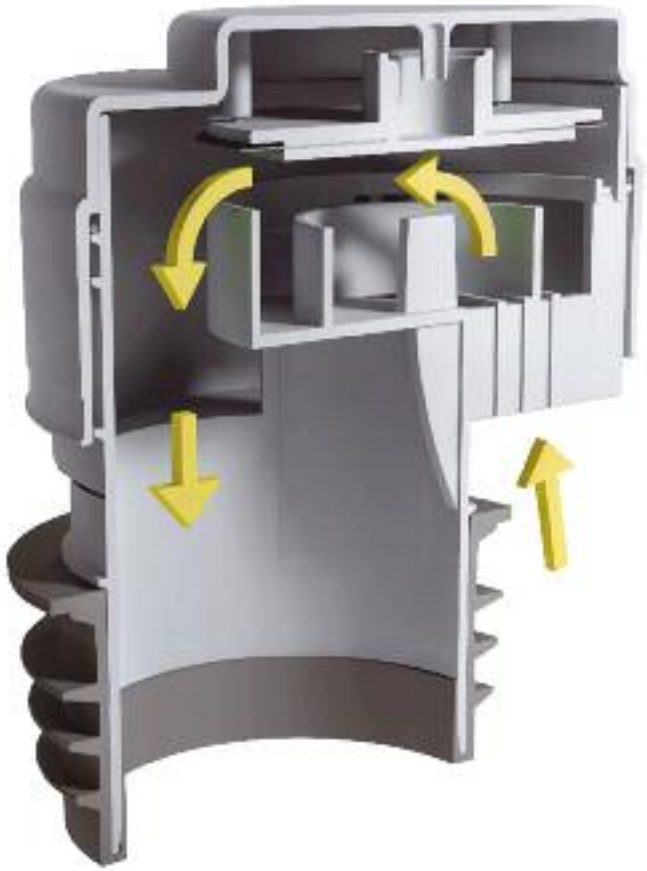
McALPINE Plumbing Products

Air Admittance Valves (Ventapipe)

SECTION 6

Air Admittance Valves (Ventapipe)



Valve open

Valve closed

Code **VP100**

Ventapipe 100 and Ventapipe 50 Application

Ventapipe 100 and Ventapipe 50 Air Admittance Valves are for use in above ground drainage systems. They are designed to:

- Provide a means of ventilation to the drainage system under conditions of reduced pressure when ventilating pipes are terminated inside buildings in accordance with BS EN 12056-2:2000

Operation

The two diagrams illustrate how Ventapipe functions. The valve diaphragm lifts and allows air to be drawn into the system when it is subjected to negative pressure. On cessation of negative pressure the diaphragm returns to the closed position thereby preventing the escape of foul air into the building.

The valve is designed to open and close spontaneously when required thereby allowing a supply of air to adequately ventilate the system thus ensuring a smooth discharge.

Approval

Approved Document H of The Building Regulations 2000 (2002 edition) requires that air admittance valves comply with BS EN 12380:2002.

All McAlpine Ventapipe air admittance valves listed have been independently tested by the LGA Testing House and certified as being compliant with BS EN 12380:2002 and designated as Class A1.

This means that Ventapipe can be installed:

- Above or below the flood level of connected appliances
- Ventapipe has an operating temperature range of -20ºC to + 60ºC
- Ventapipe was granted A1 classification without the necessity of a polystyrene cover
- Ventapipe has been tested at -250 Pa for their air flow capacity and the flow rate is stated alongside each valve listed

Quality Certificate

The LGA Quality Certificate certifies a product's high and consistent quality. It confirms the performance capability (functional characteristics, wear and tear and service life) of a product and therefore its comprehensive quality. Annual production inspections ensure its consistent quality. Whenever the LGA Quality Certificate is on a product it ensures it has been thoroughly tested.

Advantages

- Ventapipe enables ventilating pipes to be terminated inside the building thereby avoiding roof penetration
- Ventapipe allows greater flexibility in design of new drainage systems
- Ventapipe allows greater flexibility when installing additional appliances to existing drainage systems
- Ventapipe eliminates problems of freezing associated with external pipes
- Ventapipe is suitable for use with either plastic or metal pipes
- Ventapipe offers cost savings in both material and labour

Information for General Guidance only

- Underground foul drainage should be ventilated by a flow of air. A ventilating pipe should be provided at or near the head of each main drain
- An open ventilating pipe, without an air admittance valve, should be provided on any drain fitted with an intercepting trap, particularly on a sealed system and on any drain subject to surcharge
- Air admittance valves should not be used when the soil stack provides the only ventilation to septic tanks or cesspools
- Air admittance valves should not be used where there is no open ventilation on a drainage system or through connected drains and therefore alternative arrangements to relieve positive pressures should be considered
- Air admittance valves should not be used outside buildings or in dust laden atmospheres. They should be located preferably in a non-habitable space, such as a duct or roof. The space should have adequate ventilation and be accessible for maintenance
- Air admittance valves should be removable to give access for clearance of blockages
- Air admittance valves can indicate the probability of blockages within the drainage system. This can be indicated by high water levels in WC bowls following flushing and the slow draining of appliances upstream from the blockage
- Sizes and limitations upon the use of air admittance valves are subject to national and local regulations and practice. If further detail is required check with the local authority building control office
- Kinetic ram guns should not be used to shift blockages on installations where air admittance valves are fitted as undue pressure and blowback may cause malfunction

Ventapipe 15, 25, 40 and 50 Application

VP15, 25, 40 and 50 air admittance valves can be used as alternatives to anti-syphon and resealing traps to ventilate the waste pipe system in order to overcome problems such as noisy discharge or loss of trap seal caused by induced or self-syphonage. They are particularly advantageous when installing additional appliances to existing waste pipe(s).

Code **VP100**

Air Admittance Valves (Ventapipe)

Code	Class	Air Flow Capacity (Litres per second)	Colour
	Ventapipe 100 with dual-fit synthetic rubber finger seal outlet for 3"/75mm or 4"/110mm pipe 4"/110mm pipe - push over rubber seal 3"/75mm pipe - push into rubber seal		
VP100	A1	47.2	Grey
	Ventapipe 100 with solvent weld outlet for 4"/110mm pipe		
VP100N	A1	19.4	Grey
	Ventapipe 50 with dual-fit synthetic rubber finger seal outlet for 3"/75mm or 4"/110mm pipe. Also incorporates 2" universal compression outlet 4"/110mm pipe - push over rubber seal 3"/75mm pipe - push into rubber seal		
VP50-100	A1	16.3	Grey
	Ventapipe 50 with dual-fit synthetic rubber finger seal outlet for 3"/75mm or 4"/110mm pipe 4"/110mm pipe - push over rubber seal 3"/75mm pipe - push into rubber seal		
VP50P	A1	15.5	Grey
	Ventapipe 50 with 2" universal compression outlet		
VP50	A1	14.2	Grey
	Ventapipe 40/50 solvent weld outlet for 1¼", 1½" or 2" BS EN 1329-1:2000 solvent weld waste pipe		
VPSF-40/50	A1	9.1	White

Ventapipe 25 with 1½" BSP thread on outlet

Code	Class	Air Flow Capacity (Litres per second)	Colour
VP1	A1	3.0	Grey
VP1W	A1	3.0	White

Ventapipe 25 with 1½" universal compression outlet

VP2	A1	3.0	Grey
VP2W	A1	3.0	White

Ventapipe 25 with integral 1½" Multifit tee

VP3	-	4.5	White

Ventapipe 25 with integral 1¼" Multifit tee

VP4	-	2.0	White

Ventapipe 15 with 1¼" universal compression outlet

VP15M	-	0.5	Grey

Air Admittance Valves (Ventapipe)

Internal/External Air Admittance Valve for 110mm Soil Pipe

- Incorporates a stainless steel mesh in the air intake which eliminates insect and debris ingress
- Complies with BS EN 12380:2002
- Designation Class A1
- Air Flow Capacity (litres per second) 40
- Range of temperature: -20°C to +60°C
- Can be installed above or below the flood level of connecting appliances
- LGA Quality Certificate - certifies the product's high and constant quality and confirms the performance capability

Code	Class	Air Flow Capacity (Litres per second)	Colour
Ventapipe 100 with dual-fit synthetic rubber finger seal outlet for 4"/110mm pipe			
VP100E	A1	40	Black
VP100E-WH	A1	40	White
VP100E-GR	A1	40	Grey

Internal Air Admittance Valve

McAlpine recommends that Air Admittance Valves be installed internally within the building.

AAVs should be located preferably in a non-habitable space such as a duct or roof space with adequate ventilation and must be accessible for maintenance.

AAVs must be installed in the vertical position.

Internal Advantages

- Enables ventilating pipes to be terminated inside the building thereby avoiding roof penetration
- Allows greater flexibility in design of new drainage systems
- Allows greater flexibility when installing additional appliances to existing drainage systems
- Eliminates problems of freezing associated with external pipes
- Suitable for use with either plastic or metal pipes
- Offers cost savings in both material and labour

External Air Admittance Valve

Although there are no regulations for an AAV to be installed externally, it may be advantageous in certain circumstances, be it design or otherwise, to allow installation into an external soil stack and some of the advantages are as follows:

External Advantages

- The external soil stack may be terminated below the roofline which reduces the amount of soil pipe and fittings required
- The AAV may be installed at a minimum height of 200mm above the highest wet branch connection
- Fitted externally the AAV is easy to access for maintenance if required
- Reduces installation time and materials
- It may be prudent to seek guidance from the local building department

Valve open

Valve closed

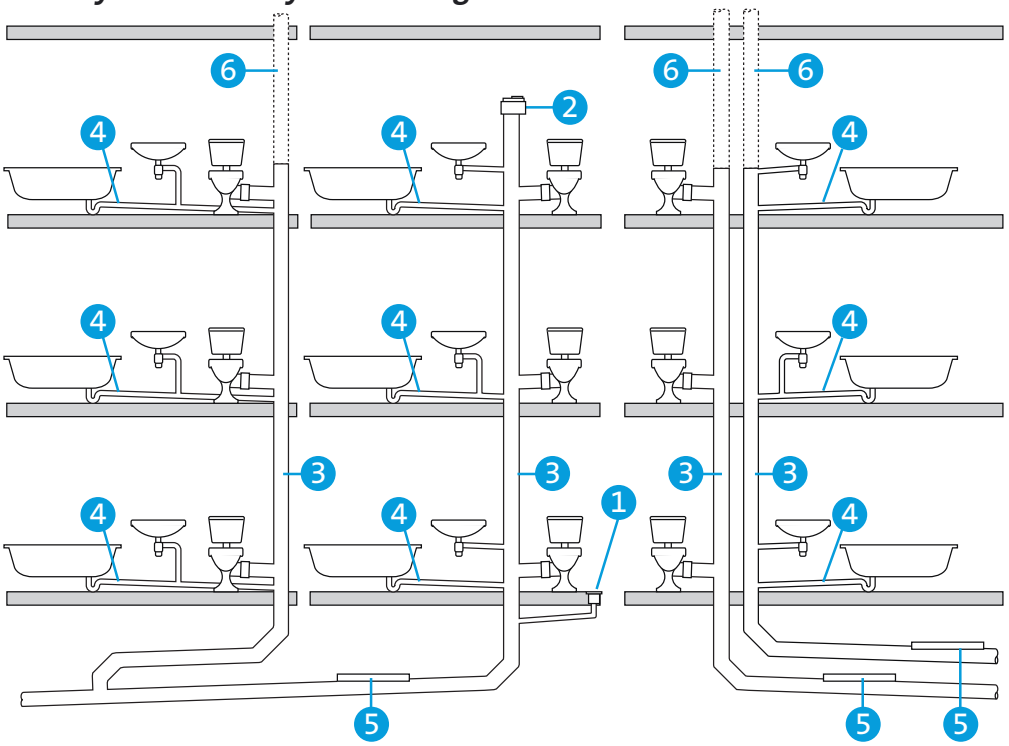
Operation

The two diagrams illustrate how Ventapipe functions. The valve diaphragm lifts and allows air to be drawn into the system when it is subjected to negative pressure. On cessation of negative pressure the diaphragm returns to the closed position thereby preventing the escape of foul air into the building.

The valve is designed to open and close spontaneously when required thereby allowing a supply of air to adequately ventilate the system thus ensuring a smooth discharge.

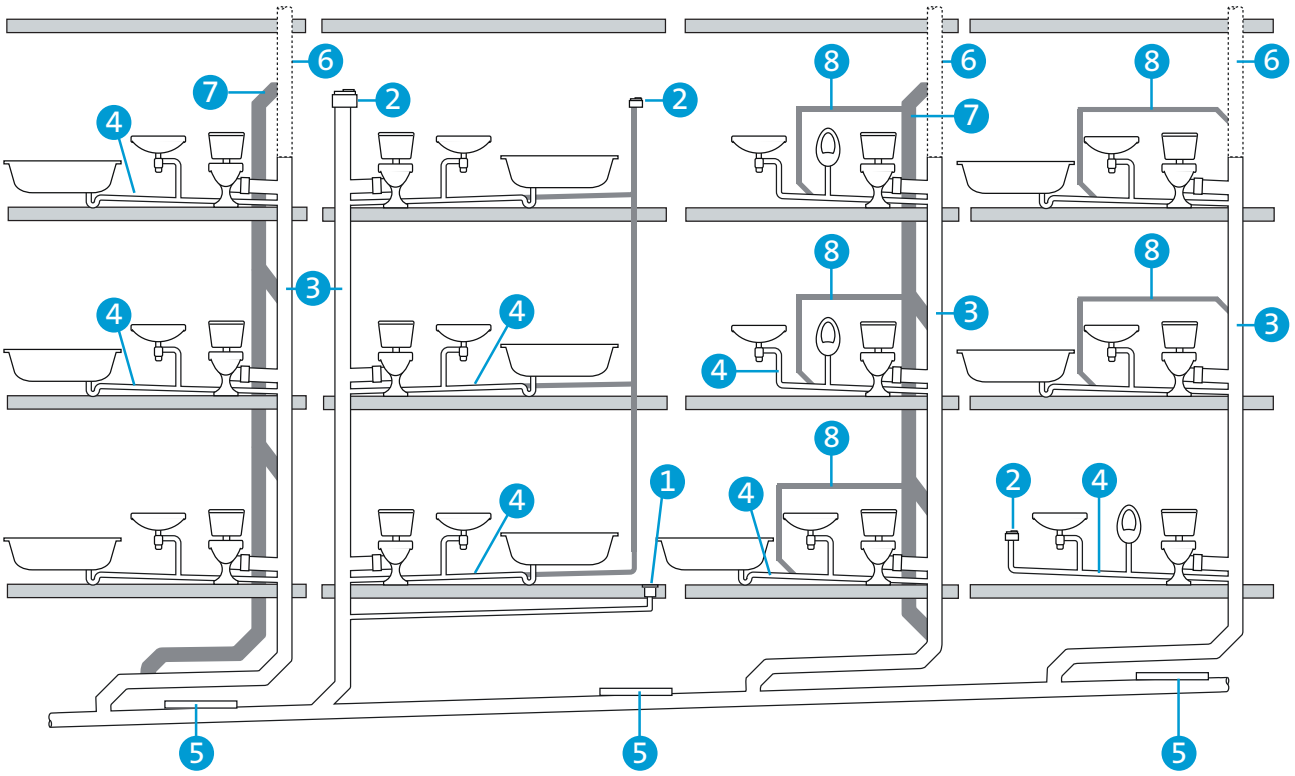
Illustrations from BS EN 12056-2:2000 Gravity Drainage Systems Inside Buildings to demonstrate installation variations for Air Admittance Valves

Primary Ventilated System Configuration



1. Floor gully
2. Air admittance valve
3. Stack
4. Branch discharge pipe
5. Drain
6. Stack vent

Secondary Ventilated System Configuration



1. Floor gully
2. Air admittance valve
3. Stack
4. Branch discharge pipe
5. Drain
6. Stack vent
7. Ventilating stack
8. Branch ventilating pipe

Control of pressure in the discharge stack is achieved by use of separate ventilating stacks and/or secondary branch ventilating pipes in connection with stack vents.

Alternatively, air admittance valves may be used.