

COPPA GUTTA

LONG LIFE
ECO-FRIENDLY
SUSTAINABLE
COST EFFECTIVE
EASY TO INSTALL
LOW MAINTENANCE
NO PAINTING



Copper rainwater systems

WHY COPPER GUTTERING?

Easy to install

Our copper rainwater systems have been designed so they can be installed by any competent tradesperson with no specialist tools required. The gutter profiles are joined together quickly and with the minimum of effort simply using our silicone sealant, which has a minimum life of 25 years, together with copper pop rivets.

Low maintenance

Copper requires no decoration, cleaning and virtually no maintenance other than the removal of debris that may fall into the guttering.

Cost effective

Over the life cycle of a building copper generally is the most competitive building material available.

Long life

The 0.6mm copper used for our guttering has a life expectancy of at least 100 years. When copper is exposed to the elements, it protects itself by developing a green patina over time, ensuring durability and resistance to corrosion in virtually any atmosphere. Unlike other materials copper does not suffer from underside corrosion.

Aesthetic

Left to age naturally copper guttering will start to mellow within weeks, changing through various shades of brown and bronze until eventually forming a green / blue patina unique to copper. The time taken for the patina process to start depends on the location of your property, local weather conditions, distance from the sea and other forms of acidic pollution. If you don't want to wait for the patina finish to develop naturally, a solution can be applied after installation that will age your copper gutter within a few hours. Eventually copper will always go green and we recommend that you do not coat the copper to try and keep it bright.

Eco Friendly

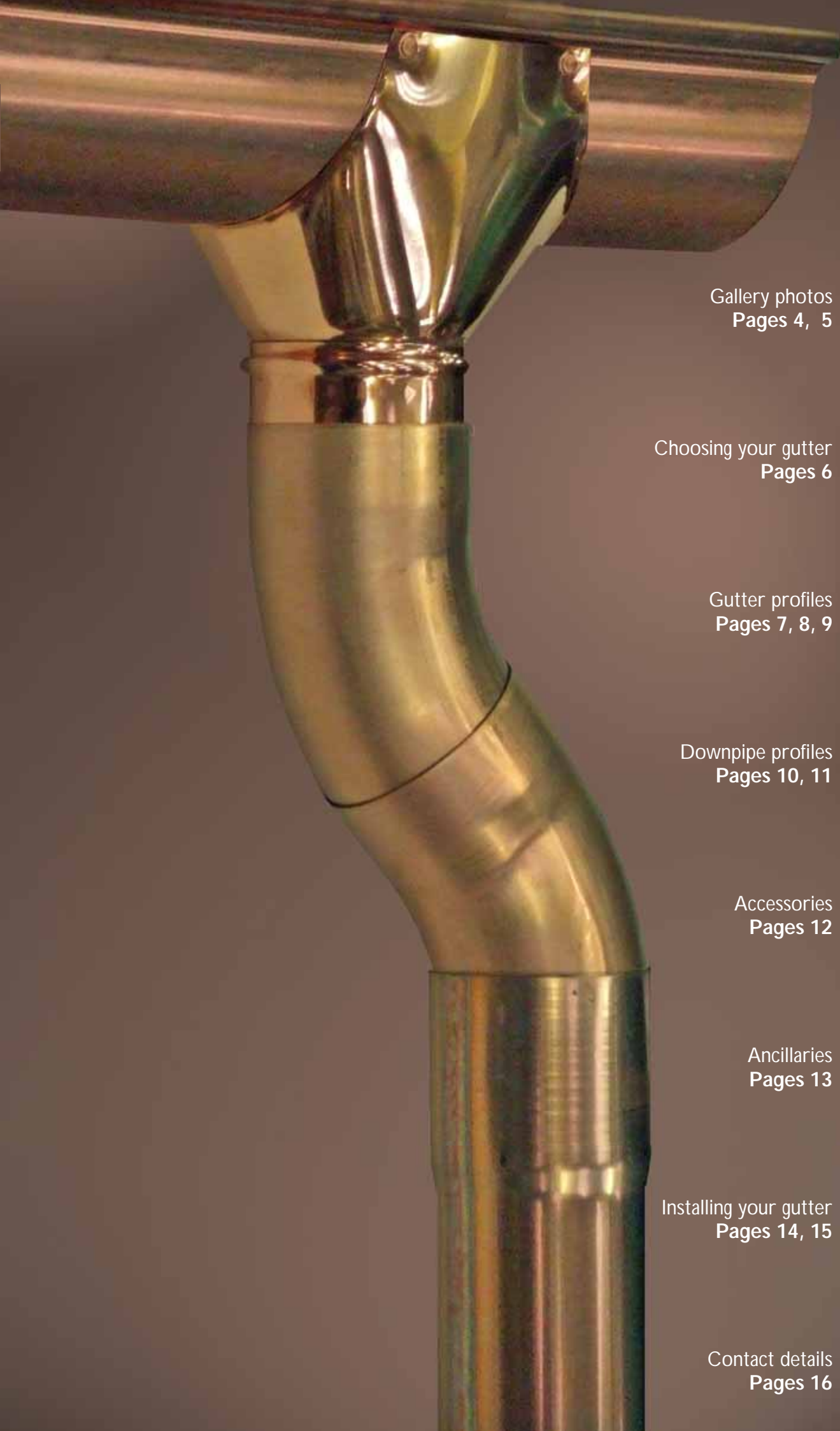
Many customers today want to lower their carbon footprint and reduce their impact on the planet. Copper is the perfect choice for this as it is 100% recyclable and one of the few metals that is fully sustainable, to date only 12% of the worlds current known reserves have ever been mined, with most mined copper still in use today.

Rainwater harvesting

Water conservation is also becoming increasingly popular. Copper acts as an algaecide and fungicide, keeping growths such as moss and lichen to a minimum, therefore keeping gutters clear and excellent for water harvesting. Copper also mildly disinfects the water, which is great for putting on plants as it has a balanced pH and is free from chemicals such as chlorine. Copper is a wholly natural material present in and essential to all plants, animals and humans. Unlike other materials such as lead, copper is non-toxic and does not accumulate in the body. A deficiency in copper is one factor in the increased risk of developing heart disease.

The future

With growing awareness of environmental issues and increasing concern for the health and safety of those constructing and maintaining buildings, copper is more than ever the most cost effective, adaptable roofing and guttering material of the future.



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GALLERY PHOTOS

A selection of copper gutter installations including newly installed guttering in its initial natural finish, guttering that has mellowed after a few weeks to a bronze colour and guttering that has been treated shortly after installation to attain the verdigris patina that usually requires many years to achieve.

For further examples visit the gallery pages on our website: www.coppagutta.co.uk





CHOOSING YOUR GUTTER

Once you have chosen whether you want half round, ogee or box section guttering it is important that you determine the correct size of gutter and downpipe needed for your property.

There are several variables that need to be considered.

1. The area of the roof that is to be fitted with guttering.
2. The rate of water flow through the chosen gutter profile.
3. The number, size and position of the downpipes.

A. Effective roof area being fitted with guttering.

To work out the water run off from your roof measure the length of the roof ridge in metres together with half the horizontal width of the roof ridge in metres. Multiply together and then multiply by the roof pitch factor (shown below) to give the effective roof area to be fitted with guttering.

Where a roof has a hipped end the effective roof area will be computed by dividing the roof into a rectangle and two triangles and adjusting each for the roof pitch multiplication factor which may be different for the hips compared to the main pitch of the roof. Similarly on a pyramid roof the area of each of the 4 triangles has to be calculated and if this pyramid roof is shown on plan then the area of the 4 triangles must be adjusted by the roof pitch multiplication factor.

The roof pitch multiplication factor RPMF.

Roof Pitch	Factor	Roof Pitch	Factor	Roof Pitch	Factor	Roof Pitch	Factor
10 Degrees	1.088	20 Degrees	1.182	30 Degrees	1.288	40 Degrees	1.419
15 Degrees	1.134	25 Degrees	1.233	35 Degrees	1.350	45 Degrees	1.500

For roofs of 50 degrees pitch and above use the factor as 1.600.

To calculate the maximum rainfall off a particular roof calculate its effective area in square metres and multiply this figure by 0.02 to give the number of litres per second coming off it. Compare this volume of rainwater run-off with the capacity of the gutter to handle it (shown below) and from this it is possible to see the size of gutter that can be used and the number and position of downpipes that would be needed.

Copper Gutter Profile	Sectional Area of Profile	Capacity (Litres/Metre)	Minimum Flow Rate
Standard Half Round	6200sq mm	5.6 litres / metre	2.0 litres / second
Large Half Round	12000sq mm	12.7 litres / metre	3.6 litres / second
Standard Ogee	9000sq mm	6.4 litres / metre	2.7 litres / second
Large Ogee	12700sq mm	12.7 litres / metre	4.0 litres / second
Standard Box	5525sq mm	5.5 litres / metre	1.5 litres / second
Large Box	0350sq mm	10.3 litres / metre	3.2 litres / second

B. Rate of water flow through the gutter profile chosen.

It should be noted that the positioning of the outlets/downpipes on a run of guttering can be very important. A downpipe in the middle of a straight run of gutter can normally handle twice the flow (*coming from both sides*) compared to a downpipe positioned at one end of a gutter run.

C. The number, size and position of downpipes.

It is possible to plan where to put the downpipe outlets. For instance if there is 8 litres per second coming off a section of roof fitted with Coppa Gutta's standard half round guttering which can handle a flow rate into the downpipe of 2 litres/second when positioned at an end of a gutter run, then this section of guttering would need either 3 downpipes (1 at each end and 1 in the middle of the run) or alternatively 2 downpipes spaced 1/3rd and 2/3rds of the way along the gutter run in order to dispose of the 8 litres per second of rainwater.

D. Other factors.

All the flow rate calculations are based on the assumption that the guttering is completely level and clear of any debris or other obstructions. If the rainwater has to flow around a corner before arriving at a downpipe the capacity of the gutter flow can be reduced by as much as 40% and should be considered in any gutter system design.

E. Snow loading

In areas where particularly high snow falls and severe icing might be expected, it is recommended that snow boards be fitted to the eaves of the pitched roofs. This precaution should also be considered wherever sliding snow might cause damage or injury to gutters, structures or persons below.

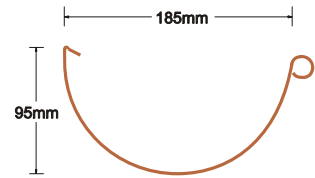
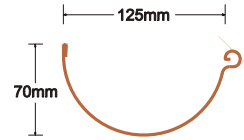
HALF ROUND GUTTER COMPONENTS

Standard profile measures: **70h x 125w**

Large profile measures: **95h x 185w**

Our Half Round style copper gutter is manufactured from 100% natural 0.6mm copper and is supplied in 2.4m lengths, making both transportation and installation uncomplicated. This simple design has a folded back edge for strength and an attractive rolled front for decoration.

Fitting our Half Round copper guttering couldn't be easier, sections are overlapped, jointed using silicone and copper rivets, with pre-made corners and outlets available off the shelf.



Fascia bracket

Roof bracket

Rise & Fall bracket

Brackets are manufactured in 4mm copper with the exception of the rise & fall bracket which has a stainless steel arm.



Fit every 1 - 1.2m's



Fit every 600 - 800mm's



Fit every 600 - 800mm's

Internal bracket

Running outlet

Swiss outlet

Swiss outlets can be supplied pre-fitted to a 300mm section of gutter. Alternatively they are available as a separate component that can be easily installed where required to the outside of the gutter.



Fit every 600 - 800mm's
Only available for our
Standard size profile



Stop end

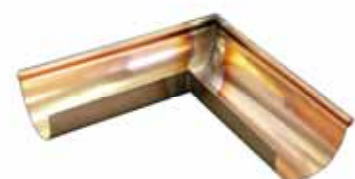
Internal corner

External corner

Stop ends are fitted with rivets then silicone sealed. Corners are TIG welded and lightly cleaned to ensure a strong, high quality finish. Custom corners and segmented curved sections can be produced to any angle or diameter.



90° and 135°



90° and 135°

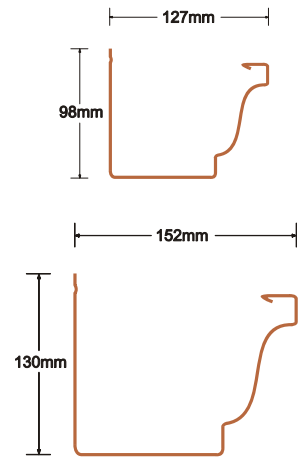
OGEE GUTTER COMPONENTS

Standard profile measures: **98h x 127w**

Large profile measures: **130h x 152w**

Our Ogee style copper gutter is manufactured from 100% natural 0.6mm copper and is supplied in 2.4m lengths, making both transportation and installation uncomplicated. This attractive design has a decorative front more suited to older style properties.

Fitting our Ogee copper guttering couldn't be easier, with pre-made corners and outlets. Internal joints simply require silicone sealant and riveting in place.



Fascia bracket Roof bracket Rise & Fall bracket

Brackets are manufactured in 4mm copper with the exception of the rise & fall bracket which has a stainless steel arm.



Fit every 1 - 1.2m



Fit every 600 - 800mm



Fit every 600 - 800mm

Internal bracket Running outlet Joint



Stop end Internal corner External corner

Stop ends are fitted with rivets then silicone sealed. Corners are TIG welded and lightly cleaned to ensure a strong, high quality finish. Custom corners and segmented curved sections can be produced to any angle or diameter.



Left & right handed



90° and 135°



90° and 135°

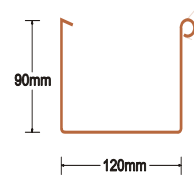
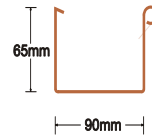
BOX GUTTER COMPONENTS

Standard profile measures: **65h x 90w**

Large profile measures: **90h x 120w**

Our Box style copper gutter is manufactured from 100% natural 0.6mm copper and is supplied in 2.4m lengths, making both transportation and installation uncomplicated. This simple design has a folded back edge for strength and an attractive rolled front for decoration.

Fitting our Box copper guttering couldn't be easier, with pre-made corners and outlets. Internal joints simply require silicone sealant and riveting in place.



Fascia bracket

Roof bracket

Rise & Fall bracket

Brackets are manufactured in 4mm copper with the exception of the rise & fall bracket which has a stainless steel arm.



Fit every 1 - 1.2m



Fit every 600 - 800mm



Fit every 600 - 800mm

Joint

Running outlet

Spigot



Stop end

Internal corner

External corner

Stop ends are fitted with rivets then silicone sealed. Corners are TIG welded and lightly cleaned to ensure a strong, high quality finish. Custom corners and segmented curved sections can be produced to any angle or diameter.



90° and 135°



90° and 135°

ROUND DOWNPIPE COMPONENTS

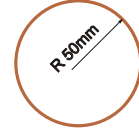
Standard profile measures: **80mm diameter**

Large profile measures: **100mm diameter**

Our Round copper downpipes are manufactured from 100% natural 0.6mm copper and are supplied in 2.4m lengths, making both transportation and installation uncomplicated.

Each length is swaged at one end so they push fit together, with additional connectors available so you can use up all your off cuts.

1mm thick heavy duty pipes are available for high risk areas such as alley ways and school playgrounds.



Heavy Duty Downpipe

Bends

Swan neck

All of our downpipe components are designed to be push fit and require no sealing.



Supplied in 1.4m lengths



40°, 72° and 85°



Extends 480mm - 740mm

Branch

Diverter

Connector



Downpipe Clip

Shoe

Dispenser



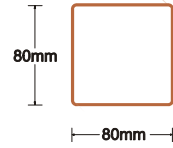
SQUARE DOWNPIPE COMPONENTS

Standard profile measures: **80mm x 80mm**

Our Square copper downpipes are manufactured from 100% natural 0.6mm copper and are supplied in 2.4m lengths, making both transportation and installation uncomplicated.

Each length is swaged at one end so they push fit together, with additional connectors available so you can use up all your off cuts.

1mm thick heavy duty pipes available for high risk areas such as alley ways and school playgrounds.



Heavy Duty Downpipe

Bends

Swan neck

All of our downpipe components are designed to be push fit and require no sealing.



Supplied in 1.4m lengths



72° and 85°



Extends 480mm - 740mm

Branch

Connector

Downpipe clip



Shoe

Dispenser



ACCESSORIES

Each of our hoppers has been hand crafted from the same quality 0.6mm copper as our guttering. Due to their complex shape most of our hoppers have soldered joints. All of our hopper styles are supplied with 80mm round outlets, which makes them compatible with any of our downpipes. Custom design enquiries are welcome.

Copper rain chains and cups can be used to add a distinctive and interesting visual aspect to your guttering, creating interesting garden features when used in conjunction with planters, ponds, green houses, gazebos and water butts.

Our copper rain cups are supplied in metre lengths and can be easily separated and joined together to create the required drop. Each of the chain designs are supplied in packs of metre lengths to create a 2.5m drop as several lengths of chain must be used per outlet to make them effective. We strongly recommend that they are only used as a decorative feature and not as the main form of gutter downpipe.

Catherine



Height 210mm
Width 240mm
Depth 170mm

Victoria



Height 370mm
Width 250mm
Depth 250mm

Georgina



Height 210mm
Width 240mm
Depth 170mm

Charlotte



Height 300mm
Width 220mm
Depth 220mm

Jane



Height 280mm
Width 255mm
Depth 150mm

Rose Rain Cup



Available in 1m lengths

Pipe Ring Chain



Sold in packs of 8 x 1m lengths
to make a 2.5m drop

Square Link Chain



Sold in packs of 10 x 1m lengths
to make a 2.5m drop

Double Link Chain



Sold in packs of 5 x 1m lengths
to make a 2.5m drop

ANCILLARY ITEMS

To complement our standard ranges of copper guttering and downpipes we also provide all the necessary ancillary components to ensure your gutter is easy to install and fitted securely.

The low modulus silicone we provide has been laboratory tested for a minimum 25 year life and makes installing our guttering quick and easy, also helping to reduce labour costs.

Our guttering can be left to age naturally from deep brown to verdigris. Alternatively our verdigris solution can be applied and within a few hours the copper will achieve the blue / green verdigris patina. This solution must be applied within days of installing the copper rainwater system to work effectively.

Silicone Sealant



Copper rivets



Copper Screws



Downpipe Clip Spacers



Leaf Guard



Verdigris Solution



Available in 1cm, 2cm, 3cm, 4cm, 5cm

Flux Solution



Solder



Applying Verdigris Solution

Once all the copper guttering is installed our verdigris solution can be applied using a hose lock spray. This must be done within days of installing the guttering to work effectively.

Protective gloves and glasses must be worn and try to avoid windy or rainy days when applying the solution.

Spray the guttering as evenly as possible and the solution will start to work within a matter of hours.

INSTALLATION INSTRUCTIONS

The following instructions have been written to help you fit your copper guttering. We have tried to explain all the points necessary to enable you to easily fit your rainwater system but obviously not every eventuality can be covered.

When installing any of our gutter brackets it is advisable to put all the brackets in a perfectly level line. The various gutter profiles we offer are deep enough to allow for a proper flow of the rainwater from the gutter to the downpipe outlets. Check where the gutter will sit once the brackets are installed so that the rainwater run off from the roof is properly caught by the gutter. (Fig 1) If wrongly positioned, the rainwater may run off the roof and shoot over the gutter.

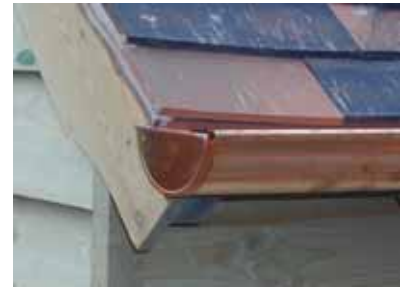


Fig 1

Fitting Fascia Brackets

First, install a fascia bracket 150mm from the end of the fascia board at both ends of a straight run of gutter. (Fig 2) A level string line should then be run between them to ensure they are at exactly the same height. The intermediate brackets should then be spaced equidistant apart at about 1 metre centres to be in line with this string line.

If all four elevations of the property are to be fitted with a continuous link of gutter, it is advisable to fit all the brackets at each corner first to ensure that they are at the same height.



Fig 2

Fitting Roof Brackets

First, install a roof bracket on the last roof truss at both ends of a straight run of gutter. A level string line should then be run between them to ensure they are at exactly the same height. The intermediate brackets should then be spaced equidistant apart attached to the relevant trusses at about 600mm - 800mm centres to be in line with this string line.

To bend the roof bracket put the tail of the bracket in a vice and bend the bracket carefully to the correct angle. Once the first bracket is bent to the correct angle leave it in the vice so the others can be bent to match.

If the brackets are being fitted to the roof trusses after the tiles/slates have already been laid, then not only does the tail of each bracket have to be bent to the pitch of the roof but also twisted 90 degrees so that it can be screwed to the exposed roof trusses. (Fig 3)



Fig 3

Fitting Internal Brackets

Firstly a level line marking the top rear edge of the gutter being fitted needs to be made along the fascia board.

Ideally the brackets should be fitted onto the gutter sections prior to putting the guttering into position. They should be positioned approximately 600mm apart. Line up the guttering with the internal brackets fitted so that the top rear edge of the gutter runs along the level line that has been marked on the fascia board.

When properly in position screw the internal brackets through the gutter to the fascia board. (Fig 4) We suggest that you screw the internal brackets at each end of the gutter section into the fascia first and then the ones in between. Fitting the guttering using internal brackets is normally a two person job.



Fig 4

FITTING YOUR GUTTER

If you have purchased a running outlet skip to further instructions below.

Fitting Swiss Outlets. Mark where on the guttering the outlet is to be fitted. (Fig 1) Cut out the hole for the outlet either with nibblers or by carefully using a hole cutter. (Fig 2) The hole does not have to be neatly cut as it will be covered by the Swiss outlet on the outside. Place the Swiss outlet into position, bend the back tags over to hold it in place. Drill and rivet the Swiss outlet to the front of the guttering – 2 rivets preferably. (Fig 3)

Fitting Spigots. Mark where on the guttering you want your spigot to be fitted. Cut out the hole for the spigot either with metal nibblers or by carefully using a hole cutter of 75mm or 92mm diameter depending on the diameter of downpipe being fitted. Place the spigot outlet into position applying our sealant around the lip to make it watertight. (Fig 4)



Fig 1



Fig 2



Fig 3



Fig 4

Fitting Half Round Gutter

Pop rivet and then bond any stop ends in place using our silicone sealant. (Fig 1) Fit your first section of gutter in place at one end of your first straight run of gutter. (Fig 2) The next section of gutter needs to overlap the first length by about 30 to 50mm. Before sliding sections together make sure that a good application of sealant is applied. All joints must be pop riveted through the overlap and more sealant applied inside. The final length of gutter can be cut to length using nibblers or a hacksaw.

When fitting corners to the lengths of gutter use the same principles as detailed above. Once the joined lengths of gutter are all correctly positioned, the guttering can be secured to the brackets. Firstly bend over the back bracket tags to hold the gutter in place (Fig 3) and then fit a pop rivet through the top front of the guttering and bracket ensuring that the gutter sits firmly inside the brackets. (Fig 4) If using internal brackets then each section of gutter is screwed onto the fascia board along the pre-marked level line.



Fig 1



Fig 2



Fig 3



Fig 4

Fitting Ogee and Box gutter

Pop rivet and then bond any stop ends in place using our silicone sealant. (Fig 1) The ogee and box style guttering is joined using our special internal copper joints. (Fig 2) Joints are fitted inside the gutter as detailed below. Fit your first section of gutter in place at one end of your first straight run of gutter. (Fig 3) The final length of gutter can be cut to length using nibblers or a hacksaw.

When fitting corners to the lengths of gutter use the same principles as detailed above. Once the joined lengths of gutter are all correctly positioned, the guttering can be secured to the brackets. Firstly bend over the back bracket tags to hold the gutter in place (Fig 3) and then fit a pop rivet through the top front of the guttering and bracket ensuring that the gutter sits firmly inside the brackets.

If using internal brackets then each section of gutter is screwed onto the fascia board along the pre-marked level line. (Fig 4)



Fig 1



Fig 2



Fig 3



Fig 4

Fitting Ogee and Box gutter joints

Ideally measure up the straight run of guttering required and put it together on the ground lifting up the whole length and fitting it in one operation. (Fig 1) Apply the sealant along the grooves in the internal joint so it is one continuous length going around the corners and curves of the joint.

Slide the two sections of gutter to be joined together. Once in position you may find it easier to press the joint firmly into the gutter using a clamp and two pieces of timber to prevent marking the gutter (Fig 2) before applying two pop rivets to each side. To doubly ensure that the joint does not leak apply silicone sealant to the inside of the gutter where the joint edges meet the gutter and around the rivets.

If the sections of gutter are being joined in situ, (Fig 3) use the sealant around the joint sealant channels and the internal joints can just be slid into the gutter sections. (Fig 4) Again a bead of silicon sealant should be applied to each joint and around the rivets once the guttering is fully fitted in place as a further barrier against possible leaks.



Fig 1



Fig 2



Fig 3



Fig 4

FITTING YOUR DOWNPIPES

If the downpipe outlet is some distance from the wall then it will be necessary to fit an extendable swan neck or make up one using two bends and a short length of downpipe to bring the downpipe close to the wall. (Fig 1)

The downpipe is held to the wall using clips which are supplied with the necessary fittings. If required downpipes can be spaced further away from the wall using brass spacers available in lengths from 1cm to 5cm which can be fitted in any combination to allow the downpipe to be run up to 15cm away from the wall. (Fig 2)



Fig 1



Fig 2



Fig 3

When you have decided on the position of the downpipe, use a plumb bob down and chalk mark it against the wall. Fit at least three downpipe clips per length of downpipe or one every 1.5 metres whichever is the greater. One clip should be as near to the top of the downpipe as possible and one near the bottom with any others spaced equidistant apart in between.

Cut the downpipe to length remembering to allow for any shoes or outlets to the drains. The downpipe can be cut using a hacksaw or nibblers. (Fig 3) Fit the open swaged end of each downpipe length uppermost as this acts as the female joint. When cutting downpipe to length always keep the length with the open swaged end or use our connectors to use up any off cuts.

Fitting Accessories

A superb range of very attractive hopper heads can be purchased to add real presence to the guttering installation (See page 12). These hopper heads are normally placed near the top of the downpipe to act as a surge reservoir for heavy rain and also to take more than one downpipe outlet coming in from other small roof areas.

Finally, in place of downpipe it is possible to fit our copper rain cups or rain chain to make a display feature of the rainwater discharge. These are simply hung from a stainless steel bar across the outlet and must be secured at the bottom. At least four lengths of chain must be used per outlet and not as the main source of discharge from a roof.



Radius Sections and Special Order Items

We have become very experienced in producing segmented radius copper gutter sections to suit customer requirements. Small sections of the required copper gutter profile are mitre cut and tig welded together to create the radius section. Segmented copper gutters are normally supplied in approx 2m lengths, which can easily be joined together or to straight runs on site. If you are concerned that your copper gutter will not be fitting to a true radius, simply supply us with a template and our technicians will calculate and cut each mitre section manually, ensuring it follows your guide.



Contact Details

Coppa Gutta Ltd

Unit 8, Bottings Industrial Estate,
Hillsons Road, Botley,
Hampshire, SO30 2DY

Tel: 0845 050 4590

Fax: 0845 050 4570

Email: info@coppagutta.co.uk

Web: www.coppagutta.co.uk