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passivent

VENTILATION DESIGNED FOR CARE HOMES

Contents

Ventilation in care homes provides good indoor air quality for residents, staff and visitors. A ventilation system designed to suit different environments within the care home will provide fresh air, remove pollutants (humidity, odours, CO_2 emissions etc.) and prevent condensation risk and mould growth.

Care homes owners constantly strive to provide premises that are clean, hygienic and free from offensive odours providing a dignity of care to their residents.

Passivent ventilation systems designed specifically for care homes offer tailored solutions to meet the needs of individual rooms or spaces. Our fully trained in-house design team offer a full technical design service to suit building regulations and budget.

VENTILATION DESIGNED FOR CARE HOMES

Key issues for Care Homes

- Care homes are occupied 24 hours a day, 7 days a week. A continuous demand controlled ventilation system is suited to this type of environment. Passivent care home ventilation systems are energy efficient coupled with low initial cost and lower life time running costs.
- Rooms within a care home have different principle pollutants. Humidity in some rooms and odours in others. Passivent ventilation systems are designed to suit the relevant pollutant in each room whether this is humidity or odour related.
- Rooms are occupied for different lengths and times across the 24 hours. Automatic demand control ventilation is suited to this type of environment as it removes the need for occupant interaction, automatically switching on when and where required detecting rises in pollutants and responding accordingly. Passivent ventilation systems are effective and energy efficient.
- In care homes, as little occupant input as possible is required. Intermittent extraction that relies on an occupier is not ideal as research has shown there is often a risk of insufficient ventilation or over ventilation increasing energy costs. Often the ventilation is not sufficient to reduce humidity and maintain levels below the 70% target for prolonged periods. Passivent 'intelligent' ventilation systems remove the need for occupier interaction.
- Ventilation systems are required to be quiet to reduce disturbance. At night with low demand, the fan speed reduces meaning less noise and therefore less disturbance. Passivent constantly running low power fans are discrete and energy efficient.

Important factors for a Care Home ventilation solution include

- Good indoor air quality providing fresh air all year round
- Maintaining relative humidity below 70% to control condensation
- Effectively removing pollutants

Regulations and Requirements include

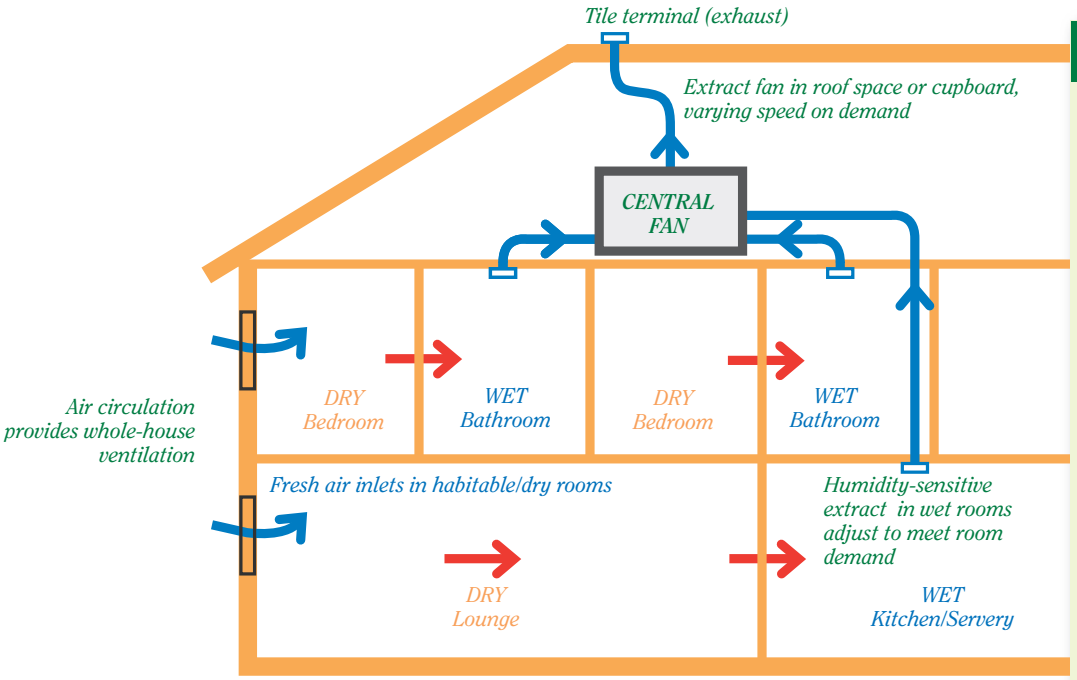
Building Regulations Approved Document F1: Means of Ventilation Building Regulations covering ventilation of domestic and non-domestic dwellings *'Communal residential properties are buildings containing separate residential units with some degree of communal facilities.'*

CIBSE Guide B0: *Application and Activities: HVAC strategies for building types*

CIBSE Guide B2: *Ventilation and Ductwork*

Good Practice Guide 192: *Designing energy efficient multi-residential buildings*

PASSIVENT *i*MEV CARE HOME SYSTEM



BENEFITS

- Automatic control maintains effective ventilation throughout the care home.
- Quiet fan that reduces speed at night to eliminate occupant disturbance.
- Designed to maintain relative humidity below 70% in wet rooms.
- Designed to combat odours.
- Minimises heat loss as only extracts air as and when required, 32% energy saving.
- Low running costs.

Passivent intelligent Mechanical Extract Ventilation (*i*MEV) is the *intelligent* ventilation system that caters for multi-occupancy care homes where individual rooms and areas require different extraction rates. Passivent *i*MEV is *intelligent* in that it removes the need for occupant interaction, automatically increasing extraction when and where required.

Passivent *i*MEV care home system works by drawing polluted air (moisture laden, odours etc.) via air extracts located in 'wet' rooms (en-suite bathrooms, kitchens etc.) using a central fan and exhausting this air through ducting to roof-mounted terminals.

To ensure the polluted air is replaced, through-wall or window vents allow fresh air from outside to enter. These vents are typically placed within habitable rooms such bedrooms and living areas.

This cycle of stale air out and fresh air in ensures good indoor air quality and a fresh clean environment. Importantly, it also removes moisture which can otherwise lead to damp and mould.

Passivent *i*MEV automatically detects rises in humidity and responds accordingly. The system only increases extraction when required, so it uses much less energy as the central fan is not running at a higher speed unnecessarily. Heat loss is also reduced as *i*MEV relies on demand control (extraction when and where required), extraction is only increased in the areas where humidity has risen.

Constant pressure system

With a constant pressure fan (A151DC W CP), automatic control of the humidity sensitive extracts situated in wet rooms (eg en-suite bathrooms) and a fan pressure sensor maintains the overall system pressure.
This increases extraction in the areas where required, whilst keeping a sufficient level of ventilation in other rooms. At night time when there is low humidity and low demand the fan speed reduces to the quietest minimum setting.

A constant pressure system is ideally suited to provide effective ventilation for care homes.

Energy savings

All Passivent *i*MEV care home systems use constantly running low-power fans which reduce energy bills and the carbon footprint of the building.

Demand control

Systems automatically respond to the need for ventilation, increasing effectiveness and energy efficiency.

Complete solutions

Every Passivent *i*MEV care home system provides a complete ventilation solution which is individually tailored to a particular project by our expert design team.

FANS

It is important to choose the right fan for a project. The descriptions shown indicate the main uses for each fan type, but Passivent can advise on the most suitable for any given project.

A151DC E Fan

Capacity: 415m³/hr @ 100Pa

The A151DC E fan incorporates one of the lowest energy motors on the market, despite it being one of the most powerful. It can be operated at a constant fixed speed and be commissioned during installation.
A humidity sensor is located internally to adjust the running speed.

Key features

- To further enhance occupier comfort, the fan is fitted with an internal silencer, reducing mechanical noise and allowing the fan to be placed within a cupboard space near habitable rooms.
- The A151DC E is eligible for energy use calculations under Appendix Q of SAP (Standard Assessment Procedure for Energy Rating of Dwellings) and has a Specific Fan Power as low as 0.17W/l/s.

A151DC W CP Fan

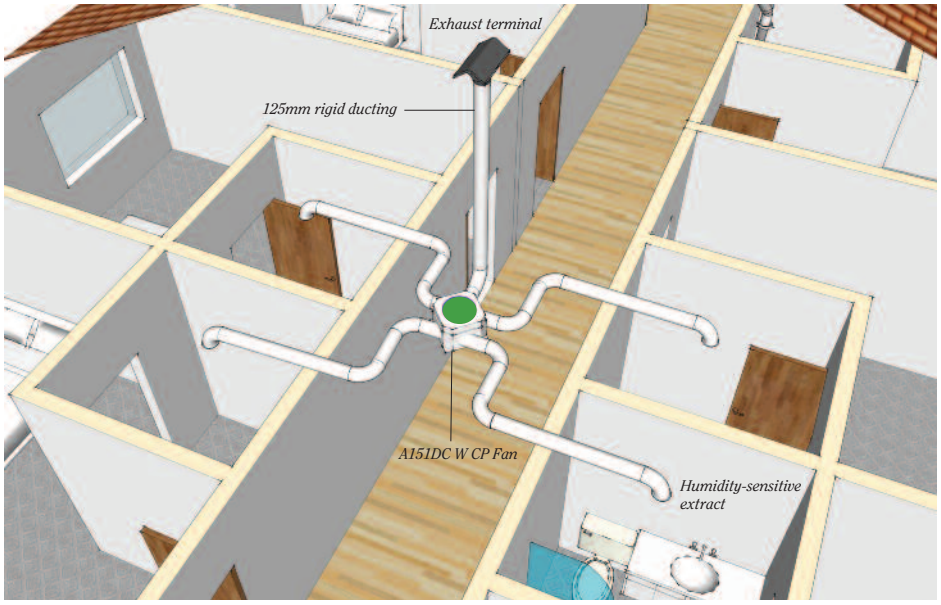
Capacity: 360m³/hr @ 100Pa

The A151DC W CP fan is perfect for large multi-residential properties which require individual areas to be monitored and ventilated separately, without the need for occupant involvement. The constant pressure version is designed to be used with humidity-sensitive extracts as part of a Passivent *i*MEV care home system.

Its compact size and range of fixing positions means it can be concealed within a roof or cupboard space, with one fan serving multiple dwellings. This fan is especially useful for care homes and other multi-occupancy residential properties where extraction may need to increase in different areas at different times, without affecting other areas where additional ventilation is not required.

Key features

- Energy efficient.
- Can be mounted in various different profiles eg on the floor, wall or ceiling.
- Spigot orientation can be changed for versatile installation possibilities.
- Fan blade orientation improves acoustic performance and reduces air resistance which increases longevity.
- Constant pressure version features a malfunction warning light to easily identify issues with individual units when multiple fans are used. Good for care homes where multiple fan units may be clustered together.
- Can be supplied without constant pressure controller if required (A151DC W).



AIR EXTRACTS

Passivent have a wide range of extract options available for use in the different applications. They are located in wet rooms such as bathrooms, WCs and kitchens.

Each extract provides a level of control that is suitable for the room and activity at any time. Each room has different requirements from the ventilation system; Passivent provides a truly adaptive solution for each.

For example, a WC is not permanently occupied and so does not need such a high level of permanent extraction. However, once occupied a boost rate is required.

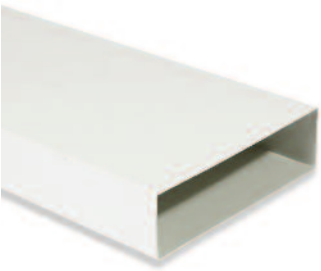
A121

A141 PIR

Extract type	Model	Airflow performance (m^3/hr) @ 80Pa Normal	Boost	Typical applications
Automatic humidity-sensitive, some with switched boost Used to provide fully automatic extraction based on humidity levels within wet rooms (kitchens and bathrooms). Can also be boosted by the user if additional extraction is required (switch located in the vicinity causes extract to open further, increasing the level of extraction). Suitable for use within residential and care multi-occupancy buildings where individual users may be unable to control the system effectively.	A121	15 - 75	not applicable	En suite, servery
	A133	20 - 75	150 for 30 mins	Assisted bathrooms, sluice
	A133C	20 - 75	150 constant	Assisted bathrooms, sluice
	A133SH	10 - 45	90 for 30 mins	Assisted bathrooms, sluice
Constant volume with switched boost The A141E is particularly suited as part of a ventilation solution whereby a constant level of ventilation is wanted for the majority of the time, whilst still offering occupants the option to boost ventilation.	A141E	25	90 for 30 mins	Bathroom, nurse station
	A141EWC	15	30 for 30 mins	WC, store
	A142E	25	120 for 30 mins	Bathroom, sluice
	A142C	20	120 constant	Bathroom, kitchen
Constant volume with passive infra-red boost Provides constant extraction at a relatively low level but boosts automatically for 30 minutes upon detecting a presence within the room. This is has added advantages within bathrooms as it can be used to tackle odour as well as humidity.	A141PIR	15	65 for 30 mins	En suite, servery
	A141PIRWC	15	30 for 30 mins	WC, staff changing areas
Constant volume Extract is set at a constant level so extraction is always the same. Increased extraction is regulated by fan speed rather than the extract itself. Suitable for when similar levels of extraction are always required (kitchens, store rooms).	A141/15	15	not applicable	Store
	A141/30	30	not applicable	WC, cleaners
	A141/45	45	not applicable	WC
	A141/60	60	not applicable	Bathroom, kitchen
Boost switch (timed for 30 minutes)	A132	Use with A133, A133SH, A141E, A142E		
Constant boost switch	A134	Use with A133C, A142C		

DUCTING, TERMINALS AND AIR SUPPLY

Rigid circular ducting, uninsulated



Rigid flat channel ducting, uninsulated

DUCTING

Plastic rigid circular ducting

Plastic rigid circular ducting can be used to connect all parts of a Passivent care home system including air extract to fan and fan to roof terminals. Available with a number of different connection pieces to navigate different project layouts. Insulation is available to prevent heat loss and condensation.

Plastic rigid flat channel ducting

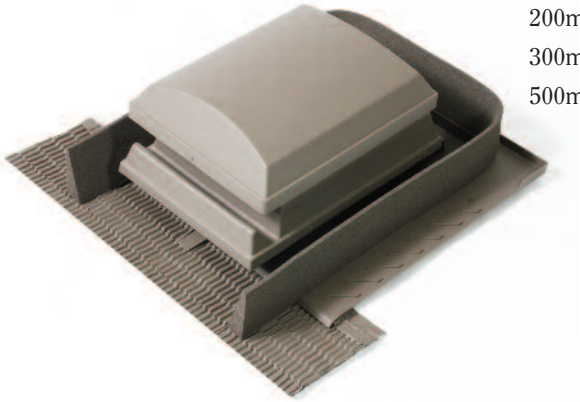
Plastic rigid flat channel ducting is suitable for extraction from wet rooms such as bathrooms and kitchens. Its low profile enables ducting to be concealed. The various types of ducting available mean that it can easily be incorporated into different types of project.

TERMINALS

Exhaust air terminal

A tile terminal is designed to blend with most available manufacturers' roof tiles, and will weather to match the surrounding tiles over time. Unique to this product, to the underside of the cowl there are anti-condensation bars to prevent condensation dripping back down the ducting below.

Terminal	Duct/spigot dia	Air flow performance
Versa-Tile TT13	150mm	50m³/hr at 0.3Pa 100m³/hr at 1.0Pa 200m³/hr at 4.2Pa 300m³/hr at 9.5Pa 500m³/hr at 27.4Pa



Note:
TT13FK is also available for builders kerb situations.

Wall terminals and airbricks are also available.

AIR SUPPLY

When using Passivent *i*MEV care home systems, fresh air vents must be provided to replace the extracted air. Inlet vents are usually located within habitable rooms such as bedrooms and living rooms.

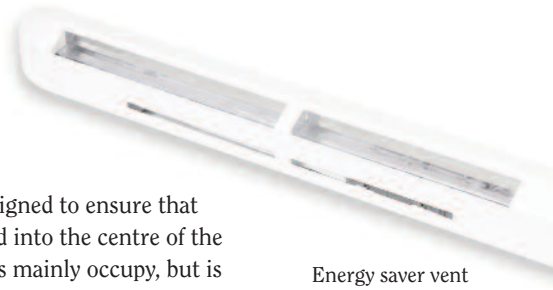
Passivent have various inlet vent options available to provide sufficient levels of background air but at the same time ensure that residents' comfort is maintained.

Ultravent

Window Vents

Window Vents are incorporated within the window or the frame. There are various types available with different controls, from manual operated units to fully automatic humidity sensitive versions.

The units are usually installed by the window manufacturer at the time of making the windows. Each is designed to ensure that airflow is not directed into the centre of the room which residents mainly occupy, but is directed upwards, reducing the effect of draughts.



Energy saver vent

There are acoustic options including either manual or automatic control. These can give sound reduction of up to 42dB $D_{n,e,w}$ providing a quieter, peaceful living environment.

Fresh ALdB

Wall Vents

A range of through-wall vents can be used where it is not possible or desirable to fit a window vent or where a greater control of fresh air supply is required.

Wall vents are infinitely adjustable between open and closed, so allow close control of how much air is allowed in.

Humidity-sensitive options are available where manual control is not required. The acoustic range can provide substantial sound reduction of up to 50dB $D_{n,e,w}$.

Fresh TLFdB acoustic wall vent

FURTHER INFORMATION

Services

Passivent offers a comprehensive design and advisory service tailored to your specific project, covering ventilation design and product selection. Advanced software based on CIBSE AM10 is used to calculate sizes of air inlets and outlets to achieve optimum performance.

Names of approved installers can be provided on request.

Quality assurance

Passivent is committed to the continuous improvement in the quality of its products, service and method of operation.
Its products are designed, developed and manufactured under the ISO 9001 quality management system, providing an independently audited assurance that the products will fulfil their intended purpose.
The company also works to an occupational health and safety (OH&S) management system and has been accredited to the international standard ISO 45001.

Environment

Passivent conducts all business processes under the international ISO 14001 quality management system, giving an assurance that all activities are carried out having minimal impact upon the environment.

Other products

Passivent sells a range of other ventilation and daylighting products for commercial and domestic buildings including:

Natural ventilation systems.

Aircool® ventilators for windows, curtain walling and walls.

Airstract® roof terminals for passive stack and other natural ventilation systems.

Airscoop® wind-driven ventilation terminals.

Litevent combined ventilator and rooflight.

*i*MEV intelligent mechanical extract ventilation system.

Hybrid Plus2 Aircool® ventilators.

Hybrid Plus Airstract® ventilators.

SoundScoop® acoustic transfer ventilation products.

PASSIVENT
North Frith Oasts, Ashes Lane, Hadlow, Kent TN11 9QU Tel: 01732 850770 Fax: 01732 850949
Email: projects@passivent.com Web: www.passivent.com

BPD
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