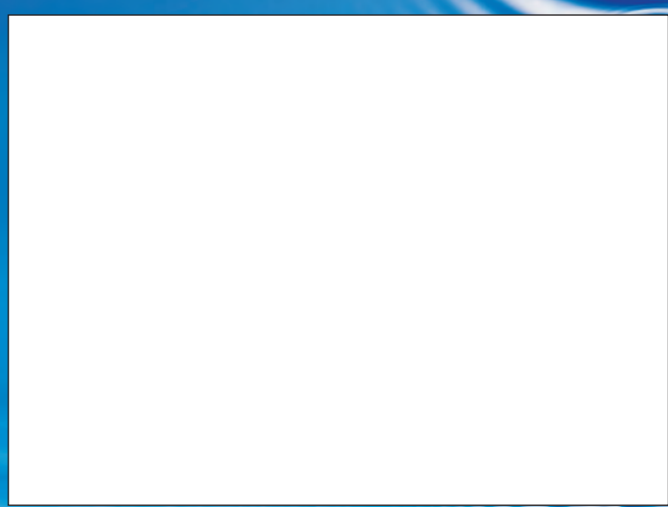
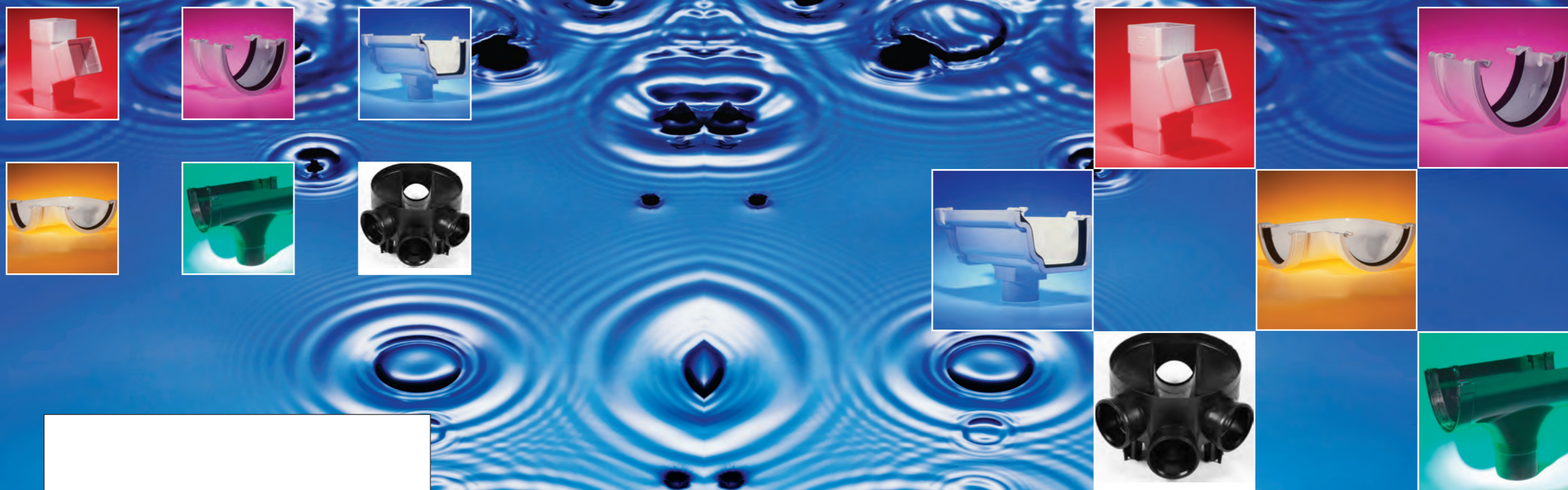


# Marshall-Tufflex Rainwater and Drainage Systems



Marshall-Tufflex is a licenced trading brand of Polypipe Limited.

Marshall-Tufflex, Broomhouse Lane, Edlington, Doncaster DN12 1ES  
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Issue One



## Marshall-Tufflex

Marshall-Tufflex is a licenced trading brand of Polypipe Limited, one of Europe's largest and most innovative manufacturers of Plastic Piping Systems.

## Rainwater and Drainage Systems

**PVC-U Rainwater Systems** are available in a variety of sizes and colours for domestic, commercial and conservatory applications.

The new **Underground** system incorporates the latest technology to provide efficient and effective waste water and foul discharge drainage from above ground systems.

### To locate your local stockist...

Our products are available from a network of Building Products Stockists throughout the UK. Please telephone 01709 770 000 for details of your nearest stockist.

### Customer Service

Sales orders are processed by our Customer Services Team who have immediate access to stock availability and lead times to ensure our stockists have a reliable and consistent service.

### Peace of Mind

Buying products from Marshall-Tufflex means that you can have peace of mind. We offer a full technical after sales service, a trouble-shooting hotline and over half a century's valuable experience.

System and Size (width x depth of gutter)	Application	Colour						See page
		Black	White	Grey	Brown	Clay Brown	Terracotta	
<b>Half Round System</b> 112mm x 51mm	Residential	●	●	●	●			4-5
<b>Square Line System</b> 114mm x 59mm	Residential	●	●		●	●		6-7
<b>XL System</b> 114mm x 71.5mm	Large Residential Light Commercial	●	●		●			8
<b>Commercial Plus</b> 170mm x 117mm	Commercial	●						9
<b>System Plus</b> 128mm x 88mm	Residential Light Commercial Conservatories	●	●		●	●		10-11
<b>Underground</b> 110mm	General						●	14-15

**Total Quality Management:** Marshall-Tufflex is totally committed to quality and customer satisfaction and the Company is recognised by the British Standards Institution as a firm of Assessed Capability to BS EN ISO 9001:2000.



- Quality Methods:** We have strict controls within our factories to ensure that products are of a consistently high standard.
- Product Standards:** In addition to quality standards many of our products have to meet strict standards to be fit for purpose under national and international regulations.
- Health & Safety:** All our factories and procedures are designed to meet strict H&S standards required by UK legislation and the HSE (Health & Safety Executive).
- Energy Efficiency:** All steps are taken within our factories, offices and distribution networks to ensure that energy consumption is minimised.
- Transportation:** Manufacturing in the UK for a UK market significantly reduces harmful emissions of transportation pollution.
- Environment:** PVC-U is a proven superior material and offers major environmental benefits. Marshall-Tufflex is recognised by the BSI as a firm of Assessed Capability to BS EN ISO 14001:2004.



## Rainwater Systems

- Aesthetically pleasing, yet hard wearing rainwater systems
- High impact PVC-U with high gloss finish for long lasting good looks
- Choice of guttering profiles, capacities and colours to suit your style
- Choice of round or square down pipe allows match to building design
- Suitable for domestic, commercial and conservatory applications
- High capacity systems mean fewer down pipes required, improving the overall look of the property
- Colour fastness and quality guarantee
- All systems comply with BS EN607:1996, BS EN1462:1997, BS 4576-1:1989, EN12200-1:2000
- Custom gutter angles available to fit your building design
- Good compatibility and connection with existing systems
- All outlets are designed for maximum flow capacity to avoid back-up in the gutter and so preventing overflow in heavy weather
- High quality systems at competitive prices
- All products are designed and manufactured in the UK

### Services for Specifiers and Architects

**Rainwater and drainage design calculation service**  
The CRM Gutterflow package offers specifiers technical advice on the number and type of downpipes and guttering required for a particular project. This saves the specifier time and ensures that the correct product is chosen for your installation. Contact us on 01709 770 000 for more details.

### Colouring Service

Rainwater Systems are available in a variety of colours to match almost any colour scheme. Subject to minimum quantities, profiles and fittings can be spray coated to order to achieve a high quality and long lasting colour finish. The system could match to a company's corporate colours or blend into natural surroundings, in fact we can match to any ISO, BS or RAL colour.



All of our products are designed to be easy to install allowing projects to be completed quickly and efficiently!



### Calling all Installers!

To request a copy of our new Installer Presenter, please call 01709 770 000. This brochure is designed for you to present details of rainwater products to your customers in an impressive and professional way. Leaflets are also available for you to leave with your customers.



# Half Round System

Size: 112mm wide x 51mm deep  
Application: Residential



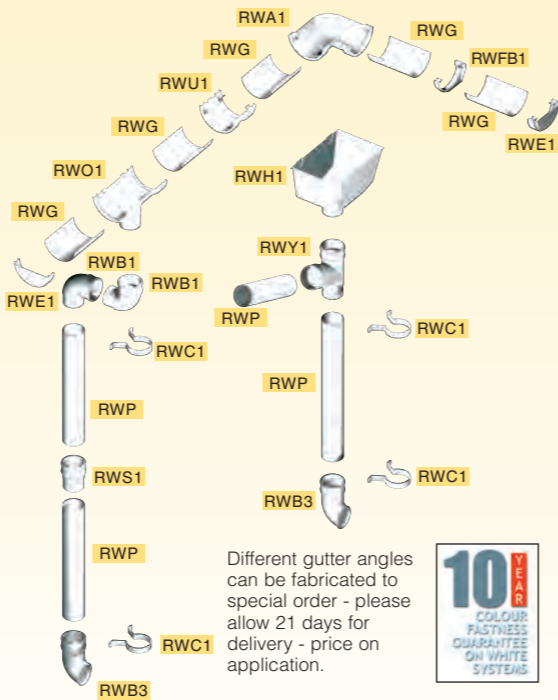
The Half Round System is an easy clip design with rounded ends ensuring simple installation. Suitable for residential applications Half Round is compatible with many existing systems.

### Compatibility with Alternative Systems

The following should be used as a guide only. We do not recommend mixing fittings or extrusions on the same building.

### Manufacturer

Polypipe	Yes
Hepworth	Yes
Osma	Yes
Hunter	Yes
Marley	Yes
Floplast	Yes
Brett Martin	Yes
Terrain	No



Different gutter angles can be fabricated to special order - please allow 21 days for delivery - price on application.



### Colours Available

Black	White	Grey	Brown	Clay Brown*
BL	WH	GY	BN	CB

**IMPORTANT WHEN ORDERING**  
Indicate product colour(s) required by using the following code suffixes shown, eg. Pipe Socket in brown = RWS1BN.

\* Products marked are available in clay brown. Please note that pack quantities for grey products will vary. Please enquire for details.

### Gutter and Fittings

114 51	182 182 48	105 55	30	160 77	
Description	Gutter 114mm	90° Angle	135° Angle	Stop End - External	Stop End Outlet
Product Code	RWG4 RWG2	RWA1	RWA2	RWE1	RW02
Length/Size	4m	2m			

33	12	200 135	100	
Description	Stop End - Internal	Fascia Bracket	Running Outlet	Union Bracket
Product Code	RWE2	RWFB1	RW01	RWU1

### Downpipe and Fittings

68	80 36 77	68 36 75	118 46	
Description	Pipe *	90° Bend *	112° Offset Bend *	Shoe *
Product Code	RWP25 RWP4 RWP55	RWB1	RWB2	RWB3
Length/Size	2.5m 4m 5.5m			

RWP4 is not available in Grey or Clay Brown.

120 100 68	60 56 RWCS1 Spacer Pack: 80	36 90	175 36 64	
Description	Pipe Clip *	Single Fixing Down Pipe Clip *	Pipe Socket *	112° Branch *
Product Code	RWC1	RWC3	RWS1	RWY1

### Brackets and Adaptors

110	100	100	78	100	
Description	Round Cast to Round PVC Adaptor	L/H Round to Ogee Adaptor #	R/H Round to Ogee Adaptor #	Square to Round Adaptor	Square to Round Clipped Adaptor
Product Code	RWD2	RWD3	RWD4	RWSD1	RWSD6

36 90	168 187	
Description	Square to Round Pipe Adaptor *	Hopper *
Product Code	RWSD2	RWH1

### Additional items available with this system:

Rainwater Butt Connector Kit	RWBC1
Gutter Clip	RWHC1
Gutter Gasket	GS011
Plastic Sacks	RWPS1
See page 12 for more information	



# This product is not compatible with the Plus System.

# Square Line System

Size: 114mm wide x 59mm deep  
Application: Residential



## Colours Available

Black White Brown Clay Brown\*

BL WH BN CB

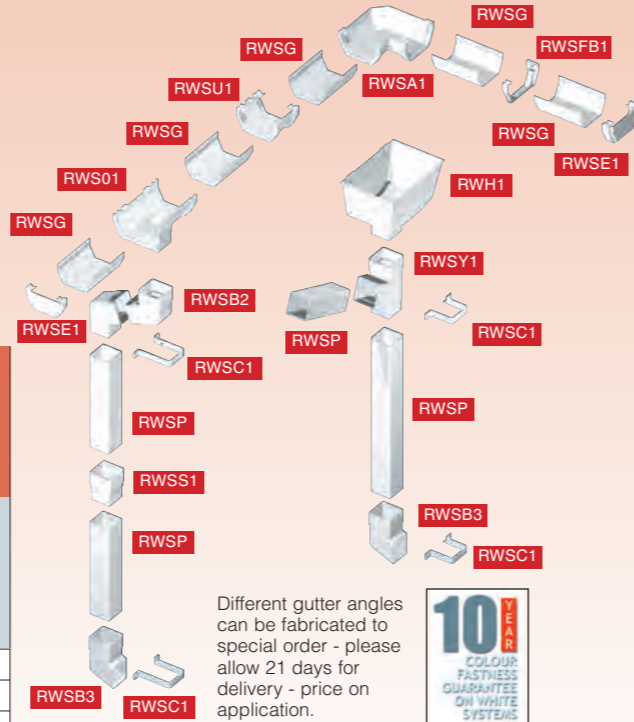
**IMPORTANT WHEN ORDERING**  
Indicate product colour(s) required by using the following code suffixes shown, eg. Pipe Socket in brown = RWSS1BN.  
\* Products marked are not available in clay brown.

## Compatibility with Alternative Systems

The following should be used as a guide only. We do not recommend mixing fittings or extrusions on the same building.

Manufacturer	Yes	No
Polypipe	Yes	
Hepworth	Yes	
Osma	Yes	
Hunter	Yes	
Marley	No	
Floplast	Yes	
Brett Martin	Yes	
Terrain	No	

The Square Line System is suitable for residential applications and has an easy clip design with rounded ends to ensure simple installation. Top Hung Fascia Brackets are available which give even smoother lines and the range is compatible with many existing systems.



Different gutter angles can be fabricated to special order - please allow 21 days for delivery - price on application.



## Gutter and Fittings

Description	Gutter 114mm	90° Angle
Product Code	RWSG4	RWSA1
Length/Size	4m	2m

## Downpipe and Fittings

Description	Pipe	90° Bend	112° Offset Bend	Shoe
Product Code	RWSP25 RWSP4 RWSP55	RWSB1	RWSB2	RWSB3
Length/Size	2.5m 4m 5.5m			

RWPS4 is not available in Grey.

Description	Pipe Clip	Pipe Clip - Flush	Single Fixing Down Pipe Clip	Pipe Socket	112° Branch
Product Code	RWSC1	RWSC2 (Flush)	RWSC3	RWSS1	RWSY1

## Brackets and Adaptors

Description	L/H Square to Round Adaptor *	R/H Square to Ogee Adaptor # *	Square to Ogee Adaptor # *	to Round Adaptor *	Hopper
Product Code	RWSD1	RWSD3	RWSD4	RWSD6	RWH1

Description	Square to Round Pipe Adaptor	Cut In Outlet (Only available in grey)
Product Code	RWSD2	RWSD5

# This product is not compatible with the Plus System.

## Additional items available with this system:

Rainwater Butt Connector Kit	RWBC1
Gutter Clip	RWHC1
Gutter Gasket	GS011
Plastic Sacks	RWPS1
Balloon Guard	RWOB1BK
Gutter Guard	RWGG1
Drainsmart	RWDS1
Access Point	RWSAP1
Water Diverter	RWSRD2

See page 12 for more information



Description	135° Angle	Stop End - External	Stop End - Internal	Fascia Bracket
Product Code	RWSA2	RWSE1	RWSE2	RWSFB1

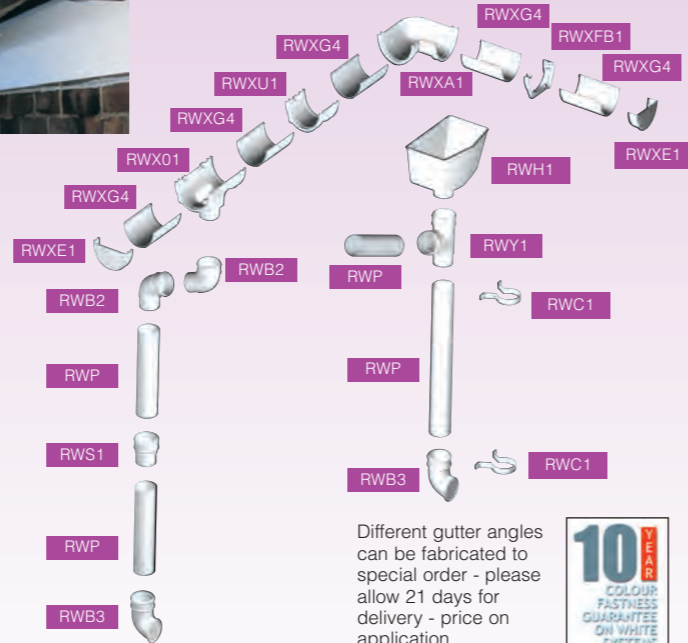
Description	Top Hung Fascia Bracket	Running Outlet	Stop End Outlet	Union Bracket
Product Code	RWSFB2	RWSO1	RWSO2	RWSU1

## XL System

Size: 114mm wide x 71.5mm deep  
Application: Large Residential  
Light Commercial



XL is ideal for properties with large roof areas such as terraced or community housing and light commercial buildings. The deep elliptical shape takes an impressive capacity of rainwater meaning fewer downpipes are required, allowing more space for wall designs or windows. Installation is quick and easy and Running Outlets will connect to either square or round downpipes.



Different gutter angles can be fabricated to special order - please allow 21 days for delivery - price on application.



### Colours Available

Black White Brown  
**BL WH BN**

**IMPORTANT WHEN ORDERING**  
Indicate product colour(s) required by using the following code suffixes shown, eg. Union Bracket in brown = RWXU1BN.

### Gutter and Fittings

Description	Gutter 114mm	90° Angle	135° Angle	Stop End - External
Product Code	RWXG4	RWXA1	RWXA2	RWXE1
Length/Size	4m			

Description	Stop End - Internal	Fascia Bracket	Running Outlet	Union Bracket
Product Code	RWXE2	RWXFB1	RWXO1	RWXU1

Additional items available with this system:

See page 12 for more information.

## Commercial Plus

Size: 170mm wide x 117mm deep  
Application: Commercial



Commercial Plus is designed to handle large volumes of water with ease. Ideal for commercial or large domestic housing and apartment projects the outlet design encourages a vortex effect for greater water flow down the pipe.

### Colour Available

Black

**BL**

### Gutter, Downpipe and Fittings

Description	Gutter 170mm	90° Angle	Stop End - External	Stop End - Internal
Product Code	RWMG4BK	RWMA1BK	RWME1BK	RWME2BK
Length/Size	4m			

Description	Fascia Bracket	Running Outlet	Union Bracket	Pipe 3m Plain Ended
Product Code	RWMFB1BK	RWMO1BK	RWMU1BK	RWMP3BK

Description	Pipe 3m Socket Ended	Offset Bend 135° Top	Offset Bend 135° Bottom	Bend 92.5°
Product Code	RWMP3BK	RWMB1BK	RWMB2BK	RWMB4

Description	Shoe	Pipe Clip	Hopper
Product Code	RWMB3BK	RWMC1BK	RWMH1BK

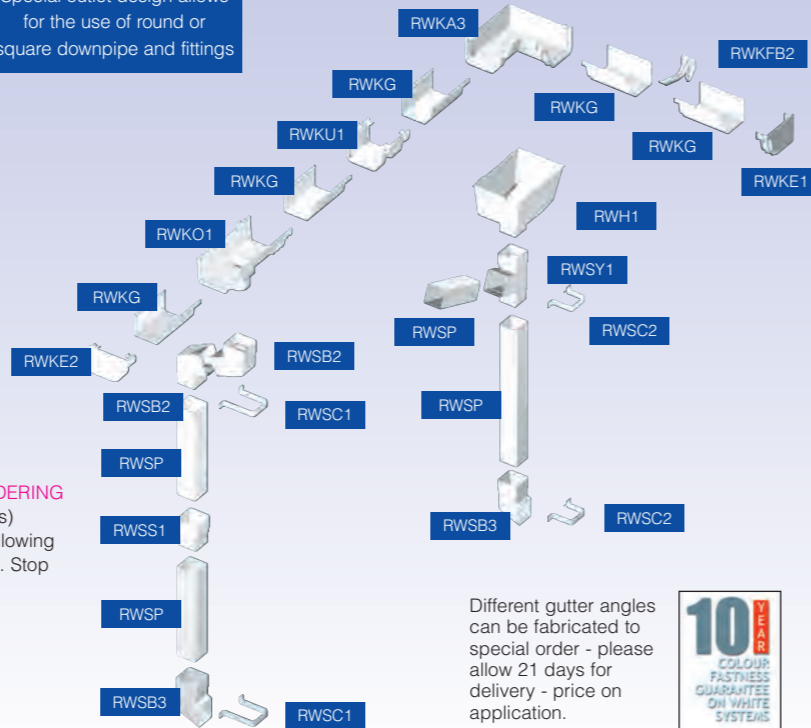
# System Plus

Size: 128mm wide x 88mm deep  
 Application: Light Commercial,  
 Residential & Conservatories



System Plus has been designed with aesthetics in mind providing an appearance that complements any property. The system is very sturdy and ideal for use on larger residential buildings, smaller commercial premises and especially for conservatory roof applications.

Special outlet design allows for the use of round or square downpipe and fittings



Different gutter angles can be fabricated to special order - please allow 21 days for delivery - price on application.



## Colours Available

Black White Brown Clay Brown\*



**IMPORTANT WHEN ORDERING**  
 Indicate product colour(s) required by using the following code suffixes shown, eg. Stop End Outlet in brown = RWKO2BN.

## Gutter and Fittings

Description	Gutter	90° External Angle	135° External Angle	90° Internal Angle
Product Code	RWKG4	RWKA1	RWKA2	RWKA3
Length/Size	4m			

Description	150° Internal Angle	135° Internal Angle	Fascia Bracket	Top Hung Fascia Bracket
Product Code	RWKA4	RWKA5	RWKFB1	RWKFB2



Description	R/H Stop End - External	L/H Stop End - External	Running Outlet	Stop End Outlet
Product Code	RWKE1	RWKE2	RWKO1	R/H: RWKO2 L/H: RWKO3

Description	Union Bracket	L/H Plus to Square Adaptor	R/H Plus to Square Adaptor	L/H Plus to Half Round Adaptor
Product Code	RWKU1	RWKD6	RWKD7	RWKD8
		Not available in Clay Brown	Not available in Clay Brown	Not available in Clay Brown

Description	R/H Plus to Half Round Adaptor
Product Code	RWKD9
	Not available in Clay Brown

## Additional items available with this system:

- Water Diverter RWRRD2
- Rainwater Butt Connector Kit RWBC1
- Balloon Guard RWOB1BK
- Gutter Guard RWGG1
- Drainsmart RWDS1
- Access Point RWRAP1
- Gutter Clip RWKHC1
- Gutter Gasket GSP016
- Plastic Sacks RWPS1

See page 12 for more information



## Additional Products for your Rainwater System



A worthwhile addition to any rainwater system is the **Rainwater Diverter** which fits into a down pipe and directs water flow to a butt or storage tank allowing conservation of water. The design of the Diverter ensures that when the tank is full it returns flow to the drainage system avoiding overflows and flooding. Easy to install and maintenance free, the diverter is supplied with fittings and a connecting hose.



The **Access Point** fitting allows very simple entry to a down pipe for inspection and maintenance purposes after installation.

When installing a rainwater system there are several products designed to improve and enhance a property.



A popular addition to any system is **Gutter Guard**. Designed to prevent leaves and other debris from blocking outlets and down pipes, Gutter Guard simply sits in the gutter with no need for screws or brackets. It can be used with any PVC-U guttering between 100 and 115mm wide and is easily trimmed to size or clipped together to form a continuous run. The use of cable ties may be required.

**DrainSmart** is the removable above ground gully for collecting debris from gutters at ground level. The simple design means that the unit is easy to remove and clean in seconds. Down pipes are kept parallel to the wall through their whole length as they no longer connect directly to the underground system.



## Rainwater Systems Technical



Any drainage system should have sufficient capacity to carry the expected flows of water at any point in the system. The actual flow in the system depends upon the area to be drained, the rainfall intensity and the position of the outlets.

### Gutter Installation

BS EN 12056-3:2000 states that gutters should be nominally level (with a gradient of between 1mm/m and 3mm/m where practicable).

This standard also states that "where snow is likely to lie on roofs, the front edge of the gutter should not be higher than the projected line of the roof, unless snow guards or other precautions are used".

### Gutter Capacity

The profile and dimensions of a gutter determines the maximum flow rate (capacity), currently given in litres/second. The height of gutter profile determines the maximum length of gutter run before resultant overflow at the 'high point' (i.e. stop-end or mid-way between outlets), calculated per BS EN 12056-3:2000 as 50 x height.

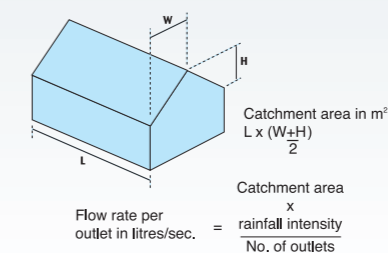
It is most important to consider the position and number of outlets as well as the size of gutter.

### Rainfall Intensity

Rainfall and storm intensities vary between differing locations within the UK and a number of pages are devoted in BS EN 12056-3:2000 to variations and safety factors, relating to various types of buildings and gutter locations. Eaves gutters should be designed using a one year storm event, and the intensity found from maps in BS EN 12056-3:2000.

### Catchment Area

In accordance with BS EN 12056-3:2000 the drainable catchment area of a pitched roof is calculated by adding half the height to the plan width and multiplying by the length as follows:



Product should not be stored in direct sunlight when in packaging. This can lead to an excessive heat build up within the packaging which could lead to product distortion.

### Design Flow Rate

End Outlet in Gutter				
System	Outlet size (mm)	Max flow rate (l/s) to BS EN 12056	Maximum distance to stop end (m)	between outlets (m)
Half Round	68 dia	0.66	2.5	4.87
Square Line	65 sq.	1.18	2.8	5.62
XL	65sq.	1.29	3.5	6.9
Plus	65 sq.	1.66	3.7	7.3

Centre Outlet in Gutter					
System	Outlet size (mm)	Max flow rate (l/s) to BS EN 12056	Max flow rate (l/s) to BS6367	Maximum distance to stop end (m)	between outlets (m)
Half Round	68 dia	1.32	1.4	2.5	4.87
Square Line	65 sq.	1.79	2.13	2.8	5.62
XL	65 sq.	2.59	3.37	3.5	6.9
Plus	65 sq.	2.60	3.5	3.7	7.3

Capacity and Flow Charts Large, complicated and industrial projects are best treated individually with reference to BS EN 12056-3:2000.

Due to increases in the safety factors applied, the design flow rate based on BS EN 12056 is lower than that for BS6367. This does not mean that the gutter flow is actually any lower. It is purely the figure used for design purposes. For this reason we have included the flow rates for BS6367 so that comparisons can be made. Gutter/outlet capacities with BS EN 12056-3:2000 are lower than with BS6367:1983, which it replaced, as freeflow must now be used for eaves gutters.

### PVC-U Formulation

Marshall-Tufflex have adopted a 'Next Generation' PVC-U formulation for their Rainwater Fittings.

With many years experience of white window formulations we are pleased to offer a 10 year guarantee for the colour fastness of our white system in natural weathering.

Maximum colour change shall be no greater than level 4 of the grey scale as clarified by ISO 105-A03:1987, BS 1006-A03:1990. Level 5 is no change. Tested using SDC standard methods, 5th edition A03.

Any material exhibiting a greater change in colour will be replaced free of charge.

When determining colour differences on weathered surfaces, light cleaning with a non-abrasive soap based cleanser should be used.

### Characteristics of Marshall-Tufflex Rainwater Systems

Properties	Value
Specific gravity	1.35-1.45
Co efficient of linear expansion	7x10-5/m°C
Water absorption	Negligible
Oxygen index	42%

### Vicat Softening Temperature

	Extrusion	Mouldings
White average	80.5°C	76°C
Grey average	80.5°C	76°C
Brown average	80.5°C	76°C
Black average	80.5°C	76°C

### Chemical Resistance

The material is virtually unaffected by solutions of inorganic acids, alkalis and salts and is resistant to many organic chemicals. It may be softened by some organic materials such as Ketones and aromatic compounds. It will not corrode.

### Fire Resistance

The materials used in Marshall Tufflex Rainwater Systems are self extinguishing.

### Standards

Rainwater systems are manufactured to comply with the requirements of BS EN 607:1996; BS EN 1462:1997; EN 12200-1:2000; BS 4576-1:1989 where applicable.

### Installation Guide

Installation instructions for all of our systems are available on request. When fitting our products, the Building Regulations should be followed.

There are a wide range of brackets to assist with the installation and design of our guttering systems. Please see our pricelist for the full range of products.

# Underground System

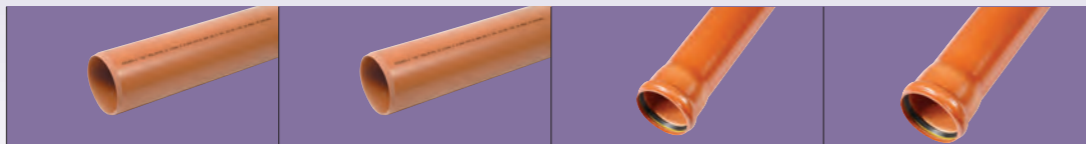
Pipe Size: 110mm diameter



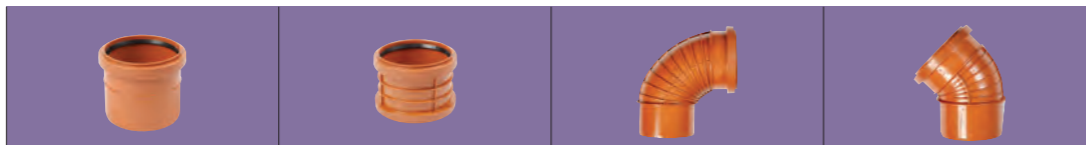
The Underground System incorporates the latest blown end technology allowing for retention of the seal in transit and a perfect connection for jointing. The system provides an efficient means of waste water and foul discharge from above ground drainage that's ideal for new build or refurbishment projects.

- 110mm PVC-U pipe and fittings manufactured where applicable to BS EN 1401-1:1998 BS4660-2001 and BBA certificate 89/2206
- PVC-U gives a strong, durable and lightweight product
- Fittings are compact in size while still adhering to the British Standard specification
- Innovative seal and snap-cap system allows push-fit joints throughout

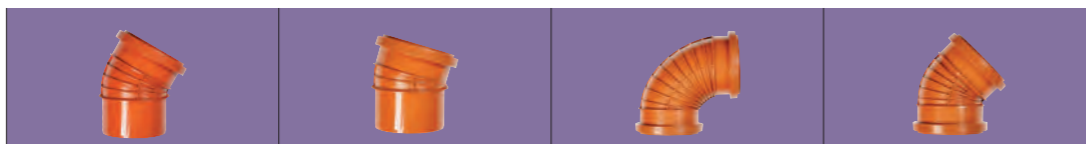
**Colour Available**  
Terracotta Only  
**TC**



Description	110mm Pipe - Plain Ended 3m	110mm Pipe - Plain Ended 6m	110mm Pipe - Single Socket 3m	110mm Pipe - Single Socket 6m
Product Code	UFC430	UFC460	UFC432	UFC462



Description	110mm Coupler - Single Socket	110mm Coupler - Double Socket	110mm 87.5° Single Socket Bend	110mm 45° Single Socket Bend
Product Code	USH43	UR401	UR412	UR404



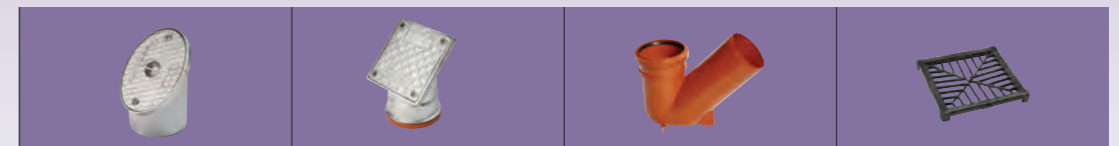
Description	110mm 30° Single Socket Bend	110mm 15° Single Socket Bend	110mm 87.5° Double Socket Bend	110mm 45° Double Socket Bend
Product Code	UR468	UR410	UR411	UR403



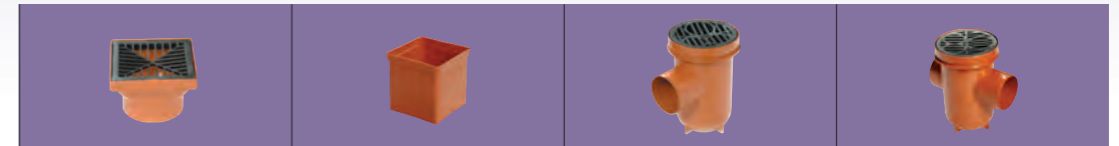
Description	110mm 30° Double Socket Bend	110mm 15° Double Socket Bend	110mm 0-30° Double Socket Adjustable Bend	110mm 87.5° Double Socket Equal Junction
Product Code	UR467	UR409	UG494	UR424



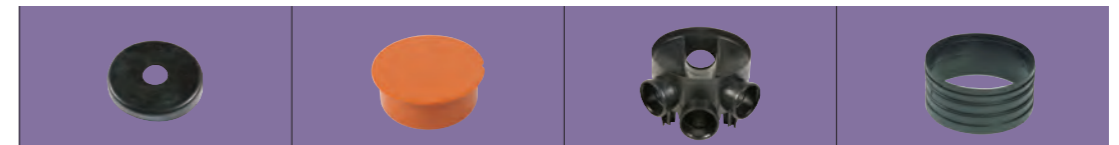
Description	110mm 45° Double Socket Equal Junction	110mm 87.5° Triple Socket Equal Junction	110mm 45° Triple Socket Equal Junction	110mm Screwed Access Cap
Product Code	UR406	UR423	UR405	USA62



Description	110mm 45° Rodding Eye Terminal - Oval	110mm 45° Rodding Eye Terminal - Square	110mm Universal Gully Trap	110mm Spare Square PP Grid
Product Code	UG422	UG416S	UG413	UG415



Description	110mm Square Hopper	110mm Raising Piece for Square Hopper	110mm Bottle Gully	110mm Back Inlet Bottle Gully
Product Code	UG414	UG470	UG425	UG427



Description	110mm Universal Drain Adaptor	110mm Plain Socket Plug	110mm Shallow Access Chamber	Side Rider
Product Code	UG493	UG420	UG437	UG438



Description	Round PVC Cover and Frame
Product Code	UG501