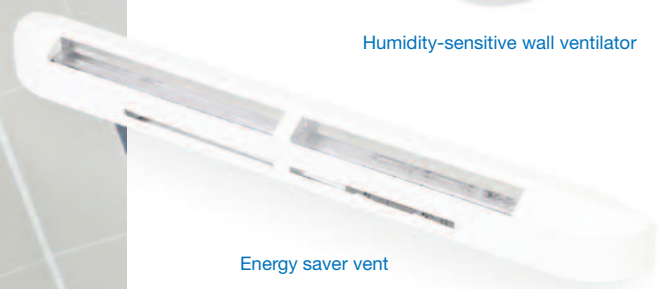


iPSV® WHOLE-HOUSE VENTILATION SYSTEM



Humidity-sensitive wall ventilator



Energy saver vent



WHY VENTILATE?

The home environment should be designed for comfort and health, whilst at the same time minimising energy consumption.

Such design requires a balance of three elements: heating, insulation and ventilation. All three are equally important to the indoor environment and the wellbeing of the occupants.

Ventilation is required:

- To remove water vapour generated by washing, cooking, showers, washing machines, tumble driers and people breathing. Excess water vapour can lead to harmful condensation if it is not managed by ventilation.
- For comfort, to bring fresh air into the building to avoid nausea and stuffiness.
- For health, to remove atmospheric pollutants which can cause allergies and chemicals released by building materials and furniture.

Ventilation is essential but has an energy cost. It is therefore vital to select the most energy efficient form of ventilation. The consequences of inadequate ventilation are well documented and include surface and interstitial condensation, stuffy atmospheres, lingering odours and in the worst cases, mould growth.

Building Regulations

The United Kingdom now has different Regulations for each of the countries as follows:

- England & Wales - Approved Document F.
- Scotland - Technical Handbook Domestic Section 3.
- Northern Ireland - Technical Booklet K.
- Republic of Ireland - Technical Guidance Documents Part F.

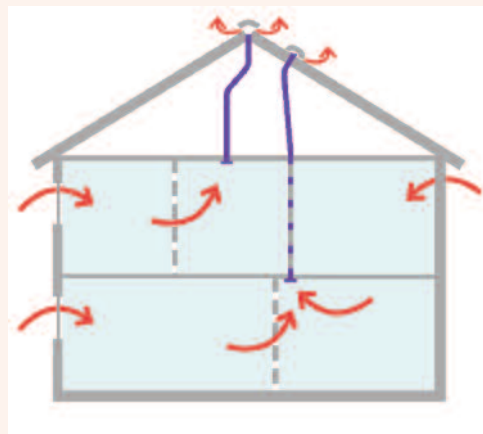
All require that adequate ventilation is provided for people within buildings. One recognised method referenced in all documents is the use of passive stack ventilation.

Photographs to the left show the results of harmful condensation.



HOW TRADITIONAL PASSIVE STACK VENTILATION WORKS

Standard passive stack ventilation (PSV) works by being primarily driven by the natural stack or 'convection effect' by which warm air rises, entering a vertical duct to be exhausted at higher level reaching colder outside air. The air inside a house is almost always warmer than outside. As the warm air rises it carries water vapour with it. There is an additional contribution from wind flow across the roof which creates a suction effect at the terminal (the 'Venturi effect'). This wind benefit is not essential to the operation of the system and experience shows that the system will continue to function even in still weather conditions.



The traditional PSV system is permanently open so has the risk of unnecessary heat loss from the building especially in winter time.

HOW GLIDEVALE iPSV IS DIFFERENT

Shortcomings of traditional PSV

New buildings are progressively being built in a more airtight manner, and as such more consideration must be given to the ventilation system to reduce condensation risk. As energy efficiency standards also improve, limiting heat loss through ventilation also becomes increasingly important. Clearly a balance has to be struck between energy use, restricting unnecessary ventilation and heat loss, and the control of condensation.

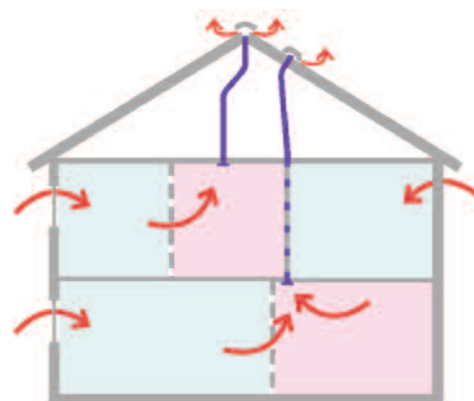
In standard PSV systems, the siting of inlets and extracts ensures that air always moves from 'dry' rooms to 'wet' rooms (kitchens, bathrooms etc). The air then passes through ducting to roof terminals where it is vented to the outside. No fans are required so no power is used.

There is no automatic control so in winter, heat is lost from the building via the stack as it remains permanently open with fresh air being supplied by background ventilators which are often located in windows. The system can therefore over-ventilate and cause increased energy costs.

The use of ventilation controls can minimise energy consumption and unnecessary heat loss in winter. These can comprise some form of regulation to the system, either by user intervention or preferably demand-controlled ventilation providing regulation to the system dependent on conditions without user intervention.

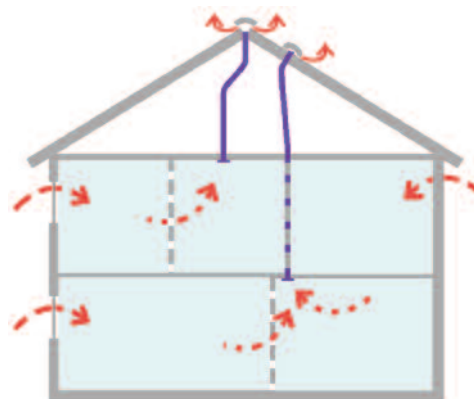
Glidevale iPSV is controlled by 'intelligent' air inlets and extracts. These respond automatically to changes in relative humidity, thereby modulating the ventilation rate in each room to meet the varying need. Ventilation levels are matched to demand.

- When room humidity is low, the ventilation rate is minimised, irrespective of external weather conditions, preventing unnecessary heat loss.
- When room humidity is high, the ventilation rate increases, removing moisture rapidly when need is greatest.
- The airflow rate responds continuously to demand, so maximising ventilation effectiveness and minimising heat loss through loss of warm indoor air.
- Both extract grilles and air inlets use non-electrical, humidity-sensitive control. Nylon strands in each unit expand or contract in response to humidity levels. This automatically regulates the size of the air opening and varies the ventilation rate accordingly.
- The operating range between minimum and maximum opening of the vents is 30% to 75% relative humidity.
- This method of control uses no electrical power.



High humidity

These diagrams illustrate a Glidevale iPSV intelligent controlled system to keep heat loss to a minimum yet provide adequate ventilation when conditions demand it.



Low humidity



A161 humidity-sensitive extracts in kitchen and bathroom

BENEFITS OF GLIDEVALE iPSV

Demand control for comfort

The Glidevale iPSV system provides fully automatic, demand-controlled ventilation. It responds to peak humidity levels and hence to the occupant's activities, giving optimum comfort conditions.

Whole-house ventilation

The Glidevale iPSV system ventilates the whole-house by responding to demand in each space providing the appropriate level of ventilation, room by room, 24 hours a day.

Energy efficient

The Glidevale iPSV system needs no input of power so there are no direct CO₂ emissions as a result of ventilating the property. This cannot be said for any other ventilation strategy.

Combat condensation and mould

Assured, effective ventilation helps to combat condensation and mould growth. This brings long-term health benefits and minimises future refurbishment costs.

Continuous extraction

The continuous, gentle extraction of the Glidevale iPSV system is silent, unobtrusive and therefore unlikely to be tampered with by unknowing occupants. Continuous low-level ventilation is more effective in removing lingering humidity.

Automatic boost effect

Humidity-sensitive control provides an automatic boost effect as an integral feature by allowing greater air flow when condensation risk is high. As the humidity levels fall, the air flow is reduced.

Ideal for disabled and older people

With automatic response and no operating controls, the Glidevale iPSV system is ideal for disabled and older people.

Meets building requirements

The Glidevale iPSV system meets the requirements of Building Regulations and Standards in England, Wales, Scotland and Ireland. BBA certification has been in place since 1996 and was reviewed again in 2015 against present requirements.

Simple installation

The Glidevale iPSV system is easily installed: it needs no electrical connections and once installed, no further adjustments or commissioning are required. This makes it ideal for both new build and refurbishment projects.

Minimal maintenance / lifetime cost savings

Simple and reliable components with few or no moving parts means minimal maintenance. The comparison between initial purchase and ongoing maintenance costs of the Glidevale iPSV and mechanical ventilation heating recovery (MVHR) systems shows substantial savings for the building owner over the life of the building.

Unrivalled experience and a proven record

The Glidevale iPSV system has been sold since 1984 and whilst continuously developed over that time with new and innovative features, it has remained a proven ventilation system even in the most airtight of buildings.

Building Regulations

Background ventilation is required in conjunction with an iPSV system to provide whole-dwelling ventilation complying with Building Regulations Approved Document F.

Glidevale window and wall vents provide controllable ventilation at a relatively low level to meet the regulatory requirements. Glidevale iPSV requires only one background ventilator per 'dry' habitable room to meet the Regulations, as stated and shown in the independent BBA certification.

BBA certification is recognised as an Alternative Approach to meet the requirement of Building Regulations.

In contrast, a standard PSV system would require several ventilators per habitable room, needing multiple unsightly wall / window penetrations.



Fresh TLF air supply ventilator

AIR SUPPLY - BACKGROUND VENTILATION



Energy Saver Vent
and Ultra Grille



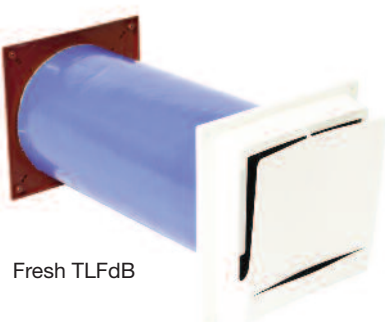
Fresh 99H



Fresh TLF



Fresh 99HdB



Fresh TLFdB

Background ventilation units

Glidevale has a comprehensive range of window vents (Tricklevent range) and wall vents (Fresh range) to meet most requirements.

- Controllable, secure and designed to avoid draughts.
- Automatic humidity-controlled options to ensure that the whole ventilation strategy needs no user input.
- Acoustic vents provide good sound insulation for noisy locations, and are available as part of a BBA approved system.
- Colour co-ordination: Ultra Vent and Grille tricklevents can be supplied in any RAL colour to match windows.



Fresh external wall grille

Glidevale background ventilation units

	Free area mm ²	Equivalent area mm ²	Features
Through-frame vents			
Ultra Vent and Grille	5400/4465	5000/4000	Slim profile
Energy Saver Vent* and Ultra Grille	4000	3815	Humidity-sensitive
Wall vents			
Fresh 80*	4000	2230	Round vent, pull cord
Fresh 90*	5600	2880	Aesthetic vent, slide control
Fresh 100*	5600	3760	Round vent, pull cord
Fresh TLF*	5000	2910	Aesthetic vent, slide control
Fresh 99H*	5600	4210	Automatic humidity-sensitive round vent

*Acoustic versions also available

Ventilation area is defined by Building Regulations in term of 'equivalent area' (England and Wales) or 'free area' (remainder of UK and Ireland). 'Free area' is simply the size of the ventilation aperture. 'Equivalent area' provides a measure of the actual airflow performance of the vent and is determined by the method of BS EN 13141-1: 2004.

AIR EXTRACTION - EXHAUST TERMINATION

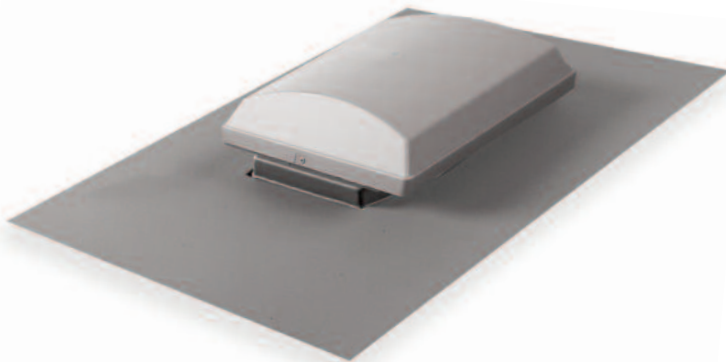
Terminals

There is a range of terminals to suit pitched and flat roofs. Ridge terminals are usually recommended where possible, but tile terminals can be used where necessary.

PRT Ridge terminal



TT9 Universal Soaker style slate terminal



TT9 Versa-Tile terminal



Air extract



A161 Humidity-sensitive extract. Normally ceiling-mounted, wall-mounted option available.

Ducting



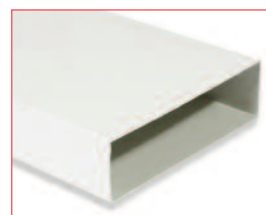
F1252 Insulated flexible ducting, length 4.0m.



F1251 Uninsulated flexible ducting, length 3.0m.



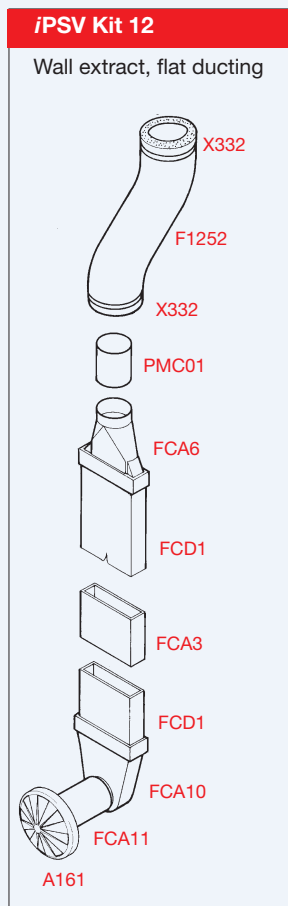
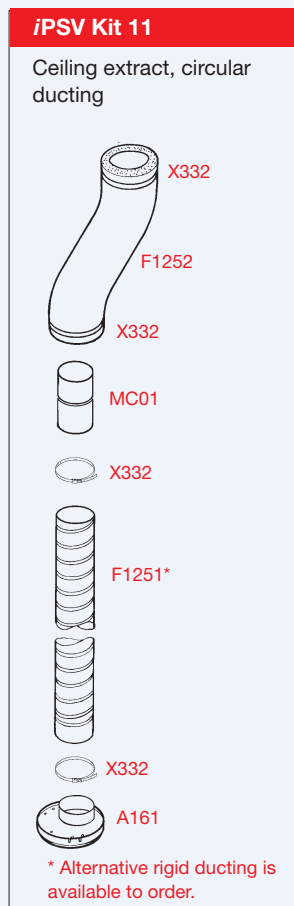
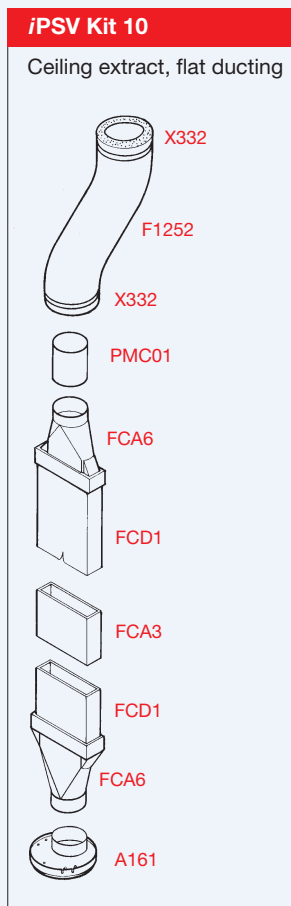
PC1252M Uninsulated rigid ducting, length 2.0m (available to order).



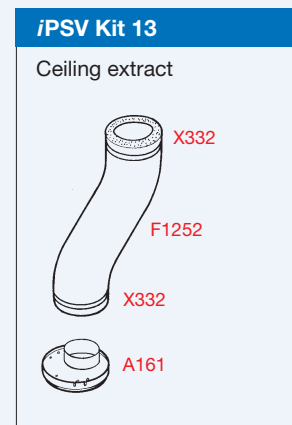
FCD1 Flat channel ducting, length 1.5m.

iPSV KITS FOR 'WET' ROOMS

Ground floor (kitchen, utility and other 'wet' rooms)



First floor (bathroom, shower room, ensuite etc)



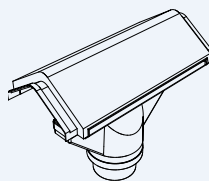
Please note, where standard iPSV kits are not suitable for the property layout, alternative configurations can be supplied. Extension ducting is also available for properties over two storeys.

Code	Component
A161	Humidity-sensitive extract
F1251	Uninsulated flexible ducting, 3.0m
F1252	Insulated flexible ducting, 4.0m
PC1252M*	Uninsulated rigid ducting, 2.0m
FCA3	Flat channel straight connector
PMC01	Plastic sleeve coupling, male 125mm
FCA6	Flat channel circular adaptor
FCA10	Flat channel elbow connector
FCA11	Round pipe
FCD1	Flat channel ducting, 1.5m
MC01	Metal sleeve coupling, male 125mm
PRT	Ridge terminal
TT9	Tile/slate terminal
X332	Speed clamp

* Available to order

Terminal options

PRT ridge terminals



For clay ridges

PRT25: half round ridge terminal

For concrete ridges

PRT15: half round ridge terminal

PRT35: segmental ridge terminal

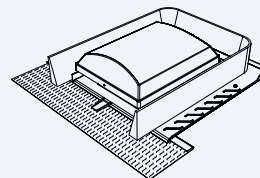
PRT45: angle ridge terminal

PRT46: angle ridge terminal

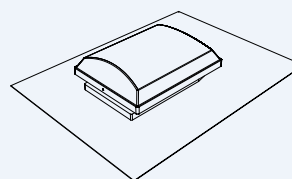
PRT301: legged angle ridge terminal

Where a suitable ridge terminal is not available, the use of a TT9 is the alternative terminal solution as close to the ridge as possible (no more than 0.5m) and on the leeward side of the roof.

TT9 Versa-Tile terminal**



TT9 Universal Soaker style slate terminal**



** Profile dedicated terminals are available where the above options are not suitable.

DESIGN GUIDANCE

Glidevale offers a design service for iPSV systems based on building drawing supplied.

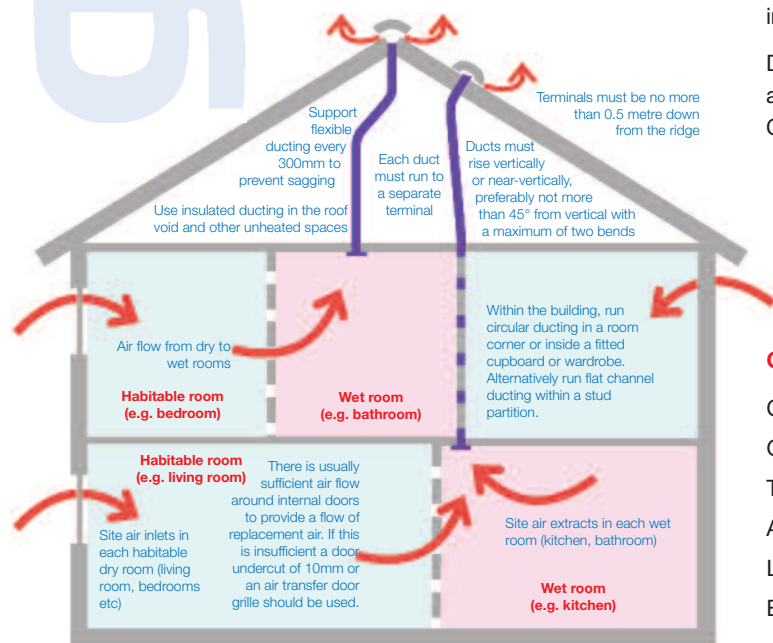
Design points

The main design points are given (see below). The layout shown is schematic and actual installations may differ in detail. Designs should also follow the guidance given in Approved Document F1 Table 5.2b, with exception of background ventilation provisions.

Design guides

A number of independently produced guidance documents make recommendations for the installation of PSV or intelligent PSV.

PP3/99 Sustainable Homes: Embodied Energy in Residential Property Management published by BRE, Housing Corporation and Hastoe Housing Association.



Best practice guidelines state:

- Design for long life (at least 60 years and preferably more).
- Do not install ultra high tech equipment that offers only marginal energy savings in use.
- Avoid systems with high maintenance requirements or which need frequent replacement.
- Avoid systems which rely heavily on user regulation to achieve energy savings (e.g. use intelligent self-regulating passive stack ventilation rather than user-controlled systems).

Glidevale iPSV meets all these criteria.

BRE Information paper *IP13/94 Passive Stack Ventilation Systems: Design and Installation* provides information and guidance regarding the design and installation of PSV systems.

Design information is also given in BBA Certificate 18/5523.



Other products from Glidevale:

Cavity trays and preformed DPCs.

Ground floor gas & damp protection products.

Tile and slate ventilators.

Abutment ventilation.

Loft access traps/ladder.

Eaves and low level ventilation systems.

Specification clause

Ventilation to be provided by means of a BBA certified whole-house intelligent passive stack ventilation system complying with: Building Regulations (England and Wales) Approved Document F*, Building (Scotland) Regulations Technical Handbook Domestic Section 3*, Building Regulations (Northern Ireland) Technical Booklet K*, Building Regulations (Republic of Ireland) Technical Guidance Documents Part F*.

The ventilation system to be Glidevale iPSV whole-house system covered by BBA certificate 18/5523, supplied by Glidevale, 2 Brooklands Road, Sale, Cheshire M33 3SS, tel: 0161 905 5700, fax: 0161 905 2085, email: technical@glidevale.com.

Design and layout of the system to be in accordance with the manufacturer's recommendations. Installation to be in accordance with the manufacturer's instructions and any other design recommendations supplied.

*Select as appropriate

Stockist's stamp

GLIDEVALE

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Tel: 0161 905 5700 Fax: 0161 905 2085

Email: info@glidevale.com Web: www.glidevale.com

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