficial.
3. Pressure testing the pipes is compulsory to avoid any form of leakage.
4. Rigid pipework with multiple joints and fittings to be avoided. Also pipe materials prone to corrosion to be avoided.