



Use of Hep_vO[®] for ventilation of branch pipes



Technical Note TN10318

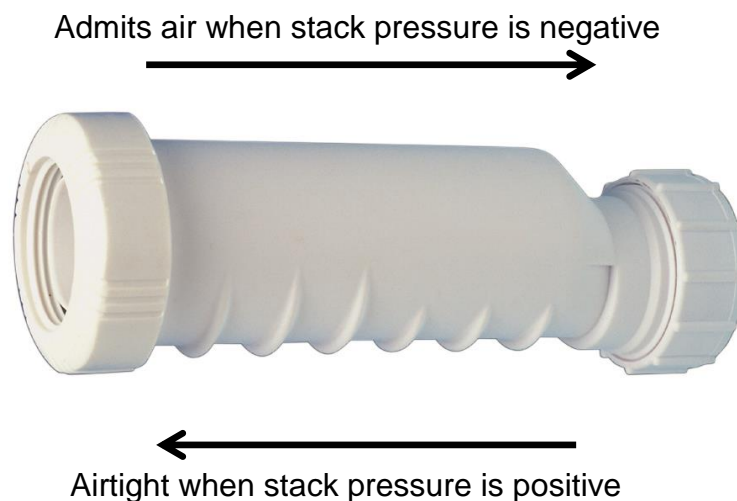
Branch pipe ventilation

Where branch pipes are long or steep, negative pressures can develop in the system which can cause loss of seal in water seal traps by self siphonage. EN 12056-2, Table 6 and Approved Document H1, Diagram 3 give guidance on when provision of branch pipe ventilation is required. This is traditionally by provision of a water seal trap incorporating an AAV.

HepVO[®] used as air admittance valve for branch ventilation

Where Hep_vO[®] is used in place of a water seal trap there is no further need for a branch air admittance valve for venting protection at that appliance.

The Hep_vO[®] will only allow air to enter the systems and will prevent backflow of air from the stack.

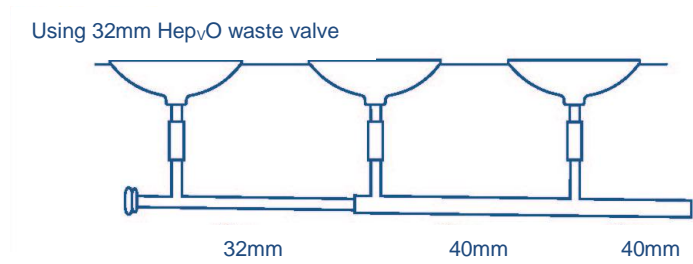


When negative pressure occurs, the Hep_vO[®] valve partially opens and closes until sufficient air flow is drawn to maintain it open. Once equilibrium is reached, the valve closes. Positive pressure in the downstream system applies pressure to the valve keeping it closed.

Plumbing design

Subject to verification, Hep_vO[®] can be used as branch pipe air admittance valves for single or multiple dwellings.

Multiple air admittance valves are also suitable for non-domestic plumbing applications.



As there is no risk of induced siphonage it is not necessary for the branch pipe to be always partially full and therefore it may be possible to reduce the size of the branch pipe.

Performance testing

Because of the mode of operation of the Hep_vO[®] valve, test results obtained by testing to EN 12380:2002 are not directly comparable to results for conventional air admittance valve designs.

However, the Hep_vO[®] valve can be used as an air admittance valve in certain circumstances and tests have been carried out to determine the typical air flow rates that would be observed under negative pressures. Airflow rates in excess of 3l/s are achieved with both valves of 32mm and 40mm diameter in the horizontal orientation compared to 6l/s for a conventional 32mm air admittance valve.

Test (short description of objective)	Relevant standard (and clause)	Criteria, result and comment	Pass / fail
Opening pressure when used as an air admittance valve	BS EN 12380:2002 (6.5)	The minimum opening air pressure for Hep _v O [®] is 54mm head	Pass
Airflow capacity test	Adapted from BS EN 12380:2002 (6.5) (Due to the design of the valve it is not possible to maintain a stable test pressure of 250 Pa, the value is therefore interpolated)	Airflow rates in excess of 3l/s are achieved with both valves of 32 and 40mm in the horizontal orientation compared to airflow of 6l/s for a conventional 32mm air admittance valve	Pass
Resistance to back pressure	Adapted from BS EN 12380:2002 (6.2)	Resistance to back pressure of foul air or water up to 500mm water head	Pass
Thermal Cycling test	BS EN 274-2:2002	Testing with cycles at 20°C ±5 to 95°C	Pass
Fatigue cycling	Based on BS EN 1055:1996	Temperature cycling test at 15°C and 96°C	Pass
Drop test	BS EN 12380:2002		Pass