



The Flavent® Flat Roof Range

Professional range of ventilation and drainage products for flat roofs

September 2015 edition

KLOBER

INTRODUCTION

Universal products and systems which offer outstanding value for money

Klober is a UK market leading manufacturer of high quality, innovative roofing ventilation products. Our product offering includes professional solutions for pitched and flat roofs as well as waterproofing walls and facades. Klober's proven product range includes ventilation, roofing underlays, vapour barriers, tapes and sealants, roof safety, dry fix roofing accessories and lead-free flashings.

A Roof, parapet and balcony drainage rainwater outlets

Single and two-piece rainwater outlets and parapet outlets



B Service outlets

Cable and pipe penetrations



C Breather vents

Single and two-piece expansion vents



D Room and soil ventilation

Single and two-piece vents



We provide both standard and specialised products, all of which offer high quality, durability, long-lasting performance and outstanding value for money. Our products comply with the latest industry standards and legal requirements, and are designed for universal application. As a result, they can be fitted with the widest possible range of roof coverings and wall constructions, making them easier to specify, easier to work with and more reliable in terms of functionality.



CONTENTS

Introduction	2
Selecting the right product	3
Rainwater Drainage Outlets.....	4-7
Outlet Kits for Pipes and Cables.....	8-11
Flavent® Plus Range of Thermal Rainwater Outlets	12-15
Breather and Extraction Vents	16-17
Warm Air and Mechanical Soil Ventilation	18-19
Breather and Soil Vent - product overview	20-21
Accessories	22-23

Product features and benefits

Features

- Quick and easy to install
- Very strong durable range of flat roof vents and outlets
- UV stable
- Comprehensive range to suit cold and warm roofs
- 70mm, 100mm and 125mm diameter vents and outlets (including TPE 80mm and 100mm)
- Suitable for bituminous, PVC and single-ply roof systems

Functionality

- The main challenge for flat roof vents is to prevent water ingress and to protect kitchen and bathroom vent pipes. Klober's Flavent® non restricting storm proof rain caps guarantee uninterrupted air flow.

SELECTING THE RIGHT PRODUCT

Considering the many possibilities of waterproofing flat roofs, it is important in every project to have the correct connector for any roof penetration. Matching a connector to the waterproofing membrane is vital for the flat roof to be reliably protected against water ingress.

Every Klover flat roof component is available with PVC flanges or preassembled connector skirts, so that it can be fixed securely

to the sub-structure. Single-piece units can be extended, as well as added to with a base section to form a two-piece combination. Thus, unventilated warm roofs can be securely waterproofed.

Klover's range of connector solutions are ideal for use with most modern waterproofing membranes.



The high impact PVC flange, for the connection of PVC membranes and liquid plastics.



The bitumen skirt solution, with a 4mm thick polymer-bitumen connector membrane, provides maximum security and can be quickly joined to the waterproofing system.



The ingenious screw connector, for high-polymer plastic roof membranes.

Durability

- Klover products are highly resilient and are not affected by prolonged UV exposure.
- Materials will not fade, crack or deform and joints withstand extremes of heat and cold.

Availability

- Rain water outlets are available in a variety of designs and sizes to suit surface area requirements and for installation on warm or cold roof decks.

CONNECTOR OPTIONS



Material	PVC connector sleeve	Bitumen skirt	Screw connection* only in 100, 125 Dia.
Bitumen	✓*	✓	
ECB (ethyl copolymer bitumen)			✓
EPDM (ethyl propylene India rubber)			✓
EH-VAE (ethyl vinyl acetate copolymer)			✓
FPO (free polyolefins)			✓
IIR (isoprene isobutylene India rubber)			✓
PEC (chlorinated polyethylene)			✓
PIB (polyisobutylene)			✓
PVC (polyvinylchloride)	✓		✓

* The PVC sleeve must be roughened with a wire brush. Do not use any bitumen undercoat.

ROOF DRAINAGE WITH THE PROVEN KLOBER FLAVENT® RANGE

Achieving optimum flat roof drainage is crucial to maximise performance and lifespan. Since standing water can cause considerable damage, flat roofs must be drained at their lowest points. Poor drainage can result in 'ponding' (standing water). This can lead to a build-up of algae and a risk of deterioration of the

waterproofing membrane. In severe cases, water ingress can occur, resulting in damage to the roof construction and internal property.

Klober's range of flat roof drainage solutions are fully comprehensive and proven to eliminate these kinds of problems.

Flavent® rainwater outlets

Product features and benefits

- Slender inlets for narrow roof penetrations
- Quick installation with individual flange connectors
- Variable height options
- High impact leaf filters for optimum water drainage
- Optional pipe extension allows for all thermal insulation thicknesses

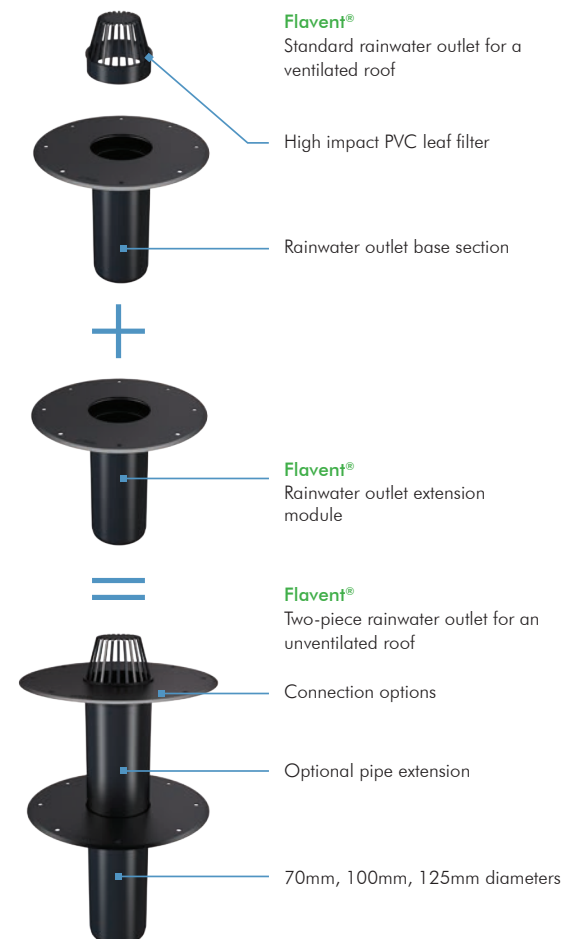
Material and properties

High impact PVC

- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature max. +40°C (for short periods max. +80°C)

TPE - Thermoplastic Elastomers

- Flexible
- Cost-effective
- Resistance to the ozone and to the oxygen
- Excellent resistance to the degradation due to the atmospheric ageing
- Resistance to high temperatures (until 140°C) both in a dry and in a wet environment
- Resistance to low temperatures: the flexibility is conserved until -35°C



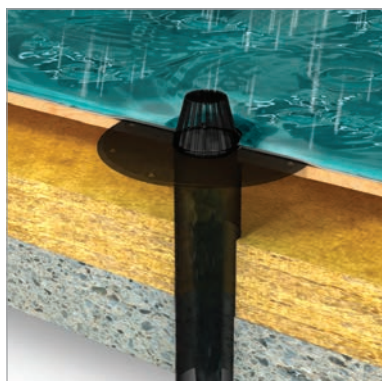
Flavent® parapet rainwater outlet

Our products are designed for optimum drainage of parapet walls, terraces and balconies.

Product features and benefits

- Rainwater outlet for horizontal installation through a wall (parapet)
- Ideal for installation to roofs, balconies and terraces
- Weather, frost and UV-resistant
- Extendable, reliable and easy to install

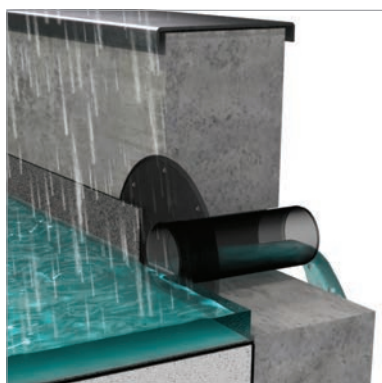




Installation example:
Flavent®
Rainwater outlet for a ventilated roof with a polyurethane waterproofing membrane



Installation example:
Flavent®
Rainwater outlet for an unventilated roof with a bitumen waterproofing membrane



Installation example:
Flavent®
Parapet wall rainwater outlet for an unventilated roof with a bitumen waterproofing membrane



Connector diameters

- 70mm, 100mm, 125mm, including TPE 80mm and 100mm options

Connector options

- PVC-connector flange
- Bitumen skirt
- Screw connector



Standards

- DIN EN 12056 part 3
- DIN 1986 part 100
- DIN EN 1253
- DIN 18195

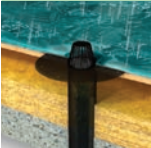















Add-on products













- Pipe extensions
- Tangit PVC adhesive





Installation

- Specify sufficient fall to meet BS 6229
- It is recommended that roofs with interior drainage must have at least one emergency overflow or several exterior downpipes
- Position rainwater outlets at the lowest point of a roof
- The position and number of outlet pipes should be calculated using current regulations and best practice to ensure that surface water can drain away effectively
- Maintain sufficient distance from upstands and joints
- Rainwater outlets and emergency overflows should be fixed to the substructure of the roof
- If the roof surfaces are divided into sections then these areas must also be drained individually
- Rainwater outlet flanges should be compatible with the roof membrane to ensure a watertight seal is made
- Flanges should be below the roof membrane's finished level to ensure that water does not puddle around the outlet
- A two-piece outlet must be used to connect to the vapour barrier in a ventilated roof
- Rainwater outlets should always be freely accessible for maintenance

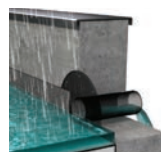
FLAVENT® RAINWATER OUTLETS – PRODUCT OVERVIEW

		DN 70	DN 100	DN 125
Ventilated roof	 Leaf and gravel filter (not included with delivery and to be ordered as an option)	 KF 6819*	 KF 6826*	 KF 6827*
	 Hard PVC flange Rainwater outlet*	 KF 6500*	 KF 6510*	 KF 6520*
	 Bitumen skirt Rainwater outlet*	 KF 6501*	 KF 6511*	 KF 6521*
	 Screw connector Rainwater outlet (Leaf and gravel filter KF 6880 already included in delivery)	 as DN 125, in combination with reducing piece DN 125 to 100 (KF 6765)		 KF 6522














		DN 70	DN 100	DN 125
Unventilated roof	 Hard PVC flange Extension element*	 KF 6500*	 KF 6510*	 KF 6520*
	 Bitumen skirt Extension element*	 KF 6501*	 KF 6511*	 KF 6521*
	 Screw connector Extension element (Leaf and gravel filter KF 6880 already included in delivery)	 as DN 125, in combination with reducing piece DN 125 to 100 (KF 6765)		 KF 6522

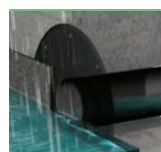
		DN 70	DN 100	DN 125
Insulation package pipe extensions (can be shortened individually)		 KF 6836	 KF 6837	 KF 6838
		Extensions necessary from insulation thickness...		
		> 215mm	> 264mm	> 264mm

FLAVENT® PARAPET AND BALCONY OUTLETS – PRODUCT OVERVIEW



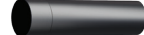


Flavent® Parapet and balcony outlets





	DN 70	DN 100	DN 125
Leaf and gravel filter (not included with delivery and to be ordered as an option)			
	KF 6819*	KF 6826*	KF 6827*
 Hard PVC flange Parapet rainwater outlet with pipe extension			
	KF 6530	KF 6540	KF 6550
 Bitumen skirt Parapet rainwater outlet with pipe extension			
	KF 6531	KF 6541	KF 6551
 TPE flange Parapet rainwater outlet with pipe extension	100 x 100 x 500mm 		
	KF 7603-1*		



Flavent® pipe extensions

	DN 70	DN 100	DN 125
Pipe extension for wall penetration (already included with delivery, can be shortened individually)			
	KF 6836	KF 6837	KF 6838

Flavent® rainwater outlet TPE

	DN 60-125	DN 80	DN 100
Leaf filter grill Note: suitable for all PVC and TPE breather vents.			
	KF 7800-1*		
 TPE Rainwater Outlet		80mm 	100mm 
		KF 7503-1*	KF 7513-1*

Additional comments:

Modular use as rainwater outlet, extension element, vent lower part. All individual components are to be bonded with Tangit (except leaf and gravel filter and screw ring). If reducing pieces are used only the smaller cross-section may be employed.

The technical drawings of all articles can be downloaded under www.klober.co.uk

* Stock items in UK. Other products without * are not UK stocked items and are made to order. These will incur production time plus delivery time. Contact Sales office for more information.

THE FLAVENT® ROOF OUTLET KIT FOR PIPES AND POWER CABLES

Besides typical traditional roof penetrations on flat roofs, such as breather pipes, vents or rainwater outlets, there are also many applications today which have to be installed through or on the roof. These include power cables for antennas as well as connectors for photovoltaic, or service pipes such as for solar

thermal and air conditioning systems. The Flavent® 'swan neck' design can be combined with all other Flavent® flat roof system components, such as upper pipe extensions, including insulation package extensions, or those with unusually high insulation layers.

Flavent® roof outlet kit for power cables

Product features and benefits

- Ideal for connecting to bitumen and PVC roof membranes
- Optional pipe extension allows for all thermal insulation thicknesses
- Quick and simple to install

Material and properties

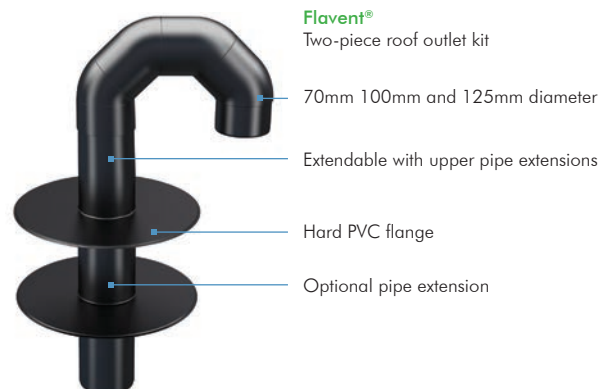
- High impact PVC, black
- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature max. +40°C (for short periods max. +80°C)



Flavent®
Roof outlet kit



Flavent®
Base section



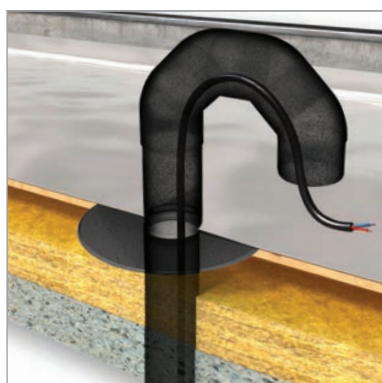
Flavent®
Two-piece roof outlet kit

70mm 100mm and 125mm diameter

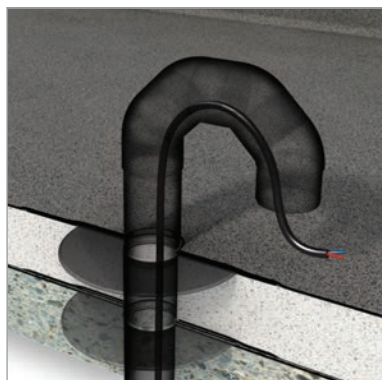
Extendable with upper pipe extensions

Hard PVC flange

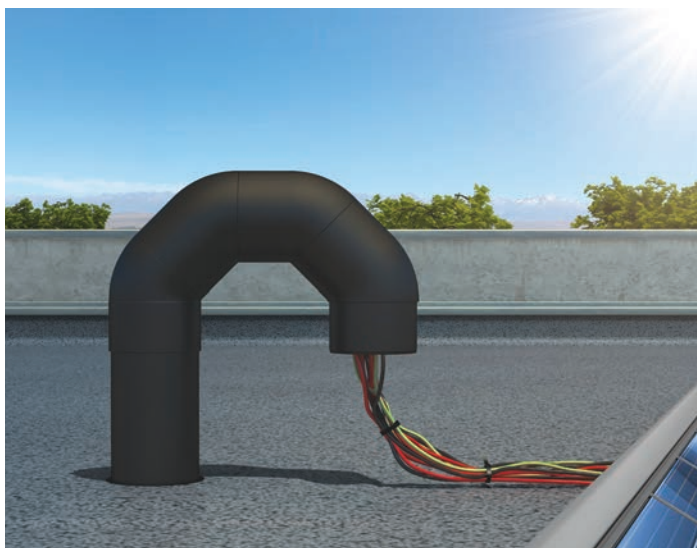
Optional pipe extension



Installation example:
Flavent®
Single-piece roof
outlet kit for a ventilated
roof with PVC roof
membrane



Installation example:
Flavent®
Two-piece roof outlet kit
in unventilated roof with
bitumen roof membrane



Connector diameters

- 70mm, 100mm, 125mm

Connector options

- PVC connector flange
- Bitumen skirt



Standards

- DIN 18531 – roof waterproofing
- DIN 18195 – building structure waterproofing

Add-on products

- Lower vent section
- Upper pipe extensions
- Optional pipe extensions for insulation
- Tangit PVC adhesive

Technical instructions

- The positioning of roof service penetrations, and their subsequent installation, must first be assessed professionally to enable them to perform to their optimum potential and remain reliably water-tight
- As far as possible, service penetrations should be positioned at the higher points of the roof surface in order to avoid hindering water drainage
- Roof penetrations should be kept to a minimum
- Distances between roof penetrations and to other building components or roof edges must be at least 300mm
- On roofs with pitches under 5°, roof penetration connectors must be taken up at least 150mm above the upper edge of the roof covering

FLAVENT® ROOF OUTLET KIT - PRODUCT OVERVIEW



Flavent® single-piece roof outlet kit for power cables

Ventilated roof



Hard PVC flange
Rainwater outlet*

DN 70



KF 6910*

DN 100



KF 6920*

DN 125



KF 6930



Flavent® two-piece roof outlet kit for power cables

Unventilated roof



Hard PVC flange
Lower part*

DN 70



KF 6500*

DN 100



KF 6510*

DN 125



KF 6520*



Bitumen skirt
Lower part*



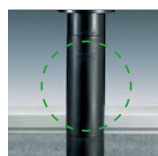
KF 6501



KF 6511



KF 6521



Flavent® upper pipe extensions

Upper pipe extensions
(can be shortened individually)

DN 70



KF 6806

DN 100



infinitely extendable
KF 6807

DN 125



KF 6808*



Flavent® insulation package pipe extensions

Insulation package pipe extensions
(can be shortened individually)

DN 70



> 194 mm
KF 6836

DN 100



Extension necessary from insulation thickness ...
> 275 mm
KF 6837

DN 125

















> 235 mm
KF 6838

All individual components are to be bonded with Tangit, whereby the joint gap all round may not amount to more than 0.6 mm.

Tangit is not included with delivery.

REPLACEMENT ACCESSORIES

	DN 70		DN 100		DN 125	
	Bonding adhesive Tangit for sticking hard PVC connections, 125 g weight					
	 KF 6828					
	Raincaps, clamp connector					
	 KF 6809	 KE 8013	 for open socketless pipes KF 8015	 KF 6817		
	Head part / socket / basic carrier					
		 Head part for extension vent KF 6866	 Slip in socket KF 6867	 Basic carrier for weather hood KF 6818		
	Screw connector without under-screw pipe for living space supply and exhaust vent and refurbishment vent					
	 KF 6856					
Under-screw pipe for screw connector						
	 of living space supply and extract vent KF 6859		 of refurbishment vent for pipes without sockets KF 6816			
Vent lower section old range before 2005						
	 Hard PVC flange KF 6870		 Bitumen skirt KF 6871			

Additional comments:

Modular use as rainwater outlet, extension element, vent lower part.

All individual components are to be bonded with Tangit (except leaf and gravel protection birdcage and screw ring).

The technical drawings of all articles can be downloaded under www.klober.co.uk.

* Stock items in UK

Other products without * are not UK stocked items, and are made to order. These will incur production time plus delivery.

THE FLAVENT® PLUS RANGE OF THERMAL RAINWATER OUTLETS

Today, flat roofing is reasserting itself again as a positive architectural design option, both in terms of aesthetics and of building practice. In respect of an energy-efficient building, a flat roof – thermally insulated and with long-life waterproofing membranes and connectors – results in lower energy requirements and thereby costs.

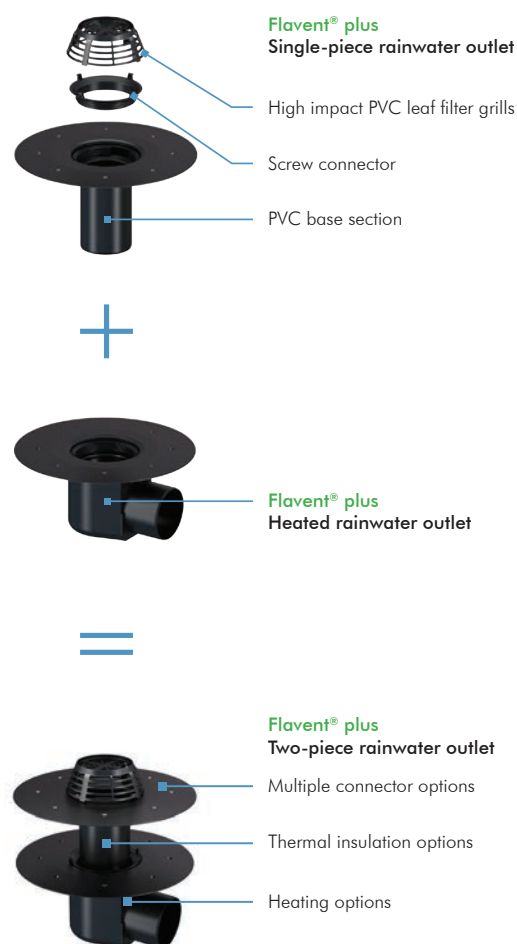
Flavent® thermal rainwater outlets

Product features and benefits

- Outstanding thermal properties
- Fits all flat roof structures and constructions
 - Single or two part, allowing for height variations
 - Angled or vertical
- Heated outlets prevent rainwater from freezing
- Preassembled connector sleeves both speed up installation as well as increase its integrity
- Available with a PVC flange, as well as with connector sleeves for bitumen and plastic roof membranes
- Isolated heating elements

Material and performance

- High impact PVC, black
- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature max. +40°C (for short periods, max. +80°C)



DRAINAGE OF THE FLAT ROOF – THE BASIC PRINCIPLES

Against the background of increasing extreme weather conditions, the design of flat roof drainage is of particular importance. A basic prerequisite for the secure drainage of flat roof surfaces, and for increasing the length of the roof's life, is having a sufficient fall ratio. The rainwater should be disposed of by the shortest route in this way. To avoid problems of rain penetration damage, it is vital to meet BS6229 standards with a minimum fall of 1:80. Where possible, a 1:40 fall will ensure more efficient drainage.

Gravity drainage systems inside buildings with flat roofs must be taken into account to comply with meet Part 3. Conjoined property roofs may also need to comply with Part H as well as Part L1B.

In areas exposed to severe weather conditions, environmental loads such as snow or heavy rainfall need to be considered to meet BS EN 1991 standards.



Installation example:
Flavent® plus
Single-piece vertical
rainwater outlet for a
ventilated roof



Installation example:
Flavent® plus
Two-piece vertical
rainwater outlet for an
unventilated roof



Connector diameters

- 70mm, 100mm, 125mm, including
TPE 80mm and 100mm options

Connector options

- PVC connector sleeve
- Bitumen skirt
- Screw connector
- Screw connector with PVC sleeve



Standards

- DIN EN 12056 part 3
- DIN 1986 part 100
- DIN EN 1253
- DIN 18195

Add-on products

- Insulation pipe extension
- Upper and lower pipe extensions
- Tangit PVC adhesive

















Installation










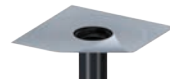

- Specify sufficient fall to meet BS 6229
- It is recommended that roofs with interior drainage must have at least one emergency overflow or several exterior downpipes
- Position rainwater outlets at the lowest point of a roof
- The position and number of outlet pipes should be calculated using current regulations and best practice to ensure that surface water can drain away effectively
- Maintain sufficient distance from upstands and joints
- Rainwater outlets and emergency overflows should be fixed to the substructure of the roof
- If the roof surfaces are divided into sections then these areas must also be drained individually
- Rainwater outlet flanges should be compatible with the roof membrane to ensure a watertight seal is made
- Flanges should be below the roof membranes finished level to ensure that water does not puddle around the outlet
- A two-piece outlet must be used to connect to the vapour barrier in a ventilated roof
- Rainwater outlets should always be freely accessible for maintenance







FLAVENT® PLUS RAINWATER OUTLETS – PRODUCT OVERVIEW

	<i>Flavent® plus single-piece rainwater outlet</i>				
	VERTICAL	DN 70	DN 100	DN 125 non-heated heated	DN 150
			↑	 KF 6700	↑
			In combination with reducing piece DN 125 to 100 (KF 6765)	 KF 6700-01	In combination with expansion piece DN 125 to 150 (KF 6764)
	<i>Flavent® plus two-piece rainwater outlet (in combination with single-piece rainwater outlet)</i>				
		DN 70	DN 100	DN 125	DN 150
			↑	 KF 6706	↑
			In combination with reducing piece DN 125 to 100 (KF 6765)	 KF 6706-01	In combination with expansion piece DN 125 to 150 (KF 6764)
	<i>Flavent® insulation package pipe extensions for two-piece rainwater outlet</i>				
	ACCESSORIES	DN 70	DN 100	DN 125	DN 150
	Insulation package pipe extensions (can be shortened individually, extension necessary from insulation thickness 165mm)			 KF 6808	
	Expansion pieces				 DN 125 to 150 KF 6764
	Reducing pieces	 DN 125 to 100 KF 6765			
	Leaf and gravel filter (already included in delivery)			 KF 6880	

FLAVENT® PLUS RAINWATER OUTLETS – PRODUCT OVERVIEW

		Flavent® plus single-piece rainwater outlet									
		ANGLED	DN 70*		DN 100	DN 125		DN 150			
			non-heated	heated		non-heated	heated				
Ventilated roof		Hard PVC flange / screw connector Rainwater outlet			↑			↑			
			KF 6704	KF 6705		KF 6702	KF 6703				
		Bitumen skirt Rainwater outlet			In combination with expansion piece DN 70 to 100 (KF 6767) reducing piece DN 125 to 100 (KF 6765)			In combination with expansion piece DN 125 to 150 (KF 6764)			
			KF 6704-01	KF 6705-01		KF 6702-01	KF 6703-01				
		Screw connector Rainwater outlet with plastic sleeve to choice (see table on page 10)			↓			↓			
			KF 6704-xx	KF 6705-xx		KF 6702-xx	KF 6703-xx				

		<i>Flavent® plus two-piece rainwater outlet (in combination with single-piece rainwater outlet)</i>				
		DN 70		DN 100	DN 125	DN 150
Unventilated roof		Hard PVC flange / screw connector Extension element*			 KF 6706	
		Bitumen skirt Extension element*		In combination with expansion piece DN 70 to 100 (KF 6767) reducing piece DN 125 to 100 (KF 6765)	 KF 6706-01	In combination with expansion piece DN 125 to 150 (KF 6764)
		Screw connector Extension element with plastic sleeve to choice (see table on page 10)			 KF 6706-xx	

	Flavent® insulation package pipe extensions for two-piece rainwater outlet				
ACCESSORIES	DN 70	DN 100	DN 125	DN 150	
Insulation package pipe extensions (can be shortened individually) extension necessary from insulation thickness 165mm)			 KF 6808		
Expansion pieces		 DN 70 to 100 KF 6767		 DN 125 to 150 KF 6764	
Reducing pieces		 DN 125 to 100 KF 6765			
Leaf and gravel filter (already included in delivery)			 KF 6880		

Note: none of these products are stock items in UK, therefore will incur production plus lead delivery times.

FLAVENT® BREATHER AND EXTRACTION VENTS

In today's modern buildings, humidity can penetrate into the roof space, posing a threat to the roof structure from moist air forming condensation under the waterproofing layer, leading to the development of mould, rot or blisters. Moisture entering the roof space via defective waterproofing can also create these same problems. Cold roofs need to be ventilated so as to avoid the

threat of this kind of damage. On unventilated warm roofs, with bituminous waterproofing membranes, moist air entering the roof space can lead to blisters forming on the waterproofing membrane. Eventually, these may crack or split, leading to damage of the deck and sub-structure.

Flavent® breather and extraction vents for flat roof spaces

Area of use

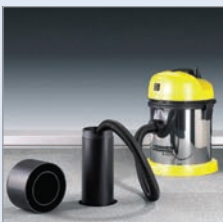
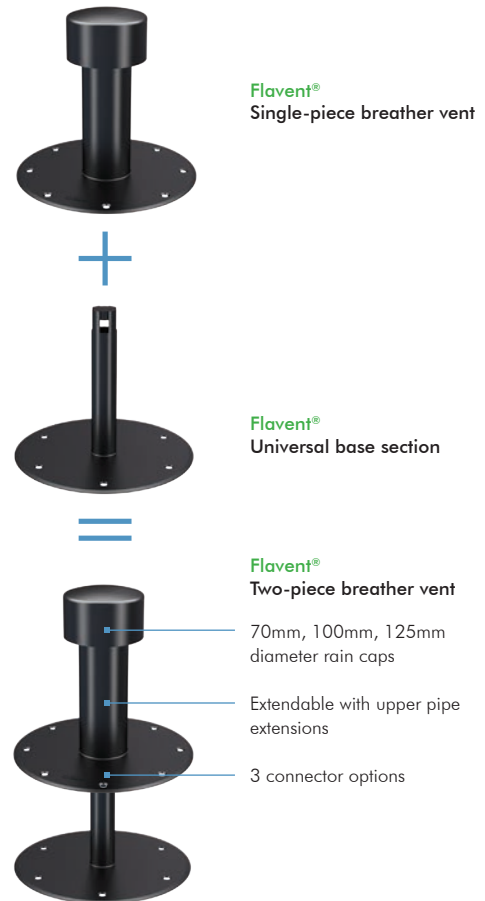
- Breather vents are designed to create air circulation above the insulation layer. They remove moisture trapped in a flat roof, thereby avoiding condensation on the underside of the waterproofing layer which can lead to the formation of mould, rot and surface blisters
- A replacement for old or damaged vents
- Renovation of vents in a roof overlay
- For drying out roofs after construction or renovation

Product features and benefits

- Optimum air circulation
- Moisture and condensation is removed
- Insulation performance remains intact
- Compatible with most modern membranes
- Quick and easy installation

Material and performance

- High impact PVC, black
- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature max. +40°C (for short periods max. +80°C)



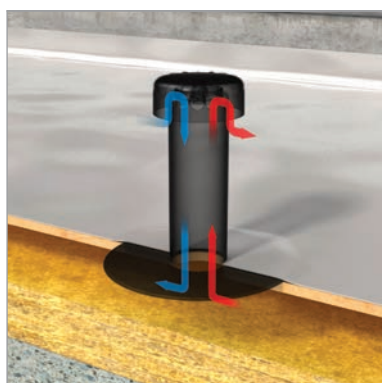
AVOIDING EXTENSIVE ROOF REPLACEMENT

Klober's Flavent® breather and extraction vents can be used in certain situations to avoid expensive replacement of the entire waterproofing and insulation systems. These products may be used where damaged vents or wet insulation has occurred due to water ingress.

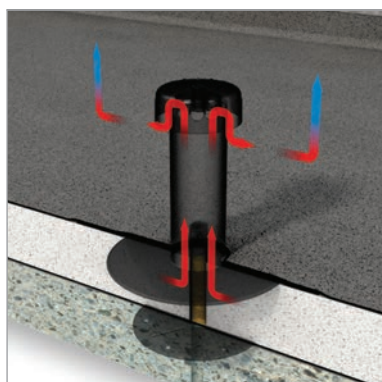
Advantages:

- Old vents can remain in the roof surface
- A high-cost replacement of the old roof is unnecessary
- Time-saving, through the simple addition of new vents
- Damp insulation may be dried out in stages by the use of water suction devices

Flavent® breather and extraction vents enable economical installation of a new overlay waterproofing layer and additional insulation.

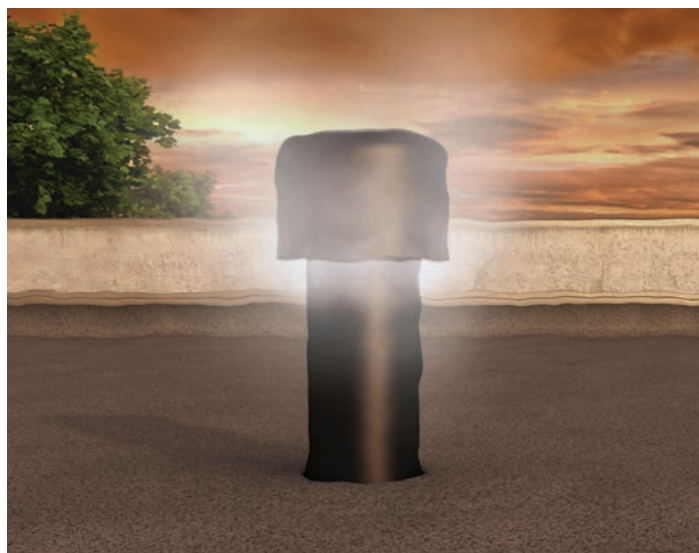


Installation example:
Flavent®
Single-piece breather vent
for ventilated roof with
PVC roof membrane



Installation example:
Flavent®
Two-piece breather vent
for unventilated roof with
bitumen roof membrane

Note the insulation
material-filled lower
section, preventing
condensation forming
within the roof structure



Connector diameters

- 70mm, 100mm, 125mm, including TPE 80mm and 100/120mm options

Possible connectors

- PVC-connector flange
- Bitumen skirt
- Screw connector
(only in 100mm, 125mm diameters)



Standards

- DIN 4108

Add-on products

- Lower vent section
- Upper and lower pipe extensions
- Tangit PVC adhesive

Installation

- To prevent condensation forming within the supporting structure, care must be taken when installing two-piece vents to ensure that the lower section is filled with an insulation material
- A uniform space above an insulation layer is required to enable effective ventilation
- The number and position of breather vents required must be installed in accordance with British Standards

FLAVENT® WARM AIR AND MECHANICAL SOIL VENTILATION

The Flavent® breather vents, for flat roofs over living spaces, are optimised solutions for mechanical and static ventilation. They convey unpleasant stuffy air and moisture, e.g. from bathrooms and kitchens, to the exterior. Klobber's vent pipes are also excellent when incorporated into controlled ventilation systems.

Flavent® breather and mechanical soil extraction vents

Area of use

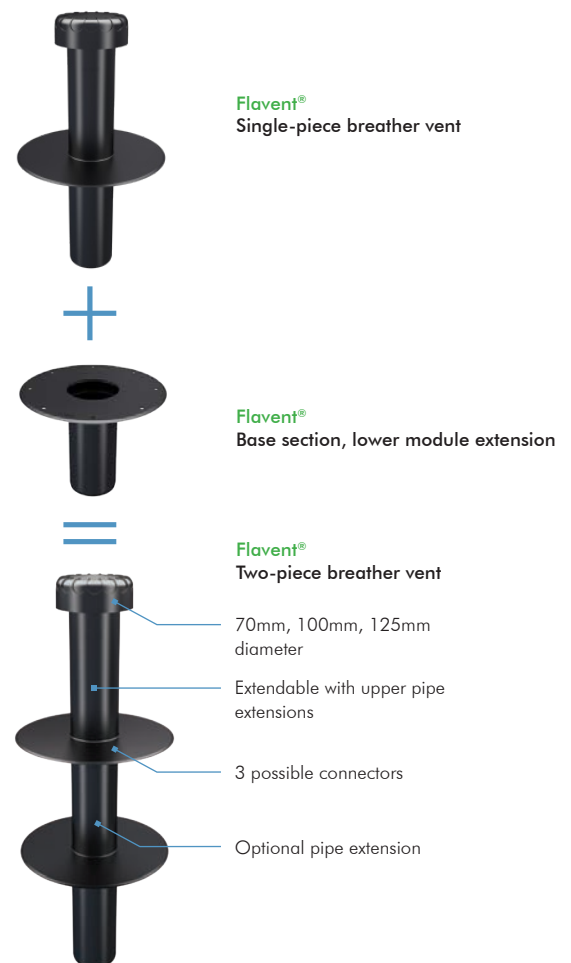
- Ventilation of bathrooms and toilets
- Soiled water ventilation
- Ventilation for extraction hoods in kitchens
- Controlled ventilation systems

Product features and benefits

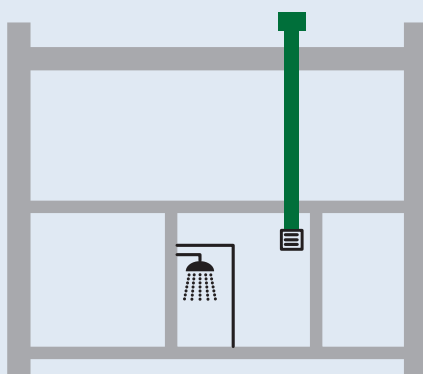
- Provides fresh air whilst removing stale and foul air
- Compatible with most modern membranes
- Optional pipe extension allows for all thermal insulation thicknesses
- Quick and easy installation

Material and properties

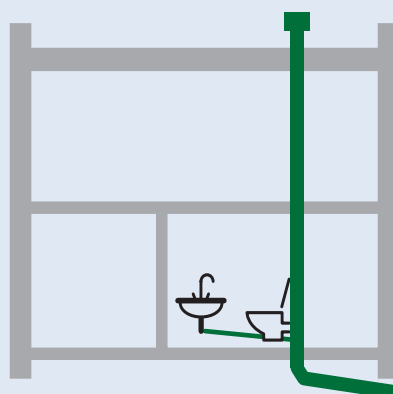
- High impact PVC, black
- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature max. +40°C (for short periods max. +80°C)



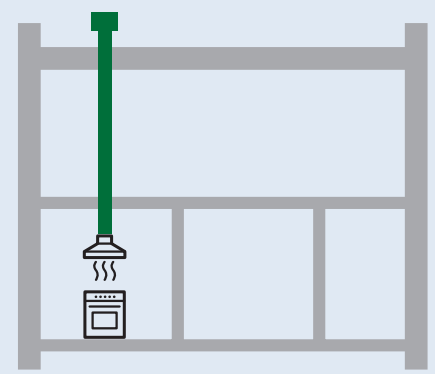
VENTILATION SOLUTIONS



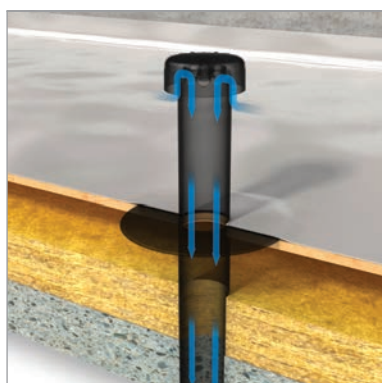
Ventilation of bathrooms and toilets without a window to the outside



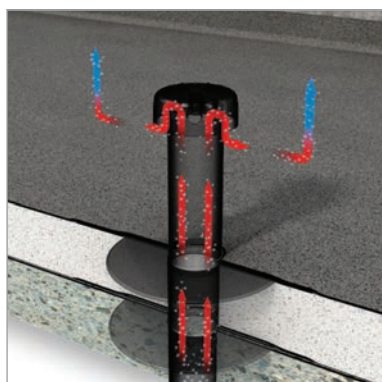
Soiled water ventilation



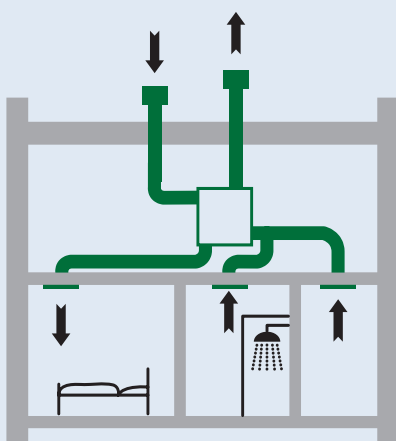
Ventilation for extraction hoods in kitchens



Installation example:
Flavent®
Single-piece breather/
mechanical soil extraction
vent for ventilated roof
with PVC roof membrane



Installation example:
Flavent®
Two-piece breather/
soil vent for unventilated
roof with bitumen roof
membrane



Controlled living space ventilation



Connector diameters

- 70mm, 100mm, 125mm

Possible connectors:

- High impact PVC flange
- Bitumen skirt
- Screw connector (only in 100mm and 125mm)



Standards

- DIN EN 12056 part 3
- DIN 1986 part 100
- DIN EN 1253
- DIN 18195
- DIN 18017


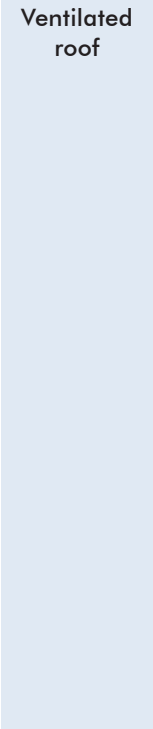
















Add-on products

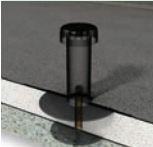
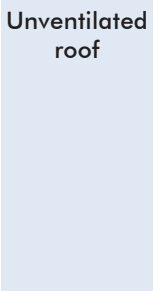




- Lower vent sections
- Upper pipe extensions
- Optional pipe extensions for insulation
- Tangit PVC adhesive

Installation

- Living space breather vents, with height-extending components, need to achieve reliably high ventilation performances
- In areas prone to heavy snowfall, ventilation pipes must be taken up at least 150mm above the roof surface
- If connectors between roof penetrations and ventilation pipes are connected by a hose, the hose should be no longer than a maximum of 1m

FLAVENT® BREATHER AND SOIL VENTS – PRODUCT OVERVIEW

 Flavent® single-piece breather vent		DN 70	DN 100	DN 100	DN 125
 Ventilated roof	 Hard PVC flange	 KF 6000*	 KF 6010*	 KF 6020*	 KF 6030*
	 Bitumen skirt	 KF 6001*	 KF 6011*	 KF 6021	 KF 6031*
	 Screw connector		 KF 6012*	 KF 6022	 KF 6032*
		Length extension restricted, separate manually, bond to stub	Length extension restricted, separate manually, bond to stub or bond with optional connection socket		Length extension restricted, separate manually, bond to stub or bond with optional connection socket
				Infinitely extendable	Infinitely extendable
TPE Breather Vent		DN 80	 KF 7001-1*	DN 100/ 120	 KF 7003-1*

 Flavent® lower part for two-piece breather vent		DN 70	DN 100	DN 100	DN 125
 Unventilated roof	 Hard PVC flange Lower part DN 40	 KF 6100			
	 Bitumen skirt Lower part DN 40	 KF 6101			


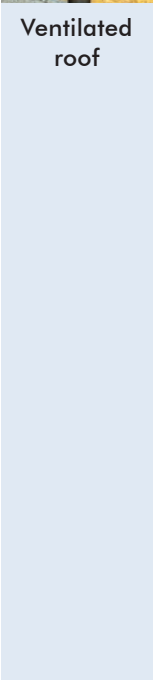














 Flavent® upper pipe extensions		DN 70	DN 100	DN 100	DN 125
Upper pipe extensions (can be shortened (reducible) individually)		 KF 6806	 KF 6807	 KF 6807	 KF 6808




Additional remarks: Modular use as rainwater outlet, extension element, vent lower part. All individual components are to be bonded with Tangit (except leaf and gravel protection birdcage and screw ring).


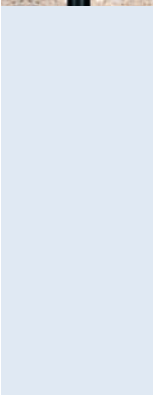








The technical drawings of all articles can be downloaded under www.klober.co.uk.

* Stock items in UK. Other products without * are not UK stocked items, and are made to order. These will incur production time plus delivery time. Contact Sales office for more information.

FLAVENT® BREATHER AND SOIL VENTS - PRODUCT OVERVIEW

		Flavent® single-piece breather and soil vents			
		DN 70	DN 100	DN 100	DN 125
	 Hard PVC flange	 KF 6040*	 KF 6050*	 KF 6060	 KF 6070*
	 Bitumen skirt	 KF 6041	 KF 6051*	 KF 6061	 KF 6071*
	 Screw connector		 KF 6052*	 KF 6062	 KF 6072*
		Refurbishment vent for socket-less pipes, length extension restricted, separate manually, bond to stub			
		length extension restricted, separate manually, bond to stub or optional with connection coupling			
		infinitely extendable			

		Flavent® lower part for two-piece breather and soil vents			
		DN 70	DN 100	DN 100	DN 125
	 Hard PVC flange Lower part*	 KF 6500*	 KF 6510*	no Lower part necessary	 KF 6520*
	 Bitumen skirt Lower part*	 KF 6501	 KF 6511	no Lower part necessary	 KF 6521

		Flavent® upper pipe- / insulation package pipe extensions			
		DN 70	DN 100	DN 100	DN 125
	Upper pipe extensions (can be shortened individually)	 KF 6806	 KF 6807	 KF 6807	 KF 6808
	Insulation package pipe extensions (can be shortened individually)	 > 194 mm KF 6836	 > 275 mm KF 6837	 > 275 mm KE 8006	 > 235 mm KF 6838

FLAVENT® ACCESSORIES

Flavent® Refurbishment Outlet

The refurbishment of flat roofs can be time and cost intensive, especially when old roof outlets must be replaced. It may prove more prudent to leave existing drainage points. Klover's Flavent® Refurbishment Outlet offers a quick and simple solution by connecting directly to existing roof drainage.

Area of use

- For direct connection to existing roof outlets

Product features and benefits

- Existing drainage points can be maintained
- Available in a range of diameters
- Prefabricated connecting sleeves for bitumen and synthetic membranes provide easy installation whilst increasing safety and reliability
- Leaf filter included

Material and characteristics

- Rigid PVC, black/grey
- Weather, frost and UV-resistant

Sizes

50mm, 70mm, 90mm, 110mm and 125mm diameters



Flavent® Universal PVC Connecting Sleeves

It is necessary to securely seal all flat roof penetrations, such as lightning protection systems, fall protection devices or hand rails. Available in a range of diameters; the height is 150mm for all diameters.

Area of use

- To seal penetrations such as lightning protection systems, fall protection devices or railings
- Compatible with PVC roof sealing membranes

Product features and benefits

- Fast and simple sealing of penetrations
- Available in a range of diameters

Materials and characteristics

- Soft PVC, grey
- Weather, frost and UV-resistant

Sizes

35mm, 56mm, 77mm, 100mm, 125mm, 150mm, 200mm



PRODUCT OVERVIEW

Opening width	DN 35	DN 56	DN 77	DN 100	DN 125	DN 150	DN 200
Product codes	KF 6950-35	KF 6950-56	KF 6950-77	KF 6950-100	KF 6950-125	KF 6950-150	KF 6950-200
Diameter Flange Connection	150 mm	150 mm	180 mm	250 mm	275 mm	275 mm	275 mm

Note: none of these products are stock items in UK, therefore will incur production plus lead delivery times.

Flavent® Inspection Chamber

Increasingly, flat roofs are being designed as green roofs, and regardless of whether the planting is extensive or intensive, a flat roof covered in greenery considerably increases the value of the

Area of use

Outlet and Inspection Chamber for green roofs

Product benefits

- Suitable for all green roofs
- Keeps roof outlets free from gravel and substrates
- Allows easy access for inspection
- Height is adjustable with extension elements for extensive/intensive green roof

Materials and characteristics

- Polyamide, grey
- Weather, frost and UV-resistant

Sizes

- Inspection Chamber 400mm x 400mm (W), 130mm (H)
- Extension Element 400mm x 400mm (W), 100mm (H)

building. Klober's Flavent® Inspection Chamber keeps the roof outlets free of gravel and substrate whilst ensuring adequate drainage. Furthermore they enable easy access for the inspection and cleaning of roof outlets.



Flavent®
Inspection Chamber

KF 6940



Extension element for
Inspection Chamber

KF 6946

Flavent® Emergency Overflows

Flat roofs should be planned to include the installation of so-called emergency overflows with inwardly discharging drains. Irrespective of the size of the roof, there should be at least one roof outlet and at least one emergency overflow/outlet.

Area of use

- Protecting a flat roof against heavy rain and flooding

Product benefits

- 500mm pipe length
- Available with connecting sleeves for bitumen and synthetic roof membranes, providing high-level, long-term functionality
- Leaf filter included (Standard only)

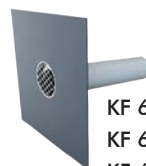
Materials and characteristics

- Rigid PVC, black/grey
- Weather, frost and UV-resistant

Sizes

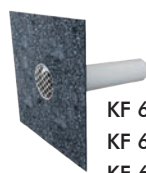
- Standard: 70mm, 100mm and 125mm diameter
- Increased performance: 120mm x 80mm x 200mm

Flavent®
Standard Emergency Overflows



KF 6532-3-xx (DN70)
KF 6542-3-xx (DN100)
KF 6552-3-xx (DN125)

Flavent®
Increased performance
Emergency Overflows



KF 6531-3 (DN70)
KF 6541-3 (DN100)
KF 6551-3 (DN125)



KF 6560-xx



KF 6561



TANGIT PVC ADHESIVE

All individual screw connection joints to be bonded with Tangit, including:

- Two-piece vents
- Extensions within the insulation level, and extensions of the upper pipes
- With the use of sockets
- Around a joint, the gap must be no more than 0.6mm

Note: none of these products are stock items in UK, therefore will incur production plus lead delivery times.

Certification

All of Klover's products conform to the relevant Building Regulations and British Standards and, where appropriate, are BBA, BRE, IAB and CE certified.

Guarantee

All products supplied by Klover Limited are covered by a 10 year guarantee against manufacturing defect. Products are not covered for colour stability, poor workmanship or incorrect installation. All products should be installed as per our literature/fixing instructions and/or guidelines set out in BS5534, BS5250 and our BBA, BRE and IAB certificates.

Note

Please note that not all of the new items will be stocked in the UK. Some products are non-standard, and will be made to order.

Ordering

Contact our sales office on **0800 783 3216** for all product codes and availability.

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The logo for KLOBER, featuring the word "KLOBER" in a bold, red, sans-serif font. A black diagonal line is positioned over the letter "O".