

# Osma Rainwater Systems



## Selection & Installation Guide

**wavin** OSMA

[www.wavin.co.uk](http://www.wavin.co.uk)

**wavin OSMA**

The brand you  
can trust.



It must be Osma

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This guide contains all the basic information you'll need for most typical Rainwater Drainage projects.

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# 1. Introduction

Osma Rainwater systems offer you more. They give you more than just outstanding, high-quality products. More than good looks and first-class performance.

## With Wavin Osma you'll get:

- A complete choice of six profile systems
- The right gutter for the building size and type
- A system that's fast and easy to install
- Aesthetic design details
- Products that won't let you down and the reassurance of
- The right expert advice and support

## Designed to handle more rainwater

Osma Rainwater systems are engineered to handle up to 30% more rainwater than similarly sized systems, thanks to the hydrodynamic running outlet.



## Specialist design features



**Hydrodynamic running outlet** to handle more rainwater.



**Concealed sockets** to hide roughly cut downpipe ends.



**Expansion line and stopper** for secure and reliable installation.

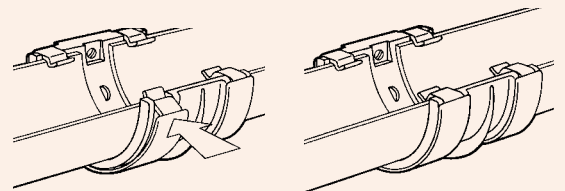


**Wide, retained seals** allow for thermal expansion.

## Easy to install

Osma 'Flexiclip' and seal and jointing mechanism makes it easy to connect gutter to fittings. The Flexiclip is fixed, rather than the whole component, which ensures a positive, permanently watertight joint. Gutter joints are marked to indicate the limit for positioning gutter ends to allow for thermal expansion.

'Flexiclip' gutter joint.



## Designed to weather the storm.

Flexible clips for easier installation



1. High front edge to catch and control run off
2. Retained seals, expansion line and stopper for reliable installation.
3. Hydrodynamic outlet
4. Side fixing wings
5. Hidden hanging brackets
6. Concealed sockets

StormLine is directly compatible with 68mm RoundLine and 61mm SquareLine downpipe.



### StormLine

111 x 76 x 97  
(4 1/4 x 3 3/4")

Ogee profile gutter



Available in a Black and White

# It must be Osma

## 2. Typical building types

Wavin recognise that no two projects are ever precisely the same. However, to help you select the right Osma Rainwater system for your next project, look at the range of illustrated building types and decide which is the nearest equivalent to the building you'll be working on.

Then consult the Selection Guidance section see (page 9) and the System Selector (page 13).

For unusual projects or query, Wavin Technical Advice is always there for you.

Email: [technical.design.uk@wavin.com](mailto:technical.design.uk@wavin.com)

## Gutter profiles



RoundLine



SquareLine



StormLine



DeepLine



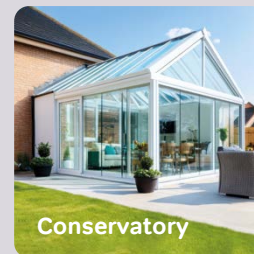
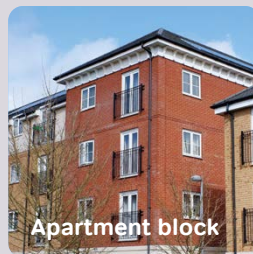
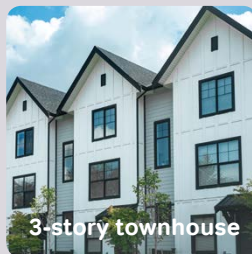
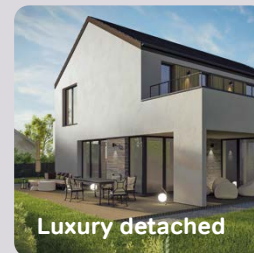
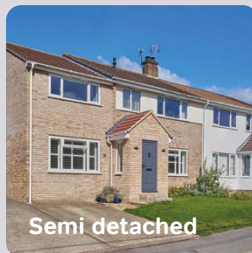
SuperLine



RoofLine

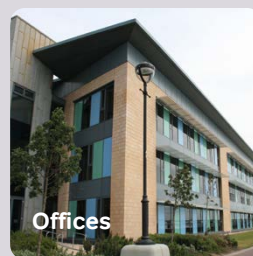
### Residential/ Domestic

- RoundLine
- SquareLine
- StormLine
- DeepLine



### Industrial/ Commercial

- SuperLine
- RoofLine



## 3. Selection guidance

This Guide provides a quick-reference system selector for typical building types (see page 7). For other projects, or if you need to check capacity requirements in more detail, see below and roof area calculations (page 11).

### The main factors

Rainwater system selection firstly needs to consider:

- Volume of water to be managed by the system – this defines the required capacity of the rainwater system to be installed.

### Required capacity

This is determined by:

- Type of building
- Roof area to be drained
- Anticipated rainfall level

NOTE: Building Regulations require allowance for a 1 in 30-year storm

### Steps to selection

System selection is decided by:

- System capacity: its ability to handle the required capacity
- Appearance: gutter profile shape and colour

### System capacity

This is dependent on:

- Gutter capacity (flow in litres per second) according to size and profile shape, but also influenced by:
  - How the gutter is laid – with a gradient (FALL), or LEVEL
  - Number of outlets/Location of outlets – at the END, or in the CENTRE, of the gutter run

System capacity will be less if the gutter

- is laid level, rather than with a fall
- includes an angle, rather than a single straight run
- outlet is at the end of the run rather than mid-run

For a quick-reference comparison of system capacity for each Osma system, (see page 12)



### Other considerations

- Are you replacing an existing system?

Is the new system to be the same size/style?

If YES, check the System Selector for Osma choices

If NO, determine capacity required and then select a suitable system

- Have there been problems with the previous system e.g. overflowing)?

If YES, check effective roof area (see page 11)

- Are there existing drainage connections?

– If YES, this will determine outlet and downpipe positions

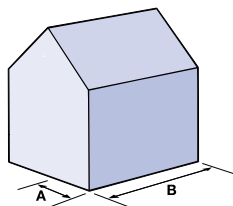
## 4. Roof area calculation

If in doubt – or if your project is not a typical building/size

- Calculate maximum roof area to be drained

### Simplified method

- Measure the roof plan area (A x B) in sq. metres
  - Multiply the area by the appropriate 'roof pitch factor'
- Shallow (approx. 30°): 1.29  
 – Normal (approx. 45°): 1.50  
 – Steep (approx. 60°): 1.87



### EXAMPLE:

A = 5m and B = 12m.

Shallow pitch: 30°

- Roof plan area: 5m x 12m = 60m<sup>2</sup>
- Effective roof area: 60 x 1.29 = 77.4m<sup>2</sup>

### Maximum effective roof area for each system

- Having calculated the effective roof area to be drained
- Check which Osma systems have sufficient capacity

### How many brackets ?

Whichever system you select, you'll need:

#### Gutter Support Brackets

- 3 per 4m gutter length when using Gutter Jointing Brackets
- 4 per 4m gutter length when using Gutter Unions

NOTE: Increase number of brackets if allowing for snow-loading

#### Pipe Support Brackets

- 1 per 2m downpipe length

### How long?

#### Downpipe

- Standard 2-storey house: 5.5m length
- Bungalow: 2.75m length

### Maximum effective roof area (m<sup>2</sup>):

gutter laid to 1:600 fall

#### Running outlet position

At END of gutter	At CENTRE of gutter	Flow capacity litres/s
<b>RoundLine</b>		
79	163	1.25-3.43
<b>SquareLine</b>		
96	178	1.30-3.71
<b>StormLine ■</b>		
130	254	1.32-5.28
<b>StormLine ●</b>		
125	239	1.26-4.98
<b>DeepLine</b>		
145	299	2.28-6.21
<b>SuperLine</b>		
121	250	2.10-5.19
<b>RoofLine</b>		
164	317	2.48-6.59

NOTE: System capacity/performance capability is reduced if the roof includes valleys, dorma windows, steep pitch, or Guttering is laid level (reduction approx. 20-30%), or Gutter includes an angle (reduction approx. 15%)

Key: Round Downpipe ● Square Downpipe ■

## 5. System selector

### Domestic



#### RoundLine

112mm (4½")  
Half-round  
gutter



#### SquareLine

100mm (4")  
Square section  
gutter



#### StormLine

111x76x97mm  
(4¼x3¾")  
Ogee profile gutter

### Industrial & Commercial



#### DeepLine

113mm (4½")  
Semi-elliptical  
gutter



#### SuperLine

125mm (5")  
Half-round  
gutter



#### RoofLine

150mm (6")  
Half-round  
gutter

	Domestic		Domestic High Capacity		Industrial & Commercial	
Gutters	RoundLine	SquareLine	StormLine	DeepLine	SuperLine	RoofLine
Max Roof Area*	163m <sup>2</sup>	178m <sup>2</sup>	254m <sup>2</sup>	299m <sup>2</sup>	250m <sup>2</sup>	317m <sup>2</sup>
Downpipe Systems	68mm ●	61mm ■ 68mm ●†	61mm ■ 68mm ●	68mm ●	68mm ●	110mm ●
Width	114mm	103mm	111mm	113mm	125mm	150mm
Depth	50mm	51mm	76mm	76mm	64mm	74mm
Depth (front)			97mm			
Colour Choice	● ● ● ●	● ● ●	● ●	● ● ● ● ● ●	●	● ●
Semi Detached	✓	✓	✓	✓		
Terrace	✓	✓	✓	✓		
Detached	✓	✓	✓	✓		
3-Storey Townhouse	✓	✓	✓	✓		
Apartment Block	✓	✓	✓	✓		
Luxury Detached			✓	✓		
Conservatory	✓	✓	✓			
Offices					✓	✓
Barn/Agricultural					✓	✓
Warehouse					✓	✓

✓ Recommended \* Maximum roof area when using one downpipe.  
See p12 for further information. † via adaptor



## 6. Preparation

### Safety

- Always comply with safety codes. In particular, ensure ladders are properly positioned and secured (**Fig 1**)

### Removing old guttering

- Remove old gutter with care (especially if cast iron) and recycle if possible
- Check condition of fascia: replace as necessary or use multi-hole screw fixings

### Checking gutter suitability

- To avoid rainwater overshooting edge of installed gutter
  - Ensure the leading edge of the tile does not extend beyond the centreline of the proposed gutter
  - If it does, a larger section gutter or Bracket Spacers will be required (**Fig 2**)

### Planning gutter run

- Gutters should be laid to a fall of 1:600 (i.e. 10mm for every 6m of the run)
- Identify highest and lowest points on gutter run
- Place Running Outlet above drainage connection: this is the lowest point
- The furthest gutter fixing away from here will be the highest point (**Figs 3 and 4**)

Fig 1



Fig 2



Fig 3



Fig 4



## 7. Installation techniques

### Cutting gutter and downpipe

- Cut 'squarely' using fine-toothed hand-saw, and de-burr (**Steps 1 & 2**)
- If using 110mm pipe, chamfer spigot end before inserting into a ring seal (**Step 3**)

### Inserting gutter into brackets/fittings

- Place far edge of gutter under the bracket clip nearest the fascia
- Pull front edge of gutter down with your fingers while simultaneously pushing the outside clip over the gutter with your thumbs (**Step 4**)
- Ensure edge of under-felt or membrane is dressed into the gutter (**Step 5**)

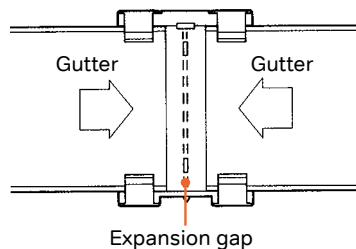
### Allowing for thermal expansion

To prevent joints from moving apart under wthermal movement

- All fittings must be secured to the building/ fascia
- Insert gutter to the depth-of-entry line
- At changes of direction, place a support within 150mm either side of gutter angle

### Pipe bracket fixings

- Wherever possible, place fixing screws in sound mortar joint or brickwork



Steps 1&2



Step 3



Step 4



Step 5



## 8. Installation procedures

### Gutters

1



Start at furthest point from outlet. Position **Gutter Support Bracket** as high as practicable under tile, ensuring sufficient room to fix the gutter using 1" n°. 10 round-head screws.

2



Use a plumbline to identify correct position of **Running Outlet** above underground drain inlet/ connection.

3



Allowing for the correct fall (1:600), position and fix **Outlet**.

4



String a plumb line between the **Gutter Support Bracket** and the **Outlet**.

5



Using the string as a guide, position other **Gutter Support Brackets** and **Gutter Jointing Brackets** at maximum 1 metre centres

6



Fix any **Gutter Union** onto the gutter length before offering the gutter into position.

If using a **Gutter Angle**, fit a **Gutter Support Bracket** within 150mm. when fixing the gutter, work from the outlet using full gutter length.

Ensure correct jointing bracket depth-of-entry positions have been maintained in all fittings. check position of each **Gutter Union** & fix to fascia using a **Gutter Support Bracket**.

7



Continue to end of run or change of direction **DO NOT** cut gutter to length until fixed position has been established and expansion gap confirmed. Attach **Stopends**.

## Installation procedures

### Downpipes



Start from top use **Offset Bends** to create swan neck assembly. Place fittings in position at top of downpipe. Measure length of pipe needed between offset bends. cut required length.



Fix **Pipe Bracket** directly under the **Offset Bend** position downpipe length(s) & support with pipe bracket at maximum 2 metre centres.



Fix any fittings (e.g. **Pipe Connector**) using **Socket Bracket**.

### Connections to drainage

There are several methods of directing rainwater out of downpipes into below ground drainage:

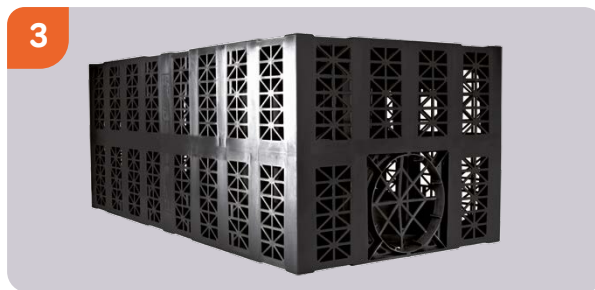


Cut a hole for the downpipe in the back plate of the **Hopper** – or remove section of **Bottle Gully** grating, insert pipe, ensuring discharge is below grating.



Direct connection to underground drainage inlet. There is a range of adaptors for connecting rainwater downpipes into underground drainage.

### Connections to soakaways



**Soakaways** where drainage connections are not present, Wavin AquaCell should be used to create a soakaway.

## 9. Installation tips

### Site survey

- You may find it useful to carry out a preliminary survey of a proposed installation from ground level using binoculars

### Screws and fixing points

- 1" N° 10 round-head screws should be used on wooden fascias
- For correct screws for plastic fascias, seek manufacturer's advice
- When installing a bracket with three fixing points, we recommend using all three, however, the central fixing hole is sufficient (and must be used).



Note: Use multi-screw fixings on high buildings or in areas subject to high winds

### Power tools

- Power tools can be used to install Osma guttering
- For correct torque setting on plastic fascias, seek manufacturer's advice

### Correct setting of bracket levels

- Support Brackets on Osma RoundLine and DeepLine incorporate a raised section at their invert to provide correct alignment for the string line. This enables all jointed fittings to be set correctly to the string line
- On all other systems, jointed fittings will need to be aligned as installation proceeds, otherwise unions will not run to a level line



### Gutter support centres

- Gutter should be supported at maximum 1m intervals, within 150mm of both sides of any angle, and at the centre of gutter unions
- In areas subject to heavy snowfalls, the distance between support brackets should be reduced to 600mm and it is recommended that brackets are used with three fixing points, and all three fixing points are used

### Lubricating seals

- Assembly is easier if the seal is lubricated using Osma Silicone Spray. Lubricant also improves service life and efficiency of seal

## Installation tips

### Water test

- Don't wait for a downpour – do a water test of new guttering before removing ladder



### Obtaining plumb vertical drop for downpipe

- If you don't have a suitable spirit level, measure in from the edge of the wall to the proposed centreline. Do so at the top, middle and bottom of the wall

### Timber preservatives

- Timber fascias treated with preservatives must be allowed to dry before fixing gutter & fittings

### Leaves

- Leaf guard should be used where there are trees close to the roof



StormLine  
rainwater  
system



For further product, installation and design information for Osma rainwater see the Product & Installation Guide - download from [wavin.co.uk](http://wavin.co.uk)



How to videos: [www.youtube.com/WavinUK](http://www.youtube.com/WavinUK)



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