SQUARE RAINWATER SYSTEM

Square Line Gutter Installation Guide

Step-by-step instructions for fitting Aquaflow Square Line gutter and 65mm square downpipe.

GUTTER PROFILE



A clean, contemporary square profile manufactured in PVC-U with a co-extruded UV-stabilised outer layer. Designed for use with 65mm square unsealed downpipe.

FLOW CAPACITY

Profile	Centre outlet, level	Centre outlet, 1:350	End outlet, level	End outlet, 1:350
Square Line	2.20 l/s	3.03 l/s	1.10 l/s	1.55 l/s

Flow capacities to BS EN 12056-3. Reduced capacities apply where bends are incorporated.

COLOURS

White · Black · Brown · Anthracite Grey · Light Oak

1000mm
Maximum gutter bracket spacing

400mm
Bracket spacing on roofs ≥ 35° pitch or in heavy-snow areas

1.8m
Maximum downpipe bracket spacing (1.5m recommended)

0°C
Do not install below this temperature

The Square Line system meets BS EN 607, BS EN 12200-1, BS EN 1462 and BS EN 681-1. Install in accordance with these instructions and/or BS EN 12056-3.

Before you start

A few minutes of preparation makes the job quicker and gives a watertight result first time.

Tools you will need

- Drill / driver or screwdriver
- Tape measure, pencil and spirit level
- String line
- Fine-toothed hand saw (6–8 teeth per cm)
- File for removing swarf and burrs
- Silicone lubricant for seals
- Ladder with a stay or stand-off

Screws and fixings

Fix every bracket and fitting with **25mm × 5mm zinc-plated or sherardised round-head screws**, using **all** of the fixing holes.

- **Do not** use countersunk screws — they can crack the plastic.
- **Never** use nails in any circumstances.

Cutting gutter and downpipe

Cut with a hand saw of 6–8 teeth per cm, held at a shallow angle, using slow steady strokes. File off swarf and burrs, then clean all cuttings from the ends — debris will damage seals and cause leaks.

Lubricate all seals with a good-quality silicone lubricant. **Do not** use washing-up liquid or detergent, which will degrade the seal.

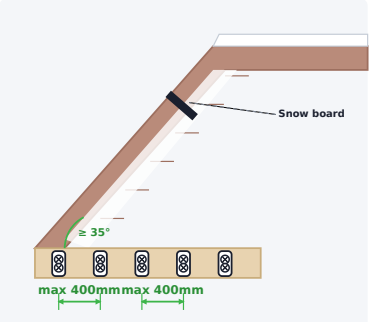
Ladders. Never rest a ladder directly on the gutter. Use a ladder stay or position the ladder to avoid contact — direct load can damage the gutter, brackets and fittings.

Temperature. Do not install below 0°C. Cold PVC-U is brittle and may break when snapped into brackets.

Treated timber. Fascias treated with creosote or similar preservative must be left to dry for at least 48 hours before installation. Avoid contact with bituminous liquids.

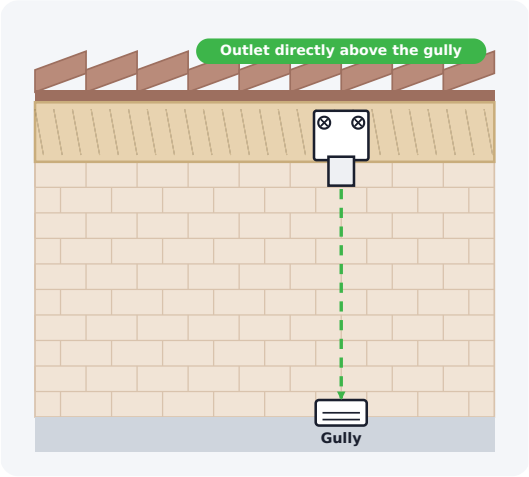
Steep roofs and heavy snow

On roofs with a pitch of 35° or more, and/or smooth roof surfaces, consider the effect of heavy snow loading — well-insulated roofs no longer melt snow on impact, so it can build up to a critical weight. In these cases reduce bracket centres to **no more than 400mm** and fit snow boards.



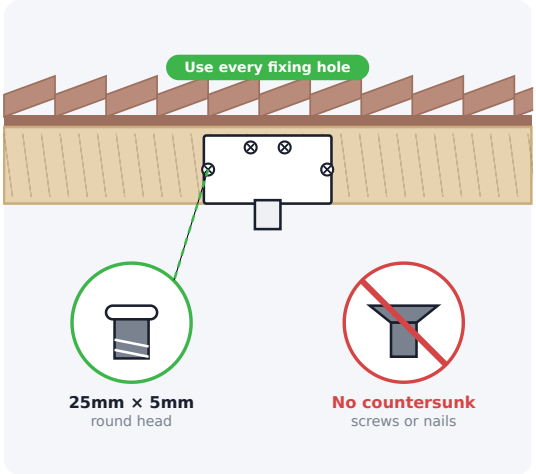
Part 1 — Fitting the gutter

The gutter is supported entirely by the outlet, unions and support brackets, so every fitting must be fully screwed to the fascia.



1 Position the outlet above the gully

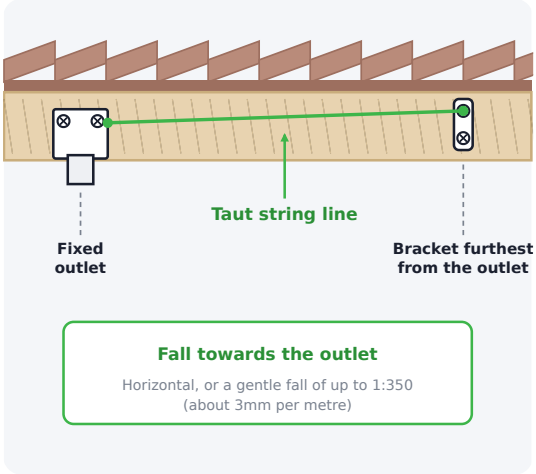
The gutter outlet must sit vertically above the drain inlet or gully that will carry the rainwater to the underground drainage system. Plan the outlet position first — everything else is set out from it.



2 Fix the running outlet

Fix the outlet to the fascia at the planned position, allowing for whatever fall is required, using 25mm × 5mm round-head screws through every fixing hole.

An outlet at the centre of the run gives roughly double the capacity of one at the end — see the flow table on the cover.

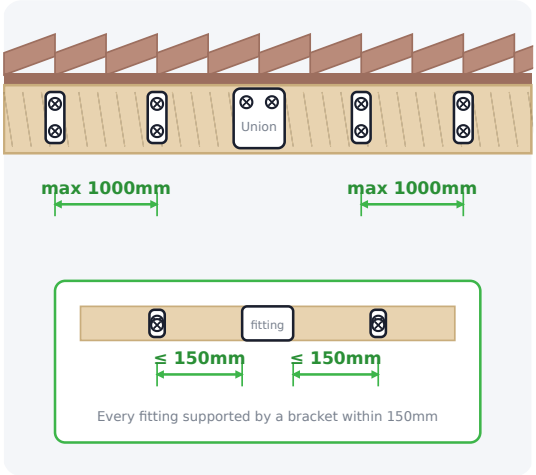


3 Fix the far bracket and run a string line

Position and fully fix the gutter support bracket furthest from the outlet, at a height that gives either a horizontal run or the desired fall, using 25mm × 5mm round-head screws.

Stretch a line taut between the fixed outlet and this bracket to establish a straight gutter line.

Any fall should be gentle — no steeper than 1:350 (about 3mm per metre).

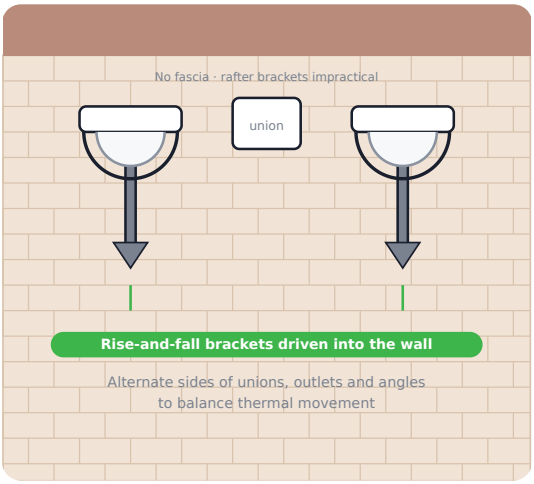


4 Fix the remaining brackets and unions

Fully fix the rest of the fascia brackets and fittings along the line, using every screw hole. Bracket spacing must **not exceed 1000mm**. Fit a union (joint bracket) at every junction of two gutter lengths.

Every fitting must be supported by a fascia bracket within **150mm** on either side.

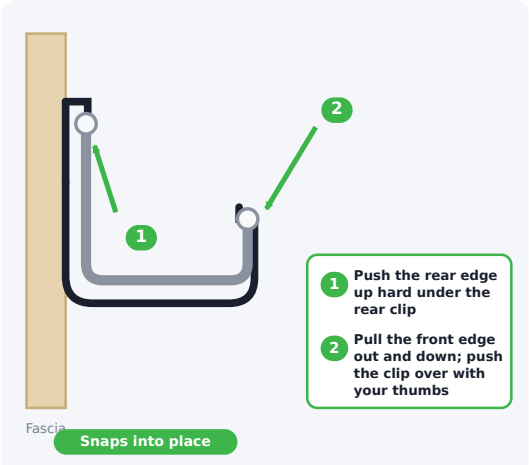
Roof pitch 35° or more, or heavy-snow area? Reduce centres to 400mm and fit snow boards.



5 No fascia? Use rise-and-fall brackets

Where there is no fascia board and rafter brackets are impractical, rise-and-fall brackets driven into the wall will support the gutter.

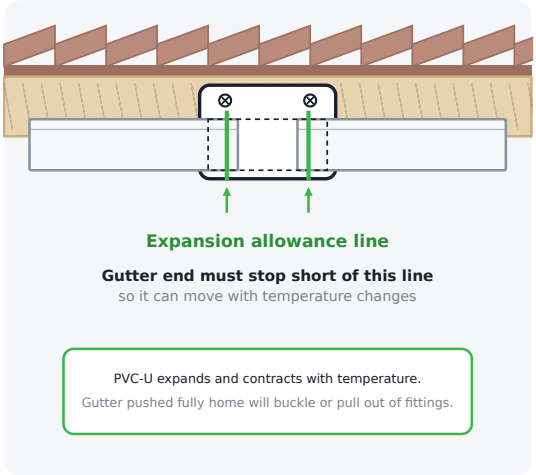
Position them against alternate sides of unions, running outlets and angles along the run, so thermal movement is not all pushed in one direction.



6 Snap the gutter into the brackets

Push the **rear edge** of the gutter up hard under the rear retaining clip of each fitting. Then pull the front edge of the gutter out and down with one hand and the front edge of the bracket out and down with the other, pushing the front clip over the gutter edge with your thumbs until it snaps into place.

Repeat at every bracket, union and outlet along the run.



7 Check the expansion allowance line

Once each length is snapped in, check that its end is **not inserted beyond the "expansion allowance" line** marked inside the union, outlet or stop end. PVC-U moves with temperature — a 2m length expands by around 2.4mm for a 20°C rise — and this gap lets it move without distorting or pulling out of the fittings.

In very hot weather the daily movement is greater — take particular care with the allowance on summer installs.





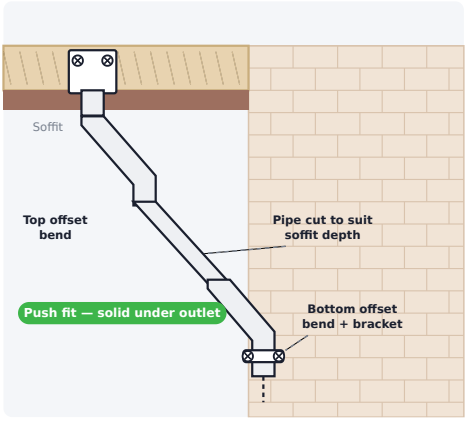
8 Cut lengths to size and lubricate seals

Where a length needs cutting, use a fine hand saw (6–8 teeth per cm) held at a shallow angle with slow, steady strokes. File off any swarf or burrs and clean all cuttings from the gutter ends.

Apply silicone lubricant to every seal before pushing the gutter home — never washing-up liquid or detergent.

Part 2 — Fitting the downpipe

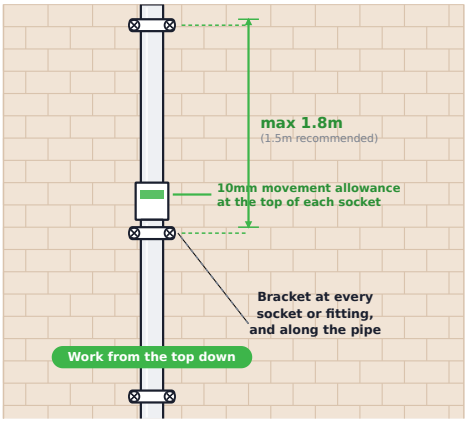
Square Line uses 65mm square unsealed downpipe. Work from the top down and allow around 10mm at the bottom of each pipe section for thermal movement.



9 Make the offset from outlet to wall

Fabricate an offset using a top and bottom offset bend joined by a short length of pipe cut to suit the soffit depth of the building.

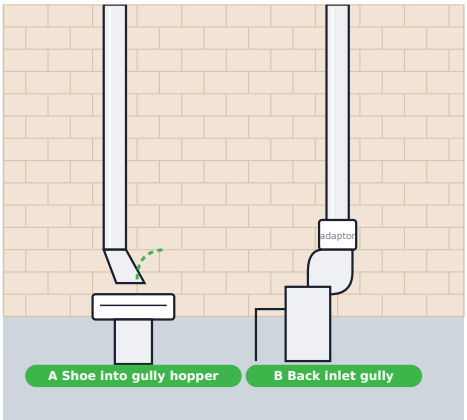
Insert a piece of pipe at least as long as the socket depth into the top offset bend and push it tightly up under the running outlet. Secure the bottom offset bend to the wall with a bracket using 25mm × 5mm round-head screws, so the whole assembly is a solid fit under the outlet.



10 Fit the downpipe

Working from the top, push the 65mm square downpipe into the bottom offset bend. Place the bottom end into a downpipe connector and secure the connector to the wall with a pipe and fitting bracket, leaving a **10mm thermal movement allowance** at the top of the socket.

Fit further lengths and fittings the same way. Secure with a bracket at every fitting or socket, and along the pipe as necessary, at centres **no greater than 1.8m** — we recommend 1.5m.



11 Connect to the underground drainage

In domestic applications 65mm square downpipe commonly discharges through a shoe into the hopper of a gully. Alternatively, it can discharge into a back inlet gully through an adaptor and bend.

Finishing off

Once the installation is complete, test it under working conditions and hand over the maintenance notes below.

Testing

Test the gutters for watertightness under working conditions once the installation is complete. Internal downpipes should be tested as prescribed in the relevant Building Regulations; guidance is also given in BS EN 12056-3. Pay attention to local authority requirements.

Maintenance

Clear the gutters and outlets of leaves and other debris **at least once a year** — more often in polluted areas or where there are trees nearby. Inspect the gutter and brackets during and after periods of ice formation.

The system is self-coloured and needs no painting. Wash periodically with warm soapy water; in severe cases use a non-abrasive kitchen cream cleaner. Maintenance is the responsibility of the building owner.

Guarantee

Subject to normal wear and atmospheric conditions, Aquaflow guarantees that the Square Line system will retain its decorative function for **15 years on white, 5 years on coloured products** and will weather within Industry Norm Limits, with only minor changes in surface appearance. Full terms are given in the Square Line Technical Data Sheet.

Handling and storage

Keep gutter and pipe in the opaque polythene sleeving until installation. Store flat, out of direct sunlight, and never drag lengths across the floor or drop components on their ends — particularly in cold weather. Do not store fittings in sealed clear bags.

Need help?

For non-standard applications or advice on bracket spacing in exposed or heavy-snow locations, contact Kalsi Plastics (UK) Ltd. Full technical data, compliance and flow information is in the Square Line Technical Data Sheet.