

PVC-U Rainwater Systems



High Quality PVC-U Rainwater Systems

FloPlast, a name synonymous with high quality PVC-U roofing products for new build and home improvement projects, with its wide range of rainwater systems, cellular foam and rigid PVC-U building profiles.

FloPlast rainwater systems offer a wide choice of profile design, both traditional and modern, in a range of colours to suit all tastes and applications.

The **FloPlast** reputation for technical excellence, competitively priced and quality finished products have established the company as a leading supplier of PVC-U Plastic Building products.

Standards/Quality Control



FloPlast operations embrace quality and environment management systems which have been accredited by BSI to BS EN ISO 9001:2008 Certificate No. FM 501414 and BS EN ISO 14001:2004 Certificate No. EMS 538445.

All products are subject to continuous quality control procedures and products manufactured to British Standard Specifications are marked accordingly.

System Features

- Gutters, pipes and fittings manufactured in PVC-U, a material which is not easily ignitable and will not support combustion. All products comply with the material requirements of:

BS EN 12200 1:2000 & BS EN 1329-1:2000
(Downpipes and fittings)

BS EN 607:2004 (Gutters and fittings)

BS EN 1462:2004 (Eaves brackets)

FloPlast Rainwater Systems have been rigorously tested by The British Standards Institute and have been awarded their prestigious Kitemark. License No. KM 501316.



- Suitable for all types of buildings including domestic, commercial and industrial.
- Practical rainwater handling systems which, unlike metal systems, do not conduct lightning.
- Components have a consistent self-finish and colour and are essentially maintenance free.
- Tough and durable, yet lightweight for ease of installation, they will withstand normal ladder weight.
- High gloss finish with blemish free surface providing excellent all round weathering and colour fastness.
- Comprehensive range of systems, colours and fittings to provide solutions to all installation requirements.
- All large fittings are packaged individually to protect their surface from scratch marks.
- Cost effective solution to rainwater collection and drainage.
- Well defined stylish contours ensure a seamless match with the architecture of all properties, new or old.



Installation Features

Specification, Technical Advice and Design

An advisory service is available to offer technical assistance regarding product selection and installation. Those associated with the building industry can take advantage of design services provided by the company for customers who have made a commitment to use or specify **FloPlast** products.

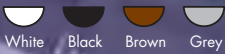
- Wrap around retaining clip on the majority of gutter fittings allow a fast positive joint to be made. Clips are easily removed should any adjustments be required during installation of the gutter system, making the system very user friendly. It also facilitates dismantling and re-assembly of the gutter system during any period of property maintenance.
- Extended gutter unions, with extra wide seals designed to eliminate the "roll-over" effect from gutter movement from thermal expansion and contraction, whilst still maintaining a watertight seal.
- All gutter fittings have positioning guide marks to allow for thermal expansion and contraction.
- Hoppers, stopend and running outlets are designed to accept sockets or plain-ended downpipe.
- Running and stopend outlets have twin fixing holes and fascia brackets offer a choice of single or twin screw fixing.



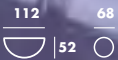
Half Round 112mm/68mm Rainwater System BS EN 12200 - 1:2000 (Downpipes & fittings)

- The original Half Round profile.
- A practical, easy to install system.
- Good flow capacity.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- Pre-lubricated seals.
- Cost effective solution for both new build and refurbishment applications.
- Connects to most other metal or plastic systems using our extensive range of adaptors.

Colours



Dimensions (mm)

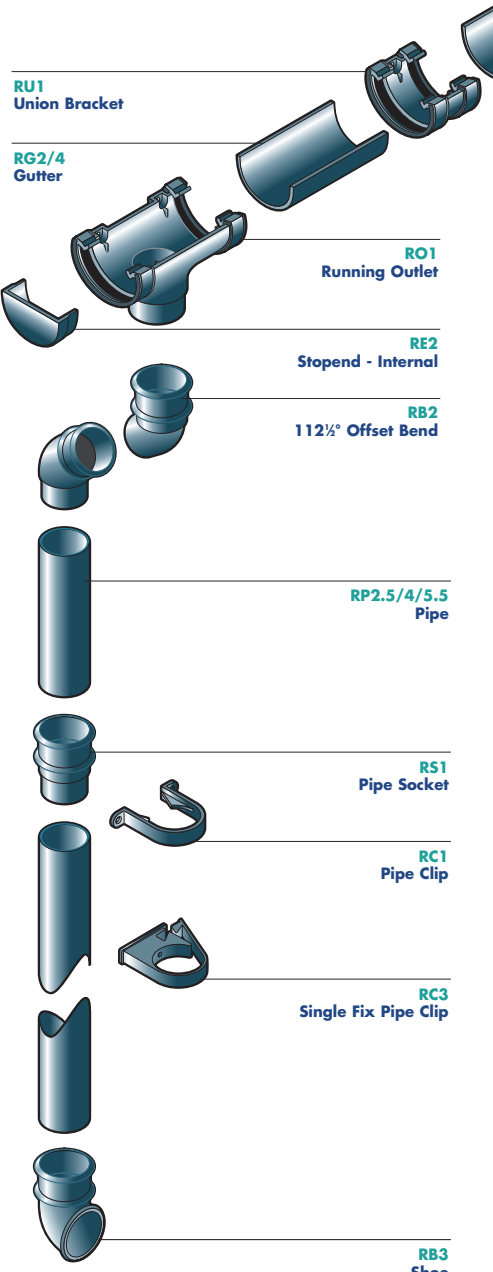


FloPlast recommend the use of lubricant on all gutter seals for ease of fitting and for improved performance.

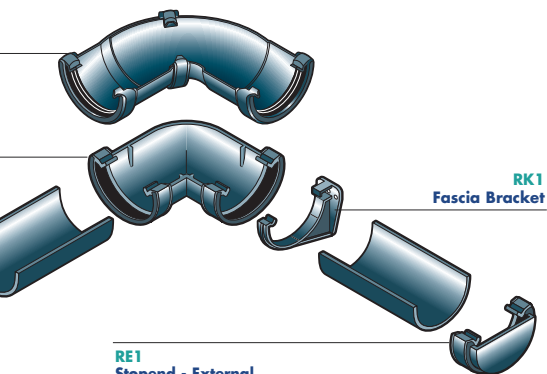
For greater detail on each fitting, please visit our website at www.floplast.co.uk and go to the Links section to view our CAD drawings.

RA3
Adjustable Angle 50° - 156°

RA1
90° Angle



Product Guide



RE1
Stopend - External

RK1
Fascia Bracket



PVC-U Style Rainwater Systems
come with a 10 year
performance & colour guarantee.

(Black, White and Brown only)

FloSaver

Rainwater Diverter CODE
RVS1



Connects to 65mm Square
and 68mm Round downpipe.
(Not available in Grey)

Leaf Protection Systems

FloGuard CODE
FG1



(5m pack)

Balloon
(Outlet Guard) CODE
OG1



DrainGuard

Black CODE
DG1



Universal Rainwater Adaptor

CODE
D96



Connects to 110mm Drainage

Universal Rise & Fall Bracket

CODE
RF1



Top Rafter Bracket

CODE
RR1



Side Rafter Bracket

CODE
RR2



Ancillaries

Gutter Clip CODE
RRC1
Gutter Seal RRS1
400ml Silicone
Lubricant Spray SL400

Gutter and pipe code reference
numbers refer to length of run:
2 metres, 2.5 metres, 4 metres
and 5.5 metres.

112mm Gutter & Fittings

Gutter

CODE
RG4
RG2



90° Angle

CODE
RA1



135° Angle

CODE
RA2



Adjustable Angle 50°-156°

CODE
RA3
(Not available in Grey)



Angle - any degree

CODE
RA9
FloPlast will fabricate
any non-standard
angle to special order.



Stopend - External

CODE
RE1



Stopend - Internal

CODE
RE2



Fascia Bracket

CODE
RK1



Running Outlet

CODE
RO1



Stopend Outlet

CODE
RO2



Union Bracket

CODE
RU1



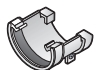
Gutter Adaptors

CODE



To Cast Iron Ogee R/H RD3

To Cast Iron Ogee L/H RD4
(Not available in Brown)



To Half Round Cast Iron RD5

68mm Pipe & Fittings

Pipe

CODE
RP2.5
RP4
RP5.5



92½° Offset Bend

CODE
RB1



112½° Offset Bend

CODE
RB2



Shoe

CODE
RB3



Shoe (with fixing lugs)

CODE
RB4
(Black/White only)
Must be used in
conjunction with RC4



Pipe Clips

CODE
RC1
RC3
(Single Fix)



RC4
(Black/White only)
Must be used in
conjunction with RB4 & RS2

Hopper

CODE
RHS1
Connects to 65mm
Square & 68mm
Round downpipe



Pipe Socket

CODE
RS1



Pipe Socket (with fixing lugs)

CODE
RS2
(Black/White only)
Must be used in conjunction with RC4



67½° Branch

CODE
RY1



8mm Downpipe Spacer Bracket

CODE
RC9
(Black/White only)
Only to be used with RS2, RC4 and RB4



Access Pipe

CODE
RX1
(Black/White/Brown only)



Square Line 114mm/65mm Rainwater System BS EN 12200 - 1:2000 (Downpipes & fittings)

- Attractive rectilinear profile.
- Flow capacity in excess of Half Round.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- Pre-lubricated gutter seals.
- Cost effective solution for both new build and refurbishment applications.
- Connects to most other metal or plastic systems using our extensive range of adaptors.

Colours



Dimensions (mm)



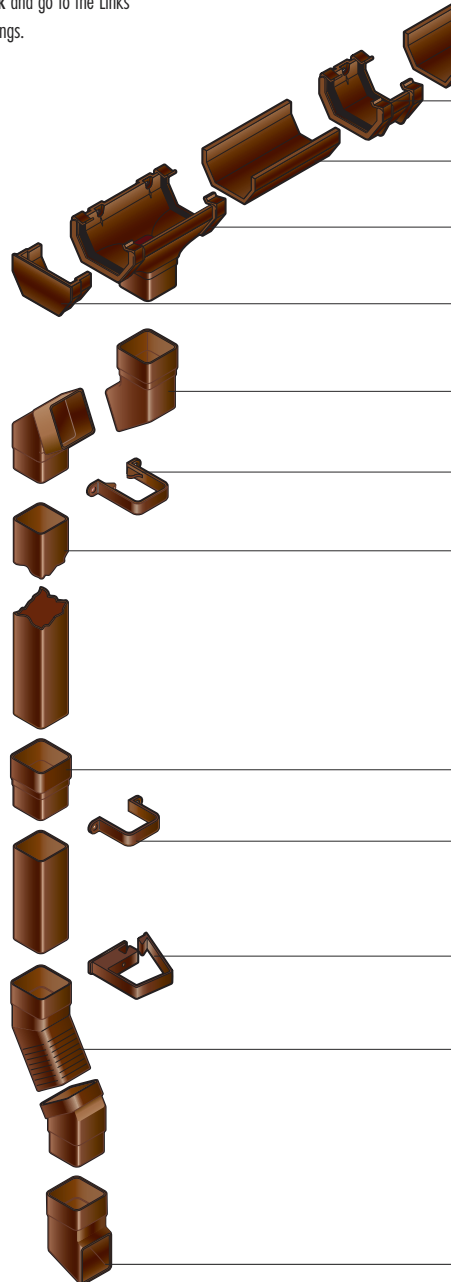
PVC-U Style Rainwater Systems come with a 10 year performance & colour guarantee. (Black, White and Brown only)

FloPlast recommend the use of lubricant on all gutter seals for ease of fitting and for improved performance.

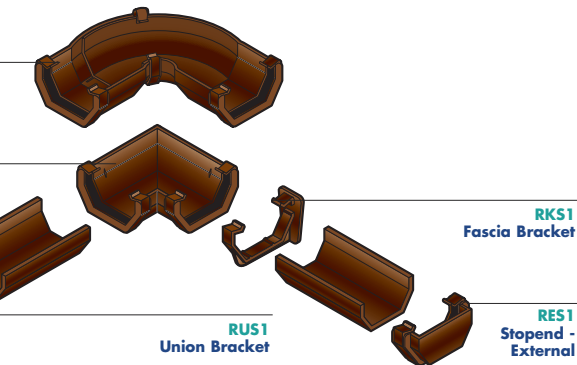
For greater detail on each fitting, please visit our website at www.floplast.co.uk and go to the Links section to view our CAD drawings.

RAS3
Adjustable Angle 50 - 156°

RAS1
90° Angle



Product Guide



RUS1
Union Bracket

RGS2/4
Gutter

ROS1
Running Outlet

RES2
Stopend - Internal

RBS2
112½° Offset Bend

RCS1
Pipe Clip

RPS2.5/4/5.5
Pipe

RSS1
Pipe Socket

RCS2
Flush Pipe Clip
allows downpipes to be
fixed flush to the wall.

RCS3
Single Fix Pipe Clip

RBS5
Adjustable Offset Bend
allows for a minimum offset
of 25mm up to a maximum
of 65mm.

RBS3
Shoe

RKS1
Fascia Bracket

RES1
Stopend -
External

Universal Rise & Fall Bracket



CODE
RF1

Top Rafter Bracket



CODE
RR1

Side Rafter Bracket



CODE
RR2

Universal Rainwater Adaptor



CODE
D96

Connects to 110mm Drainage

FloSaver



Rainwater Diverter CODE
RVS1
Connects to 65mm Square
and 68mm Round downpipe.
(Not available in Grey or Caramel)

DrainGuard



Black CODE
DG1

Gutter Adaptors



CODE
RDS1

Square Line to Half Round



to Cast Iron Ogee R/H RDS3
(Not available in Caramel)

to Cast Iron Ogee L/H RDS4
(Not available in Caramel)

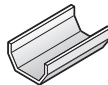


to Half Round Cast Iron RDS5
(Not available in Caramel)

Gutter and pipe code reference
numbers refer to length of run:
2 metres, 2.5 metres, 4 metres and
5.5 metres.

114mm Gutter & Fittings

Gutter



CODE
RGS4
RGS2
(RGS2 not available
in Caramel)

90° Angle



CODE
RAS1

135° Angle



CODE
RAS2

Adjustable Angle 50°-156°



CODE
RAS3
(Not available in Caramel)

Angle - any degree



CODE
RAS9

FloPlast will fabricate any non-standard
angle to special order.

Stopend - External



CODE
RES1

Stopend - Internal



CODE
RES2

Fascia Bracket



CODE
RKS1

Running Outlet



CODE
ROS1

Stopend Outlet



CODE
ROS2

Union Bracket

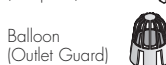


CODE
RUS1

Leaf Protection Systems



FloGuard
(5m pack) CODE
FG1



Balloon
(Outlet Guard) CODE
OG1

Spares/Ancillaries

Gutter Clip CODE
RRCS1
Gutter Seal RRS1
400ml Silicone
Lubricant Spray SL400

65mm Pipe & Fittings

Pipe



CODE
RPS2.5
RPS4
RPS5.5

92½° Offset Bend



CODE
RBS1

112½° Offset Bend



CODE
RBS2

Adjustable Offset Bend



CODE
RBS5
(Not available in Caramel)

Shoe



CODE
RBS3

Shoe (with fixing lugs)



CODE
RBS4
(Black/White only)
Must be used in conjunction with RCS4.

Pipe Clips



CODE
RCS1



Flush RCS2
(Not available in Caramel)



Single Fix RCS3
(Not available in Caramel)



RCS4
Must be used in conjunction
with RBS4 and RSS2. (Black/White only)

8mm Downpipe Spacer Bracket



CODE
RCS9
(Black/White only)

Only to be used with RSS2, RCS4 and RBS4

Hopper



CODE
RHS1

Connects to 65mm Square
& 68mm Round Downpipe.

Pipe Socket



CODE
RSS1

Pipe Socket (with fixing lugs)



CODE
RSS2
Must be used in conjunction with RCS4

67½° Branch



CODE
RYS1

Square/Rd Downpipe Adaptor



CODE
RDS2

Connects to 68mm Round Downpipe System.
(Not available in Caramel)

Access Pipe



CODE
RXS1
(Not available in Caramel)



Niagara® Rainwater System BS EN 12200 - 1:2000 (Downpipes & fittings)

- A traditional ogee style profile.
- One of the highest capacity PVC-U domestic rainwater systems on the market.
- Revolutionary designed moulded water-tight seal and retaining clip pre-fitted for fast user friendly installation.
- Suitable for all properties old and new.
- Running Outlet (RON1) can be connected to either 65mm Square or 68mm Round downpipes.
- Internal/external angles and right/left hand stopends available.
- Running outlet designed to cope with above average rainfall.
- For an improved aesthetic gutter line when viewed from below, use RKN2 top hung bracket.

Colours



* 80mm Round Downpipe not available in Caramel
** Sand available with 80mm round downpipe only

Dimensions (mm)

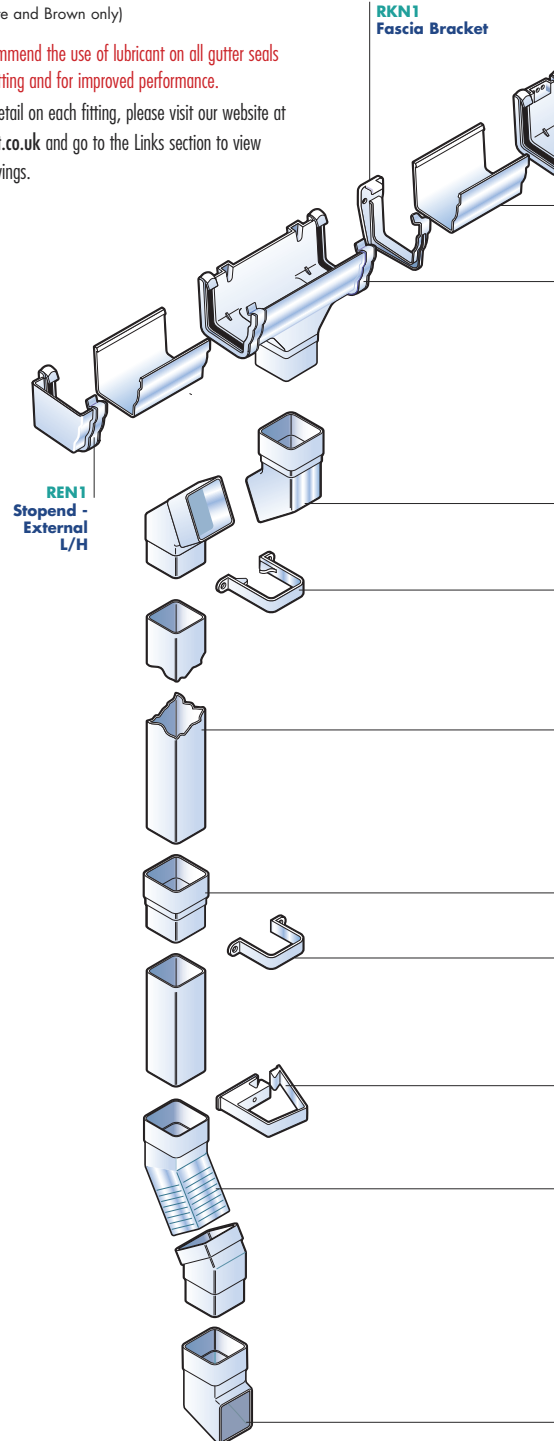


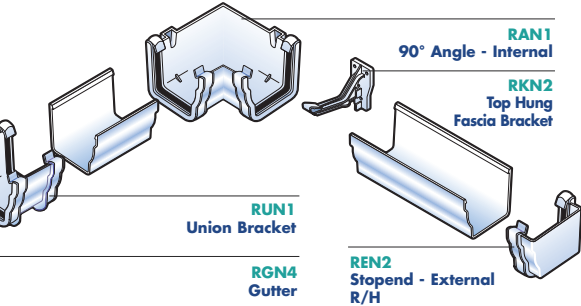
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(Black, White and Brown only)

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RUN1
Union Bracket

RGN4
Gutter

RAN1
90° Angle - Internal

RKN2
Top Hung Fascia Bracket

REN2
Stopend - External R/H

80mm Round Downpipe & Fittings

Pipe



CODE
RPH4

92½° Offset Bend



CODE
RBH1

112½° Offset Bend



CODE
RBH2

Shoe



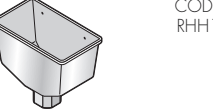
CODE
RBH3

Pipe Clip



CODE
RCH3
(Single Fix)

Hopper



CODE
RHH1

Pipe Socket



CODE
RSH1

67½° Branch



CODE
RYH1

FloSaver

Rainwater Diverters

Connects to 80mm Round downpipe.



CODE
RVH1

RVS1
Connects to 65mm Square and 68mm Round downpipe. (Not available in Sand)

DrainGuard



CODE
DG1

RBS3
Shoe

RON1
Running Outlet will connect to square (65mm) or round (68mm) downpipe

To connect to 80mm round downpipe use 80mm outlets RON4, RON5 and RON6

RBS2
112½° Offset Bend

RCS1
Pipe Clip

RPS2.5/4/5.5
Pipe

RSS1
Pipe Socket

RCS2
Flush Pipe Clip allows downpipes to be fixed flush to wall.

RCS3
Single Fix Pipe Clip

RBS5
Adjustable Offset Bend allows for minimum offset of 25mm up to a maximum of 65mm.

110mm Gutter & Fittings

Gutter



CODE
RGN4

90° Angle - Internal



CODE
RAN1

90° Angle - External



CODE
RAN2

135° Angle - Internal



CODE
RAN3

135° Angle - External



CODE
RAN4

Angle - any degree



CODE
RAN9

FloPlast will fabricate any non-standard angle to special order.

Stopend - External L/H



CODE
REN1

Stopend - External R/H



CODE
REN2

Stopend - Internal L/H



CODE
REN3

Stopend - Internal R/H



CODE
REN4

Fascia Bracket



CODE
RKN1

Top Hung Fascia Bracket



CODE
RKN2

Running Outlet - Multi Outlet



CODE
RON1

Connects to 65mm Square or 68mm Round downpipes (Not available in Sand)

Leaf Protection Systems



CODE
FG1



OG1

Stopend Outlet - 65mm Square



CODE
L/H RON2
(Not available in Sand)



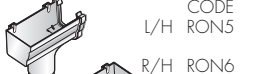
R/H RON3
(Not available in Sand)

Running Outlet - 80mm Round

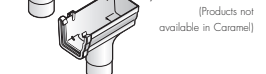


CODE
RON4
(Not available in Caramel)

Stopend Outlet - 80mm Round



CODE
L/H RON5



R/H RON6
(Products not available in Caramel)

Union Bracket



CODE
RUN1

Universal Rise & Fall Bracket



CODE
RF1

Top Rafter Bracket



CODE
RR1

Side Rafter Bracket



CODE
RR2

Gutter Adaptors

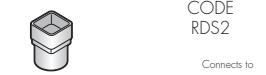
Niagara to Half Round CODE

R/H RNR3
L/H RNR4

Niagara to Square Line

R/H RNS3
L/H RNS4
(Products not available in Caramel or Sand)

Square/Rd Downpipe Adaptor



CODE
RDS2

Connects to 68mm Round downpipe (Products not available in Caramel or Sand)

Spares & Ancillaries

Gutter Clip CODE RRNC1
Gutter Seal CODE RRNS1
400ml Silicone Lubricant Spray SL400

Miniflo 76mm/50mm Rainwater System BS EN 607:2004, BS EN 12200 - 1:2000, BS EN 1462:2004

- A smaller system based on the original Half Round profile.
- Practical, and easy to install.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- Pre-lubricated seals.
- An ideal solution for garages, sheds, summer houses and most garden buildings.

Colours

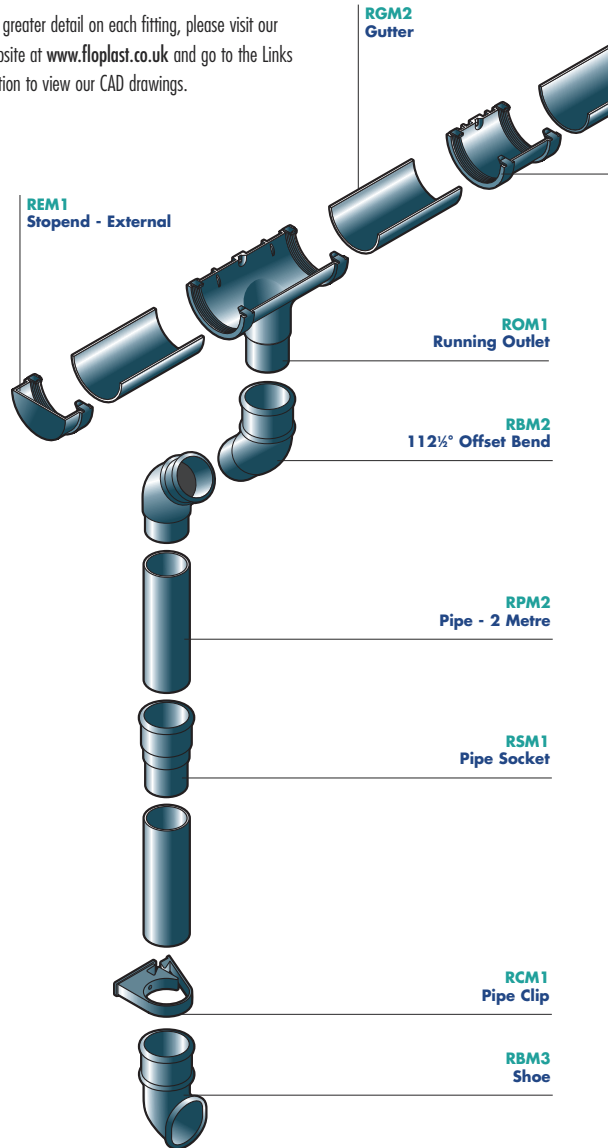


Dimensions (mm)



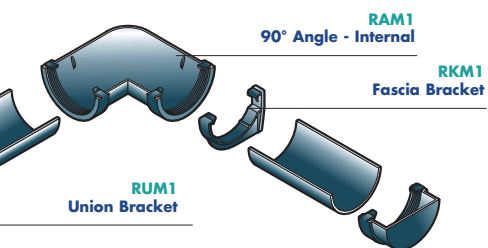
FloPlast recommend the use of lubricant on all gutter seals for ease of fitting and for improved performance.

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PVC-U Style Rainwater Systems come with a 10 year performance & colour guarantee.

(Black, White and Brown only)








Product Guide

76mm Gutter & Fittings

Gutter		CODE RGM2
Fascia Bracket		CODE RKM1
Union Bracket		CODE RUM1
90° Angle		CODE RAM1
Running Outlet		CODE ROM1
Stopend - External		CODE REM1
Stopend Outlet		CODE ROM2

50mm Pipe & Fittings

Pipe		CODE RPM2
Pipe Clip		CODE RCM1
112½° Offset Bend		CODE RBM2
Pipe Socket		CODE RSM1
Shoe		CODE RBM3

Rainwater Systems, such as Miniflo when used as an associated product with a water butt for the collection of rainwater, can lead to the award of credits under the Code for Sustainable Homes.

Miniflo 50mm downpipe would normally be installed, terminating directly into the top of a water butt.

Hi-Cap Rainwater System BS EN 12200 - 1:2000 (Downpipes & fittings)

- A semi - elliptical profile.
- High capacity - ideal for large roof areas.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- The high flow rate could result in less outlets and reduced drainage runs.
- Both 68mm and 80mm round downpipes can be connected to the gutter system.

Colours



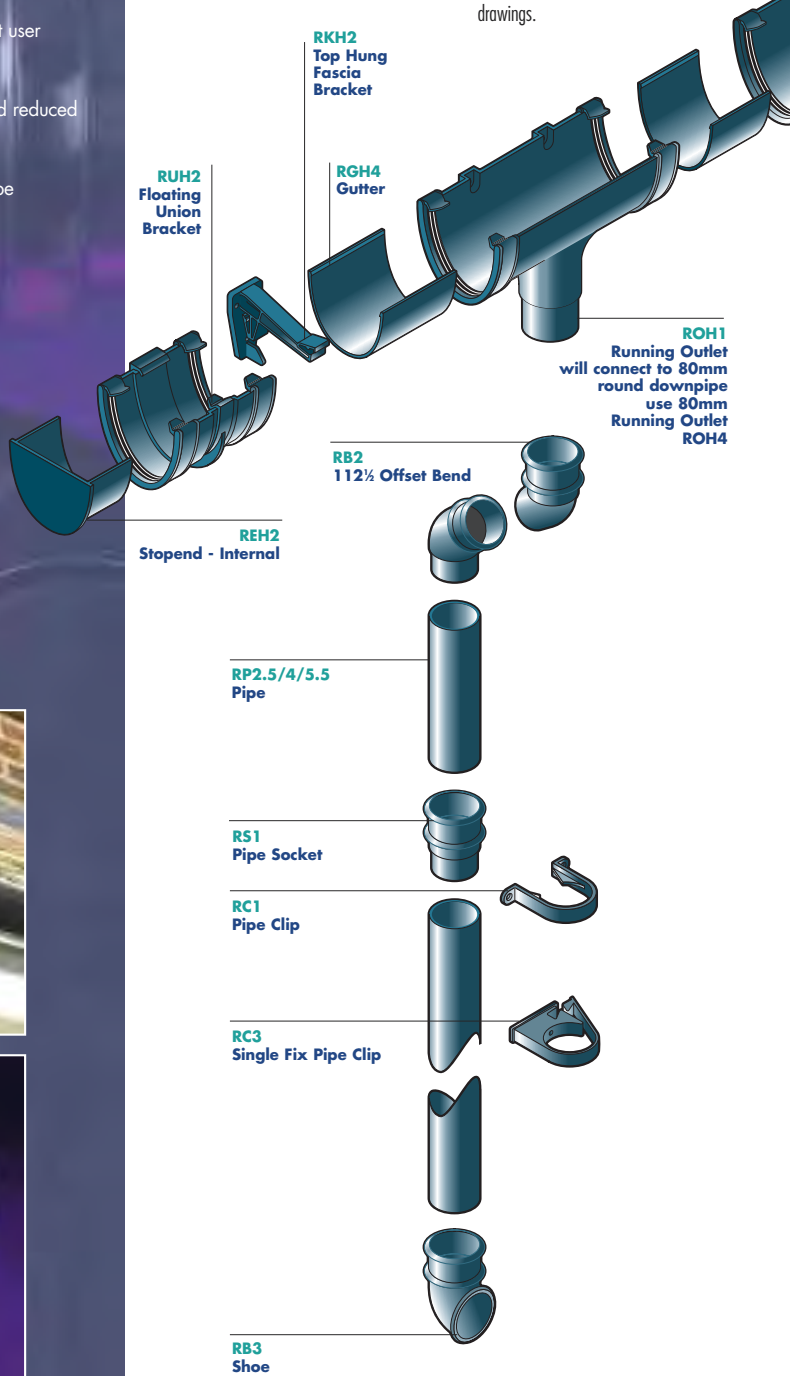
*68mm round downpipe not available in Sand.

Dimensions (mm)



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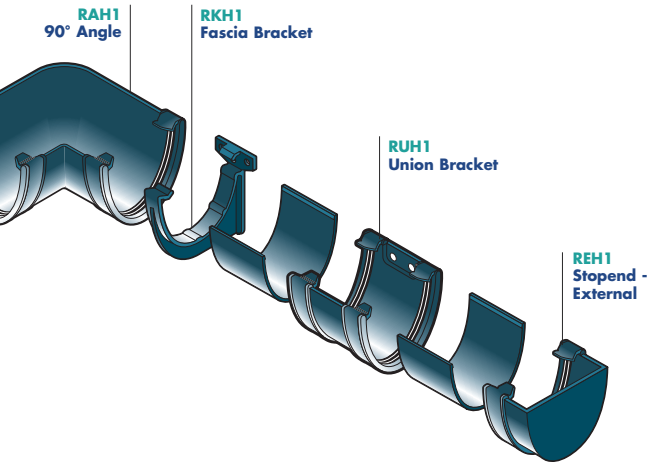
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Product Guide

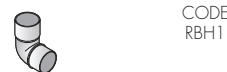


80mm Round Downpipe & Fittings

Pipe



92½° Offset Bend



112½° Offset Bend



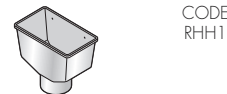
Shoe



Pipe Clip



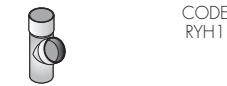
Hopper



Pipe Socket



67½° Offset Bend



Universal Rainwater Adaptor



To connect 80mm Round downpipe to 110mm drainage.

Gutter and pipe code reference numbers refer to length of run: 2.5 metres, 4 metres and 5.5 metres

Universal Rainwater Adaptor

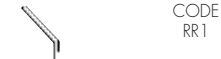


To connect 68mm Round downpipe to 110mm drainage.

Universal Rise & Fall Bracket



Top Rafter Bracket



Side Rafter Bracket



FloSaver

Rainwater Diverters



Connects to 80mm Round downpipe.



Connects to 65mm Square and 68mm Round downpipe.

(Not available in Grey or Sand)

Leaf Protection Systems

FloGuard (5m pack)



Balloon (Outlet Guard)



DrainGuard

Black

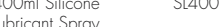


Spares & Ancillaries

Gutter Clip



Gutter Seal



400ml Silicone Lubricant Spray



68mm Round Downpipe & Fittings

Pipe



92½° Offset Bend



112½° Offset Bend



Shoe



Shoe (with fixing lugs)



Must be used in conjunction with RC4.

Pipe Clips

CODE RC1

Single Fix

CODE RC3

CODE RC4 (Black/White only)

8mm Downpipe Spacer Bracket

CODE RC9 (Black/White only)

Hopper

CODE RSH1

Connects to 65mm Square & 68mm Round downpipe.

Pipe Socket

CODE RS1

Pipe Socket (with fixing lugs)

CODE RS2 (Black/White only)

67½° Branch

CODE RY1

Access Pipe

CODE RX1 (Black/White/Brown only)

115mm Gutter & Fittings

4m Gutter



90° Angle



135° Angle



Angle - any degree



FloPlast will fabricate any non-standard angle to special order.

Stopend - External



Stopend - Internal



Fascia Bracket



Top Hung Fascia Bracket



Running Outlet 68mm



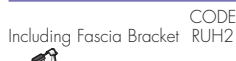
Running Outlet - 80mm



Union Bracket



Floating Union



Gutter Adapters



Hi-Cap to Half Round



Hi-Cap to Square Line



Xtraflo 170mm/110mm Rainwater System BS EN 1329-1: 2000 (Downpipes & fittings)

- A semi - elliptical profile designed to enhance water flow.
- Vortex outlet designed to promote a vacuum effect to increase the flow rate.
- A practical, easy to install system.
- High flow capacity.
- Pre-fitted gutter seal for fast user friendly installation.
- Ideal for large domestic/commercial buildings/ warehouses/offices/apartment blocks and schools.
- Utilises our 110mm soil system for downpipes.

Colours

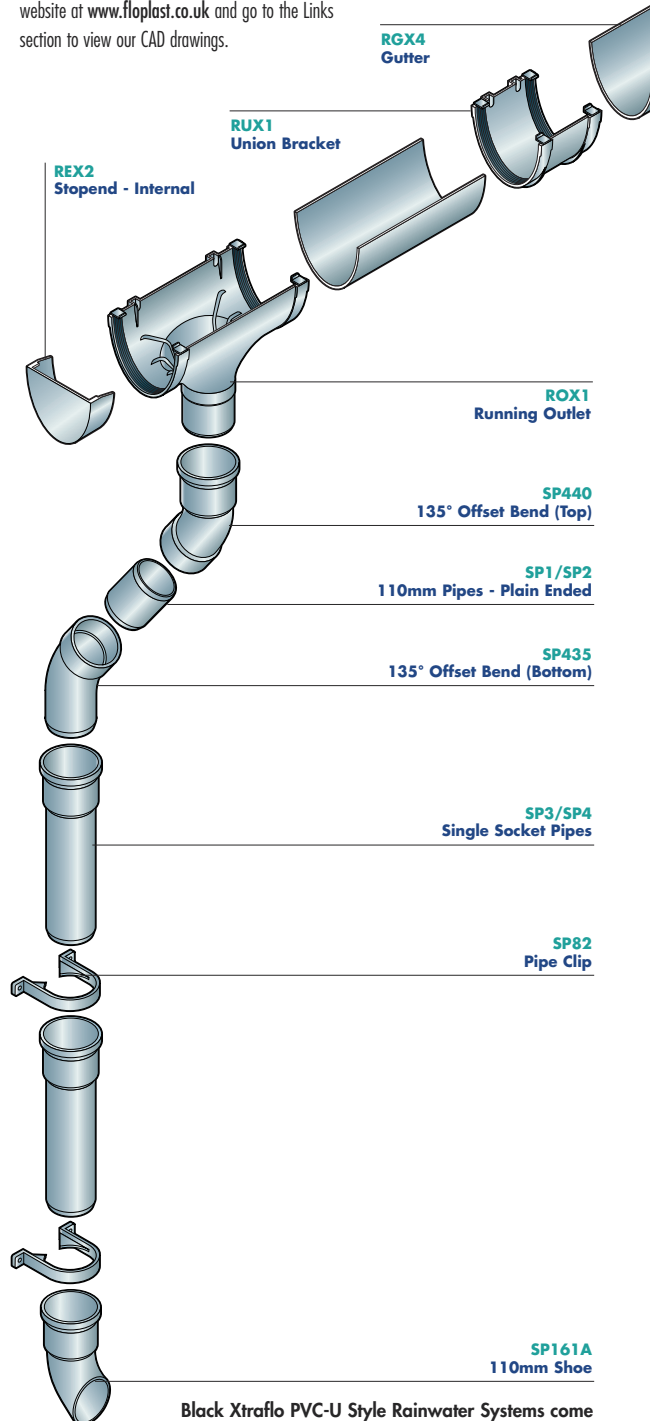


Dimensions (mm)



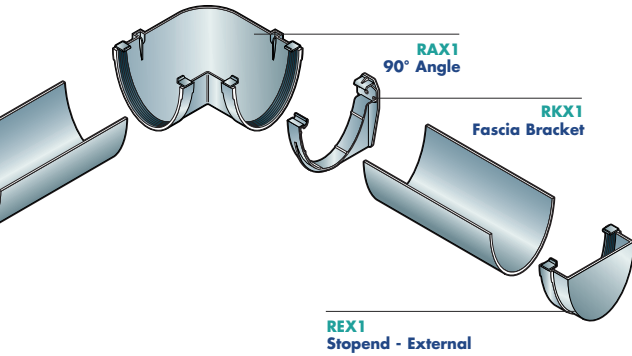
FloPlast recommend the use of lubricant on all gutter seals for ease of fitting and for improved performance.

For greater detail on each fitting, please visit our website at www.floplast.co.uk and go to the Links section to view our CAD drawings.



Black Xtraflo PVC-U Style Rainwater Systems come with a 10 year performance & colour guarantee.

Product Guide



170mm Gutter & Fittings

Gutter

CODE
RGX4

90° Angle

CODE
RAX1

Stopend - External

CODE
REX1

Stopend - Internal

CODE
REX2

Fascia Bracket

CODE
RKX1

Running Outlet

CODE
ROX1

Union Bracket

CODE
RUX1

Top Rafter Bracket

CODE
RR5

Side Rafter Bracket

CODE
RR6

Spares/Ancillaries

CODE
400ml Silicone Lubricant SL400
Spray

110mm Pipe & Fittings

Pipes - Plain Ended

CODE
SP1
SP2

Pipes - Single Socket

CODE
SP3
SP4

Shoe

CODE
SP161A

Pipe Clip

CODE
SP82

Offset Bends

135° Top

CODE
SP440

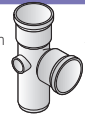
135° Bottom



SP435

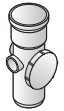
Pipe Branch

92½° Branch

CODE
SP190

Access Fittings

92½° Access Bend

CODE
SP169Access Pipe
Socket/Spigot

SP274

Hopper - 110mm

CODE
RHX1

Gutter and pipe code reference numbers
refer to length of run:
1 metre, 2 metres and 4 metres.

For any additional downpipe/ fittings
not featured, please refer to our
Above Ground Push Fit Soil range

FloPlast PVC-U Rainwater Systems

Applications

FloPlast Rainwater Systems are suitable for all applications and types of building, including domestic, commercial and industrial.

Composition

All products are manufactured from unplasticised polyvinyl chloride (PVC-U) and comply with the material requirements of either BS EN 12200-1:2000, BS EN 607:2004 or BS EN 1462:2004 as relevant.

Rainwater gutters and pipes are manufactured by a continuous extrusion process. Fittings are produced on high-pressure injection moulding machines. All fittings are manufactured to close tolerances allowing accurate incorporation of design features.

Accreditation

All of our profiles are manufactured to BS EN 607:2004 (Gutters and fittings) BS EN 12200-1:2000 & BS EN 1329-1:2000 (Downpipes and fittings) BS EN 1462:2004 (Gutter brackets) within a quality management system assessed and registered by British Standards as meeting the requirements of BS EN ISO 9001:2000 (Certificate Number FM:501414).

Supply

Products are available from a national network of distributors and stockists. For details of your local stockist contact our Sales Office.

Specification, Technical Advice and Design Guidance

A free advisory service is available to offer technical assistance regarding product and installation details. Those involved with the building industry may take advantage of design services provided by the company for customers who have made a commitment to use or specify FloPlast products.

Installation

- 1 Plan your installation using the component diagrams to assist you in selecting the correct type and quantity of products required.
 - Fascia brackets should be spaced at a maximum of one metre apart on straight gutter runs. (800mm in the case of the Niagara system, 600mm in the case of the Xtraflo system). When using 80mm Round Downpipe with Hi-Cap and Niagara Systems, fascia brackets should be spaced at a maximum of 800mm intervals.
 - Angles and stopends should have a fascia bracket within 150mm of the fitting.
- A supporting pipe clip should be used on shoes, branches and bends where necessary.
- Support downpipes below offset and at maximum intervals of 1.8 metres.
- 2 Where necessary remove the old gutter and replace old fascia board with FloPlast low maintenance PVC-UE co-extruded fascia board.
- 3 Establish the position of the running outlet, usually over an existing drain, and fix securely to fascia board.
- 4 Fix a fascia bracket 100mm short of furthest point from the outlet. Allow for a fall to the outlet (1:350 is recommended) using a string line.
- 5 Fixings:
 - Fix fascia and union brackets at required intervals.
 - Fascia brackets should be positioned so as to avoid the fixing screws splitting the top edge of any timber fascia board. All brackets should be secured to the fascia board with two 25mm x 5mm (1" x 10) screws or one 32mm x 6.5mm (1¼" x 14) screw. The "Cast Iron" fascia brackets must have two fixings.
 - Unions should be fixed using a 25mm x 5mm (1" x 10) screw.
 - Outlets and Angles should be fixed using two 25mm x 5mm (1" x 10) screws.
 - In areas of heavy snowfall it is recommended that each fascia bracket is secured using two 25mm x 5mm (1" x 10) screws.
 - Rainwater downpipe clips should be fixed using two 32mm x 6.5mm (1¼" x 14) screws.
 - Use round headed screws which should be brass or zinc plated.
- 6 Lubricate all gutter seals with FloPlast silicone spray lubricant to ensure an easy fit and to allow for movement caused by expansion and contraction.
- 7 Working from the running outlet insert the back edge of the gutter under the retaining lip of the wrap around clip. Using slight downward pressure on the gutter snap the front edge of the retaining clip over the front of the gutter. (Ensure that the marked expansion allowance is kept.)

- 8 Use a union bracket or angle to join to next gutter length in order to build up a gutter run. Use a stopend to complete the run.
- 9 Downpipe installation starts at the outlet. If an offset is required use two offset bends with or without a short piece of pipe, alternatively use an adjustable offset bend. Ensure a 6mm gap is left at the top of the downpipe for expansion.

Pipe connectors if required should be secured to the wall with a pipe clip.

At the base of the pipe, fit a shoe secured with a pipe clip or connect downpipe to underground drainage system using a 110mm x 68mm reducer (SP96/D96 or D97).

Capacity of Drainage

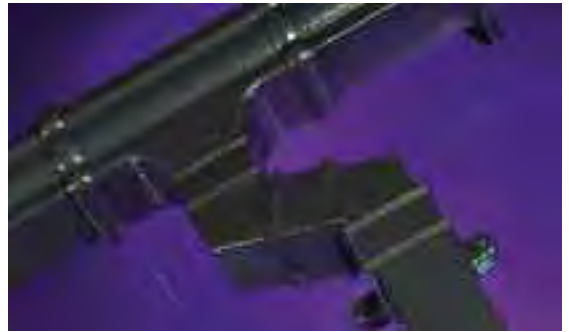
To select the gutter size appropriate to your requirements, two factors must be taken into consideration.

- Roof Area
- Gutter Flow Capacity

For further reference refer to BS 12056-3:2000 "Roof Drainage Layout and Calculation".

The capacity of a drainage system should be large enough to carry the expected flow at any point in the system.

The flow of 'run-off' depends upon the area to be drained, (the 'effective roof area'), and the intensity of rainfall. It is accepted that 75mm an hour is the intensity of rainfall in the United Kingdom. For further information, see the FloPlast "Gutter calculator" at: www.floplast.co.uk



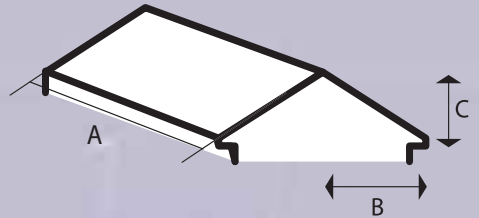
Roof Area

The effective roof area can be calculated by using the following formula:

$$\left(B + \frac{C}{2} \right) \times \text{length of Roof (A)} = \text{Area in } M^2$$

B = Half width of gable end or hip

C = Vertical measurement from eaves to apex



An alternative to the above method is the use of multiplication factors to establish effective roof cover.

Approved Document H of the Building Regulations shows the same method, although the options given below allow for greater accuracy of the effective roof area in m².

Calculate the above using the following method: A x B x factors dependant on the angle of the roof pitch

Method of calculating effective roof area

Roof Pitch	10°	12.5°	15°	17.5°	20°	22.5°	25°	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°
Factor	1.088	1.111	1.34	1.158	1.182	1.207	1.233	1.260	1.288	1.319	1.350	1.384	1.419	1.459	1.500	1.547

For roofs of 50° or more and walls, the factor of 1.600 should be used.

FloPlast PVC-U Rainwater Systems

Outlet at end of Gutter Run									
System	Gutter Fixed Level				Gutter Fixed at 1:350 fall				
	Gutter Flow		Roof Area		Gutter Flow		Roof Area		
	(litres/sec)		(m ²)		(litres/sec)		(m ²)		
	Max flow rate	BS 12056	Max flow rate	BS 12056	Max flow rate	BS 12056	Max flow rate	BS 12056	
Half Round 68mm Circular Downpipe	0.92	0.82	44	40	1.17	1.05	56	50	
Square Line 65mm Square Downpipe	1.70	1.53	81	73	2.00	1.80	96	86	
Hi-Cap 68mm Circular Downpipe	2.05	1.84	98	88	2.56	2.30	123	111	
Hi-Cap 80mm Circular Downpipe	2.25	2.02	108	97	2.79	2.51	134	121	
Niagara® 65mm Square Downpipe	2.40	2.16	115	104	2.90	2.61	139	125	
Niagara® 80mm Circular Downpipe	2.64	2.37	127	114	3.19	2.87	153	138	
Xtraflo 110mm Circular Downpipe	4.30	3.87	206	185	6.20	5.58	297	267	

Outlet at centre of Gutter Run									
System	Gutter Fixed Level				Gutter Fixed at 1:350 fall				
	Gutter Flow		Roof Area		Gutter Flow		Roof Area		
	(litres/sec)		(m ²)		(litres/sec)		(m ²)		
	Max flow rate	BS 12056	Max flow rate	BS 12056	Max flow rate	BS 12056	Max flow rate	BS 12056	
Half Round 68mm Circular Downpipe	1.80	1.62	86	77	2.60	2.34	125	113	
Square Line 65mm Square Downpipe	3.41	3.06	163	147	3.95	3.55	189	170	
Hi-Cap 68mm Circular Downpipe	3.80	3.42	182	164	5.00	4.05	240	216	
Hi-Cap 80mm Circular Downpipe	4.18	3.76	200	180	5.50	4.95	264	238	
Niagara® 65mm Square Downpipe	4.50	4.05	216	194	5.30	4.77	254	229	
Niagara® 80mm Circular Downpipe	4.95	4.45	237	213	5.83	5.24	279	251	
Xtraflo 110mm Circular Downpipe	8.20	7.38	393	354	11.80	10.62	566	509	

The flow rates in the columns BS 12056 have been calculated in accordance with BS EN 12056-3: 2000 where 90% of full flow is used as a safety factor (freeboard).

A rainwater system is suitable in terms of performance as long as the carrying capacity of the chosen configuration exceeds the calculated run-off of rainwater from the roof.

Hoppers		
Code	Hopper Flow (litres/sec) Max flow rate	Roof Area (m ²) Max Flow rate
RH1/RHS1	1.14	54.5
RH4	2.18	104.5
RH5	2.18	104.5
RHH1	1.66	79.5

Carrying Capacities for Gutter

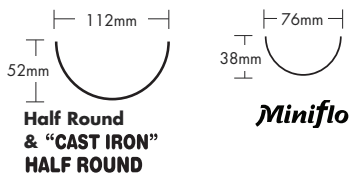
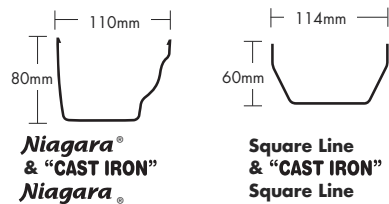
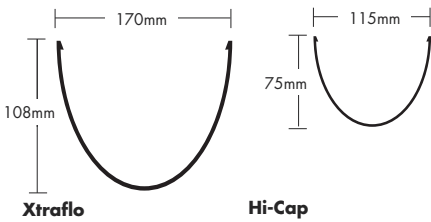
The carrying capacity of gutters varies under differing conditions. The main variables are whether or not the gutter is fitted to a fall and whether the outlet is placed in the centre or at one end of the gutter run.

Gutter flow rates will vary according to the type and configuration of downpipe system being used, however downpipe sizing is not a normal design consideration, as the downpipe systems manufactured by FloPlast have flow capacities approximately ten times greater than the gutter systems they drain.

The carrying capacities in litres per second for gutters, taking into account the major variables, are specified in the performance table on page 26.

Design Data

All gutter dimensions are nominal.



Design Factors

Building Regulations (Approved Document H) requirements.

The provisions to meet the requirements of the Building regulations 2000 (2002) are set out in Approved document H part H3.

An alternative to this requirement, is to follow the relevant recommendations of BS EN12056-3:2000 Roof Drainage, Layout and Calculation.

This document gives very comprehensive information on the calculations/design of systems in a variety of situations, and should be referred to whenever large industrial type installations are envisaged or whenever particularly severe weather conditions are expected.

Pipe Dimensions	Normal Size	Actual OD
Circular	50mm (2½")	50.3mm
	68mm (2½")	68.48mm
	80mm (3")	80.15mm
	110mm (4")	110.2mm
Square	65mm (2½")	65mm

Expansion

Tests have shown that expansion and contraction of gutter occurs during normal usage, and expansion tolerances are allowed for within our fittings.

Tests were conducted between -8°C and +40°C where an expansion of 14.63mm was experienced over a 4 metre length.

These are obvious extremes, and under normal daily temperature fluctuations expansion and contraction will be in the region of 10mm per 4 metre length.



FloPlast PVC-U Rainwater Systems

Rainwater Systems Compatibility Chart						
	Xtraflo 170mm	Niagara Ogee	Hi-Cap	Half Round 112mm	Square Line	MiniFlo
Manufacturer						
Hepworth	✗ (No equivalent)	✓ (Ogee)	✓ (High capacity)	✓ (Clickfit)	✓ (Clickfit)	✗ (Clickfit)
Brett Martin	✗ (No equivalent)	✗ (Prostyle)	✓ (Deepstyle)	✓ (Roundstyle)	✓ (Squarestyle)	✗ (No equivalent)
Osma	✗ (No equivalent)	✗ (Stormline)	✓ (Deepline)	✓ (Roundline)	✗ (Squareline)	✗ (Mini-fit)
Polypipe	✗ (No equivalent)	✗ (Sovereign)	✓ (Polyflow)	✓	✓	✗ (Half Round)
Polypipe Terrain	✗ (No equivalent)	✗ (Omega)	✗ (Rapidflow)	✗ (Crescent)	✗ (Corniche)	✗ (No equivalent)
Marley	✗ (No equivalent)	✗ (Classic)	✓ (Deepflow)	✓ (Clipmaster)	✗ (Flowline)	✗ (Miniline)
Hunter	✗ (No equivalent)	✗ (Regency)	✓ (125)	✓	✓ (Squareflo)	✗ (Half Round)
Marshall Tufflex	✓ (Xstream)	✗ (Universal Plus)	✓ (Universal XL)	✓	✓	✗ (No equivalent)

The above is a guide only for connection to existing fitted product.
We recommend that you do not mix systems if at all possible.

Transport, Handling and Storage

FloPlast PVC-U pipes and gutters are supplied in secure bales bound with straps within timber frames, FloPlast recommend that movement of bales is carried out by fork lift or other mechanical device using webbing or rope strings.

The bales may be stacked up to a maximum of three high, providing that the timber frames are placed on each other.

Fittings are generally supplied in plastic bags and should be stored away from direct sunlight. If they have to be stored outside, the bags should be opened to prevent temperature build-up.

Terms and Conditions of Sale

Goods are sold subject to our Standard Terms and Conditions of Sale, copies of which are available upon request. FloPlast Limited reserve the right to modify or extend any product range or published information without prior notice.



Product Features



HALF ROUND "CAST IRON"

Half Round "Cast Iron" effect guttering system, classic styling with a maintenance free finish.

- 10 Year "Cast Iron" Colour Guarantee.
- Significant cost saving over traditional Cast Iron.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- Pre-lubricated seals.
- All the benefits of PVC for quick and easy installation.



Niagara® OGEE "CAST IRON"

Niagara®, a traditional ogee style profile is also available in a "Cast Iron" Style finish.

- 10 Year "Cast Iron" Colour Guarantee.
- One of the highest capacity PVC-U domestic rainwater systems on the market.
- Revolutionary designed moulded water-tight seal and retaining clip pre-fitted for fast user friendly installation.
- Extremely cost effective solution for old style building refurbishment and new build installations.
- Traditional style ogee Hopper available.
- Black fixing bolts available.



HI-CAP "CAST IRON"

- A semi - elliptical profile.
- 10 Year "Cast Iron" Colour Guarantee.
- High capacity - ideal for large roof areas.
- Significant saving over traditional cast iron systems.
- Pre-lubricated seals and no painting required.
- Pre-fitted gutter seal retaining clip system for fast user friendly installation.
- All the benefits of PVC for quick and easy installation.



NEW SQUARE "CAST IRON"

FloPlast are pleased to announce the launch of their NEW 65mm Square downpipe and fittings to complement the Niagara "Cast Iron" Style range.

- 10 Year "Cast Iron" Colour Guarantee.
- Significant saving over traditional cast iron systems.
- External fixing lugs on shoes and pipe sockets.
- Black fixing bolts available.
- All the benefits of PVC for quick and easy installation.



Motifs

Motifs are the latest addition to the FloPlast "Cast Iron" Style range. They are available in two sizes and can be applied to hoppers or running outlets using a proprietary adhesive such as Siroflex MS Polymer.



Fleur-de-Lis



Tudor Rose



Decorative Square



Lion's Head

Do I need to fit my gutter with a gradient?

FloPlast's domestic eaves gutters, especially when fixed with a rafter bracket, should be fitted at a gradient no greater than 1:350 fall. The gradient should not be too steep, as this will cause an excessive gap between the lowest edge of the roof and the top of the gutter. Gutters fitted with a fall will have a higher drainage capacity, please refer to our flow rate calculator at www.floplast.co.uk or page 25/26 of this brochure.

How do I work out what flow rate is required?

A flow rate calculator is available on our website at www.floplast.co.uk, alternatively please contact 01795 431731 to speak to our technical department.

How can I prevent leaves blocking my gutters?

FloPlast manufactures FloGuard which prevents both debris and leaves collecting on the inside of the gutters - balloons are also available, for added protection in the outlets.

Can FloPlast gutters be painted?

FloPlast's gutters are produced from PVC-u and are considered low or relatively maintenance free. It may be necessary from time to time to clean our lighter gutter systems. We recommend that a soapy warm water solution is used when cleaning - in severe cases a non-abrasive kitchen cream cleaner can be used.

If the gutter needs to be painted, the system should be cleaned, with a degreasing agent such as sugar soap. Once cleaned 2 coats of a good quality gloss paint should be applied. Avoid scouring or roughing the surface of the plastic as this will affect the final appearance of the painted product.

What capacity of water do your gutters hold?

Please refer to our section on Flow Rates for more information.

What are the maximum centres for gutter fascia brackets?

In general, maximum centres should be 1m. However, different profiles and downpipe configurations present other design considerations. Please refer to our Installation Guide on page 24.

Which screws should be used to secure fascia brackets to fascia boards?

For 2 hole fixing use 25mm x 5mm non-ferrous round head screws 1 hole fixing use 32mm x 6.5mm non-ferrous round head screws.

How can "Cast Iron" Style gutters be connected to traditional cast iron?

FloPlast have an extensive range of adaptors. Use the 2 piece adaptor RD5.

Where and how far apart should downpipe clips be?

Downpipe clips should be placed below the sockets of offset bends, joints, branches and shoes, and at maximum intervals of 1.8 mtrs.

Do I need to allow for expansion on offsets?

It is not necessary to make any allowance for expansion between offset bends.

How do I fit my downpipe into Underground Drainage?

Please refer to our section on downpipe adaptors.

What brackets do I use when installing gutter directly to the rafters?

The standard gutter bracket, bolts to the galvanised top, side and rise & fall rafter brackets.

How do I connect to a neighbour's different gutter?

FloPlast have a range of adaptors for most applications, please refer to our section on rainwater adaptors and compatibility table on page 28.



A perfect match

Woodgrain Rainwater System from FloPlast

- New stylish 'Woodgrain' Style Rainwater System
- Available in a choice of Square Line and Niagara Ogee profiles
- 10 year performance and colour guarantee (register online)
- Authentic Woodgrain look in Golden Oak and Mahogany

Call us today on **01795 421422**

or visit our website

www.floplast.co.uk

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FloPlast

building the future

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Website:
www.floplast.co.uk



KM 501316



KM 512474



KM 544331



KM 548614



www.floplast.co.uk



Other systems available



PVC-UE Roofline, Window & Cladding Systems



Underground Drainage Systems



Soil & Waste Systems



'Alprene' Compression Fittings for MDPE



FloFit Push-fit Hot & Cold Plumbing Systems

01/05/10

PVC-UE Roofline,
 Window &
 Cladding Systems

Rainwater
 Systems

Soil & Waste
 Systems

Underground Drainage
 Systems

MDPE
 Systems

Hot & Cold
 Plumbing Systems