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**SECTION : B**

**SUBJECT : WASTEWATER ENGINEERING**

**SUBMITTED TO : ENGR. NADEEM ULLAH**

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**SOIL PIPES**

 A soil pipe is designed to carry soiled water from the toilet, urinal or bidet to 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 has a specific quality. First, it is of a dimension to allow solid waste to pass. Second, it is vented in a very specific way to maintain a safe environment and reduce odours. Soil pipes are vented high at the top or near to the top of a building.

**ANTI-SYPHON PIPES**

An extra pipe connected to the outlets of toilet seats of all the floors, the other end 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.

**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 systems of water pipes and sewerage systems and constitute the main elements of a building’s sanitary engineering equipment.

Sanitary fixtures are installed in different areas. Bathtubs, washstands, shower sumps, traps, and bidets are installed in bathrooms, washrooms, and shower rooms. Toilet bowls, lavatory pans, and urinals of various types, whether equipped with flush tanks or tap, are installed in lavatories. Washers, sinks and drains are installed in kitchen.

**SANITARY TRAPS**

Traps are integral parts of a modern sanitary system, being designed to retain a small quantity of the wastewater from the discharge of fitting to which they are attached as a barrier to prevent foul air entering the building as show in the figure.

Traps should be self cleaning, that is to say, they should be designed so that their walls are scoured by the discharging water. One of the advantages of modern traps constructed of plastic materials is the ease with which they may be dismantled for cleaning.

**CROSS CONNECTION**

Cross connection can occur in fixtures where the faucet is below the high water level – an air gap is required to prevent contaminated water from being siphoned back into the potable water supply under negative supply pressure conditions.

**BACK SYPHONAGE CONTROL**

Back-siphonage is backflow caused by negative pressure (i.e. vacuum or partial vacuum) in a public water system or customer’s potable water system.  The effect is similar to drinking water through a straw.  Back-siphonage can occur when there is a stoppage of water supply due to nearby firefighting, a break in a water main, etc.