Floor Drain Trap Seal Protection

International SARS Symposium

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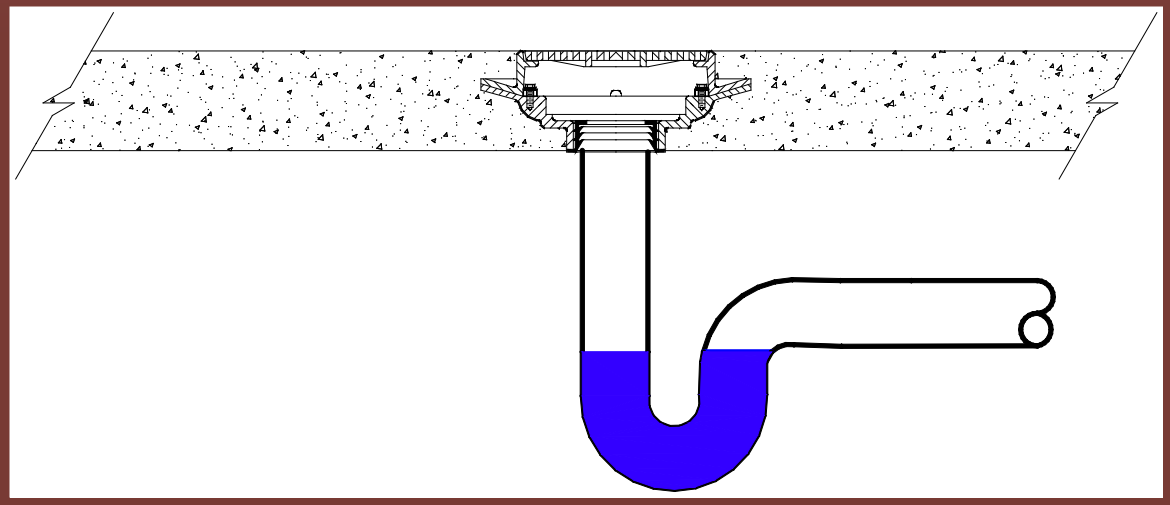
Advent of Floor Drains

- Floor drains were a great addition to plumbing systems.
- They provided emergency protection and facilitated cleaning.
- Engineers require floor drains throughout commercial buildings in the United States.

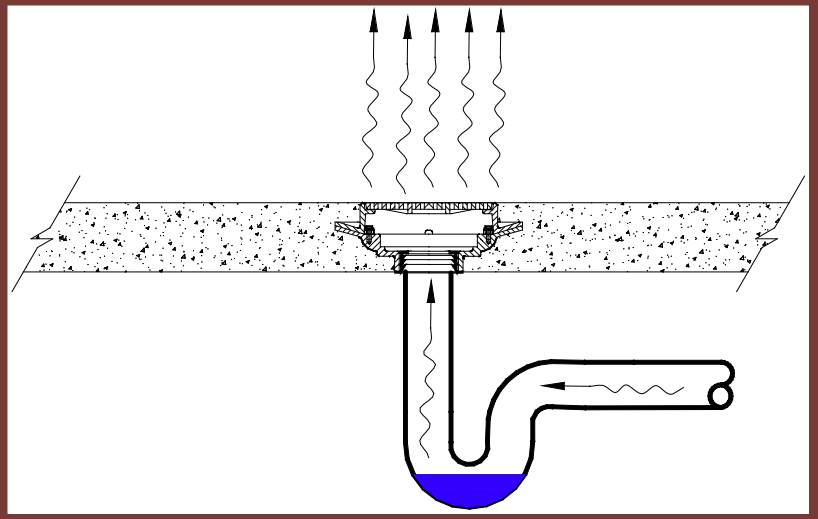
Floor Drain Trap Seal



- Floor drains connect to standard traps in the drainage system.
- Most engineers and contractors trouble themselves with venting of the floor drain trap.

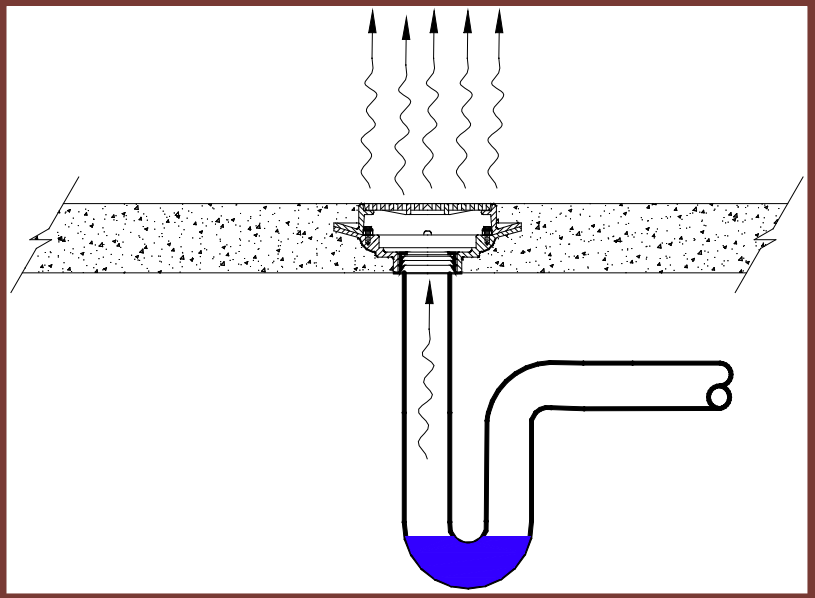
Loss of Trap Seal

- A change in cleaning to dry mop limited the use of many floor drains.
- Water evaporation is a major problem with floor drains that have limited use.
- Loss of trap seal results in leakage of sewer gas.



Deep Seal Trap

- First response by the industry was the installation of a deep seal trap.
- The problem was that a deep seal trap merely doubled the time it takes to evaporate the trap seal.



Water Supply Trap Seal Primers

- The original method of protecting a trap seal was a water supplied trap seal primer regulated by ASSE 1018.
- Main concern was backflow.
  - All have vacuum breaker component
- Work on a pressure differential principle.

Water Trap Primer Limitations

- Contractors and engineers would locate the valve in the wrong location.
- Minimal pressure change in water supply.
- Blocked water supply lines.
- Maintenance may be required.

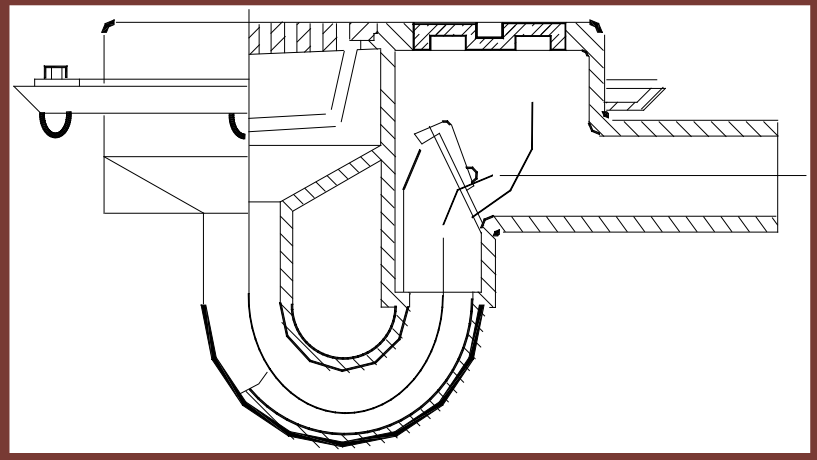
Drainage Supply Trap Seal Primer

- To reduce the waste of water, a drainage supply trap seal primer was developed.
- Regulated by ASSE 1044.
- This style of valves catches a small quantity of water and directs it to the floor drain.
- The length of unvented tubing is limited.

Drainage Limitations

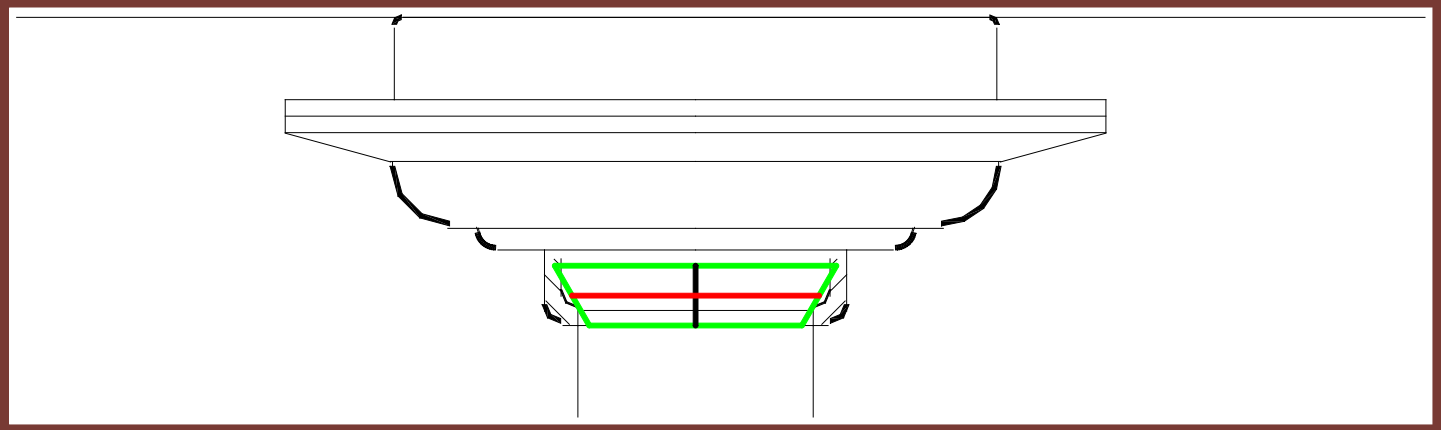
- No fixture in the close proximity.
  - Too long a run of piping
- Fixture with minimal use.
- Drain in an area infrequently visited.
- Supply line plugged up.
- Maintenance may still be required.

New Concept of Barrier Protection



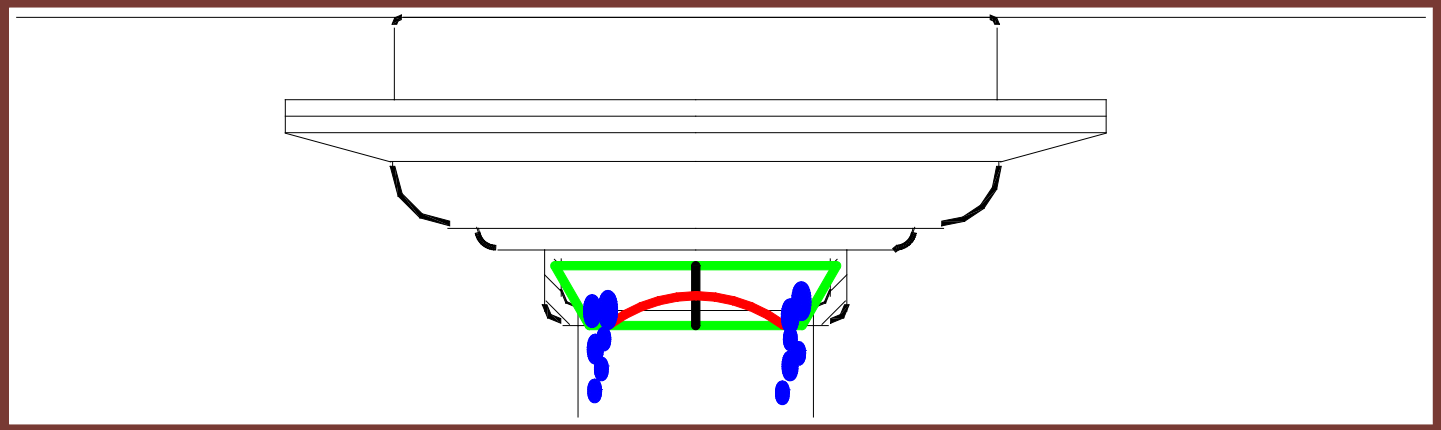
- Certain floor drains have a built-in backwater valve.
- The backwater valve has proved to be successful in preventing sewer gas from escaping out floor drain.
- Must be planned in original design of system.

Add-on Barrier Protection



- New concept is to add floor drain trap seal protection device to existing floor drains.
- Device is added without any change in the piping system.

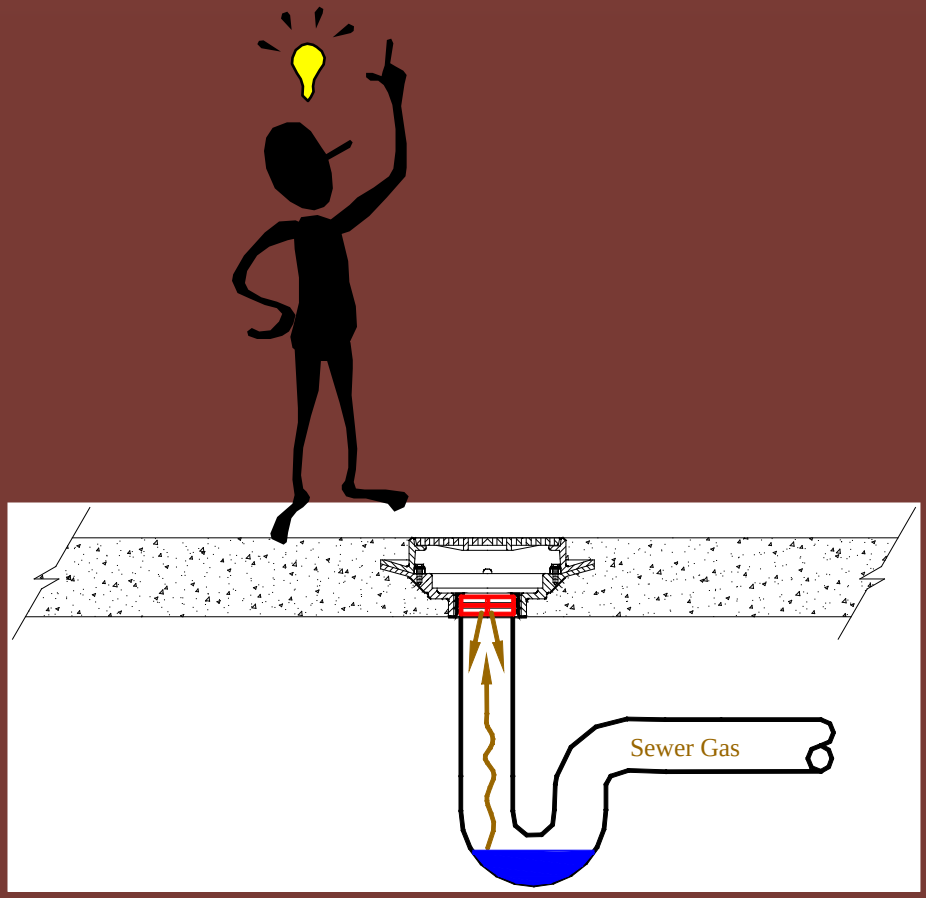
Open Upon Flow



- When water or waste flows into the floor drain the device opens to allow full flow.
- When a no flow condition occurs, the device closes.

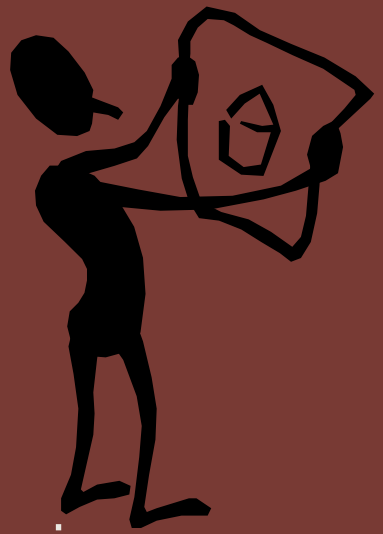
Floor Drain Trap Seal Protection Device

- Designed to prevent evaporation.
- When evaporation occurs, prevents escape of sewer gas.
- Can be easily retrofitted into existing floor drains.
- Must be reliable.



ASSE 1072 – New Standard

- ASSE is developing a new standard to regulate floor drain trap seal protection devices.
- New test protocol includes:
  - Flow test
  - Evaporation test
  - Sewer gas leakage test
  - Long-term performance (cycle testing), opening response to minimal flow (opening test), and material testing



Application of ASSE 1072 Devices

- Originally thought to be a supplement to water supply or drainage supply trap seal primers.
- Intended to be a stand alone device equivalent to trap seal primers.
- Provides three options:
  - Water supplied
  - Drainage supplied
  - Barrier
- Deep seal needs to be eliminated as option.

Preventing Spread of SARS

- SARS Coronavirus (CoV) biological aerosols can be present in sewer gas.
- To prevent the escape through floor drain traps, some form of protection must be provided to protect the seal.