PCP
CLADDING ltd

SWISH_RAINWATER_ INSTALLATION__GUIDE_0818

GUIDE

2022

PREMIERCLADDINGPRODUCTS.CO.UK | +44 (0)1428 644255 | ENQUIRIES@PCPCLADDING.CO.UK

Uniclass L7314:P7114			
CI/SfB	(52.5)	Xn6	0818

Swish®
BUILDING PRODUCTS

Sustainable Rainwater Systems

Specification & Installation Guide

84 percent recycled content

70 percent carbon saving

KM508760

BES 6001 Responsible Sourcing
www.greenbooklive.com

bsi. ISO 9001 Quality Management FM 09180

bsi. ISO 14001 Environmental Management EMS 513947

bsi. ISO 14001 Environmental Management EMS 513947

bsi. ISO 50001 Energy Management EMS 620926

The Specifier's Choice for Sustainable PVC Roofline, Cladding and Rainwater Systems

www.swishbp.co.uk

Specification Guidance

General

Swish Rainwater systems are designed for application in most domestic properties throughout the UK.

The following information is given to help specifiers determine the basic requirements of a gutter system. Swish Technical Services can provide further information and guidance as required. Tel: 01827 317238

System Performance

To determine the elements of the gutter system the designer must calculate the likely quantity of rainwater run-off from the roof as follows:–

- Decide on the local rainfall intensity that the system must cope with.
- Calculate the effective roof area (m^2) to be drained.

To meet these requirements, the designer will need to:

- Choose a gutter with sufficient flow capacity (litres per second)
- Decide on the system layout including the fall of gutter and the number and position of outlets required to maximise the flow.

Rainfall Intensity

BS EN 12056 suggests likely rainfall intensities for different areas of the UK, which may be experienced as unusual events of 2 minutes duration, once every 1, 5, 50 and 500 years. The volume of water involved in these events increases as they get rarer, but because of their relative infrequency, it is suggested that domestic gutter systems should be designed for a storm event that is likely to occur once a year. The intensity of such an event will vary across the UK, but it is sensible to design a system for a minimum intensity of 75mm/hour per m^2 or a flow rate of 0.021 litres per second.

Roof Area

The area of roof that drains into any one gutter (effective roof area : m^2) can be calculated in two ways (see diagram):–

- (H/2) + W x L
- L x W x Pitch Factor

A selection of pitch factors is shown in table A. For other pitch factors please contact Swish Technical Services.

Table A

Roof Pitch	Pitch Factor
10°	1.088
20°	1.182
30°	1.288
40°	1.419

Flow Capacity

In general terms the most efficient section of gutter runs from the outlet, for a distance of 50 times the maximum height of water the gutter can hold when level. In the case of Swish Round gutter this is approximately 2.4m (ie. 48mm x 50). The capacities shown for Swish gutter systems have been independently assessed on a flow rig in accordance with BS EN 12056:2000 and are based on the following:–

- A 'short' run of gutter (ie 50 x height of water the gutter is capable of containing).
- The gutter is set straight and level (ie a fall of up to 3mm/m).
- A storm event running at 75mm per hour per m^2 or 0.021 litres per second.
- Capacities are reduced by a 'safety factor' of 10%.

Table B

Short Gutter system	Flow litres* per second	Max. area drained m^2
Round	0.9	43
Square	1.6	76
Ogee	2.2	105
Deepflow	1.8	86

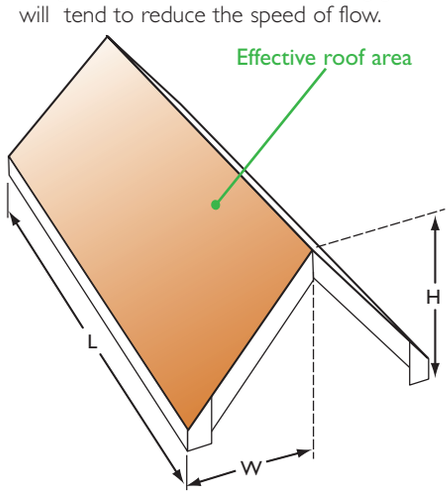
*Outlet positioned at end of run

System Layout

It is at once obvious from the flow capacity table that different gutter shapes have different flow and area drainage capabilities.

The roof area to be drained should be compared with the maximum area that a gutter type is able to drain (Table B: right column). If the figure in the table is too low the designer has the following options:

- Select a system with a higher capacity
- Increase the fall on the gutter. With a longer gutter this has its limitations, as water coming off the tiles is more likely to overshoot the gutter at the lower end. With a shallow fascia this may not even be an option. In addition the greater volume of water in a long gutter will tend to reduce the speed of flow.



- Move the outlet point to a central position to significantly increase the gutter drainage capacity.

For further guidance please consult Swish Technical Services.

Other Notes on Layout

- If an end outlet is located around a corner flow rates should be reduced by 15%.
- Larger valleys may require a dedicated outlet at the corner.
- Where the roof is likely to discharge water rapidly eg. long slopes or where low friction roof coverings are employed, a larger gutter may be required to avoid water overshooting the gutter.

Swish Roofline & Cladding Systems

Swish Cellular PVC is suited to the exposed conditions encountered on clad facades and at the roofline. Situated in elevated positions and subject to extreme weather conditions, these areas are difficult and costly to access and maintain. Cellular PVC requires no maintenance; it will last the life time of the building and can be fully recycled at the end of its service life.

New build - The BRE Green Guide (June 2008), which underpins the Materials section of the Code for Sustainable Homes, recognizes the sustainability of PVC building products which can help developers achieve high materials ratings under the Code.

PVC cladding over timber framework is classed as an A+ external wall system; the highest rating available. In addition, Swish Cellular PVC cladding and roofline systems qualify as Tier 3 products under Responsible Sourcing.

Refurbishment - Swish Cellular PVC offers the potential of a 60 year, maintenance free working life, minimising lifetime costs for landlords of social housing and private rented accommodation. This may free up the maintenance budget for the purchase of CO_2 reduction materials such as insulation.

Preparation

Ensure that fascias are straight and true and in good condition. Swish recommends that timber roofline components are replaced with Swish cellular PVC fascias, soffits and bargeboards for longevity, lower lifetime costs and a reduced carbon footprint over the service life of the building.

Position

The gutter should be fitted as high as possible up to the edge of the roof and fixed at a fall of between 1mm/m and 3mm/m. In areas where snow is likely to accumulate on the roof, ensure that the outer edge of the gutter does not project above the line of the roof. Neither should the roof covering project far over the inner edge of the gutter. Down pipes should be located directly above the drain opening.

Gutter

Use all fixing positions on all unions, angles and outlets for all systems. Fascia brackets must be used within 150mm of both sides of any gutter fitting.

Fix the end fascia bracket to the fascia board within 150mm of the stopend. The gutter can finish flush with the end tile or extend beyond it by no more than half the depth of the gutter.

Tie a plumb line to the end bracket and feed it through the outlet. This allows the installer to position the outlet accurately above the drain point and ensure the correct fall from the end fascia bracket before securing the outlet.

Fit the intermediate fascia brackets and gutter joints in place using the plumb line as a guide.

Feed the back edge of the gutter fully under the back clips of all the fascia brackets, unions, corners etc. Ensure that the gutter ends line up with the markings on the inside of each union or outlet unit (to allow for thermal movement) and push all front clips firmly and fully over the front edge of the gutter. Swish gutter seals are pre-treated with silicone but installers are advised to apply a spray of silicone prior to assembly.

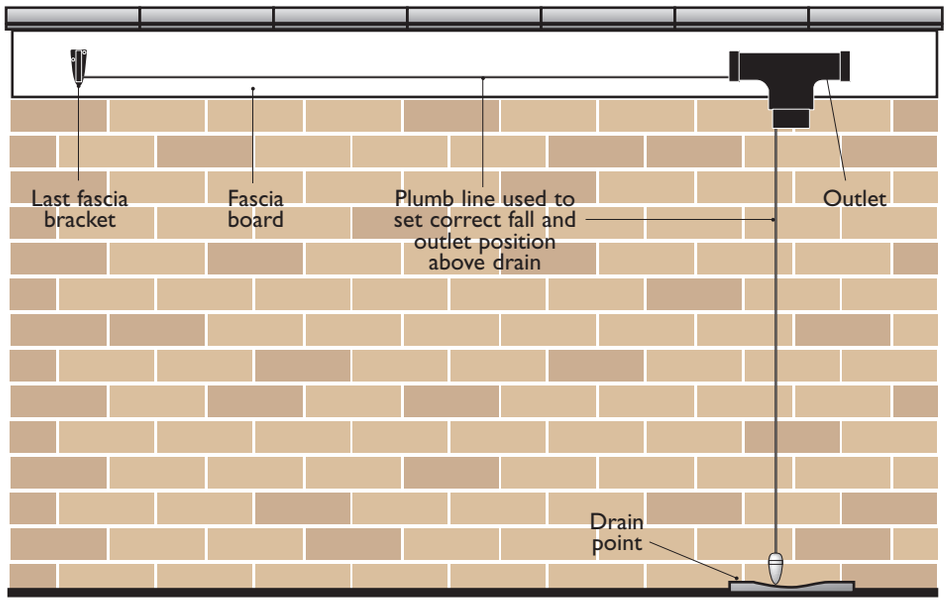
Pipe

The offset in the pipe is formed by using two 112^{0} bends to return the pipe to the wall. If the soffit is small and the two offset units need to be close to one another they will still require a small section of pipe between them to make the joint fit properly.

It is important to allow for expansion of the main pipe. This is best concealed in the offset or a pipe socket. Allow 10mm expansion gap per 5m of pipe.

Compatibility

Swish Rainwater Systems are compatible with some elements of other guttering systems. Designers and installers should consult Swish Technical Services for guidance.



Specifications

Gutter	Round	Square	Ogee	Deep
Distance between fascia brackets – Standard	1m	1m	800mm	800mm
Distance between fascia brackets – Conservatories	500mm	500mm	500mm	500mm
Distance between top hung fascia brackets	-	-	800mm	-
Expansion gap at joints	Marked on moulding			
Screws for brackets and positively fixed components	25mm N°10 s/s round head			
Minimum quantity of screws per fascia bracket	2	2	3	2
Quantity of screws per positively fixed component	As per number of fixing holes			

Pipes	Round/Square
Vertical distance between pipe brackets	1.8m
Expansion gap per 5 metres	10mm

Handling & Storage

Swish gutters and pipes are supplied in polyethylene sleeve wrapping. They will withstand general site handling, however, the following guidelines should be observed:–

- Loading and unloading should be carried out by hand.
- It is advised that products are stacked on a flat, firm base, to no more than 1m high and protected from the elements. Wherever possible a dedicated racking system is strongly recommended with side supports at intervals not exceeding 1m.
- Set aside off cuts and store carefully for re-use.
- Contact with solvents and organic based compounds such as bitumen products, paint or creosote should be avoided.
- Boxed fittings should be stored under cover away from damp surfaces to retain the integrity of the box.
- Please recycle packaging where possible.

Swish® BUILDING PRODUCTS

For further details contact:

Swish®
BUILDING PRODUCTS
Pioneer House, Mariner, Lichfield Road Industrial Estate,
Tamworth, Staffordshire B79 7TF
Telephone: (01827) 317200
Fax: (01827) 317201
e-mail: marketing@swishbp.co.uk
www.swishbp.co.uk

0818

A604