

Installation Guide

Metal guttering systems come in many forms and the method of fixing and jointing them vary quite considerably. The MGMA has, amongst its key objectives, a commitment to maintain and publicise best practice where the installation of guttering is concerned. Firstly, one has to recognise the wide variety of metal gutters available and their application.

ALUMINIUM

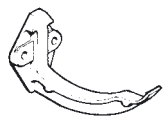
Aluminium has emerged over the past 30 years as the principal metal gutter particularly where it is likely to be visible. Aluminium gutters range in size and thickness of metal and many are produced to order being fabricated from flat sheet. The methods of manufacture are:

- Roll formed on site (commonly referred to as seamless)
- Extruded aluminium
- Die cast aluminium
- Pressed aluminium

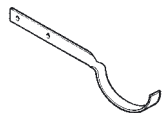
The fixing methods depend upon the profile: round shapes need an external support and those with a vertical rear face may be directly or bracket fixed.



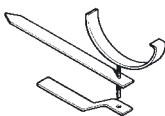
Directly fixed through the rear face above the water line and possibly in conjunction with an internal top support strap.



Bracket fixed to a fascia background. It is important that the fascia itself is securely fastened to the building.



Rafter arms are used where no fascia exists and side fix is preferred as they are easier to align and are fitted after the roof covering in most cases.



Rise and fall brackets are built into masonry and allow for height adjustment.

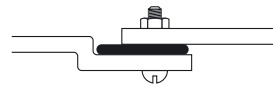
Fixing

In order to achieve a secure and attractive appearance it is essential that the setting out be done proficiently, that is the grounds must be

checked for line and level and any deviation corrected before fitting the gutter or its brackets. The fastenings should be those provided by the manufacturer or be compatible to resist corrosion or inter metallic reaction.

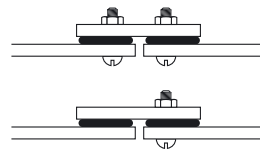
Jointing

The joint is obviously the point at which any gutter is likely to leak and where poor or careless installation becomes apparent. Some manufacturers do not make adequate provision within their design to ensure that tolerances for sealant application are present. This lack of provision, when coupled to installer ignorance, will cause problems.



Spigot and Socket where the two opposing ends of the gutter are effectively joggled to provide a connection that may be obtrusive or flush in appearance. This type

of connection is common to generic cast gutters but is sometimes employed with extruded or pressed using swaging or welded collars to provide the joint mechanism. A reputable manufacturer will provide means of spacing or shimming the gap where the sealant will be applied.



Butt Strap or Union are where the joint is achieved by a loose connection that is applied internally or externally and generally bolted into place around the gutter, depending upon its profile and size. The manufacturer's

responsibility to create tolerance applies to this type as much, if not more, than the spigot and socket type as this blends into the bespoke area where general fabricators will take on gutter work without appreciating the finer points.

Snap Fit joints are available where the need for bolts is eliminated and is achieved through the extrusion process of manufacture where this type of fit can be engineered in. A 'wet' sealant is generally used, but there are some rubber joint systems in existence, some of which have failed in the past.



The vast majority of aluminium gutters are 'wet' sealed and it is vital that high performance low modulus silicone is used – **nothing else is suitable**.

The main points to observe are that the gutters are clean, dry and frost free and that the sealant is carefully applied in order to find its way to all areas within the joint sandwich and to remain at least 2mm thick, post tightening.

Joint failure is most commonly caused by:

- **Incorrect sealant**
- **Over tightening**
- **Thermal movement**
- **Poor installation**

All gutters should be water tested and signed off before access is dismantled and the job regarded as complete.

CAST IRON

Cast iron gutters are made to traditional patterns and as such always have a spigot and socket integral to its manufacture where a single bolt is used to secure the connection. At one time, putty was used to make the joint together with other similar compounds. These days the silicone sealant is used to make the joint, as is the case with aluminium. The manufacture itself is consistent and the installation process is, again, the same as aluminium, albeit with a much heavier material.



STEEL

Steel gutters come in three distinctive finishes:

- **Pre coated plastisol**
- **Galvanised**
- **PVF2 coated**

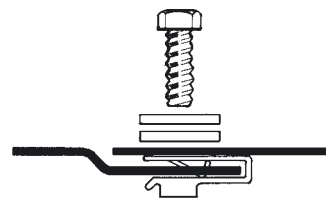
Plastisol is generally used in conjunction with roofing and cladding on industrial buildings and will blend or contrast with the livery of the building. The most common style is the Trimline, which has a distinctive appearance.

Galvanised gutter will generally be hidden and the galvanised steel will be pre or post applied with the latter being preferred for longevity reasons.

PVF2 is a factory applied decorative finish.

The installation is similar to aluminium as they may be on external support brackets or directly fixed.

Joining may be achieved with loose connectors bolted into place, a swaged joggle or a collar that is formed or welded into place. The same need for tolerance applies here as the gutters are mostly fabricated from flat sheet and a suitable sealant gap must be maintained. Steel gutters do not expand as much as aluminium and therefore there is less movement around the joint.



STAINLESS STEEL

It is quite uncommon to see stainless steel used as a gutter substrate but the methods of fixing and jointing are common to the other metals and certain fabricators will produce stainless gutters to order.

COPPER AND ZINC

Very much in the minority, these systems tend to be found mostly on mainland Europe and have brackets and jointing methods unfamiliar to the UK.

The brackets are of a rafter fix variety although there are adaptations available for fascia fixing.

The traditional jointing method on the continent tends to be a site solder which is carried out by specialist tradesmen however, there are variations which have adopted an EPDM rubber sealed boltless joint.

This information sheet is designed to supplement our publication Metal Gutters: The Guide and it is suggested that you place them together in your files. It is intended to produce more leaflets on a regular basis which will increase your definitive reference point for metal gutter selection.

Future topics will include the new EN12056; maintenance and aftercare; corrosion and so on. If there is a particular topic you would like details on, please contact the MGMA or request a copy of the members' matrix.

CPD SEMINARS

The Association provides a CPD seminar service for architects which covers a variety of topics relevant to the selection of metal gutters and pipework, including:

Substrate material
Profile types
Design considerations

Fitting and jointing
Applications

If you would like to arrange a seminar within your practice please contact us on **0151 652 3846**

Visit our web site

Visit our web site – www.mgma.co.uk - where you can contact MGMA members at the click of a mouse and discover the products and services available. Members are only too pleased to help with any problems you have and can provide design assistance should you need it.

Metal Gutter Manufacturers Association

18 Mere Farm Road, Prenton, Wirral, Cheshire CH43 9TT

Tel: 0151 652 3846 Fax 0151 653 4080

email: info@mgma.co.uk www.mgma.co.uk