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Name

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Section

Assignment.

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Q10(10) (1) Soil pipes and Anti-siphon pipe.

⊕ Soil pipes ⊕.

A soil pipe is for solid waste. This type of pipe will carry water and solids into the sewer. While any pipe could physically perform the task, the soil pipe, also known as a soil vent pipe, as installed in most homes a specific quality. First, it is of a dimension to allow solid waste to pass. Second, it is vented in a way to specifically maintain a safe environment and reduce odours. Soil pipes are vented high at the top or near to the top of a building.

Thanks to soil pipe stacks, to allow gases produced by waste to vent safely into the atmosphere. Such gases can be harmful to health so venting them high keeps them out of the way.

⊛ Anti-syphon pipe.

An extra pipe connected to the outlets of toilet seats of the floor, the other ends of which is exposed to atmosphere is called anti-syphonage pipe. These are provided to maintain water seal so that foul gases of the sewer

line do not find
 entry in to the
 toilet / bathrooms.
 if we look into
 a toilet seat we
 find some water
 at the bottom,
 which remain there
 even after flushing.
 The seats are
 designed with a
 trap so that the
 water remains in
 the seat. The water
 is maintained to
 prevent entry of
 foul gases from
 the toilet pipe /
 soil pipe / sewer lines
 into the toilet
 room. This is called
 water seal.

When one of the
 toilets in the upper

floors of flushed, water
 a lot of the
 gushes down line in
 the form of
 a water column
 with accelerating speed
 due to gravity. This
 fast moving water
 creates a
 low air pressure
 just above it.
 The water seal
 of the toilet has
 normal air pressure
 on the toilet
 side and a lower
 air pressure on
 the toilet pipe
 side. This difference
 of air pressure
 causes the water
 seal in the toilet
 seal to get
 sucked out into

Thus the water seal is broken and foul gases can enter into the toilet room.

To maintain water seal, it is necessary to maintain equal air pressure on both the toilet room and soil pipes sides.

Therefore an additional pipe called anti-siphonage pipe is connected to

the toilet vent outlet the other end of which is open to atmosphere.

As soon as the air pressure above the fast moving flush water column reduce &

the anti-siphonage pipe allows atmospheric air to enter the

low pressure zone.
 and equalize the
 air pressure. This
 prevent the sucking
 out of the water
 seal from the
 flushed toilet seat
 as well as all
 the toilets seats
 connected at lower
 floors.

(Q) Sanitary fixtures and traps.
 (A) Sanitary fixtures

A receptacle for industrial
 and fecal sewage
 that is installed in
 homes and public and
 industrial buildings.
 Sanitary fixtures are
 attached to the
 interior system of
 water pipes and
 sewerage systems
 and constitute the

main elements of a
buildings' sanitary engineering
equipment.

Sanitary fixtures are
installed in different
areas. Bathubs, Washstands,

Shower traps,
and bidets are

installed in bathrooms,
washrooms and shower

rooms. Toilet bowls,

lavatory pans, and
various

types, whether equipped
with flush tanks

or taps are
installed in lavatories.

Washers, sinks and drains
are installed in

Kitchens.

Special sanitary fixtures
are used in

medical institutions, laboratories,
bathrooms, barber shops,
and beauty salons

and on transportation facilities. These fixtures are made from cast iron, ceramics (faience, Samiporcelain), sheet steel, non-ferrous metals and alloys, or plastics. Cast-iron and steel fixtures are covered with a white or colored vitreous enamel. Ceramic fixtures are covered with glaze, and non-ferrous metal fixtures are electroplated.

④ Traps ④

In plumbing, a trap is a device shaped with a bending pipe path to retain fluid to prevent sewer gases from entering buildings while allowing waste materials to pass through. In oil refineries, traps

are used to prevent hydrocarbons and others dangerous gases and chemical fumes from escaping through drains.

In domestic applications, traps are typically U, S, or J-shaped pipe located below or in a plumbing fixture. An S-shaped trap is also known as an S-bend.

It was invented by Alexander Cumming in 1795 but became known as the U-bend following the introduction of the U-shaped trap by Thomas Crapper in 1880. The U-bend can could not jam, so unlike the S-bend, it did not need

an overflow. The most common of these traps is referred to as a P-trap. It is the addition of a 90 degree fitting on the outlet side of a U-bend there by creating a P-like shape.

Where a volume of water may be rapidly discharged through the trap, a vertical vented pipe called a standpipe may be attached to the trap to prevent the disruption of the seal in other nearby traps.

The most common use of stand pipes in houses is for clothes washers.

(3) Cross connection and back siphonage control

1. Cross connection

When drinking water piping connects to various plumbing fixtures or water utilizing equipments a cross-connection is created.


If improperly protected, contamination can result when a backflow event occurs; allowing contaminants to reverse flow from the fixture back into the drinking water piping.

2. Cross connection

The physical connection between the potable water system and an "end-use" fixture where a potential hazard exists.

② Back siphonage ②

Backsiphonage is caused by negative pressure from a vacuum in the supply piping, just as drinking through a straw draws liquids from a glass. Backsiphonage can be created when there is stoppage in the water supply due to repairs or breaks in the country's water main; an increased demand at one location, such as fire fighting, or even undersized piping, increases normal flow in the systems, and can pull contamination into the drinking water.

Checked By: Parents: Excellent Good  **BBBAR**
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