

DESIGN AND INSTALLATION SPECIFICATION - MECHANICAL VENTILATION WITH HEAT RECOVERY

The installation has been designed and must be installed in accordance with the following:

- * Domestic Ventilation Compliance Guide 2010 Edition
- * CIBSE B: Heating, ventilation, air conditioning and refrigeration, 2005.
- * Building regulations, Approved Document F: Ventilation - Volume 1 (2021), Approved Document L1: Conservation of fuel and power in dwellings, Approved Part B: Fire Safety.
- * The relevant British Codes of Practice including:
 - BS 5925: Code of Practice for ventilation principles and designing for natural ventilation
- * Manufacturer's installation instructions.
- * HVCA DW/154 specification of plastics ductwork, 2000
- * BRE Digest No 398
- * Technical Handbook ch 3 (for Scotland)

Mechanical Ventilation with Heat Recovery (MVHR)

The system is designed to operate continuously to provide ventilation rates in line with the requirements of Part F- Vol1 (2021) Continuous Supply and Extract Ventilation with Heat Recovery.

The unit specific Installation Instructions and Homeowner Guide are supplied with each unit and this product must be installed inline with the manufacturers guidance and Domestic Ventilation Compliance Guide (2010). The Homeowner Guide must be left with the unit.

Ducting:

The specified unit must be ducted in accordance with your ventilation design.

If joist layouts/sections are not supplied we assume the ceiling void is suitable to accommodate the specified duct. Clear paths through the ceiling/floor void for the duct to be installed are also assumed.

The design may show rigid plastic ducting: Ø125mm, Ø150mm circular or 204 x 60mm, 220 x 90mm rectangular ducting.

The design may show semi-rigid plastic ducting: Ø75mm, Ø90mm circular or Flat 51 Comfotube.

with associated rigid (steel) Atmo ducting of Ø160-Ø200mm.

Insulation:

Ducting should be insulated where it passes through unheated areas and voids (e.g. loft spaces) with the equivalent of at least 25mm of a material having a thermal conductivity of <0.04 W/(m².K) to reduce the possibility of condensation forming.

Where a duct extends above roof level, the section above the roof should be insulated or a condensate trap should be fitted just below roof level.

Condensation:

The MVHR unit should incorporate a condensate drain, which should be connected to the nearest waste water network. Where units are sited in a position that makes the connection of piping to allow a fall, impractical, a condensate pump may be incorporated as part of the installation.

Vertical ducting will require a condensate trap in order to prevent back flow of any moisture into the product.

If terminating to a tile vent consideration should be paid to the effective equivalent area of the terminal to ensure that this does not adversely affect the fan performance. Please refer to the product installation instructions for further details.

Cooker Hoods:

For continuously running ventilation systems we recommend that a re-circulating cooker hood complete with carbon filter is installed to degrease the air at the source of pollution, preventing a build up of grease from forming within the ducting.

Extract valves should not be installed directly above a heat source, but be positioned a minimum distance of 600mm from the nearest edge.

Fire stopping:

For advice on appropriate fire stopping products a fire officer should be consulted as well as the Building Regulations 2010: Approved Document B (Fire Safety) - Volume 1: Dwelling houses (2019).

Background ventilation:

No background ventilators are required for System 4 Continuous Supply and Extract Ventilation with Heat Recovery.

Wiring:

WARNING: Class II appliances must be earthed. All wiring must conform with BS7671: IEE Wiring Regulations. The installation must be carried out by a qualified electrician in accordance with prevailing regulations.

Minimum Clearances:		
Room Valves:	Ceiling Void	
Standard Ø125mm	135 mm	
Flat 51 system	140 mm	
Ø125mm Wall Mounted	400mm from corner	
Semi-Rigid Ducting:	Ceiling Void	Inc Insulation
Flat 51	65 mm	115 mm
Ø75mm Comfotube	85 mm	135 mm
Ø90mm Comfotube	100 mm	150 mm
Ø110mm Comfotube	120 mm	170 mm
Rigid PVC Ducting:	Ceiling Void	Inc Insulation
Ø100mm Round	125 mm	175 mm
204x60mm Rectangular	85 mm	135 mm
Ø125mm Round	150 mm	200 mm
220x90mm Rectangular	115 mm	165 mm
Ø150mm Round	175 mm	225 mm
Rigid Steel Ducting:	Ceiling Void	Inc Insulation
Ø160mm Round	185 mm	235 mm
Ø180mm Round	205 mm	255 mm
Ø200mm Round	225 mm	275 mm
PassivHaus Armaflex >		add 50mm

Plot 01 (<) 5 m³/(h.m²) at 50 Pa				
Dwelling Details				
	Floor Area	274.30 m²	Whole House Ventilation rate:	
	Room Height	2.50 m	Default	4127.5 l/s
	Volume	685.75 m³	0.3l/s per m²	82.3 l/s
	Bedrooms	4	Min ventilation rate	83 l/s
Normal Speed Flow Rates:				
Extract Normal Speed			Supply Normal Speed	
	Kitchen	20 l/s	Lounge	18 l/s
	Utility	13 l/s	Dining Room	12 l/s
	Shower	13 l/s	Snug	7 l/s
	Bathroom	13 l/s	Bedroom 1	11 l/s
	Ensuite	12 l/s	Dressing Room	5 l/s
	Ensuite	12 l/s	Bedroom 2	9 l/s
			Bedroom 3	9 l/s
			Bedroom 4	7 l/s
			Study	5 l/s
	Total Extract Airflow	83 l/s	Total Supply Airflow	83 l/s
Boost Speed Flow Rates:				
Extract Boost Speed			Supply Boost Speed	
	Kitchen	23 l/s	Lounge	19 l/s
	Utility	14 l/s	Dining Room	13 l/s
	Shower	14 l/s	Snug	8 l/s
	Bathroom	15 l/s	Bedroom 1	12 l/s
	Ensuite	13 l/s	Dressing Room	6 l/s
	Ensuite	13 l/s	Bedroom 2	10 l/s
			Bedroom 3	10 l/s
			Bedroom 4	8 l/s
			Study	6 l/s
	Total Extract Airflow	92 l/s	Total Supply Airflow	92 l/s
Commissioning Ventilation Flow rates				

Please read additional notes on MVHR Design for specific design details. The product manual and user manual are supplied with the unit, please leave the product manual with the unit.



in partnership with



Spofforth Hill - Plot 01

Spofforth Hill

Wetherby

Specification

REF 92035 SCALE 1:50

DRAWN NJC SIZE A3 (L)

DATE 15/01/2024 DWG No 01.0