



PASSIVE  
HOUSE  
SYSTEMS

**MAINFRANKEN**

LÜFTUNGSTECHNIK

# VENTILATION DUCTING SYSTEMS





Passive House Systems have been providing products for low energy housing in the areas of airtightness, windtightness, heating, solar and ventilation since 2008.

With engineering and logistical bases in Eltmann, Cork and Epping, Passive House Systems provide first class services in the design supply and support of all our products.

The PHS Mainfranken ventilation series, offers a wide range of ducting options along with all the ancillary components that an installer might need to complete a mechanical ventilation system.

Along with offering a wide range of ducting options, we also provide a series of mechanical ventilaton units, design and commissioning services. Get in touch with our team today to find out how you can start providing your home with clean fresh air.

## Why Choose Passive House Systems?



### Design Services:

We can design a ventilation system that is tailored to your requirements. Once we have obtained your project drawings from your architect or developer, we will specify the correct sized system and provide a full bill of materials with all the components you will need to complete your system. Our team of technicians will provide you with a full design and outline where to position your unit and where to run ducting.



### Commissioning:

Our certified team of technicians can provide and test air flow rates to ensure that your system is correctly balanced and in compliance with Part F of the building regulations.



### Flexible Supply:

We offer a range of flexible delivery options with all of our systems. We will work with you to ensure that your system is delivered in time and at your convenience.

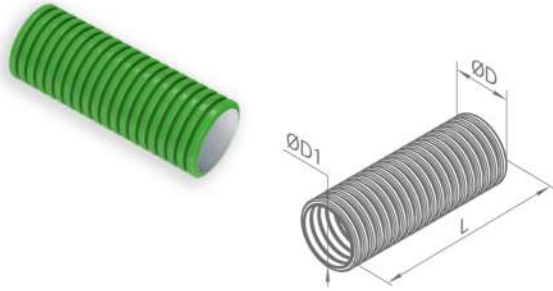


### Onsite Installation Training:

A member of our technical team can come to site to provide any installation training that you might require.



## 75MM SEMI-RIGID DUCTING



**SAP  
Tested**

\* This product and accessories are SAP approved for use with MVHR machines.

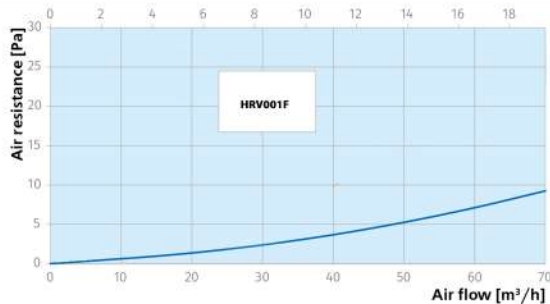


Nominal Duct Diameter	DN 75			
Air Speed (m/s)	2	2,5	3	
1 air duct - air flow (m <sup>3</sup> /h)	22	28	34	
2 air duct - air flow (m <sup>3</sup> /h)	45	56	67	
<b>Air resistance in Duct (Pa)</b>				
Air duct length (m)	2	2,5	3,4	4,8
	4	5,0	6,8	9,6
	6	7,5	10,2	14,4
	8	10,0	13,6	19,2
	10	12,5	17,0	24,0
	12	15,0	20,4	28,8
	14	17,5	23,8	33,6
	16	20,0	27,2	38,4
18	22,5	30,6	43,2	

Model	Bend radius [mm]	ØD [mm]	ØD1 [mm]	L [m]
HRV001F	150	75	63.3	50
HRV001F1	150	75	63.3	25

### 75mm Normalised Comparative Results at Minimum Flowrate Conditions

Exhaust Terminal Configuration	Fan Speed setting	Total Flow Supply rate (l/s)	Total Exhaust Supply rate (l/s)	Specific fan power Semi-rigid duct (comparative) SAP 2013
K+1	100% Variable	21.0	21.0	Equal
K+2	100% Variable	29.0	29.0	Equal
K+3	100% Variable	37.0	37.0	Better
K+4	100% Variable	45.0	45.0	Better
K+5	100% Variable	53.0	53.0	Better
K+6	100% Variable	61.0	61.0	Better
K+7	100% Variable	69.0	69.0	Better



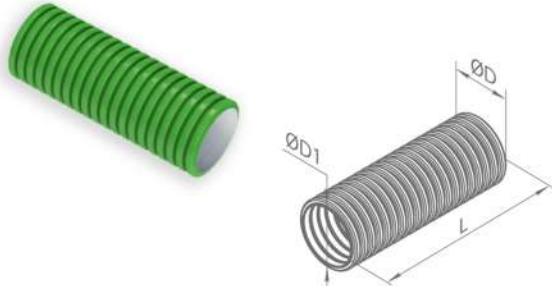
### Technical Properties

- Anti-microbial
- Material: polymer modified with silver ions (ag+)
- Flammability UL94 HB
- Max. length of use: 15m
- min. operating temperature: -5 deg C
- Anti-static
- Electrical resistance [ Ω ]: <10
- Max continuous temperature load: 50 deg C
- Min. installation length: 5 m
- External storage under direct sunlight: max. 6 months

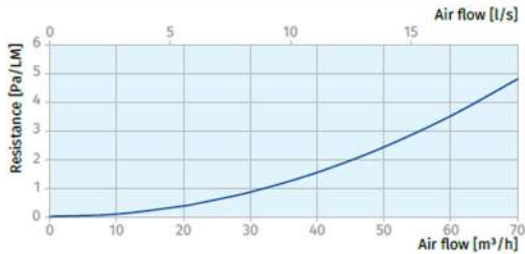
## ANCILLARY COMPONENTS

PRODUCT:	DESCRIPTION:	AVAILABLE SIZES :
	CONNECTION SLEEVE	75MM
	RUBBER SEALING RING	75MM
	90 DEG ELBOW	75MM
	AIR DISTRIBUTION BOX	75MM (AVAILABLE IN A RANGE OF SPIGOT OPTIONS)
	CEILING PLENUM	75MM
	DIFFUSER	125MM (AVAILABLE IN UNIVERSAL, SUPPLY AND EXTRACT. FIRERATED OPTIONS AVAILABLE)

# 90MM ANTI-STATIC AND ANTI-BACTERIAL SEMI RIGID DUCTING



Nominal Duct Diameter	DN 90			
Air Speed (m/s)	2	2,5	3	
1 air duct - air flow (m³/h)	36	42	50	
2 air duct - air flow (m³/h)	70	84	101	
	Air resistance in Duct (Pa)			
Air duct length (m)	2	2,8	3,7	5,1
	4	5,8	7,6	10,4
	6	8,7	11,4	15,6
	8	11,6	15,2	20,8
	10	14,5	19,0	26,0
	12	17,4	22,8	31,2
	14	20,3	26,6	36,4
	16	23,2	30,4	41,6
	18	28,1	36,2	48,8



**SAP Tested**

\* This product and accessories are SAP approved for use with MVHR machines.



Model	Bend radius [mm]	ØD [mm]	ØD1 [mm]	L [m]
HRV002A	250	90	76	50
HRV002A1	250	90	76	25

**90mm Normalised Comparative Results at Minimum Flowrate Conditions**

Exhaust Terminal Configuration	Fan Speed setting	Total Flow Supply rate (l/s)	Total Exhaust Supply rate (l/s)	Specific fan power Semi-rigid duct (comparative) SAP 2013
K+1	100% Variable	21,0	21,0	Equal
K+2	100% Variable	29,0	29,0	Better
K+3	100% Variable	37,0	37,0	Better
K+4	100% Variable	45,0	45,0	Better
K+5	100% Variable	53,0	53,0	Better
K+6	100% Variable	61,0	61,0	Better
K+7	100% Variable	69,0	69,0	Better

## Technical Properties

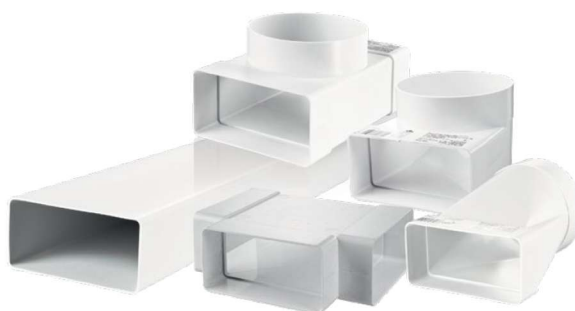
- Anti-microbial
- Material: polymer modified with silver ions (ag+)
- Flammability UL94 HB
- Max. length of use: 15m
- min. operating temperature: -5 deg C
- Anti-static
- Electrical resistance [ ]: <10
- Max continuous temperature load: 50 deg C
- Min. installation length: 5 m
- External storage under direct sunlight: max. 6 months

## ANCILLARY COMPONENTS

PRODUCT:	DESCRIPTION:	AVAILABLE SIZES:
	CONNECTION SLEEVE	90MM
	SEALING RING	90MM
	AIR DISTRIBUTION BOX	90MM (Available in a range of spigot options)
	CEILING PLENUM	90MM
	DIFFUSERS	125MM (Available in universal, supply, extract. Fire Rated options available)

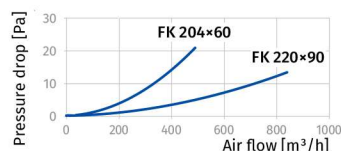
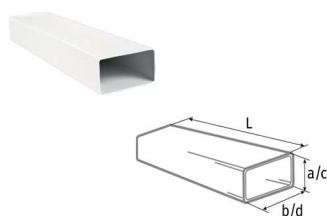
## FLAT CHANNEL DUCTING SYSTEM

THE PHS MAINFRANKEN flat duct system is the best suitable solution for arranging supply and exhaust ventilation for mechanical ventilation systems for residential or office premises.

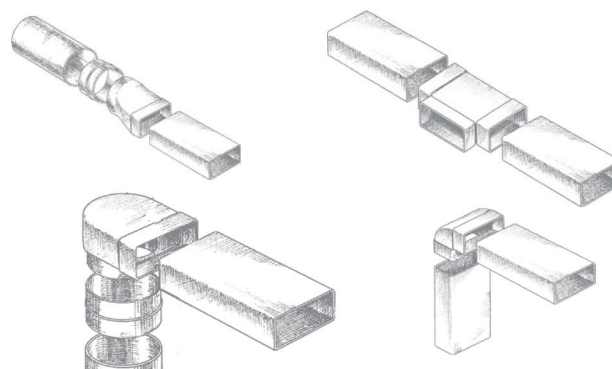


### Features

- Smooth inner surface ensures low air resistance and low noise level in the system.
- Wide range of available components allows assembling ventilation of any configuration and complexity.
- Exact matching of the components ensures perfect connection and integration into the ventilation system.
- Ergonomic fixing system and modular design shortens the required installation and rework time.
- Versatile connectors and reducers provide combination of flat and round ventilation ductworks.
- Compact sizes make the system suitable for installation in brand new or newly refurbished premises.



Data for 1-meter-long air duct section



Model	a × b (Inner size) [mm]	c × d (Outer size) [mm]	L (Length) [m]
204x60/2.0	57 × 200	60 × 204	2.0
220x90/2.0	86 × 216	90 × 220	2.0

## ANCILLARY COMPONENTS

PRODUCT:	DESCRIPTION:	AVAILABLE SIZES :
	CONNECTOR	204X60MM 220X90MM
	T-PIECE	204X60MM 220X90MM
	HORIZONTAL 90 DEGREE BEND	204X60MM 220X90MM
	VERTICAL 90 DEGREE BEND	204X60MM 220X90MM
	150MM, 125MM & 100MM ROUND PIPE ADAPTOR	204X60MM 220X90MM
	ADJUSTABLE BEND	204X60MM 220X90MM
	BRACKET	204X60MM 220X90MM



## ROUND DUCTING SYSTEM

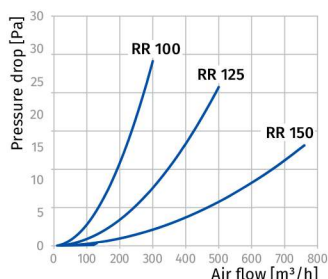
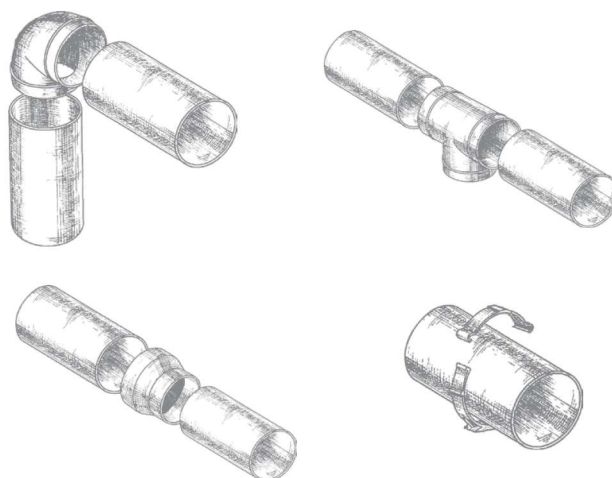
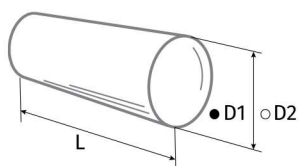
THE PHS MAINFRANKEN round duct system is the best suitable solution for arranging supply and exhaust ventilation for mechanical ventilation systems for residential or office premises.



### Features

- Smooth inner surface ensures low air resistance and low noise level in the system.
- Ergonomic fixing system and modular design shortens the required installation and rework time.

- Wide range of available components allows assembling ventilation of any configuration and complexity.
- Versatile connectors and reducers provide combination of flat and round ventilation ductworks.











Model	Ø D1 (Inner) [mm]	Ø D2 (Outer) [mm]	L (Length) [m]
RR 100/2	100	103	2.0
RR 125/2	125	128	2.0
RR 150/2	150	153	2.0



## ANCILLARY COMPONENTS

PRODUCT:	DESCRIPTION:	AVAILABLE SIZES :
	45 DEGREE BEND	150mm, 125mm, 100mm
	CONNECTOR	150mm, 125mm, 100mm
	T-PIECE	150mm, 125mm, 100mm
	90 DEGREE BEND	150mm, 125mm, 100mm



### Heat Recovery Units

Product:	Description:	Technical Specification:
	PHS_HRV550_H	SAP heat exchange efficiency, $K_{p1} = 93\%$ $\rightarrow K_{p2} = 88\%$ . High efficiency EC motors. Excellent user interface, including filter replacement and fan failure indicator.
	Komfort EC D5B 180	Perfect for false ceiling installations with just 264mm height and 14kg weight. Max airflow of 220m <sup>3</sup> /hr and a 3m dBA of 33. High efficiency EC motors.
	Komfort EC D5B 270	Produces an airflow of up to 300m <sup>3</sup> /hr. An enthalpy heat exchanger also available.
 	Komfort EC SB 350	Passive House institute certified. Max airflow rate of 450m <sup>3</sup> /hr SEC Class: A+, Enthalpy version available.
	Komfort EC SB 550	Max airflow rate of 690m <sup>3</sup> /hr SEC Class: A+, Enthalpy version available.
	Sentinel Kinetic Plus B	A market leading HRV machine. Capacity of up to 400m <sup>3</sup> /hr at 150Pa.
	Sentinel Kinetic High Flow	Up to 650m <sup>3</sup> /hr capacity. Only 34kg weight. Perfect for remote monitoring, for example in care homes.

### Mechanical Extract Units

Product:	Description:	Technical Specification:
	PHS_MEV_H	Delivers fan power down to 0.19 W/l/s. SAP approved with 75mm & 90mm semi-rigid pipe.
	PHS_dMEV_100	100mm wall core moving max 83m <sup>3</sup> /h. Max 2,6w power use (Normal 1.0 - 1.7W) Optional humidity controls.

### Positive Input Ventilation

Product:	Description:	Technical Specification:
	PHS_PIV	Low Energy EC Motor as standard. G4 Filter as standard plus an optional PM2.5 filter. Only 247mm height.
	PHS_PIV_H	Low Energy EC Motor as standard. G4 Filter as standard plus an optional PM2.5 filter. Only 247mm height. Integral 500w heating element.

### Single Room Heat Recovery Units

Product:	Description:	Technical Specification:
	Vento Expert A50-1 Pro	Maximum Air Capacity: 50m <sup>3</sup> /h Heat Recovery Efficiency: 85%
	Vento Expert A30-1 Duo Pro	Maximum Air Capacity: 30m <sup>3</sup> /h Heat Recovery Efficiency: 85%
	Vento Ergo A25-1 Pro	Maximum Air Capacity: 25m <sup>3</sup> /h Heat Recovery Efficiency: 85%

# PHS EPP DUCTING SYSTEM

## About the system

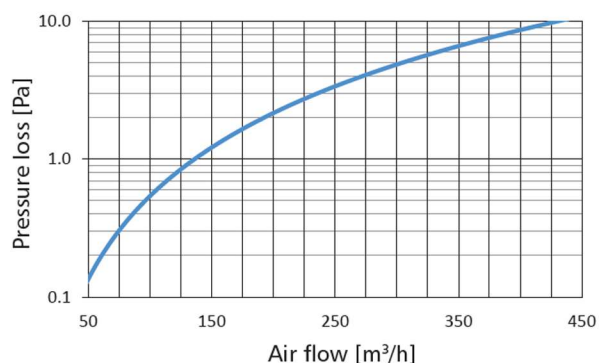
The Passive House Systems EPP duct system is made of expanded polypropylene. The system has a number of design and installation advantages:

- Low weight,
- Quick installation (no additional connectors or screws required),
- No additional insulation is required since the material itself is already an insulator,
- Easy to cut using hand tools,

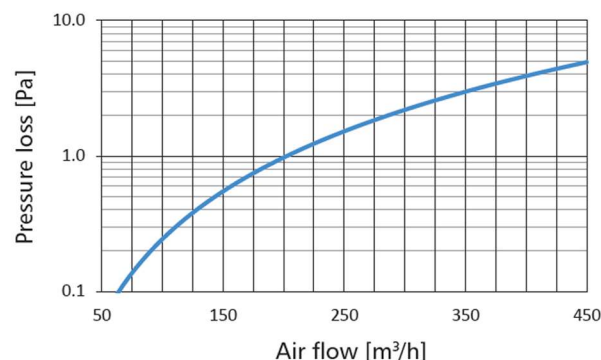


- No thermal bridges,
- Excellent thermal conductivity:  $\lambda = 0.039 \text{ [W / m} \cdot \text{K]}$ .

Measurement: inner diameter: 125mm, length: 1m, temp: 25°C,  $P_{\text{atm}}$ : 1004 mBar,  $\rho$  (density): 1.173 kg/m<sup>3</sup>



Measurement: inner diameter: 150mm, length: 1m, temp: 28.5°C,  $P_{\text{atm}}$ : 1004 mBar,  $\rho$  (density): 1.159 kg/m<sup>3</sup>



Partnumber	Description
HRV007F1	150mm ID EPP Pipe X 1000mm
HRV007F2	150mm ID EPP Pipe X 45/90° bend
HRV007F3	150mm ID EPP Pipe connector
HRV007F4	150mm ID EPP Pipe T-Piece

Partnumber	Description
HRV008E1	125mm ID EPP Pipe X 1000mm
HRV008E2	125mm ID EPP Pipe X 45/90° bend
HRV008E3	125mm ID EPP Pipe connector
HRV008E4	125mm ID EPP Pipe T-Piece

## Office

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