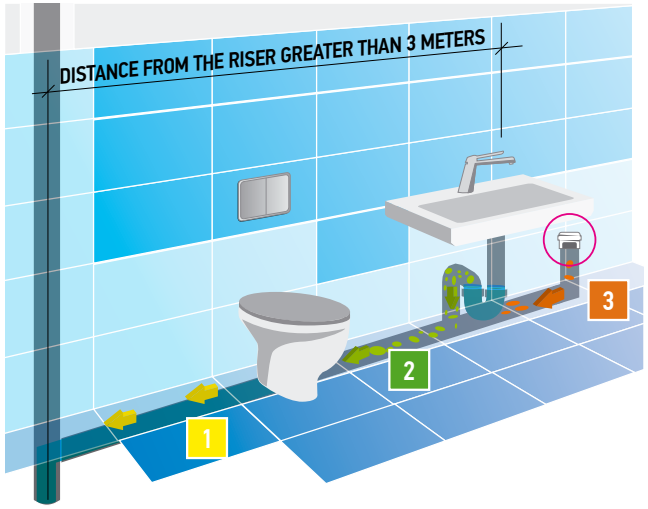
Principle of operation

Sewage flow can produce negative pressure which opens the **HypAirBalance** air admittance valve to allow air into the system and equalise the internal pressure.

While there is no negative pressure, the air admittance valve closes, thus preventing the spread of bad odours.

With positive or equalised pressure, the air admittance valve remains closed.



1. Waste water drainage from sanitary facilities.
2. Negative pressure generated by water drainage.
3. Active **HypAirBalance** air admittance valve equalises pressure and prevents the spread of sewer gases.

Capricorn

AIR ADMITTANCE VALVES
HypAirBalance

Ø	Product code	Colour
70-110	9-2730-070-10-03-01	white
70-110	9-2730-070-10-03-03	grey
70-110	9-2730-070-10-03-10	black
110	9-2731-110-00-03-01	white
110	9-2731-110-00-03-03	grey
110	9-2731-110-00-03-10	black
32-63	9-2730-030-63-03-01	white
50	9-2731-050-00-03-01	white
40/50	9-2732-050-00-03-01	white

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Capricorn

Sanitary systems

AIR ADMITTANCE VALVES
HypAirBalance

MaxiHab

EN 12380 AI RATED

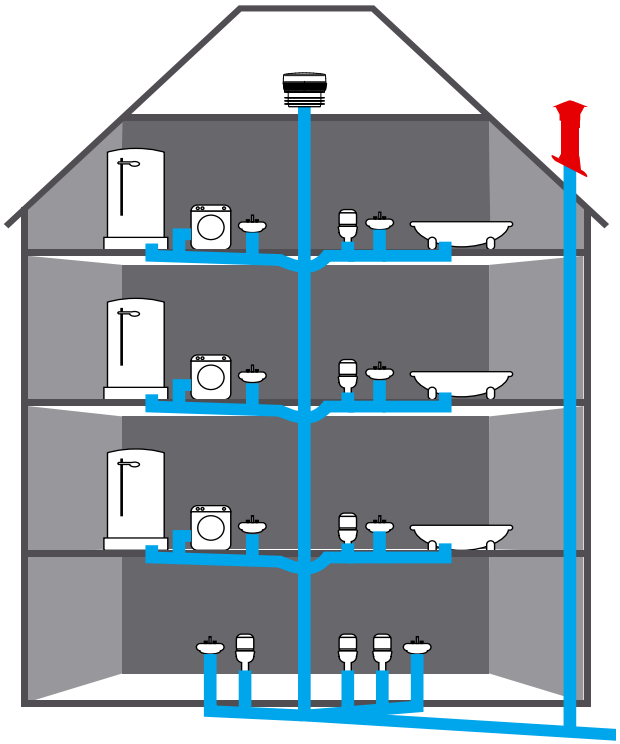
MiniHab

CE
PN-EN 12380

www.capricorn.pl

Selection of air admittance valves

Example: Calculations for a residential building (based on EN 12056)



Purpose: sanitary system in a flat

Sanitary fixtures	Number of fixtures / riser	Sewage flow rate [l/s]	Total flow rate [l/s]
WC	6	2,0	12
Washbasin	8	0,5	4
Bath	3	0,8	2,4
Shower	3	0,6	1,8
Washing machines	3	0,8	2,4
Total flow rate [l/s]			22,6

Required air volume

The system usage rate K for a flat is 0.5

$$Q_{ww} = K\sqrt{\sum DU}$$

Key:
Qww = total flow rate (l/s)
K = system usage rate
$\sum$ DU = sum of unit flows
Qa = required air volume

Qww (total flow rate) = 0.5 x square root of 22.6= 2.38 (l/s)

With one air admittance valve for an entire riser, it is necessary to ensure air supply 8 times higher than the calculated flow rate.

Required air flow rate: 8 x 2.38 = **19,04 l/s**
HypAirBalance air admittance valves designed for use in MaxiHab risers provide a flow rate of 25,4 l/s which is ideal for the case at hand.

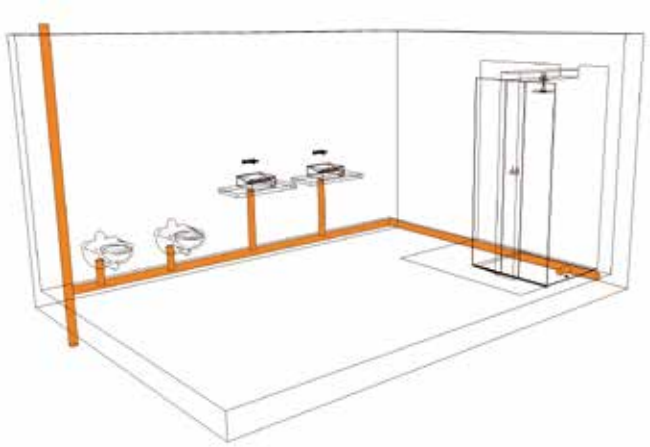
Application

Air admittance valves support the operation of a sewage system and improve the flexibility of interior design in areas where sanitary fixtures connected to the sewage system are located – most often in the bathroom or kitchen.

While designing and implementing a sewage system, it is necessary to comply with the specifications relating to the sequence of sanitary facilities and their distance from the riser as described in the applicable standard – otherwise water may be sucked out of siphons, the system may malfunction, etc. This significantly limits the possibility of interior design and arrangement of sanitary fixtures.

HypAirBalance air admittance valves increase the installability of sewage systems because they enable more flexible arrangement of sanitary facilities and user-defined sequence of connecting sanitary fixtures.

Selection of HypAirBalance air admittance valve to your bathroom:
Taking into consideration a bathroom equipped with: 2wc/2washbasins/1shower



We can calculate the number of required branched sections for sewage discharge:

Sanitary fixtures	Number of fixtures / riser	Sewage flow rate [l/s]	Total flow rate [l/s]
WC	2	2,0	4,0
Washbasin	2	0,5	1
Shower	1	0,6	0,6
Total flow rate [l/s]			5,6

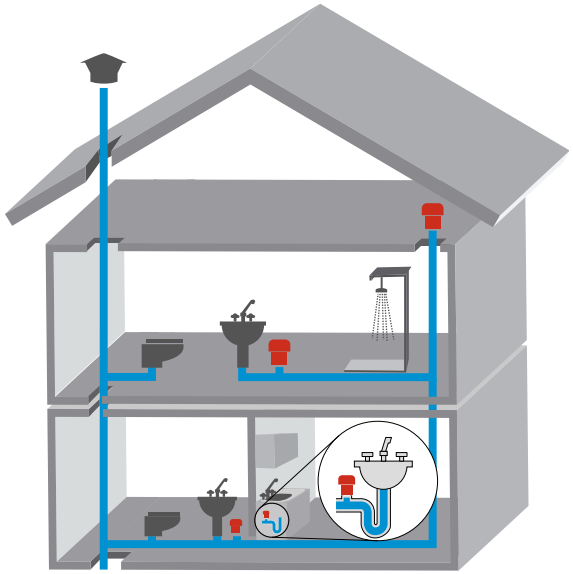
Required air volume

Design flow rate in the branched section: 5.6 l/s

The required air supply to the system can be calculated using the same formula:
Qww = 0.5 x square root of 5.6= 1.18 (l/s)

Required air volume: **1 x 1,18 = 1,18**
or for a different type of system: **2 x 1,18 = 2,36 l/s**

Installation site



Air admittance valves are ideal for installation at the ends of non--ventilated risers and near sanitary fixtures located at a considerable distance from the riser.

MiniHab air admittance valves are designed for use in branched sections of the sewage system and in small risers.

MaxiHab air admittance valves are suitable for use in sewage risers and branched sections with high flow rate.

HypAirBalance air admittance valve

- Eliminates the generation of negative pressure in the system.
- Prevents the spread of sewer gases and bad odours.
- Helps to improve the performance of a sewage system – facilitates sewage discharge.
- Eliminates the possibility of water coming out of siphons.
- Reduces investment costs – smaller number of lead-through points in the roofs, not all risers have to be ventilated with a venting device.
- Helps to improve the flexibility of arrangement of sanitary fixtures – enables greater distance between the fixtures and the riser.