Sovereign
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Technical Data Sheet 287

Sovereign Passive Vapour Vent MK1

A passive sleeved wall ventilation kit

Product Code
30806762

Description
A passive wall ventilation kit combining a through the wall warm telescopic rectangular section sleeve, incorporating an inner slab of mineral wool, with internal louvered vent and external grille.

Dimensions

Aperture:	230 x 155 mm (standard 9"x 6" Air brick)
Main tube extended:	350 mm
Main tube closed:	260 mm
Main tube width:	220 mm
Main tube height:	140 mm

These are easy to fit as bricks or air bricks are simply replaced with a Passive Vapour Vent Mk1. Sovereign can also supply cylindrical Passive Vapour Vents.

Key features and benefits
- Transparent to water vapour.
- Reduces draughty air flow and heat loss.
- No moving parts.
- No running costs.
- Works passively 24 hrs a day
- Works at peak condensation times.
- Makes no noise.
- No night time disturbance from compressors or fans.
- Low installation cost.

Properties
The 'Passive' vent provides an opening on a section of wall normal to the airflow direction with an effective area well in excess of the minimum requirement.

Airflow through the opening is controlled automatically by the intervening mineral wool slab and thereby avoids undue draughts.

It is important to realise that the release of moisture vapour pressure within a dwelling to avoid condensation does not require a specific ventilation rate.

The moisture vapour pressure within a dwelling is always higher than the outside pressure, therefore there will always be an escape of moisture vapour by the diffusion process through the passive vent.

The diffusion process is slow compared with mechanical ventilation and would not cope with the copious amount of water vapour produced in a short time scale without the combined use of mechanical ventilation in kitchens and bathrooms.

Its main use is in habital rooms where it operates continuously without noise and over 24hr period can extract a maximum of 2.5 litres of water, even at low vapour pressure.

If the relative humidity of the room were 70% at 20°C, then each kg of air would hold 0.0104 kg of water.

At a recommended maximum velocity of 0.9 m/sec (maximum velocity recommended by local Authorities) through the passive, it would transmit 0.0024 m^3/sec (i.e 2.24 kg per day) of air that contains 2.5 Litres of water.

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CONDENSATION

Tenants and property owners usually notice condensation when it presents itself on decorations often causing discoloration and black mould growths.

Air within the living environments becomes saturated with water vapour. The main causes of air saturation are: boiling kettles, cooking, drying clothes, the use of non-flued heating and even breathing. When these conditions prevail, the air inside the property becomes saturated. The amount of water vapour contained in air is related to the air temperature, hence the term 'Relative Humidity'. Warm air can contain large amounts of water vapour. When saturated air begins to cool, it no longer has the ability to hold the water as vapour and at this point will release it onto cold surface in the form of condensation. In traditionally constructed properties with open fires, ventilated suspended timber floors and sash windows, condensation (in most cases) required no extra consideration. However many old properties have been renovated. In some cases solid floors have been laid, double-glazing has been installed and the houses have been generally draught proofed to conserve expensive heat. Many new properties have been constructed with little or no thought to humidity control and thus the need for humidity controlling devices.

HUMIDITY CONTROLLING OPTIONS

Once it has been established that condensation is occurring, the question arises of how to control it. Options take many turns:

1. Install air bricks and heat the property. This can be physically effective but not cost effective as most of the heat created inside the property ends up heating the street outside.
2. Install a portable dehumidifier. This again can be physically effective but there are running costs and noise. The occupant will need to empty the water container regularly.
3. Install humidistat controlled fans which have installation and running costs.
4. Install positive pressure systems such as the Sovereign Concure PIV (loft or wall mounted) units. Please remember these effective systems have installation and running costs.

THE PASSIVE VENT

The Passive (passive dehumidification system) was invented and developed in the UK as one answer to the problem of condensation.

Condensation control is an ever-increasing market with many solutions most of which can be effective. However, the effectiveness of other products often causes expense to the property owner with running costs, noise and maintenance programmes often required for these systems to remain effective.

HOW DOES IT WORK?

The Passive Vent contains no moving parts and works on basic principles accepted in building physics. When a combination of internal room temperatures and humidity is higher than it is externally, the vapour pressure difference causes the moist air to ventilate outwards through the Passive Vent's porous membrane into the cooler external air.

HEALTH & SAFETY

Keep out of reach of children.

Health & safety information available on request

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