

AAV's – An Introduction

Steve Skeldon

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THE BPF PIPES GROUP



The **BPF Pipes Group** is the leading trade association representing manufacturers and material suppliers of plastic piping systems in the United Kingdom.

UTILITIES



RECYCLABILITY
All plastic pipe waste is either recyclable into new products or a viable source of a calorifically rich fuel.

18
AT LEAST
18 DIFFERENT APPLICATIONS
for plastic pipes

1
FIRST PVC PIPES
introduced in 1930s

BPF PIPES GROUP MEMBERS are committed to sell and promote products that are third party approved to the appropriate standards

AMOUNT OF PIPE INSTALLED ANNUALLY
288,000KM



UK MEMBER EMPLOYEES
6200

DIRECT EMPLOYEES
5500

INDIRECT EMPLOYEES
700

THE BPF PIPES GROUP is committed to raising industry standards through best practice and guidance documents

OVER 400 STANDARDS
(BS/BS EN/BS ISO) for thermoplastic pipes

ANNUAL TURNOVER of members **£8.9 billion**

REPRESENTING MANUFACTURERS since 1962

TODAY'S UNDERGROUND PLASTIC PIPES HAVE A LIFE EXPECTANCY OF OVER 100 YEARS

Learning objectives

- Evolution and importance of Air Admittance Valves in our homes
- Product and installation standards and approved documents of the Building Regulations
- Design and installation points
- Typical site issues

Agenda

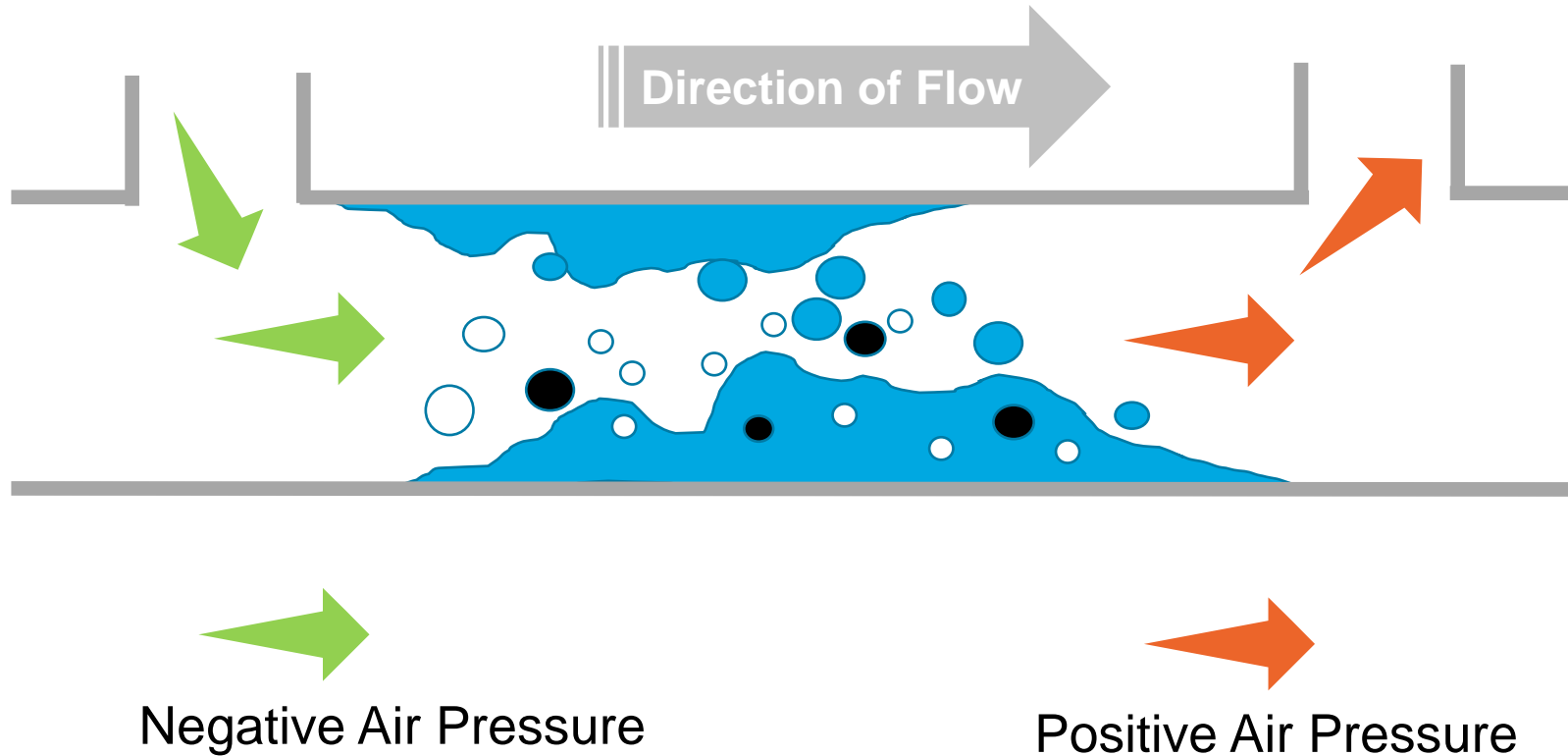
- 1) Soil and Waste venting in homes
- 2) Background to AAV's and how they work
- 3) Product and Installation Standards
- 4) Design and Installation



1. Soil & Waste venting in homes

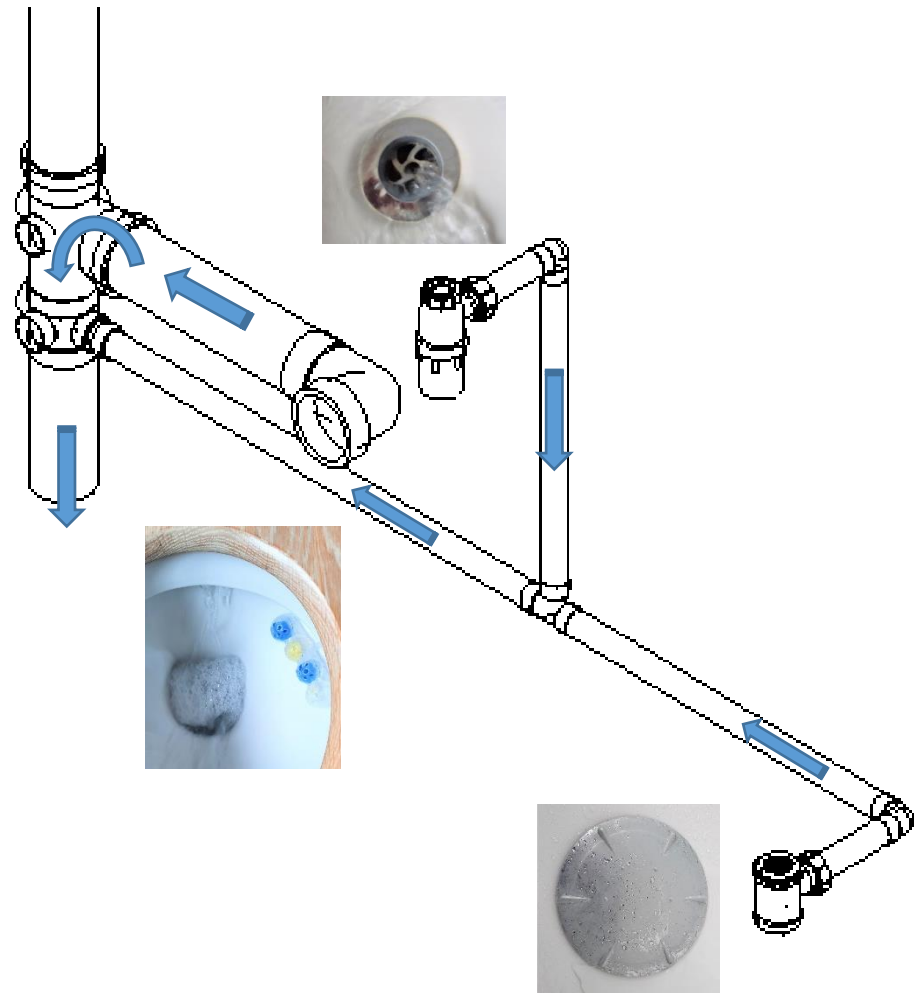


Air Pressure Fluctuations



What happens in a Soil & Waste system

- Wastewater discharged with use
- Creates positive and negative air pressure
- With insufficient, negative pressure creates vacuum and traps can siphoned
- Removing protective barrier between the air inside the home and the sewer pipe



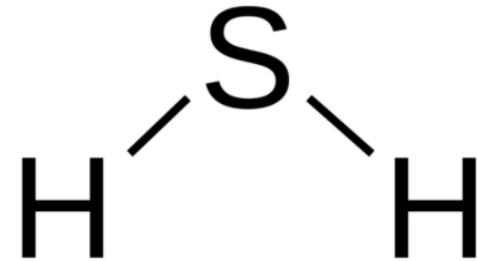
Why do we need that barrier?

Sewer gas contains:

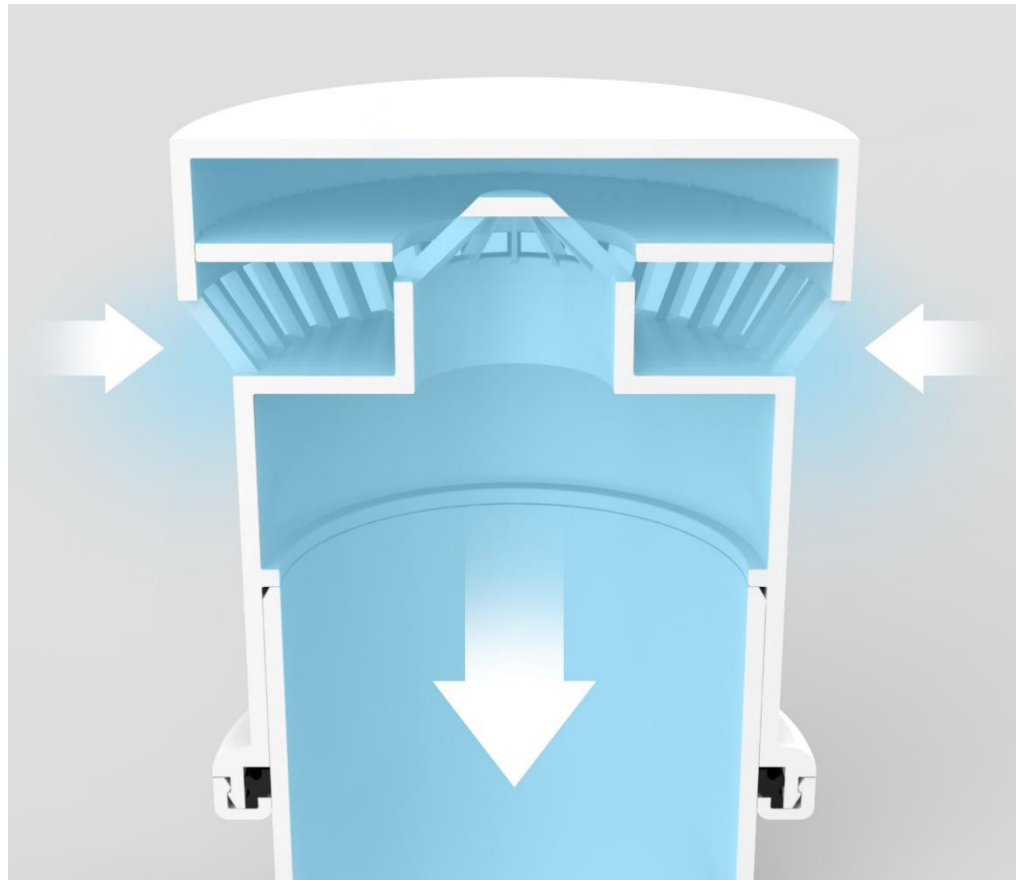
- Nitrogen, Oxygen, CO₂

But also...

- Methane, Hydrogen Sulphide, Nitrogen Oxide, Sulphur Dioxide
- Nausea, dizziness, respiratory conditions, eye irritations
- Harmful pathogens – bacteria and viruses
- Explosive



2. AAV's and how they work



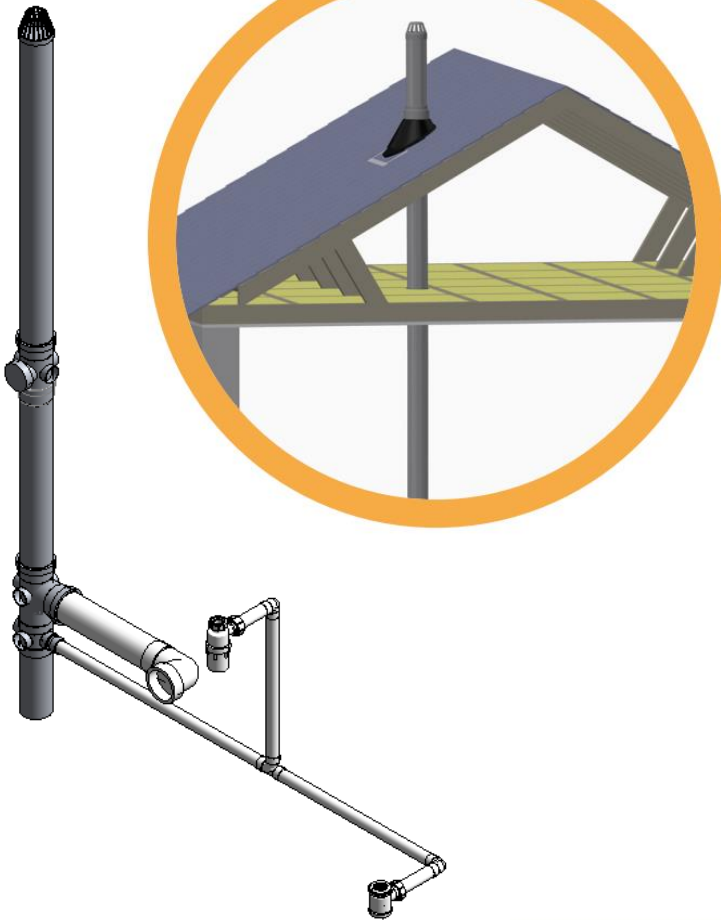
Background to AAV's

- Early examples Sweden
1970's
- One way valve

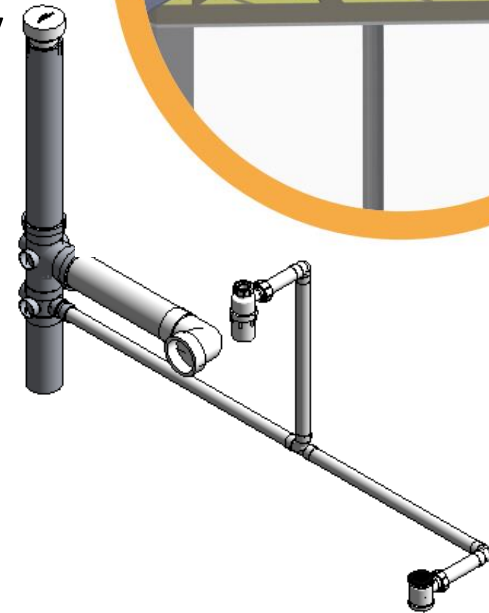


Stack venting in typical home

open
vent

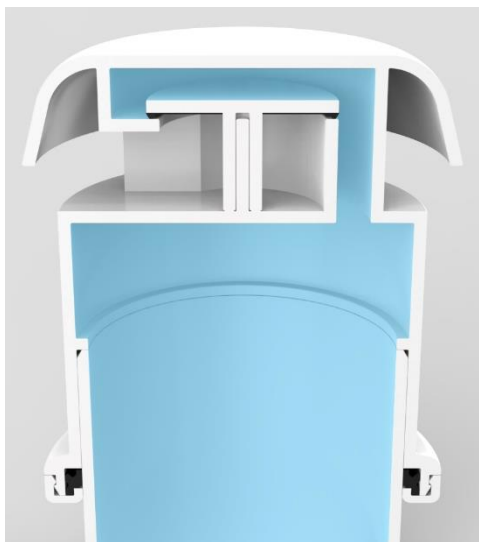


AAV

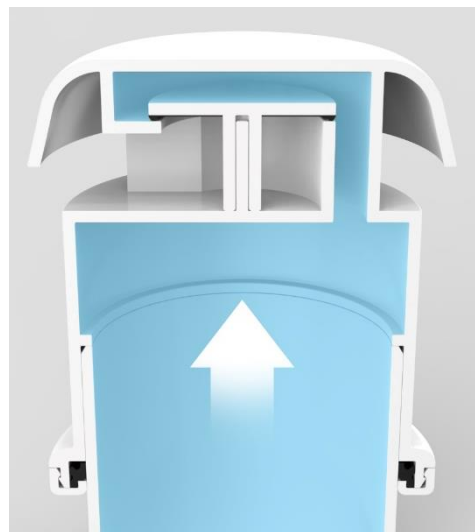


How AAV's work

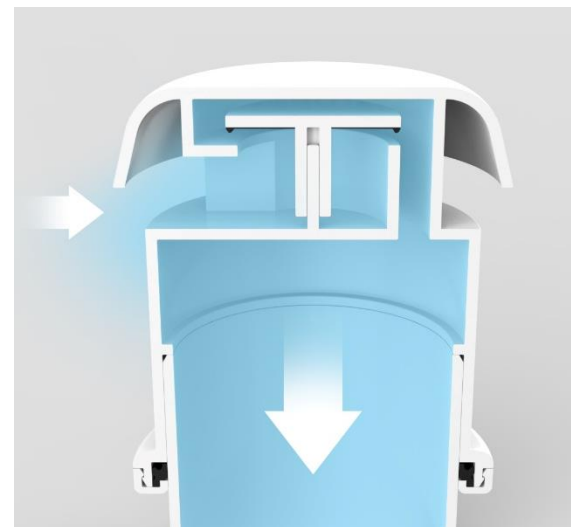
Passive: 0 Pressure



+ve Pressure

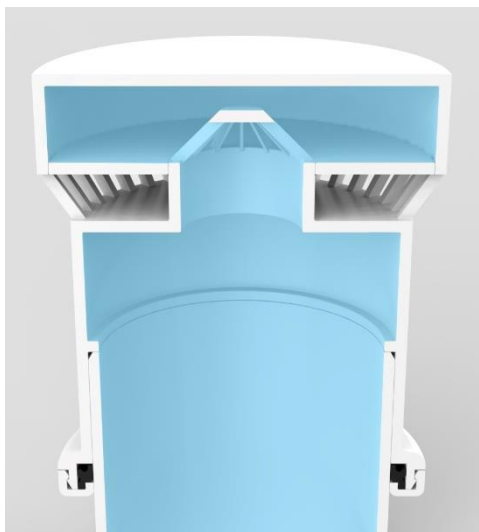


-ve Pressure

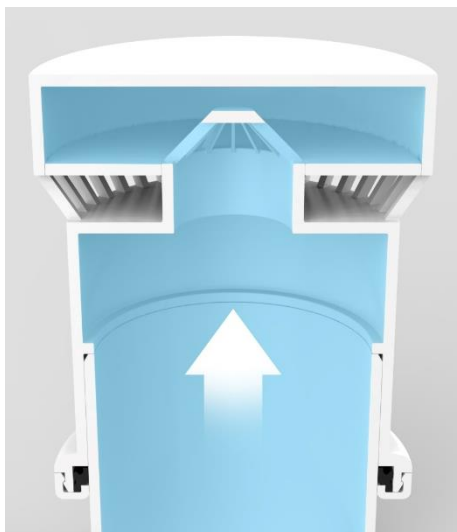


How AAV's work

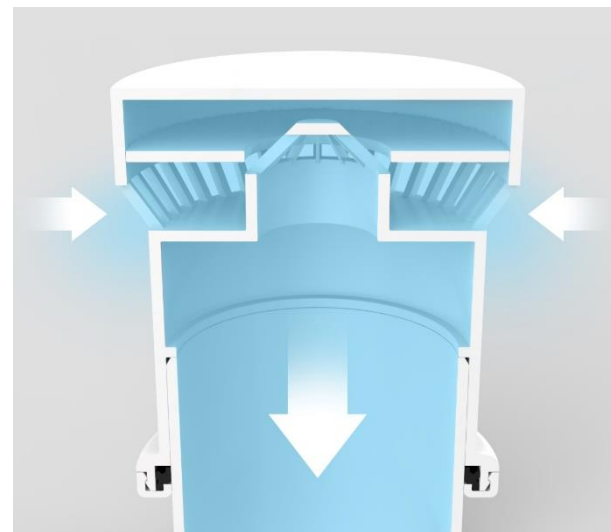
Passive: 0 Pressure



+ve Pressure

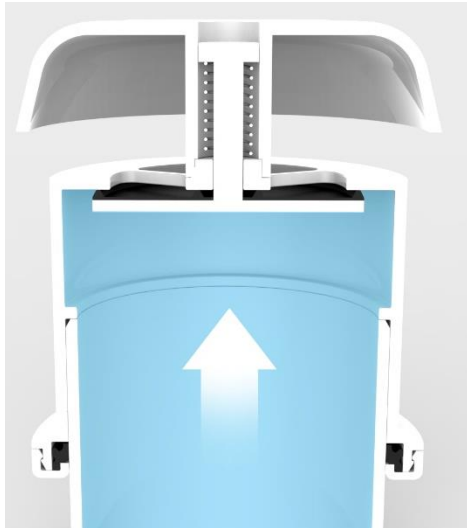


-ve Pressure

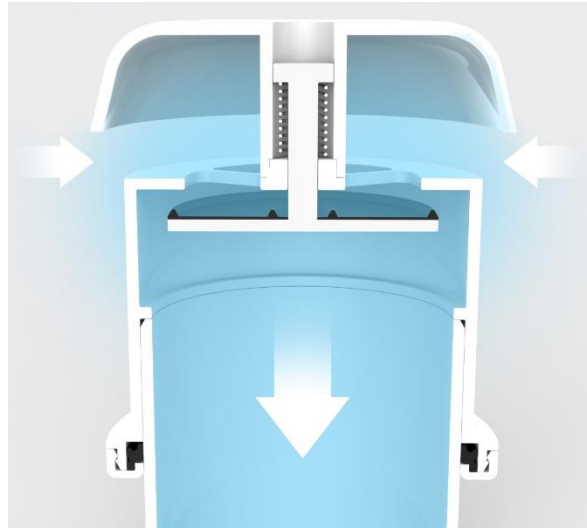


How AAV's work

+ve Pressure



-ve Pressure



3. Product & Installation Standards



A common purpose - Approved Doc H

- Adequate system of drainage
- Prevents foul air
- Minimises blockage risk
- Ventilated
- Accessible
- Does not contribute to flooding risk



Drainage and waste disposal

H

APPROVED DOCUMENT

H1	Foul water drainage
H2	Wastewater treatment systems and cesspools
H3	Rainwater drainage
H4	Building over sewers
H5	Separate systems of drainage
H6	Solid waste storage

Product & Installation Standards

SCOTLAND	ENGLAND AND WALES	NORTHERN IRELAND
Technical Handbook Clause 3.7.8	Approved Document H Clause 1.33	Technical Booklet N Clauses 2.13 & 2.15
Allows for the installation of Air Admittance Valves where they are fitted: <ul style="list-style-type: none">• in accordance with BS EN 12380or• in compliance with the conditions of certification of a notified body.	Allows for the installation of air admittance valves where they are fitted in accordance with BS EN 12380.	Allows for the installation of air admittance valves where they are fitted in accordance with BS EN 12056: Part 2 and BS EN 12380.

BS EN 12380 - Air admittance valves for drainage systems. Requirements, test methods and evaluation of conformity

British Board of Agrément (BBA) Certification

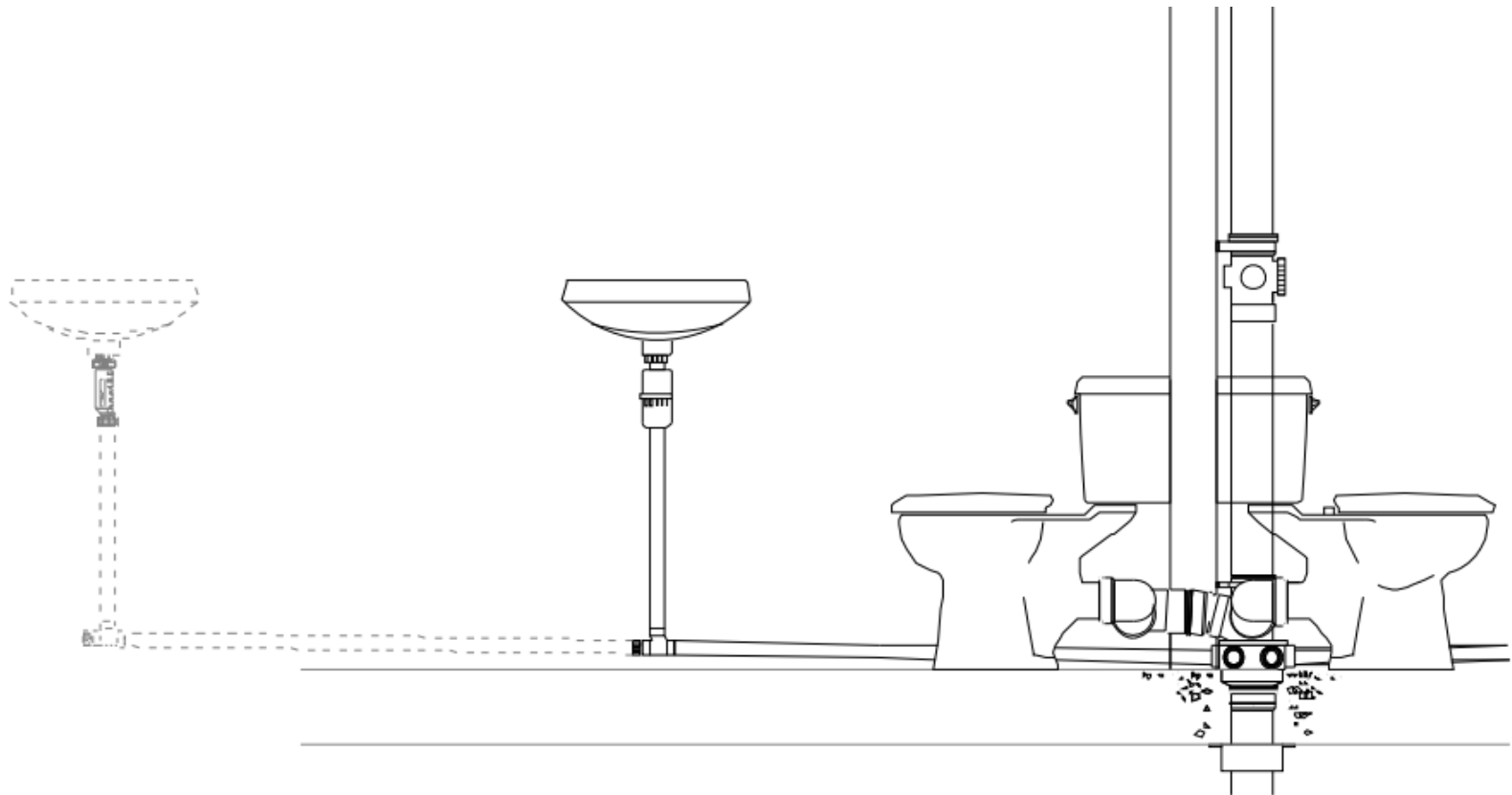
BS EN 12056 – Gravity Drainage Systems inside buildings

Designation System

BS EN 12380: 2002 Table 1

Determining Factor	Range / Position	Designation
Permitted to be located below flood level of connected appliances	Yes	A
	No	B
Operating Temperature Range	-20 °C to +60 °C	I
	0 °C to +60 °C	II
	0 °C to +20 °C	III

4. Design & Installation

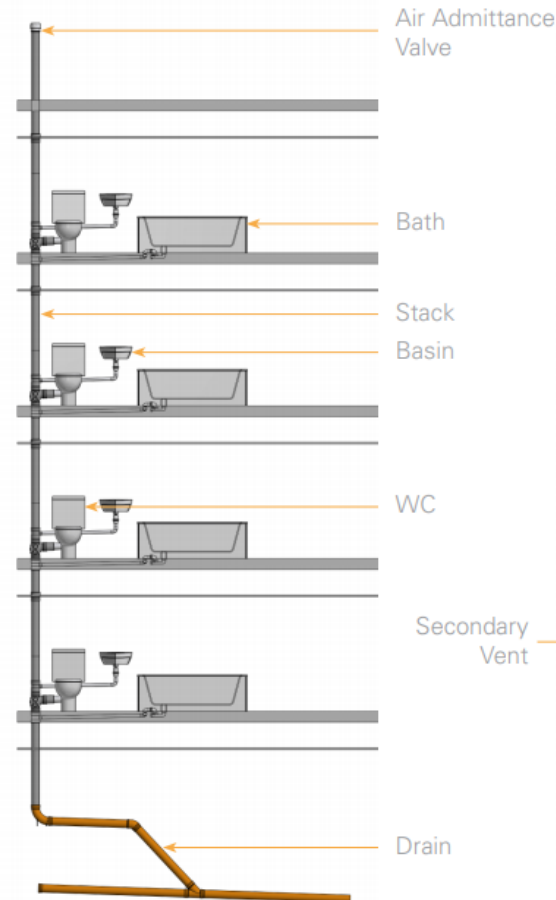


Soil stack ventilation

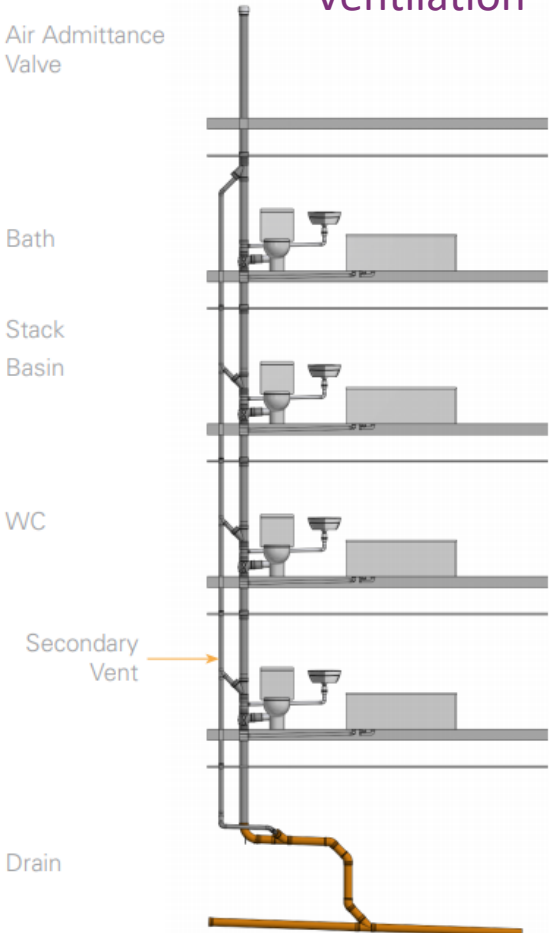
Air pressure managed

- Main soil stack
- Additional air capacity with separate ventilating stack or secondary branch pipe ventilation

Primary Ventilation



Primary & Secondary Ventilation



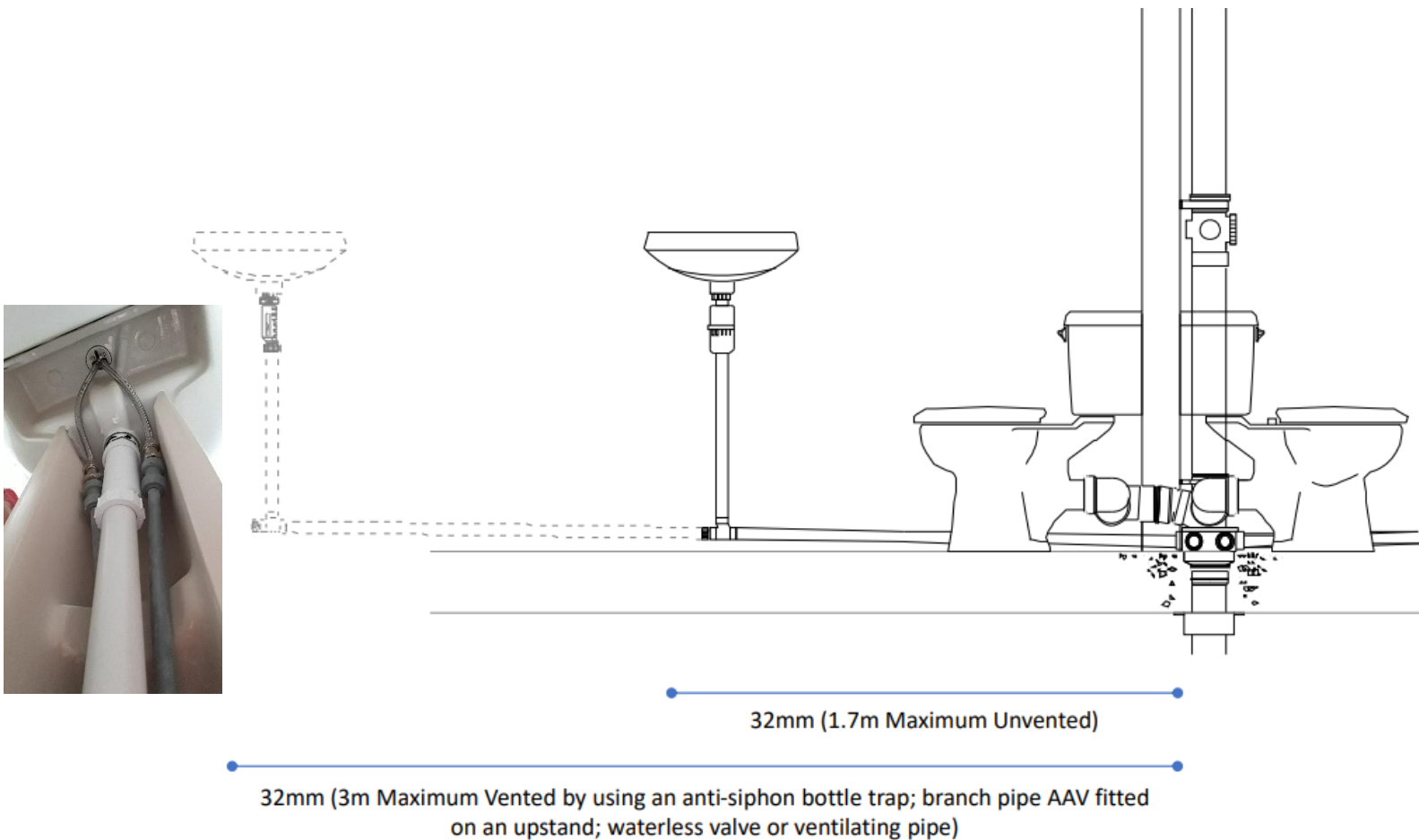
Branch Pipe ventilation

Additional venting not always needed, but where it is:

- Smaller AAV's
- Waterless traps
- Anti-siphon trap
- Secondary vent



Going the extra mile (or 1.3mtrs)

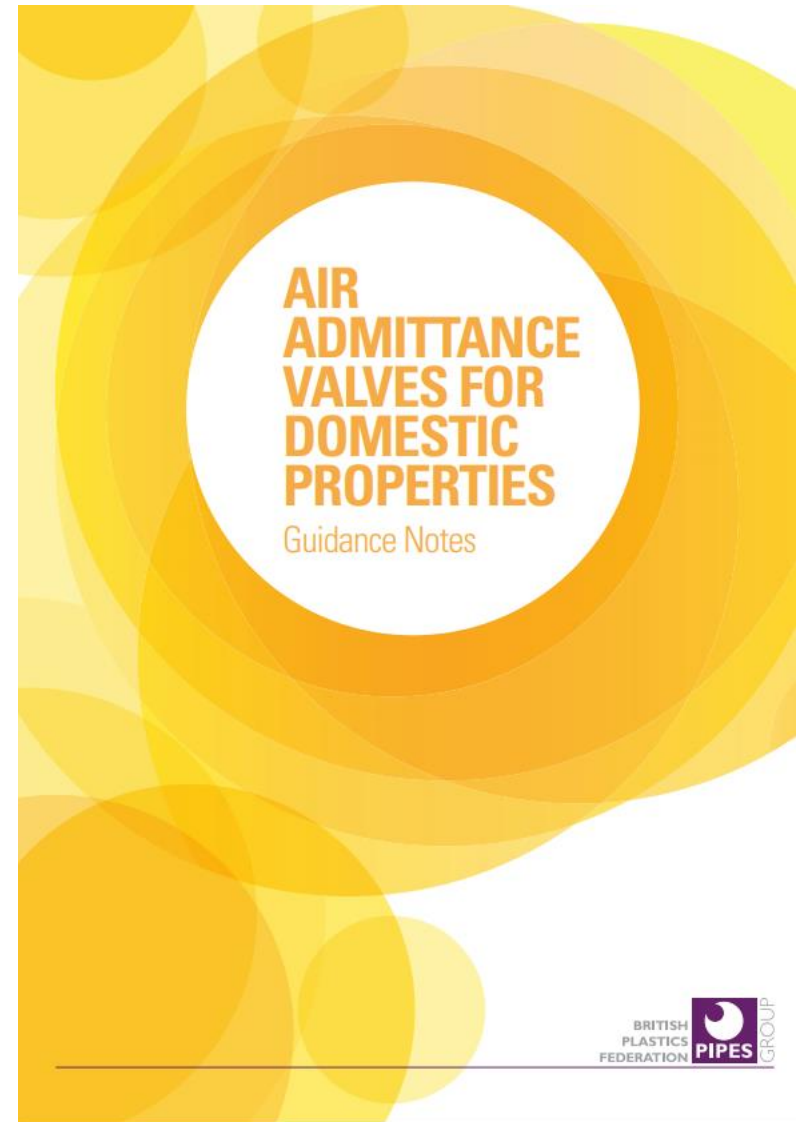


Aligning airflow to valve

Sizing the primary ventilated soil stack in line with BS EN 12056

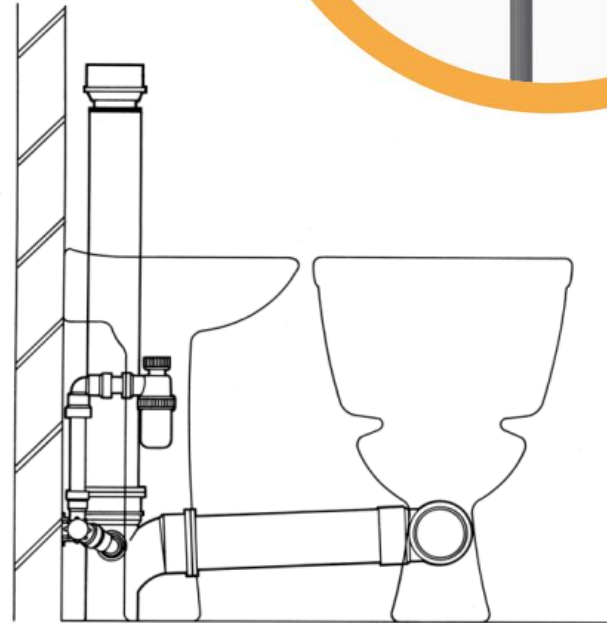
Worked examples

Check airflow performance of AAV



Good practice

- Well ventilated
- Accessible
- Stub Stacks
- Extra precautions for external installation
- Avoid dusty environments
- Additional insulation



If in doubt...



Learning objectives summary

- To provide an insight into the evolution and importance of Air Admittance Valves in our homes
- To provide a short overview to the relevant product and installation standards and approved documents of the Building Regulations
- To provide a summary of key design and installation points
- Typical site issues reported to manufacturers and resolutions

Any questions?

BRITISH PLASTICS FEDERATION PIPES GROUP

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About Us

BRITISH PLASTICS FEDERATION PIPES GROUP

The British Plastics Federation (BPF) Pipes Group is the leading trade federation of the UK plastic piping systems industry and a member of the European Plastic Pipes and Fittings Association (TEPPFA).

> Learn More

Applications

Under the directive of the BPF Pipes Group Council the group is split into Application Groups encompassing the wide range of applications covered by plastic piping systems.

- > Civils/Utilities
- > Building Services

Support and Downloads

Access information resources in the form of News Articles, Guidance Notes and Position Statements which cover areas of interest to specifiers, manufacturers and installers of plastic piping systems.

> Learn More

www.bfppipesgroup.com

Future webinars

- The Right Choice – The Role Of EPDs In The Selection Of Pipe Systems – 2nd September
- The Role Plastic Pipes Will Play In The Delivery Of Net Zero – 20th October
- Designing Drains And Sewers – 24th November

Contact Details

- Web: www.bfpipesgroup.com
- Email: carol.day@bfpipesgroup.com
- Tel: 07807 113537