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January 2017			

Lindab Rainwater Systems

Featuring **Rainline™** – the superior steel rainwater system
and **Magestic™** – the king of galvanised gutters



We're here to help

At Lindab Building Products, our aim is to match the reliability of our products with that of our service. Customer support is a core part of our business philosophy.

Our customers are the people we meet on a daily basis, rather than the companies they work at. It is alongside all these people – designers and architects, fitters and installers – that we have built our trust. Lindab is a partner you can trust. Our relations are based on an in-depth understanding of the challenges our customers face. We create our solutions based on these needs and challenges.

We are always near

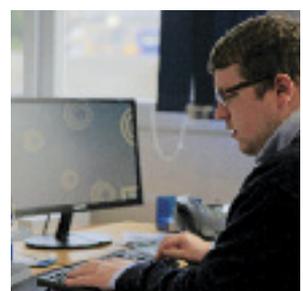
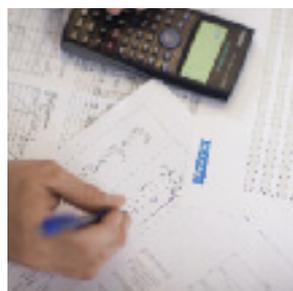
We are proud of the relationships we have developed with local authorities, housing associations, exclusive developers, contractors and end-users across the UK. Thanks to unique customer contacts, we can predict what you need and adapt our offering to suit specific local requirements. It is important to us, because it is important to you, that we optimise the various sales channels we have on each market.

We have a dedicated team of UK regional Business Development Managers who have been trained to the highest degree on our Rainwater System. Our team is available to visit you, we will give you full technical support on site and work closely with your designated contractor. Our team can also offer product training and marketing materials to enable you to make the choice that is right for you.

There when you need us

In a UK market undergoing rapid transformation, there are increasing demands on simplification, speed, flexibility and reliability. We meet these demands and simplify the construction process – before, during and after. We do this with a sustainable supply chain, efficient logistics and a customer-focused flow that creates greater value for you.

We have a committed customer support team at Profile House, our UK distribution centre. They can provide you with technical assistance, quotes, order entry and problem-solving solutions just by picking up the phone. Send us your building drawings and we will even do a “product take-off” for you free of charge.



The superior **steel** rainwater system

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Lindab in brief

With over half a century of experience in the development, manufacturing and marketing of sheet-metal products, Lindab has become one of the leading international players in the construction and HVAC industries.



In 1957, Lindab started out as a small sheet-metal shop in Lidhult, Sweden, and the year after, Lindab moved to Båstad, on the Bjäre Peninsula in the south west of Sweden, where Lindab is situated today.

Lindab has since then expanded to a worldwide business with representation in more than 30 countries. Lindab is a supplier of products and system solutions for simplified construction and improved indoor climate, our main market is Europe. Through close dialogue with our customers, a flat organisation, knowledgeable employees and a strong corporate culture, we develop solutions that have a lower environmental impact and offer increased customer value.



We simplify construction

At Lindab, we simplify construction because it is in human nature to build. By simplifying in every stage, we make it easier to build sustainably. We develop products with the environment in mind. We invent complete solutions that meet the demands for comfort, simplicity and energy efficiency.

We do this so that you can continue building with a clear conscience – not just today, but also tomorrow.



What do we simplify?

With the service, support and availability we provide, our broad product portfolio of smart products and solutions builds an offering that simplifies the construction of energy-efficient buildings.

- Complete ventilation solutions
- Indoor climate solutions
- Ventilation products
- Air movement
- Fire protection
- System solutions for walls, roofs and joists
- Facade systems
- Steel building solutions
- Roof and wall cladding
- Rainwater systems

A culture of innovation

There are three core values behind the drive and the culture of innovation that permeate our entire organisation; to continuously generate improvements for our customers and users.



Customer success

The way we see it, success for our customers breeds success for us. Our endeavour to simplify construction for our customers helps to make their operations more efficient. We do this by leading the development of solutions in our main areas.



Down to earth

We strive for long-term relations based on uncomplicated, trustworthy conduct and an attitude of humility. Important factors are cost-consciousness and fast, efficient decision-making that avoids unnecessary bureaucracy.



Neatness and order

Good orderliness everywhere has a positive impact on efficiency as well as the overall image of the company, and also contributes to a feeling of pride when presenting Lindab.

A few words about steel – a life cycle of green performance

Lindab's steel rainwater system has proved itself to be the most environmentally friendly material available, with a natural place in today's approach to green sustainability.

A study on the life cycle assessment of rainwater products in different materials has compared the environmental impact of products, processes and disposal of seven different materials, covering their entire life cycle from cradle-to-grave. This study covers materials frequently used in rainwater products such as aluminium, zinc,

copper, cast iron, galvanised steel and plastic. This life cycle comparison includes the steps taken up until a product leaves the factory gate; extraction of raw materials, production, energy used, including transport, plus disposal, recycling or waste treatment after use. The environmental impact of all seven materials clearly shows that Lindab's steel, in a product life cycle study, has the lowest carbon footprint of any of its competitors.



The carbon footprint of steel

Lindab's steel has the lowest carbon footprint of any rainwater system, with up to 30% manufactured from recycled material, which is itself completely recyclable. The case for Lindab's steel is further proven with its long-life durability. The useful life of a component is of vital importance; the longer the lifetime, the fewer components need to be produced, making the environmental impact even less.



Lindab's steel is the ultimate material for roof drainage systems. It is strong, durable and made to last.

Life expectancy of various guttering materials

A more environmental focus

To accurately establish the environmental impact of Lindab's steel in comparison with other rainwater materials, a functional unit of one metre of downpipe, in seven different materials, was assessed and compared. The comparison considered the cradle-to-grave carbon impact, making allowance for the different lifespan of each material. The chart on the left lists the data and expectations used as input in the comparison.

Pipe dimension (mm)	Material	Weight (kg/metre)	Expected lifetime (years)
75	Galvanised steel	1.29	70
76.5	Aluminium	1.28	40
75	Zinc	1.45	50
75	Copper	1.45	50
75	Cast iron	6.61	50
68	PVC	0.58	10
68	PE	0.48	10

Product life cycle CO₂ impact

Increasingly customers are asking for the carbon footprint of products, in order to determine how far they contribute to climate change.

The Lindab steel product life cycle CO₂ study has highlighted how current CO₂ levels are 30% higher than in the pre-industrial era and how a doubling of levels in the atmosphere is expected to occur over the next century. The impact and implications of such changes are far-reaching.

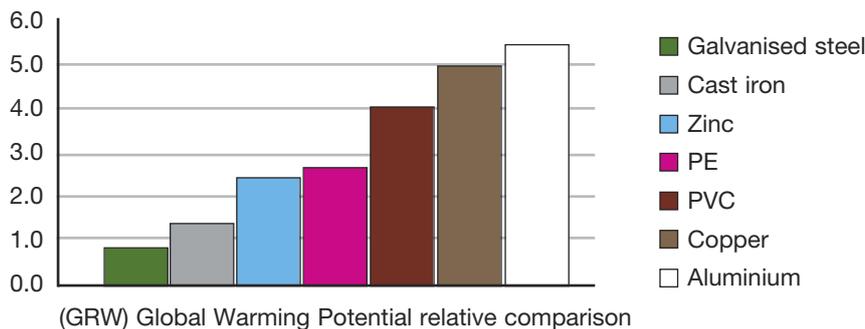
It is with this in mind that Lindab strives to minimise the environmental impact caused by the company's operations and products; this environmental commitment means that products are developed based upon a life cycle perspective, with set targets for continual improvements.



Every component in the Lindab Rainline™ System is manufactured to the highest standards and simply snaps together for ease of installation.



Lindab steel – a green effect on today's environment

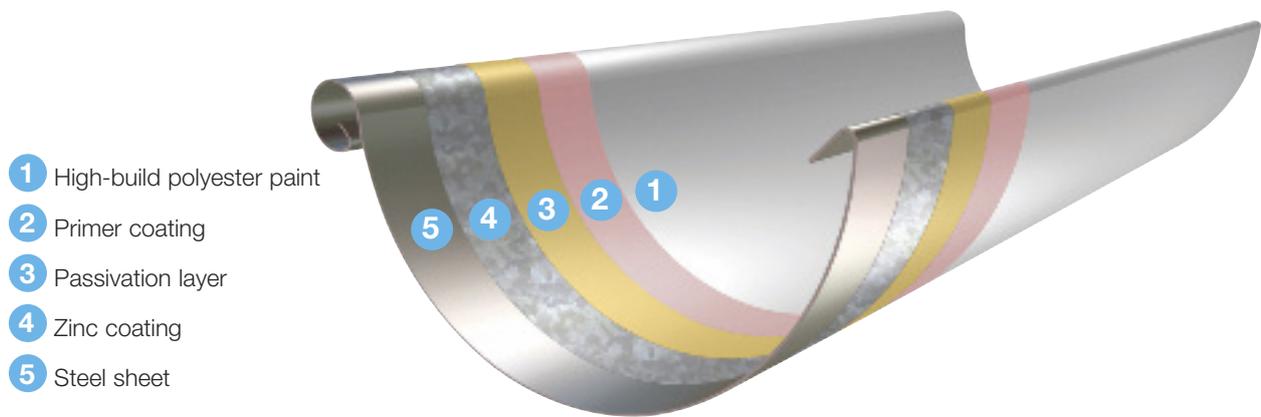


As our study shows, all metals in the comparison have advantages over plastic materials when it comes to recycling with steel performing the best of all.

Beauty that lasts – painted Rainline

Rainline is made from high-performance steel produced by the top European manufacturers. This high-performance steel ensures that Rainline is lightweight, durable and long-lasting, making it the gutter system of choice for both domestic and commercial use.

This steel has a thick layer of zinc coating on both sides which protects the steel core from corrosion and the top coat contains polymer grains that make the surface scratch resistant. This coating also has excellent flexibility which enables the sheet steel to be formed to produce various products without damage to the coating.



An extra-durable high-build polyester paint coating provides protection and extends the life expectancy of Rainline in excess of 70 years with minimal maintenance, only annual cleaning is recommended and touch up of any scratched paint.

Rainline painted finishes have excellent colour fastness, they are UV stable. All painted Rainline is supplied with a standard 15 year warranty.

Colours displayed may vary from actual, NCS and RAL codes are the nearest colour match. Colour samples can be supplied to demonstrate true colour.

Painted Rainline is available in a choice of 11 different colours, 3 with a metallic finish and 8 with a gloss finish:



An elegant finish – unpainted metals

Unpainted metal options provide a uniquely attractive organic aesthetic. The new improved Magestic galvanised rainwater system and supreme natural copper Rainline system will weather and adjust to the environment requiring minimum maintenance.

Unpainted finishes are not covered by Lindab's 15 year warranty. Lindab Magestic carries a 10 year warranty.

Magestic

Magestic – The King of Galvanised Gutters, an improved galvanised steel with a strengthened magnesium zinc alloy coating offering the highest surface protection of any metallic coated steel. Magestic settles into an attractive dark grey metallic appearance within 3-5 years after installation.



Natural Copper

A limited range of Rainline products are available in uncoated copper. The finish is highly desirable and provides excellent corrosion resistance once it has transitioned to a greenish verdigris patina.



Stainless Steel

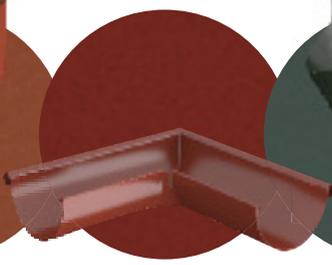
Only Rainline Vandal proof products are available in a stainless steel finish. The products are made from 1.5m stainless steel plate.



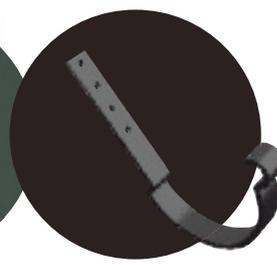
Brown
RAL 8017
NCS S 7010-Y70R



Dark Red
RAL 3009
NCS S 5040-Y80R



Coffee Brown
RAL 8019
NCS S 8502-Y



Tile Red
RAL 8004
NCS S 4050-Y70R

Pine Green
RAL 6020
NCS S 7010-G30Y

Lindab Magestic

Elite galvanisation

New technology has allowed galvanised steel to be developed using magnesium to create a stable barrier to protect zinc's porous structure against corrosion factors.

New Material Technology

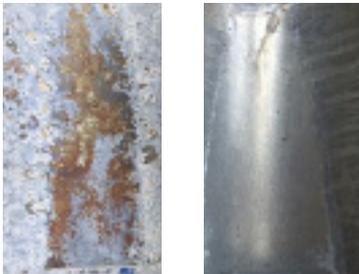
The zinc coating composition used for Magestic is strengthened with 3% magnesium and 3.5% aluminium. Hot dipped zinc galvanised coatings have a porous structure, magnesium creates a compact structure with high corrosion inhibition and creates a stable barrier against corrosion factors.

Proven protection

Highest surface protection rating of any metallic coated steel

Salt spray tests demonstrate more than 20 times the corrosion resistance of hot dipped galvanisation (ISO 9227).

Zinc Galvanised	Magnesium Zinc Galvanised
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After 6 weeks salt spray test

Self-healing

Improved cut edge protection

A galvanised coating migrates to repair red rust on cuts and scratches. Magnesium is more anodic than zinc making the sacrificial properties of the Magestic coating more active than a zinc galvanised coating. The self-healing effect remains on heavy gauge Magestic material above 5mm.

cut edge salt spray test – 5mm gauge steel



Reduced coastal corrosion

Ultimate resistance in aggressive environments

Natural exposure tests demonstrate more than 3 times the corrosion resistance of standard galvanisation in marine environments.

Magestic corrosion rate is not influenced by the chlorine content of the environment.

Exceptionally environmentally friendly

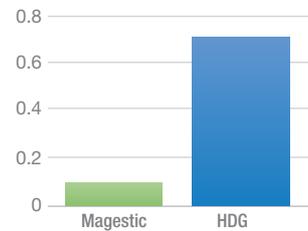
Reduced zinc resource consumption

Galvanised steel is already the most environmentally friendly material used in rainwater systems, Magestic has a reduced impact on zinc resources.

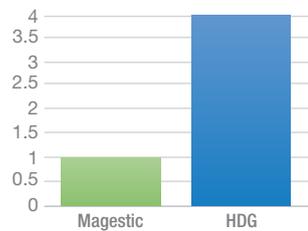
Adding a minor factor of magnesium to the zinc dramatically improves performance enabling reduced coating thickness.

Less than 25% zinc run off into soils compared to hot dipped galvanised steel.

Mass loss in alkaline environment (pH11.7-5% ammonia)



Runoff rate in C4 Maritime environment (g/m²/year)



Ages beautifully

Natural weathering effect

Unpainted metal gutters naturally adjust to the installation environment

Magestic settles to an attractive dark grey metallic appearance within 3-5 years after installation

Initial Look



After 6 months



After 4 years



10 Year Warranty

Lindab Magestic products all come with a 10 year warranty



Stand out from the crowd

Whether you're designing luxury housing, building a cosy cabin or renovating a multi-occupancy development Lindab Rainline can fit the bill.

Whilst a rainwater system is a functional requirement of a building, the right choice can add character and a differentiating feature to a project. Although galvanised steel is a relatively modern material the range of colours

and finishes available means that Rainline offers design flexibility to suit traditional projects as well as contemporary schemes and the durable coating will not fade when exposed to rain or sun.

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Practical protection

Lindab Rainline is the perfect choice for industrial, commercial or agricultural buildings, its strength and durability making it highly resistant to knocks and bumps or vandals.

Steel has an extremely low coefficient of thermal expansion making it less prone than plastic to leakage caused by deformation during spells of hot or cold weather and with no sealants required in its installation you can be assured that Lindab Rainline will provide years of leak free service.

The Rainline Vandal range of reinforced pipes and outlets with integrated brackets can offer further protection to buildings situated in high traffic areas

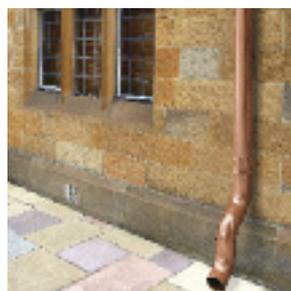


Metal or metallic

If a galvanised or natural copper aesthetic is desired but the natural weathering of unpainted metal is not, Rainline metallic finishes offer an ideal solution.

A spectacular Magestic galvanised system can add the finishing touch to a building but will oxidise and darken over time. Rainline Silver Metallic painted finish allows the sparkly appearance to be retained alternatively the Anthracite Metallic painted finish skips straight to the darker

appearance if preferred. Stunning natural copper gutters and pipes are really something special and the organic verdigris effect is often welcomed. Rainline Copper Metallic painted finish is an ideal option when retaining the original appearance is preferred.



Features and benefits

Made to last with the lowest environmental impact

Steel is the ultimate material for roof-drainage systems. It is much lighter than cast iron, easier to handle than aluminium and offers minimal thermal movement compared to plastic (which can move and crack causing leaks).

Low maintenance

The only maintenance required is an annual wipe or wash down ensuring a long service life.

Vandal resistant

Highly resistant to attack from vandals – new Vandal proof products can be used to further reinforce the bottom 2m of pipes.

Material and colour choice

Rainline is available in a choice of 11 standard coloured high-build polyester coatings which are UV stable. Unpainted natural copper and Magestic galvanised finishes are also available.

15-year warranty

Lindab Rainline painted products are covered by a 15 year warranty. Lindab Magestic galvanised products are covered by a 10 year warranty.

Choice of 5 gutter sizes

Lindab Rainline is available in a choice of 5 sizes to suit different roof sizes and prevailing local rainfall patterns.

Quick and easy to install

Smart design solutions save installation time for professionals and make DIY easy. Pipes simply push together, snap mounting outlets, self-sealing stop ends, and click lock gutter joints and pipe brackets are just some of the unique product features.

Stylish design for a variety of buildings

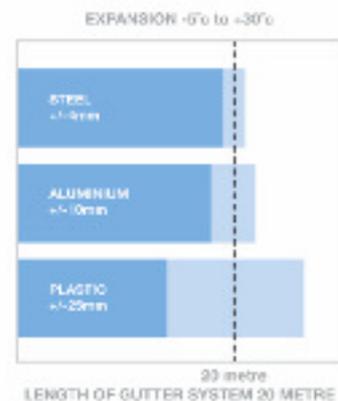
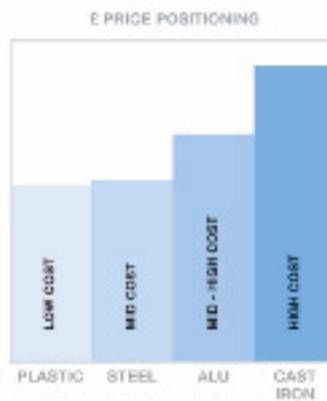
Designed for large or small, classic or contemporary.

Cost-effective solution

Competitively priced against leading plastic systems and inexpensive compared with aluminium and cast iron.

Minimum environmental impact

Tests have proven that Rainline steel systems reflect the lowest lifespan impact by minimising the use of raw materials, components, energy, packaging and transport.



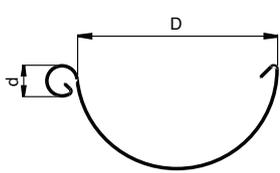
Simplifying the science – size guide

It is important that the sizes of gutters and pipes used in a rainwater system are selected with consideration of the size of the roof and the position of downpipes in order to ensure that typical rainfall does not cause the system to overflow.

All gutter systems in the UK should be designed to BS EN 12056-3:2000 Gravity drainage systems inside buildings. Roof drainage, layout and calculation (AMD 17041), 2000.

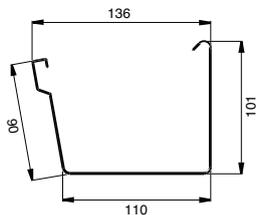
Rainline gutters are available in two shapes and five sizes. Half Round: 100mm, 125mm, 150mm, 190mm and Rectangular 136mm. Downpipes are available in four sizes: 75mm, 87mm, 100mm and 120mm.

Half round gutters (R)

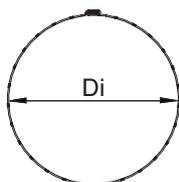


Size (mm)	D (mm)	d (mm)
100	107	17
125	123	17
150	155	17
190	192	22

Rectangular gutters (RER)



Downpipes (SROR)



Size (mm)	Di (mm)
75	75
87	87
100	100
120	120

Roof area

BS EN 12056-3:2000 requires that wind driven rain is taken into account when considering the effective catchment area. The standard assumes that rain falls at an angle of 2 units vertical to 1 unit horizontal which means that half the vertical height of any surface must be taken into account in calculations.

For a typical roof surface this means that the effective area is calculated from:

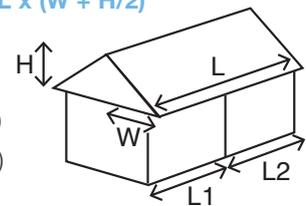
Effective area, AE (m²) = L x (W + H/2)

Where:

L= Roof length (m)

W= Eaves to ridge width (m)

H= Eaves to ridge height (m)



Flow capacities

In order to select the appropriate gutter and pipe size combination it is necessary to understand the flow rate required and the flow capacity of the system. The presence of corners in the gutter reduces the capacity, where this is applicable a 15% reduction should be assumed for calculations.

Flow rate is calculated from:

Flow rate (litres/second)

= effective area x rainfall intensity

Flow capacities of the Rainline gutter-pipe size combinations are shown in the table below:

Flow capacity (l/s)

Gutter	Downpipe							
	Centre Outlet				End Outlet			
	75mm	87mm	100mm	120mm	75mm	87mm	100mm	120mm
Half Round 100mm	1.3	1.3	-	-	0.7	0.7	-	-
Half Round 125mm	1.6	2.0	2.0	-	0.9	0.9	0.9	-
Half Round 150mm	1.6	2.6	3.4	3.4	1.6	1.7	1.7	1.7
Half Round 190mm	-	-	3.7	6.5	-	-	3.3	3.3
Rectangular 136mm	1.6	2.6	3.3	-	1.6	2.4	2.4	-

Pipe position

The position of the pipe has a significant effect on the flow capacity of a rainwater system, this can be seen by comparing the flow capacities table for a gutter run with a centre outlet to the table for a gutter run with an end outlet.

A gutter ratio can be used in conjunction with the effective roof area to account for the required adjustment in system flow rate.

For a typical gutter run up to a maximum of 10m the ratio of gutter lengths is calculated from:

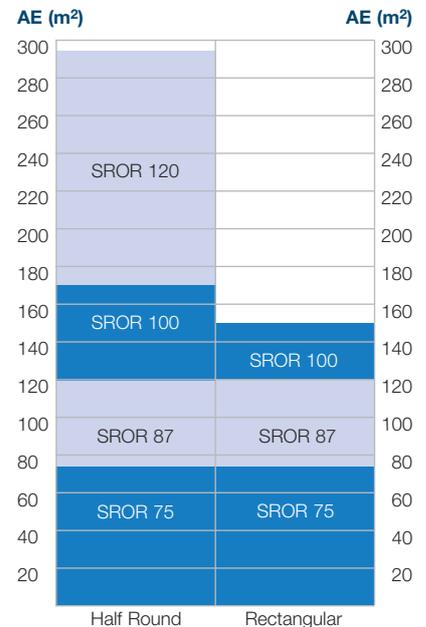
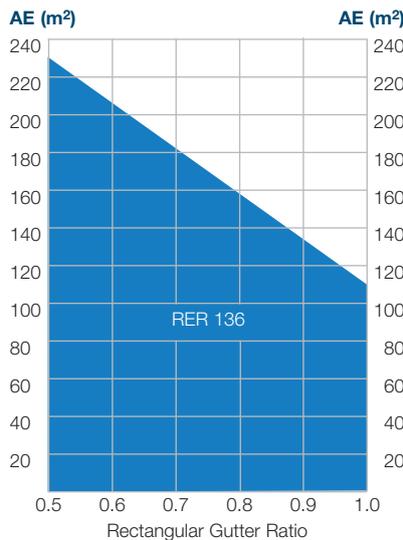
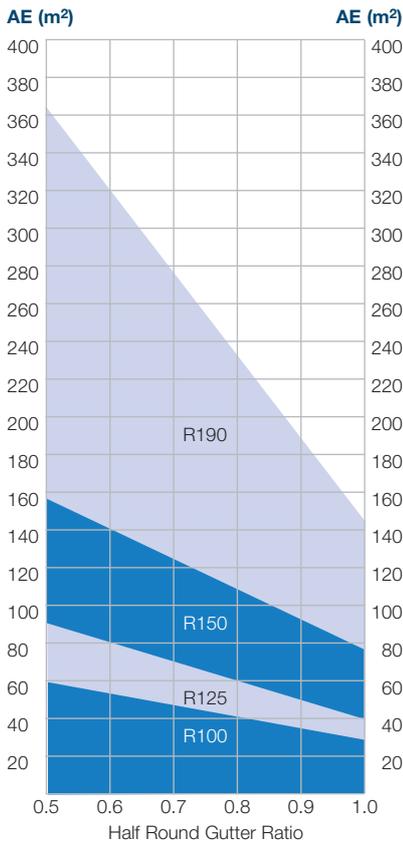
$$\text{Gutter ratio} = L1 / (L1 + L2)$$

Where: $L1 \geq L2$

Selecting gutter size

There is no standard rate of rainfall in the UK so for accurate calculations refer to an approved weather authority to get a site-specific rainfall level. A worst case storm of 0.021 litres per second per square metre has been used in our calculations as recommended by British Standards..

The charts below allow effective area and gutter ratio to be used to choose the correct gutter and pipe size. For gutter runs longer than 10m contact us for further advice.

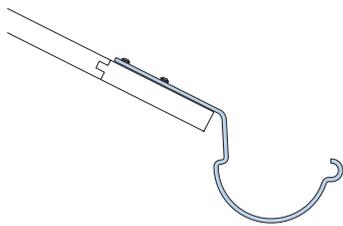
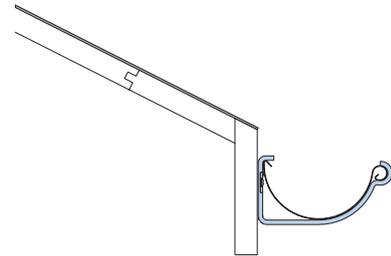


Understanding brackets

Roof construction type, stage of build and preferred method of installation can influence the type of bracket chosen for a project. The main bracket types are fascia brackets and rafter brackets.

Fascia bracket

Fascia brackets fix to a fascia board or directly to the wall of a building. Vertical fascia boards are most common in the UK however adjustable fascia brackets are available for use on angled fascia boards.



Rafter bracket

Rafter brackets are fixed directly to the roof rafters, typically on buildings with overhanging roof structures or with particularly uneven wall surfaces. Rafter bars can be twisted to enable side fixing where access to the top of the rafter is limited.

Rafter bars should be bent to the required angle based on the pitch of the roof, a KBO bracket bender can be used. Rafters can be twisted or bent for a charge of £2 per bracket.

Number of brackets

Brackets should be installed at 800mm centres. End brackets should be installed 100mm from roof edge.

To calculate how many brackets are required use the following formula:

No. of brackets = $(L \div 0.8) + 1$ Where: L = length of run in metres

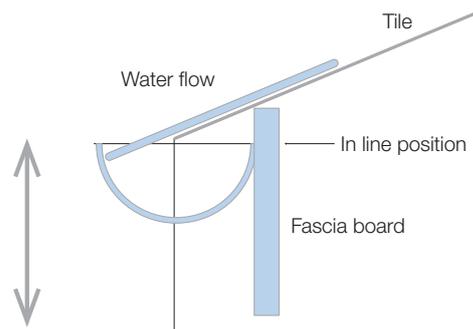
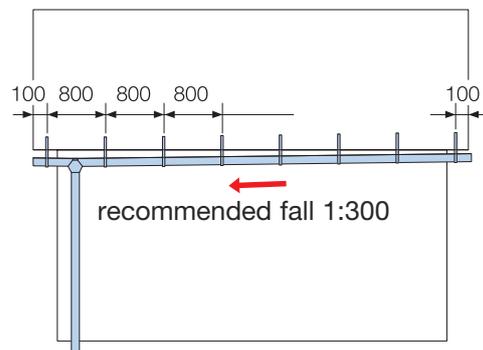
Bracket installation

Gutters should be installed so that the gutter falls towards the outlet dropping by 10mm over every 3m length, (a fall of 1:300). A single run should not exceed 10m.

In order to achieve the required slope install the lowest bracket first (next to the outlet) and then the highest bracket (at the opposite end of the gutter run). Pull a string between the two brackets, the string indicates the level that the other brackets should be fixed.

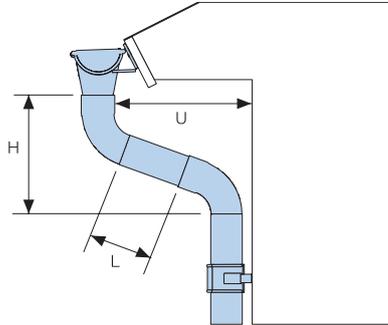
Where multiple downpipes are positioned along one gutter run the gutter should be installed with a high point between the pipes and sloping towards each outlet.

The front lip of the highest bracket should not be installed higher than the position horizontally in line with the roof edge. In areas with heavy snowfall the highest bracket should be installed lower.



Creating offsets

The roofline of a building, where the gutter is fitted, is commonly positioned away from the walls of the building. An offset arrangement is used to connect the outlet to a downpipe stack.



The measurement U is the projection of the offset. An SOKN one-piece offset is available with a fixed projection of 100mm.

For larger projections an offset can be created using pipe bends and a length of SROR pipe or an MST intermediate pipe cut down to the required length.

The table can be used to indicate the length of the pipe required to make the offset.

Bends at an angle of 70° are typically used to create offsets, 85°/90° bends may be preferred for very long projections however flow capacity will be reduced.

A BK conical bend should be used at the top of the offset. If the pipe used has a spigot bottom a BK conical bend should also be used at the bottom of the offset. If the pipe used does not have a spigot bottom a BM pipe bend with socket should be used at the bottom.

Intermediate pipe length at 70° bends

U mm	H mm	L mm
220	275	0
270	290	100
300	300	135
350	320	185
400	340	240
450	355	290
500	375	345
550	395	400
600	410	455
650	430	505
700	450	580
750	465	610
800	485	665
850	505	720
900	520	770
950	540	825
1000	555	880
1050	575	930
1100	595	985
1150	610	1040
1200	630	1090

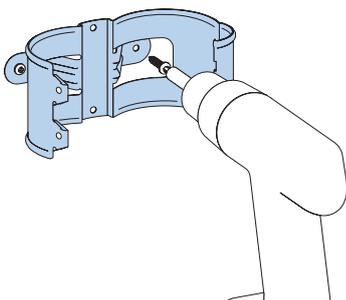
Pipe bracket installation

Pipe brackets should be installed at 1.5m centres. The highest pipe bracket should be installed 150mm from the offset or hopper head at the top of the pipe stack. A spirit level or plummet line can be used to align the other brackets.

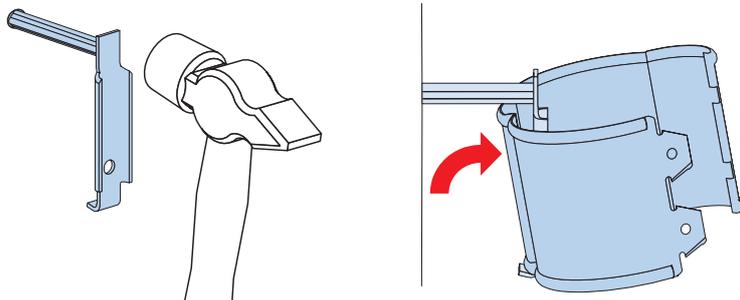
Pipe brackets are typically installed using screw-to-wall fixing or drive-in fixing. Choice can be influenced by the construction type of the building, installer preferences or regional conventions.

Rainline SSVU universal pipe brackets can be installed using either fixing method and have a neat click lock mechanism. Unpainted Rainline systems use SVHA brackets for screw-to-wall fixing and SV brackets for drive-in fixing and have an easy to use wedge lock mechanism. Drive in spikes should be ordered separately.

Screw-to-wall fixing



Drive-In fixing



Expertly engineered

Thanks to its many smart design solutions which have been refined over decades, Lindab Rainline has become the most preferred steel roof drainage system by many professionals. With its unique hand-in-glove fit and overall quality it guarantees quick installation and a high functionality – for decades to come.

1. Smart bracket

One of many bracket options in the Rainline range, this bracket can be adjusted to match various fascia board angles. Strong and extremely easy to fit.

2. Stop ends

These ends are self-sealing with an EPDM seal. They are non-handed, easily fitted with a single firm tap from a soft hammer.

3. Pipe holder

This holder is made from one piece of sheet steel, mounts a pipe with one firm click and fixes with two screws. It can also be easily connected to a fixing spike when a drive-in method is required.

4. Gutter joint

These joints are easy to fit, creating a very firm and durable joint. The joints are guaranteed leak-proof with a long-lasting EPDM seal.

5. Outlet

This versatile gutter outlet neatly fits to the shape of the gutter. A minimum of a 2-inch diameter hole needs to be drilled or cut out of the gutter before the outlet is assembled. This method ensure flexibility during installation and doesn't require additional gutter joints.



A complete range of components



Gutters & fittings

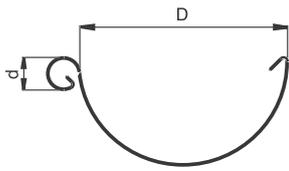
Gutters

R – Half Round Gutter. Standard length 3m



Size mm	D mm	d mm
100	107	17
125	123	17
150	155	17
190	192	22

- Roll formed 0.6mm steel with bead stiffened fronts
- Can be joined using RSK gutter joint or roll joint method
- Supplied in 3m lengths as standard
- Also available in 2m or 1m shorter lengths



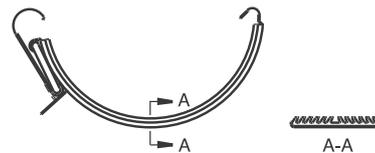
Gutter joints

Used to join gutters or gutter angles

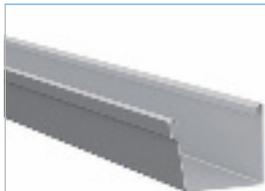
RSK – Gutter Joint with Rubber Seal



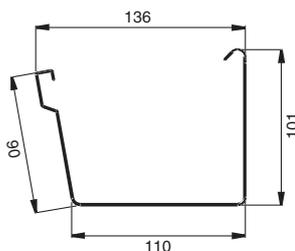
- Designed with click and lock mechanism for easy installation
- Built in EPDM rubber gasket
- Doesn't require sealant or screws
- 190mm gutters are fitted using the roll joint method



RER – Rectangular Gutter



- 0.6mm steel box gutter with front lip detail
- Joined using RERSK gutter joint
- Supplied in 3m lengths as standard



RERSK – Rectangular Gutter Joint with Rubber Seal



Guidance document available on request

- For use with rectangular gutters
- Includes central marks to aid with gutter positioning
- Built in EPDM rubber gasket
- Doesn't require sealant or screws



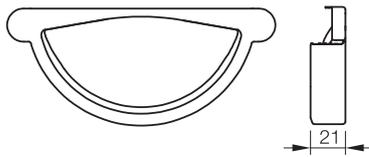
Stopends

Required for each end of a gutter run

RG – Self-Locking Stop End



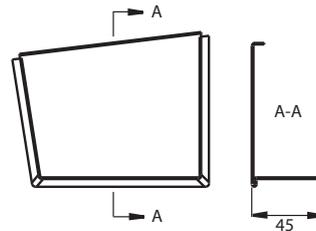
- Universal left and right handed, surplus ear should be removed
- Push fits around the outside of the gutter
- Built in EPDM rubber seal, doesn't require sealant or screws



RERGV/RERGH – Left/Right Hand Rectangular Stop Ends



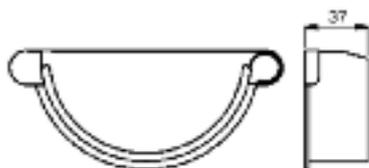
- For use with rectangular gutters
- RERGV fits to left hand end only, RERGH fits to right hand end only
- Sits inside gutter end
- It is recommended that sealant is used



RGV/RGH – Left/Right Hand Stop Ends



- Required for 190mm gutters
- RGV fits to left hand end only, RGH fits to right hand end only
- Sits inside gutter end, fitted using roll joint method
- It is recommended that sealant is used



Gutters & fittings

Gutter angles

Used to continue gutter line around a corner

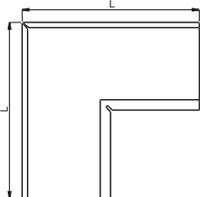
- **Universal left and right handed**
- **Require 2 RSK gutter joints**

RVI 90° – Internal Gutter Angle



Size mm	L mm
100	400
125	300
150	300
190	500

- Required for roof features such as recesses or extensions
- To fit 90° corners
- Alternative angles can be manufactured on request

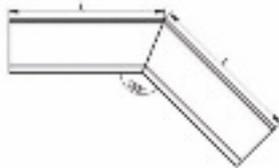


RVI 135° – Internal Gutter Angle



Size mm	L mm
100	300
125	300
150	300

- Required for roof features such as recesses or extensions
- To fit 135° corners
- Alternative angles can be manufactured on request

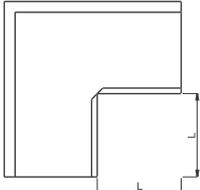


RVY 90° – External Gutter Angle



Size mm	L mm
100	295
125	160
150	130
190	285

- Required for roof types such as hipped or cross-gable
- To fit 90° corners
- Alternative angles can be manufactured on request

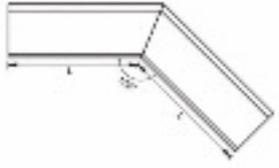


RVY 135° – External Gutter Angle

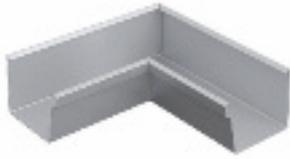


Size mm	L mm
100	250
125	240
150	230

- Required for roof types such as hipped or cross-gable
- To fit 135° corners
- Alternative angles can be manufactured on request

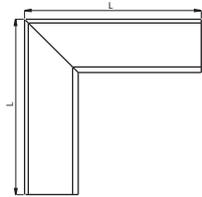


RERVI 90° – Internal Rectangular Gutter Angle

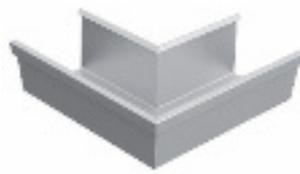


Size mm	L mm
136	300

- For use with rectangular gutters
- Required for roof features such as recesses or extensions
- Also available to fit 135° corners

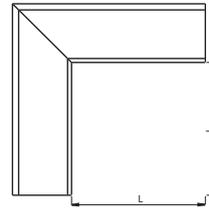


RERVY 90° – External Rectangular Gutter Angle



Size mm	L mm
136	165

- For use with rectangular gutters
- Required for roof types such as hipped or cross-gable
- Also available to fit 135° corners



Gutter outlets

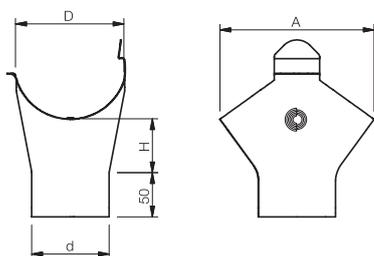
Used to connect gutters to downpipes

OMV – Gutter Outlet



Size mm	D mm	d mm	A mm	H mm
100x75	100	75	151	56
100x87	100	87	151	48
125x75	125	75	174	67
125x87	125	87	174	59
125x100	125	100	174	50
150x87	150	87	207	82
150x100	150	100	207	73
150x120	150	120	207	60

- Can be positioned at any point along the length of the gutter
- Click fit for easy installation
- Requires hole to be created in the gutter



OK – Gutter Outlet



- For 190mm gutters or to fit 75mm pipes to 150mm gutters
- Can be positioned at any point along the length of the gutter
- Uses flex-fit flaps to secure
- Requires hole to be created in the gutter

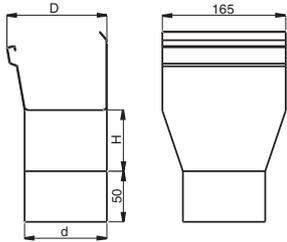
Gutters & fittings

REOK – Rectangular Nozzle



Size mm	D mm	d mm	H mm
136x75	136	75	85
136x87	136	87	85
136x100	136	100	85

- For use with rectangular gutters
- Can be positioned at any point along the length of the gutter
- Uses flex-fit flaps to secure
- Requires hole to be created in the gutter



Fascia brackets

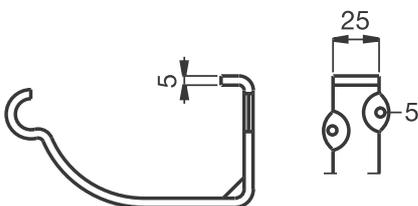
Used for securing gutters by fixing to fascia boards

- **Recommended maximum 800mm interval spacing**
- **Should be installed to create fall of 10mm per 3.0m run**

KFK – Fascia Bracket



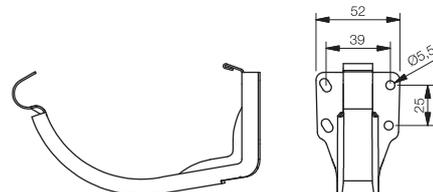
- Most popular fascia bracket for UK installations
- Solid 5mm steel structure
- 1 standard screw hole and 1 oval hole



KPK – Lightweight Fascia Bracket



- Folded steel lightweight design
- Reduced metal content
- More environmentally friendly
- 4 oval fixing holes to allow precise fixing adjustments

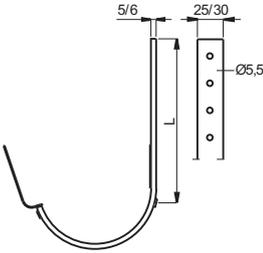


K24 – 240mm Flex-Fit Fascia Bracket



Size mm	L mm
190	244

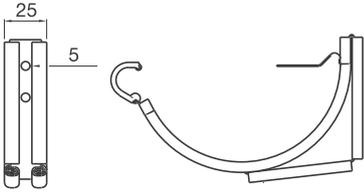
- Extended 240mm bracket for larger gutters
- Uses flexible clips to hold the gutter in place
- 4 screw holes offer more secure fixing



SSK – Adjustable Fascia Bracket



- For use on angled fascia boards
- Locks in place at 7°, 14°, 18°, 22°, 27°, 38° or 45° angle
- Now with fixed hook front
- Requires 1 fixing screw per bracket

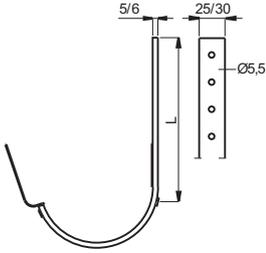


K07 – 70mm Flex-Fit Fascia Bracket



Size mm	L mm
100	70
125	70
150	70
190	70

- 70mm bracket with 2 screw holes
- Uses flexible clips to hold the gutter in place
- Clips attached with stainless steel rivets

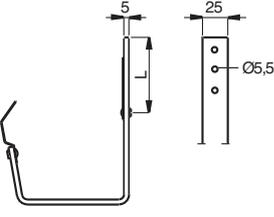


REK07 – Rectangular 70mm Flex-Fit Fascia Bracket



Size mm	L mm
136	70

- For use with rectangular gutter
- 70mm bracket with 2 screw holes
- Uses flexible clips to hold the gutter in place
- Clips attached with stainless steel rivets



Gutters & fittings

Rafter brackets

Used for securing gutters by fixing to roof rafters

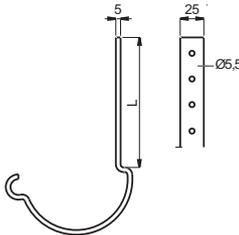
- Recommended maximum 800mm interval spacing
- Should be installed to create fall of 10mm per 3.0m run
- Should be bent to required angle using KBO bracket bender

KFL – 200mm Rafter Bracket



Size mm	L mm
100	196
125	196
150	196

- Most popular bracket for UK installations
- Solid 5mm steel, 25mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge

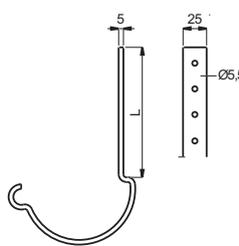



KFM – 150mm Rafter Bracket



Size mm	L mm
125	146
150	146

- Shorter rafter bar is preferred for refurbishment installations
- Solid 5mm steel, 25mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge

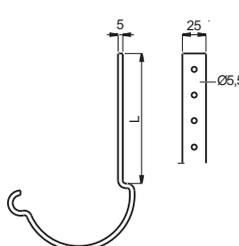


KFL35 – 350mm Rafter Bracket



Size mm	L mm
125	336
150	336

- Longer rafter bar can provide more secure fixing
- Solid 5mm steel, 25mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge



Flex-fit rafter brackets

Used for securing gutters by fixing to roof rafters

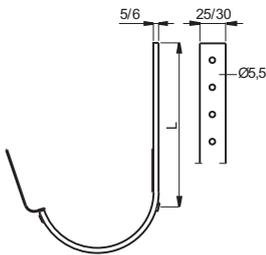
- **Recommended maximum 800mm interval spacing**
- **Should be installed to create fall of 10mm per 3.0m run**
- **Should be bent to required angle using KBO bracket bender**

K16 – 160mm Flex-Fit Rafter Bracket



Size mm	L mm
100	160
125	160
150	160

- Uses flexible clips, attached with stainless steel rivets, to hold the gutter in place
- Solid 5mm, steel 25mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge

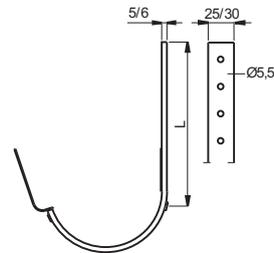


K21 – 210mm Flex-Fit Rafter Bracket



Size mm	L mm
125	210
150	210

- Uses flexible clips, attached with stainless steel rivets, to hold the gutter in place
- Solid 5mm, steel 25mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge

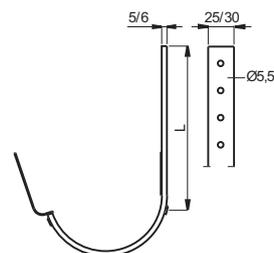


K33 – 330mm Flex-Fit Rafter Bracket



Size mm	L mm
150	334
190	334

- Uses flexible clips, attached with stainless steel rivets, to hold the gutter in place
- Solid 6mm, steel 30mm wide rafter bar with 4 fixing holes
- Can be supplied bent or twisted for side fixing for additional charge



Gutters & fittings

REK21 – Rectangular 210mm Flex-Fit Rafter Bracket



Size mm	L mm
136	210

- Uses flexible clips to hold the gutter in place
- Clips attached with stainless steel rivets
- Solid 5mm, steel 25mm wide rafter bar with 4 fixing holes

Rise & fall brackets

Used for securing gutters by driving into the wall

- **Recommended maximum 800mm interval spacing**
- **Should be installed to create fall of 10mm per 3.0m run**

RFKF – Rise & Fall Bracket



- Solid 5mm steel bracket with fixing nut
- 250mm threaded bar used to adjust gutter level
- 300mm spike used for drive in fixing to wall
- Threaded bar and spike require paint after installation

Radius gutter brackets

Used for fixing gutter sections to fit a curved roofline

RSKR- Radius Gutter Bracket



Guidance document available on request

- Combined gutter joint and fascia bracket
- 4° alignment deviation tolerance at each joint
- Requires 2 fixing screws per bracket
- Built in EPDM rubber gasket

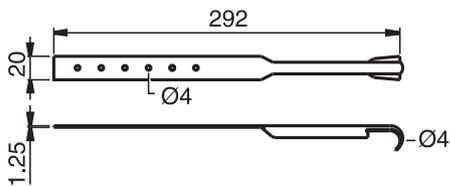


Gutter accessories

STAG – Stay Strap



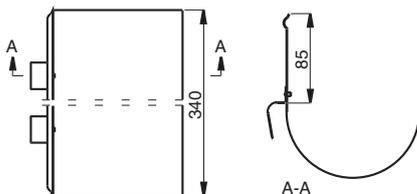
- Used to provide added stability to gutters in areas subject to adverse weather conditions
- Clips to rolled front of gutter
- 5 fixing holes to secure to the roof



OSKR – Straight Overflow Protector



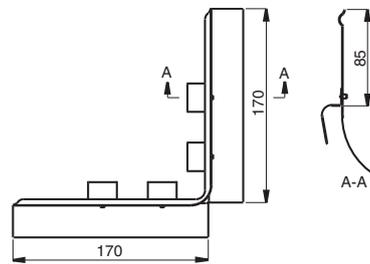
- Used to reduce gutter overflow at high flow sections
- Can be retro-fitted to gutter
- Hooks over gutter bead to secure
- Hooks attached with stainless steel rivets



OSK – Corner Overflow Protector



- Used to reduce gutter overflow at high flow corner sections
- Can be retro-fitted to gutter
- Hooks over gutter bead to secure
- Hooks attached with stainless steel rivets



LGB – Leafline Gutter Brush



- Used to catch leaves whilst allowing water to flow
- Supplied in 3m lengths
- No fastenings are required, cable ties may be preferred in high wind areas
- Stainless steel wire core with polypropylene bristles.

GRID – Gutter Leaf Guard (HD Polythene)



- Used to create a cover to prevent leaf blockage
- Supplied in 10m roll with 23 clips
- Clips are available in Black or White
- Additional clips can be purchased

Pipes & fittings

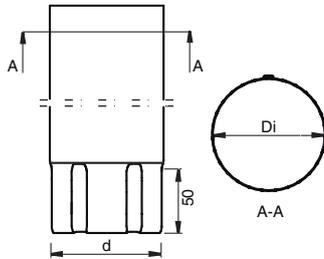
Pipes

SROR – Downpipe



Size mm	Di mm	d mm
75	75	73
87	87	85
100	100	98
120	120	118

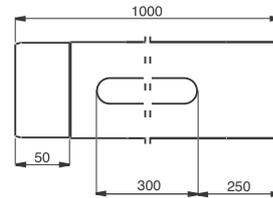
- Roll formed 0.6mm steel with solid seam (0.7mm for 120mm pipes)
- Hidden male/female joint, sockets are not required
- Supplied in 3m lengths as standard
- Also available in 2.5m or 1m shorter lengths



MSTRA – Rod Access Pipe



- Used to provide access for maintenance rod to remove pipe blockages
- Supplied in 1m length with double spigot male ends
- Second spigot can be removed if not required
- Steel door can be unlocked and removed using plastics handles

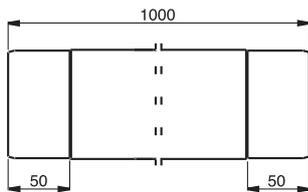


MST – Intermediate Pipe 1m / 0.5m

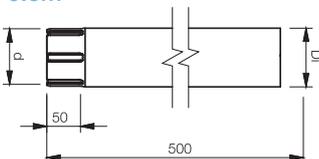


- Typically used to make an offset with >100mm projection
- 1m length option supplied with double spigot male ends
- Can be cut to make two short pipes
- 0.5m supplied with male/female ends

1m



0.5m



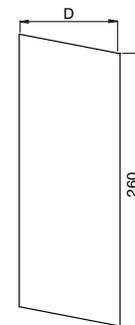
Size mm	Di mm	d mm
75	75	73
87	87	85

PRT – Sliding Pipe



Size mm	D mm
75	77
87	89
100	102

- Used with an RT Drain Trap
- Provides easy access for cleaning
- Fits outside the down pipe



Pipe brackets

Used for fixing pipes to the wall

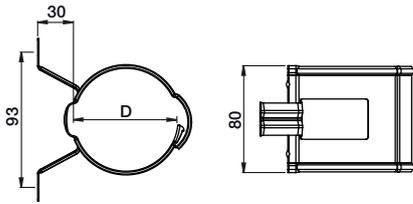
- Recommended maximum 1.5m interval spacing

SSVU – Universal Pipe Bracket



Size mm	D mm
75	77
87	89
100	102
120	122

- Can be used to screw fix pipes to the wall or used with SST Spike for drive-in fixing
- Easy click function secures pipe in place
- Required 2 screws or spike for fixing

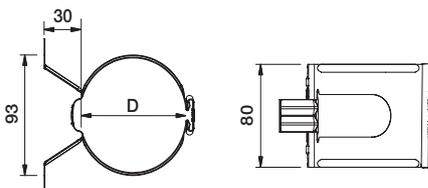


SVHA – Down Pipe Bracket



Size mm	D mm
75	77
87	89
100	102
120	122

- Required for unpainted systems
- Used to screw fix pipes to the wall
- Wedge is used to secure pipe into place
- Requires 2 screws for fixing

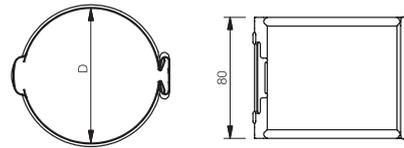


SV – Pipe Holder (for Spike)



Size mm	D mm
75	77
87	89
100	102
120	122

- Required for unpainted systems
- Used to attach pipe to spike fixed into the wall
- Wedge is used to secure pipe into place
- When pipe holder is closed the spike locks in place
- Spike is ordered separately

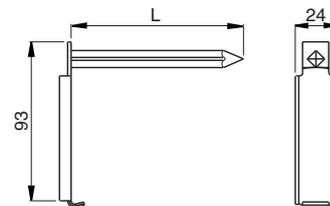


SST – Spike (for Pipe Holder)



Size mm	L mm
125	125
175	175
250	250
300	300

- Used with pipe holder to fix pipe to the wall
- Spike is ordered separately, supplied in plain galvanised finish only
- Available in 125mm, 175mm, 250mm and 300mm lengths
- When pipe holder is closed the spike locks in place



Pipes & fittings

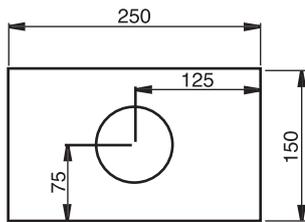
Hoppers

Used with outlet spouts or to maximise pipe flow rate

VATKR – Regular Water Hopper



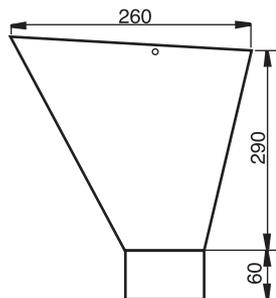
- Used at the head of a pipe that doesn't directly connect to a gutter
- Rectangular front with square sides
- 250 x 150 x 150mm



VATKL – Large Water Hopper



- Used with high flow outlet spouts or where multiple gutters meet
- Square top with inverted pyramid sides



Bends

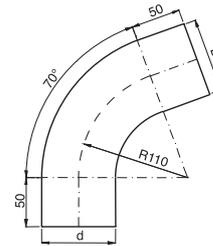
Used for offsetting pipe stacks and traversing facade features

BK – Conical pipe bend



Size mm	Di mm	d mm
75	75	73
87	87	85
100	100	98
120	120	118

- Conical shape provides clean line while allowing male/female connection
- Top is perfect fit for outlets or male spigot ends of pipes
- Bottom fits directly into standard pipe
- Available in 45°, 70° and 85° variations

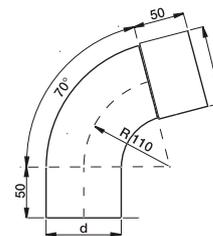


BM – Pipe bend with socket



Size mm	Di mm	d mm
75	77	75
87	89	87
100	102	100
120	122	120

- Traditional socket allows male/female connection
- Top will fit directly to a cut end of a standard pipe
- Bottom fits directly into standard pipe
- Available in 45°, 70° and 85° variations

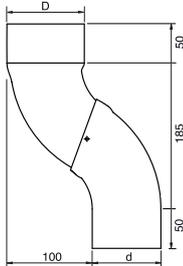


SOKN – One-Piece Offset



Size mm	D mm	d mm
75	77	75
87	89	87
100	102	100
120	122	120

- Used to offset a pipe stack usually to join to a gutter outlet or to traverse a plinth
- Set 100mm projection
- Longer offsets can be assembled using bends and cut down pipes

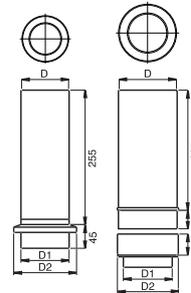


BUTK – Drain Shoe



Size mm	D1 mm	D2 mm
75	81	115
87	93	115
100	93	115
111	93	119
120	93	119

- Used to connect a pipe directly to a ground drain pipe
- Fits outside the down pipe
- Cover sits over drain pipe
- Can be lifted to provide maintenance access



Shoes

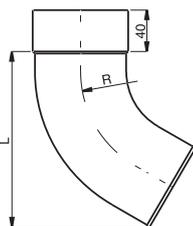
Used at the bottom of a pipe stack

UTK – Pipe Shoe



Size mm	Di mm	d mm
75	110	151
87	110	157
100	110	113
120	110	173

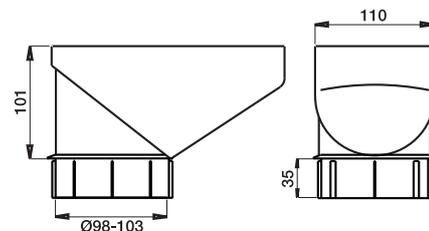
- Angled pipe shoe used to discharge water into a drain or grate
- Socket fits directly to pipe
- Rolled rim ensures no sharp edges



RT – Drain Trap (HD Polythene)



- Used to prevent leaves and other blockages entering the drain
- Connects to 100mm drain pipe
- Should be used with PRT sliding pipe to allow cleaning

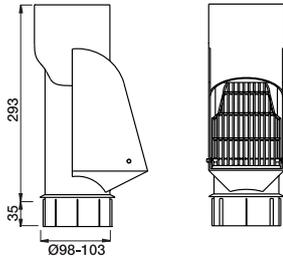


Pipes & fittings

SLS – Self Cleaning Leaf Trap (HD Polythene)



- Used to filter leaves and other blockages from the drain pipe
- Angled design allows rainwater to clean the filter
- Connects to 100mm drain pipe
- Can be used with a BUTK Drain Shoe to fit 75mm or 87mm pipes

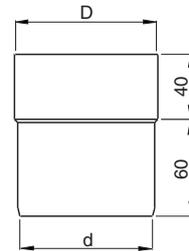


SRORM – Pipe Connector



Size mm	D mm	d mm
75	77	73
87	89	85
100	102	98
120	122	118

- Used to connect two pipes if the male spigot has been removed
- Allows pipe offcuts to be used
- Provides male/female connection

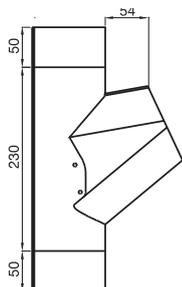


Connectors

GROR – Branch



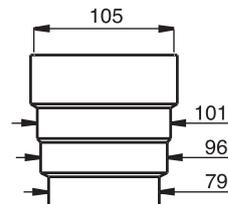
- Used to merge a second pipe run into a pipe stack
- Branch can be positioned between 50° and 80°
- Standard branch will connect equal pipe diameters
- Unequal branches are available which will fit pipes with smaller diameters



MRT – Drain Connector (HD Polythene)



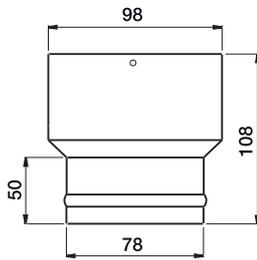
- Used to directly connect to a ground drain pipe
- Stepped design fits to multiple sizes
- Fits up to 100mm down pipes and drain pipes



SLAS – Hose Connector



- Used to connect pipe directly to a hose
- Only available in 87mm
- Fits to 80mm hose



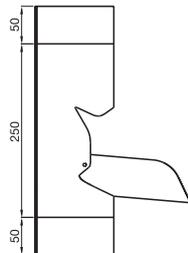
Diverters

Used to collect water in a water butt

FUTK – Adjustable Diverter



- Outlet spout manually opens and closes
- Spout attached with stainless steel rivets
- Fits directly to pipe stack



RWDK – Rainwater Diverter Kit (HD Polythene)



- Plastic components divert water through flexible hose
- 2 screw holes for wall fixing
- Fits to 75mm or 87mm pipe stacks

Vandal reinforced pipes and fittings

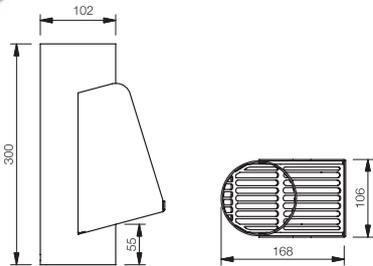
Used in high traffic areas

- Made of 2mm hot-dip galvanised steel or 1.5 mm stainless steel plate
- Can be connected to standard drain pipe using BUTK Drain Shoe

VSL5 – Reinforced Leaf Trap

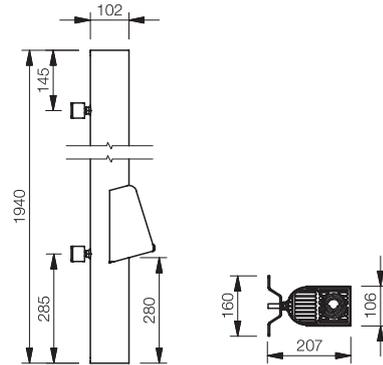


- Used to filter leaves and other blockages from the drain pipe
- Angled design allows rainwater to clean the filter
- Filter is stainless steel



VSL2 – Reinforced Pipe with Leaf Trap 2m

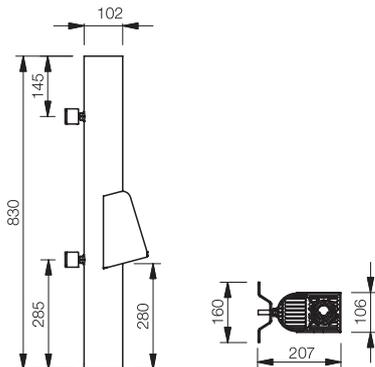
- Includes stainless steel SLS leaf trap filter
- Integrated stainless steel brackets



VSL09 – Reinforced Pipe with Leaf Trap

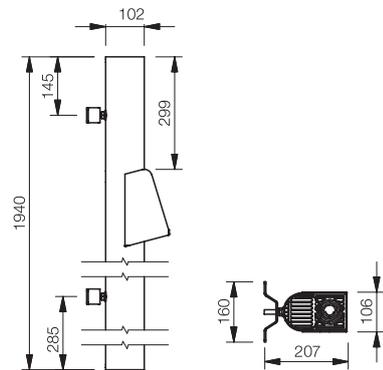


- Includes stainless steel SLS leaf trap filter
- Integrated stainless steel brackets



VSLST2 – Reinforced Pipe with Raised Leaf Trap 2m

- Includes stainless steel SLS leaf trap filter
- Leaf trap raised out of reach of children
- Integrated stainless steel brackets



VUTK09 – Reinforced Pipe with Shoe

- Includes UTK shoe outlet
- Used to discharge water into a drain or grate
- Integrated stainless steel brackets

VUTK2 – Reinforced Pipe with Shoe 2m

- Includes UTK shoe outlet
- Used to discharge water into a drain or grate
- Integrated stainless steel brackets



Lindab Residential Ductwork

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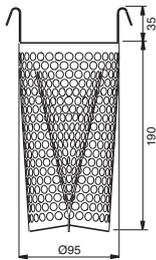


Accessories

DVSIL – Leaf Filter



- Used to filter leaves and other blockages from the drain pipe
- Sits inside drain pipe, suspended by hooks
- Usually used with BUTK Drain Shoe for cleaning
- Made from stainless steel



BF – Touch Up Paint



- Used for installation or maintenance touch up
- Supplied in 250ml tins
- Available to match all standard painted finishes
- Applicable COSHH sheets are available

KBO – Bracket Bender



- Used to bend rafter brackets to required angle*
- *Brackets can be supplied pre-bent for an additional charge

STIFT – Touch Up Paint



- Used to protect metal exposed during installation
- Drill holes, cut edges or scratches should be touched up
- Available to match all standard painted finishes
- Supplied in 12ml bottle with applicator brush

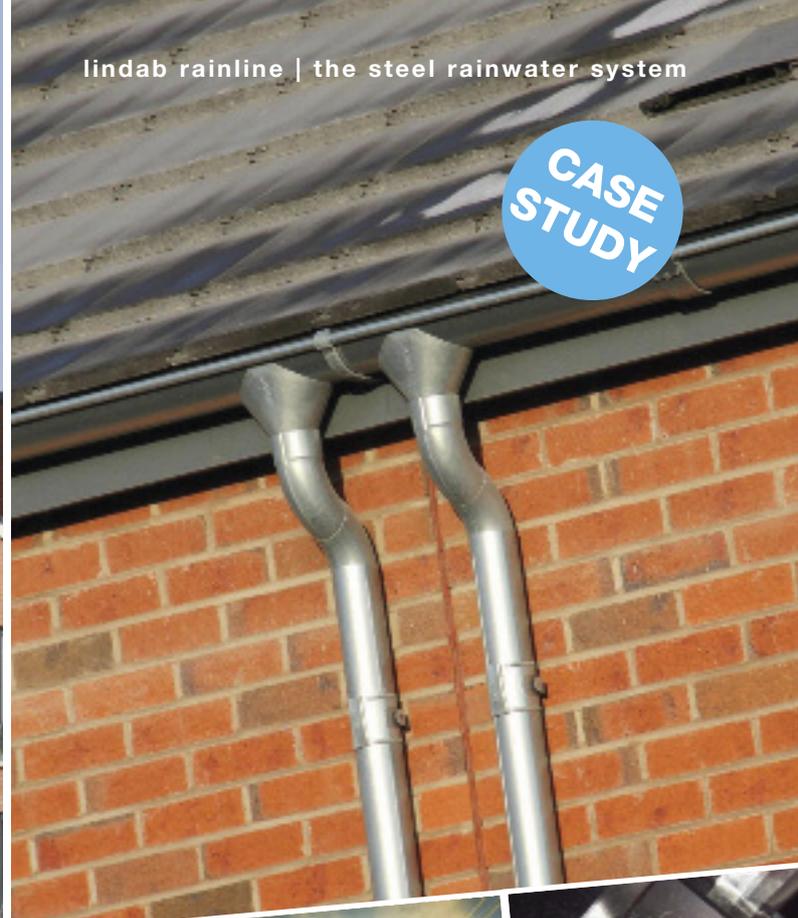


Contact us to find out about our RIBA approved CPD seminars. Email: rainline@lindab.co.uk



lindab rainline | the steel rainwater system

CASE STUDY



WINNER OF GREEN APPLE AWARD
WINNER OF YOUR MOVE PROPERTY BEST AFFORDABLE HOUSING AWARD

Queens Court – Winner of Green Apple Award

The Forrest Construction project for the Halton Housing Trust in Widnes has been recognised with a Bronze Award for the Built Environment and Architectural Heritage.

A steel rainwater system was specified by architect Denovo Design; the affordable housing scheme has been recognised for high environmental specification.

Lacey Street – Winner of Your Move Property Award

The Rainline project has received The Best Affordable Housing award which was judged in relation to many areas including; value for money, design and finish, quality of work, materials used, regeneration and sustainability of the scheme, environmental consideration of the development including landscaping and amenities.

Architect Denovo Design received the award for the Halton Housing Trust residential scheme. Denovo say, "Mild steel rainwater goods were specified because they need no maintenance, are more durable, much stronger in resisting snow loading than plastic, have the lowest carbon footprint and are 100% recyclable."

Keep up to date with Lindab news at www.lindab.co.uk/rainline

Email: rainline@lindab.co.uk



ARCHITECT:
Denovo Design Ltd, Liverpool

CLIENT:
Halton Housing Trust, Widnes

MAIN CONTRACTORS:
Queens Court:
Forrest Construction, Bolton
Lacey Street:
Cruden Construction, Warrington



www.lindab.co.uk/rainline

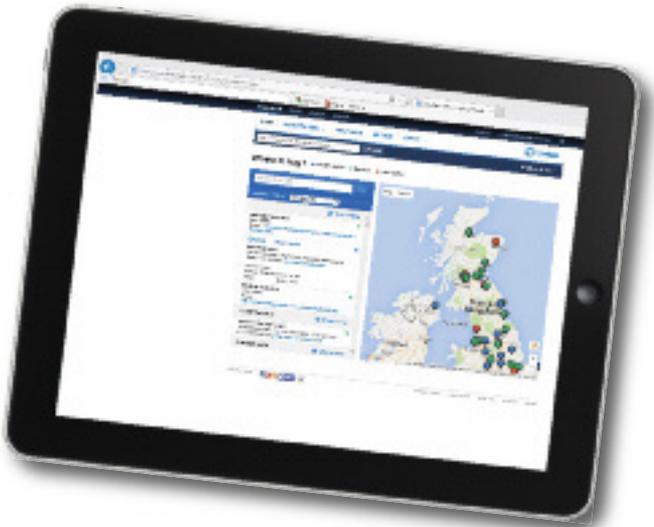
Right place, right time

Lindab rainwater systems are available through large and independent merchants throughout the UK.

Distributor network

We have a network of approved distributors across the UK which can help you with orders, quotes and arranging visits from our regional managers. Deliveries are made from our distribution centre in the Midlands to your local distributor or directly to a site of your choice. Care should be taken for health and safety of personnel when handling consignments.

Normal delivery time is 3-5 working days, items that are not held in stock in the UK will have an extended lead time. Orders placed are subject to VAT at the current rate, terms and conditions apply. Carriage charges may be applicable.



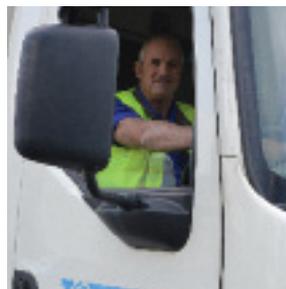
Use the **Where to Buy** tool on www.lindab.co.uk to find an approved distributor

Lindab Express

Enhanced delivery times are available for standard stocked items.

Although we always process customer orders efficiently and we are proud of our ability to delivery consistently on time-in full we know that there are occasions when this is not quick enough. Our new Lindab Express delivery service can guarantee next day delivery for orders received and acknowledged by our sales office before 11am.

Lindab Express is only available for standard items that are held in stock at our UK distribution centre. Express service is subject to availability, additional carriage charges will apply. Next day delivery may not be available to all postcode areas.



Specification and project estimation

The Lindab Building Products team can assist with specification generation and quote estimation. A take-off service is available for creating bill of material lists from architectural drawings.

To find out more about project support services contact the sales office on: **0121 585 2780**



Lindab Rainline TLB software

Lindab Rainline TLB is a product library that can be used in AutoCAD to create detailed drawings using our predefined profiles. The library includes most products from the Rainline range. It is quick and easy to use.

The Magestic product range has the same tried and tested product designs as Lindab's Rainline range which means Rainline TLB software design elements can be used for both rainwater systems. BIM files are now available for use with Autodesk Revit 2016

For more information about Rainline TLB visit the software page on: www.lindab.co.uk

Keep up-to-date with Lindab's events and offers – follow us on Twitter **@UK_Lindab**

A white computer mouse is shown on a blue background. The mouse's USB cable is plugged into a USB port and is artistically shaped into a speech bubble. Inside the speech bubble, there is a white Twitter bird logo and the text '@UK_Lindab' above it.

Simplifying specification



A general guidance framework for a specification for Lindab rainwater systems is provided below, content should be selected as appropriate to the project.

For a size specific NBS specification visit www.ribaproductselector.com/lindab, for further project specification advice contact buildingproducts.sales@lindab.co.uk

R10 Rainwater drainage systems

GENERAL

- Gravity rainwater drainage system
- Design to BS EN 12056-3:2000 Gravity drainage systems inside buildings. Roof drainage, layout and calculation (AMD 17041), 2000.
- Gutters, pipes and fittings to BS EN 612:2005: Eaves gutters with bead stiffened fronts and rainwater pipes with seamed joints made of metal sheet

MANUFACTURER

Lindab Ltd, Profile House, Shenstone Trading Estate, Bromsgrove Road, Halesowen, B63 3XB
Tel: 0121 585 2780 Fax: 0121 585 2782 Email: buildingproducts.sales@lindab.co.uk

PRODUCT SPECIFICATION (GUTTERS AND FITTINGS)

332 CONTINUOUSLY HOT DIP COATED STEEL GUTTERS/
335 GALVANISED STEEL GUTTERS/ 330 COPPER GUTTERS

Product reference: Rainline coated steel/ Rainline natural copper/ Magestic galvanised steel gutter system

Profile: R Half Round/ RER Rectangular

Size: 100mm/ 125mm / 150mm/ 190mm/ 136mm

Outlet size: 75mm/ 87mm/ 100mm/ 120mm

Grade: 0.6mm steel/ 0.6mm copper

Finish: 045 Silver metallic/ 044 Anthracite metallic/ 778 Copper metallic/ 015 Black/
001 Antique white/ 087 Dark grey/ 434 Brown/ 742 Tile red/ 758 Dark red/
830 Pine green/ 387 Coffee Brown/ Unpainted magnesium zinc galvanised/ Natural Copper

FITTINGS

Joints: RSK gutter joint/ RERSK rectangular gutter joint/ roll joint method /As drawing ___ / Contractor's choice

Stop ends: Not required/ RG Self-locking stop end/ RGV Left hand stop end/ RGH Right hand stop end/ RERGV Left hand rectangular stop end/ RERGH Right hand rectangular stop end/ As drawing ___ / Contractor's choice

Angles: Not required/ RVI Internal 90° gutter angle/ RVI Internal 135° gutter angle/ RVY External 90° gutter angle/ RVY External 135° gutter angle/ RERVI Internal rectangular 90° gutter angle/ RERVI Internal rectangular 135° gutter angle/ RERVY External rectangular 90° gutter angle/ RERVY External rectangular 135° gutter angle/ As drawing___ / Contractor's choice

Outlets:	OMV Gutter outlet/ OK Gutter outlet /REOK Rectangular nozzle/ As drawing___ / Contractor's choice
Brackets:	KFK Fascia bracket/ KPK Lightweight fascia bracket/ K24 240mm Flex-fit fascia bracket/ K07 70mm Flex-fit fascia bracket/ SSK Adjustable fascia bracket/ KFM 150mm Rafter bracket/ KFL 200mm Rafter bracket/ KFL35 350mm Rafter bracket/ K16 160mm Flex-fit rafter bracket/ K21 210mm Flex-fit rafter bracket/ K33 330mm Flex-fit rafter bracket/ RFKF Rise and fall bracket/ RSKR radius gutter bracket/ REK07 Rectangular 70mm flex-fit fascia bracket/ REK21 Rectangular 210mm rafter bracket/ As drawing ___/ Contractor's choice
Overflow protectors:	Not required/ OSKR Straight overflow protector/ OSK Corner overflow protector/ As drawing ___ / Contractor's choice
Stay straps:	Not required/ STAG stay strap/ As drawing ___ / Contractor's choice
Accessories:	Not required/ LGB Leafline gutter brush/ GRIDB Gutter leaf guard (HD Polythene)

PRODUCT SPECIFICATION (PIPES AND FITTINGS)

395 HOT DIP COATED STEEL PIPEWORK – PRESSED/ 370 GALVANISED STEEL PIPEWORK/
431 STAINLESS STEEL PIPEWORK/ 390 COPPER PIPEWORK

Product reference:	Rainline coated steel/ Rainline natural copper/ Magestic galvanised steel gutter system
Profile:	SROR Round/ VANDAL Reinforced Round
Size:	75mm/ 87mm/ 100mm/ 120mm/ 102mm
Grade:	0.6mm steel/ 0.7mm steel (120mm only)/ 2.0mm (102mm only)/ 1.5mm stainless steel (102mm only)/ 0.6mm copper
Finish:	045 Silver metallic/ 044 Anthracite metallic/ 778 Copper metallic/ 015 Black/ 001 Antique white/ 087 Dark grey/ 434 Brown/ 742 Tile red/ 758 Dark red/ 830 Pine green/ 387 Coffee Brown/ Unpainted magnesium zinc galvanised/ Natural Copper/ Stainless Steel
Joints:	Male/ female jointing

FITTINGS

Bends:	Not required/ BK 70° Conical pipe bend/ BK 45° Conical pipe bend/ BK 85° Conical pipe bend/ BM 70° Pipe bend with socket/ BM 45° Pipe bend with socket/ BM 85° Pipe bend with socket/ As drawing ___ / Contractor's choice
Offsets:	Not required/ SOKN One-piece offset/ Created using bends and intermediate pipe/ As drawing___ / Contractor's choice
Intermediate pipe:	Not required/ MST Intermediate pipe 1m/ MST Intermediate pipe 0.5m/ As drawing___ / Contractor's choice
Access pipe:	Not required/ MSTRA Rod access pipe 1m/ PRT Sliding pipe/ As drawing___ / Contractor's choice
Branches:	Not required/ GROR Pipe branch/ GROR Unequal pipe branch/ As drawing___/ Contractor's choice
Connector:	Not required /SRORM Pipe connector/ SLAS Hose Connector/ MRT Drain connector (HD Polythene)/ As drawing___/ Contractor's choice

Shoes:	Not required/ UTK Pipe shoe/ BUTK Drain shoe/ As drawing ___/ Contractor's choice
Hoppers:	Not required/ VATKR Regular water hopper/ VATKL Large water hopper/ As drawing___/ Contractor's choice
Diverter:	Not required/ FUTK Adjustable diverter/ RWDK Rainwater diverter kit (HD Polythene)/ As drawing ___ / Contractor's choice
Brackets:	Not required/ SSVU Universal Pipe Bracket/ SVHA Downpipe bracket/ SV Pipe holder (for spike)/ SST Spike (for pipe holder)/ As drawing ___/Contractor's choice
Reinforced pipes:	Not required/ VSLS Reinforced leaf trap/ VSLS09 Reinforced Pipe with leaf trap 0.85m/ VUTK09 Reinforced pipe with show 0.85m/ VSLS2 Reinforced pipe with leaf trap 2m/ VSLST2 Reinforced pipe with raised leaf trap 2m/ VUTK2 Reinforced pipe with show 2m/ As drawing ___ /Contractor's choice
Accessories:	Not required/ DVSIL Leaf filter (stainless steel)/ RT Drain Trap (HD Polythene)/ SLS Self-cleaning leaf trap (HD Polythene)

Recommendations

INSTALLATION GENERALLY:

- Install pipework/gutters to ensure the complete discharge of rainwater from the building without leaking.
- Obtain all components for each type of pipework/guttering from the same manufacturer unless specified otherwise.
- Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.
- Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.
- Do not bend plastics or galvanized steel pipes. Adequately protect pipework/gutters from damage and distortion during construction.
- Where not specified otherwise use plated, sherardised, galvanised or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed.

FIXING AND JOINTING:

- Fix gutters securely at maximum 800mm centres and at all joints in gutters, with additional brackets near angles and outlets.
- Ensure that roofing underlay is dressed into gutter.
- Ensure that outlets are securely fixed before connecting pipework. To cut the hole for the outlet a hack saw or metal cutting hole saw should be used. Use a hammer on the edges to create a drip edge.
- Fix pipes securely at maximum 1.5m centres plumb and/or true to line. Fix every length of pipe at or close below the coupling.
- Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.
- Fix branches and low gradient sections with uniform and adequate falls to drain efficiently. Provide additional supports as necessary to support junctions and changes in direction.
- Fix externally socketed pipes/fittings with sockets facing upstream.
- Provide a load bearing support for vertical pipes at not less than every storey level. Tighten fixings as the work proceeds so that every storey is self-supporting and undue weight is not imposed on fixings at the base of the pipe.
- Cut ends of pipes to be clean and square with burrs and swarf removed. Ensure that jointing surfaces are clean immediately before assembly.

CUTTING:

- Cut the gutters and pipes with plate shears, hacksaw or chop saw on a firm underlay on the ground.
- Never use an angle grinder. It heats the steel up and thus destroys the galvanisation. The coating may also be scorched by hot chips or filings.

COATED PIPEWORK/GUTTERS:

- Make sure that the roof drainage components are handled with care during transport, storage and unpacking. If not, the coating may be damaged or the pipes and gutters dented.
- Store pipes and gutters on a plane and stable surface.
- Non coated components must be unpacked and stored in a dry and ventilated place.
- Make good to coatings after cutting and any other damage or recoat.

ACCESS FOR TESTING AND MAINTENANCE:

- Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance.
- Position access fittings and rodding eyes so that they are not obstructed by other pipework, framing, etc.

TESTING:

- Inform the Contractor Administrator sufficiently in advance to give him a reasonable opportunity to observe tests.
- Check that all sections of installation are free from obstruction and debris before testing.
- Provide clean water, assistance and apparatus for testing as required.
- Carry out tests as specified. After testing, locate and remedy all defects without delay and retest as instructed.
- Keep a record of all tests and provide a copy of each to the Contractor Administrator.
- To complete a gutter test- block all outlets, fill gutters to overflow level and after 5 minutes closely inspect for leakage.

MAINTENANCE:

- Complete maintenance on the system 1-2 times a year.
- Clean the gutter and pipes from leaves and debris. Wash with water and a mild detergent.
- Don't use a high pressure washing appliance.
- At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation including full details of the recommended inspection, cleaning and repair procedures.

BEFORE HANDOVER:

- Remove construction rubbish and debris from all roofs and gutters. Where possible, sweep and remove fine dust which may enter rainwater systems. Do not sweep or flush dust or debris into the rainwater system.
- Remove swarf, debris and any temporary caps from the entire rainwater installation.
- Ensure that all access covers etc. are secured complete with all fixings.





Good Thinking

At Lindab, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

Quality Assurance:

Quality Management Systems
BS EN ISO 9001

Environmental Standard:

Environmental Management Systems
BS EN ISO 14001

Associations:



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