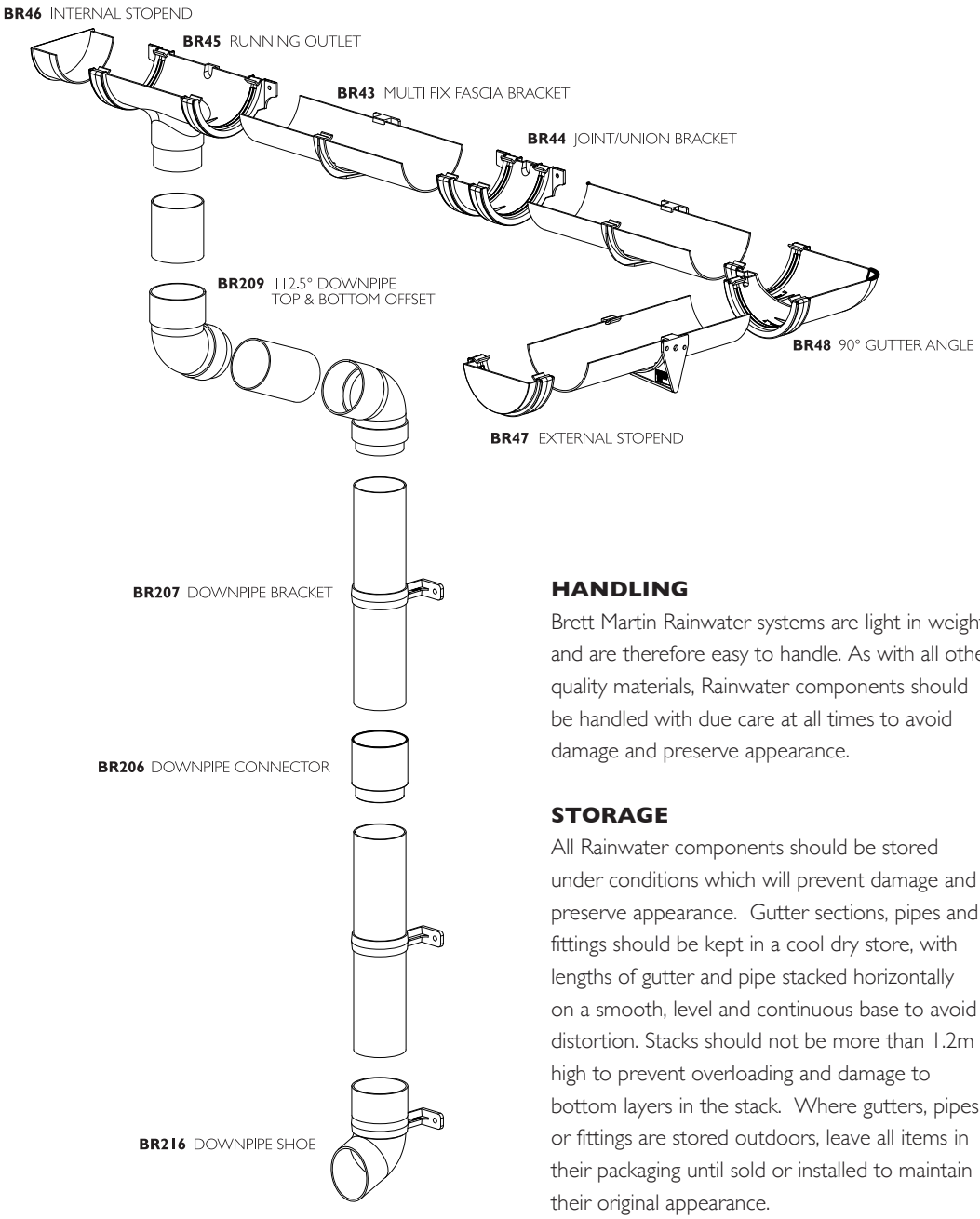
AN EXPLODED VIEW OF A TYPICAL BRETT MARTIN RAINWATER INSTALLATION



HANDLING

Brett Martin Rainwater systems are light in weight and are therefore easy to handle. As with all other quality materials, Rainwater components should be handled with due care at all times to avoid damage and preserve appearance.

STORAGE

All Rainwater components should be stored under conditions which will prevent damage and preserve appearance. Gutter sections, pipes and fittings should be kept in a cool dry store, with lengths of gutter and pipe stacked horizontally on a smooth, level and continuous base to avoid distortion. Stacks should not be more than 1.2m high to prevent overloading and damage to bottom layers in the stack. Where gutters, pipes or fittings are stored outdoors, leave all items in their packaging until sold or installed to maintain their original appearance.

GUTTER INSTALLATION

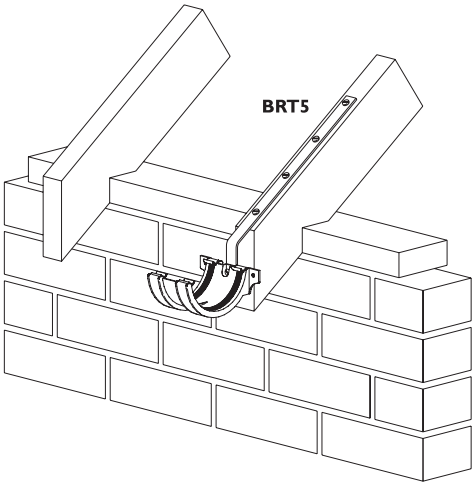
Brett Martin Rainwater gutters, in all five sizes, can be efficiently installed if the following procedures are followed.

Rainwater systems are supported by the outlet joint/union bracket and external angles as well as the gutter support brackets, all of which must be fixed, wherever possible to the fascia or support bracket, or the system securely held by rise and fall brackets, to ensure trouble-free lifetime service.

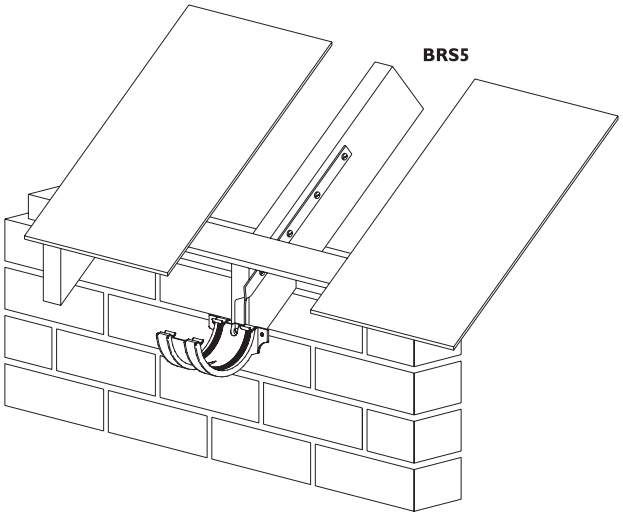
INSTALLATION SEQUENCE

- Position the gutter outlet vertically above the drain inlet or gully from which the rainwater will be conveyed to the underground drainage system.
- Fix the outlet in position on the fascia allowing for whatever fall, if any, is required.
- Fix the gutter support bracket furthest from the outlet at a position on the fascia which will produce a run of gutter either horizontal or to the desired fall.
- Stretch a line taut between the fixed outlet and support bracket, establishing a straight gutter line.
- Fix the remainder of the fittings to the fascia following this line, a joint bracket being positioned at each junction of two gutter sections.
- Where, due to the absence of a fascia or the design of the building support fittings cannot be fixed, the rafter top bracket and side bracket provide alternatives.
- Rise and fall brackets driven into the wall will support the gutter system where there is no fascia and rafter brackets are impractical. Position these against alternate sides of joint brackets, running outlets or angles along the installation to prevent excessive thermal movement in any one direction.

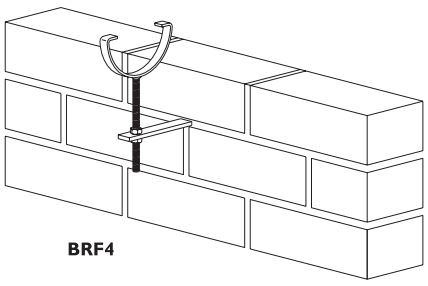
RAFTER TOP BRACKET



RAFTER SIDE BRACKET



RISE & FALL BRACKET



GUTTER SUPPORT SPACING

Gutter support spacing should normally NOT EXCEED 900mm. Roofs with a pitch of, or exceeding, 35° and/or with SMOOTH SURFACES should prompt consideration of the effects of HEAVY SNOW LOADING. Improved roofspace insulation now prevents snow from melting on impact and is more likely to accumulate to a critical amount.

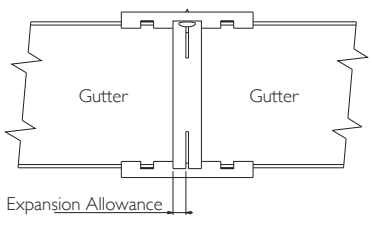
In such instances, support spacing centres should NOT EXCEED 600mm and snow boards should be fitted. All gutter fittings incorporate fixing positions, which must be used during installation.

Where gutter angles are required, relevant holes should be drilled to enable fixing to the fascia board and adjacent support brackets should be no more than 900mm away. If the angle is unable to be fixed, the adjacent brackets should be no more than 150mm away.

FITTING GUTTER

To snap the gutter section into the support fittings, first push the rear edge of the gutter up hard under the rear retaining clip of the fitting.
Then pull the front edge of the gutter out and down with one hand, and the front edge of the support fitting out and down with the other hand, while pushing the front retaining clip over the front edge of the gutter with the thumbs, until the gutter snaps into place.

THERMAL MOVEMENT ALLOWANCE
When each length of gutter has been snapped into position check that each end is not inserted into the fitting beyond the 'EXPANSION ALLOWANCE' line. This allows the gutter to move with changes in temperature without distortion.



To ensure the joint remains intact, each gutter fitting should be fixed to the fascia board or rafter bracket wherever possible.

DEEPSTYLE 170 ANGLE & CLIP INSTALLATION

170mm Gutter Clips are asymmetrical to give the clips a better hold on the gutter.
It is recommended that the overhanging side of the clip is kept closest to the wall.
Fittings come preassembled however as only one 90 degree angle is provided it is preassembled for a wall on the inside of the corner. When the wall lies on the outside of the corner it is then advised that the clips are swapped around.

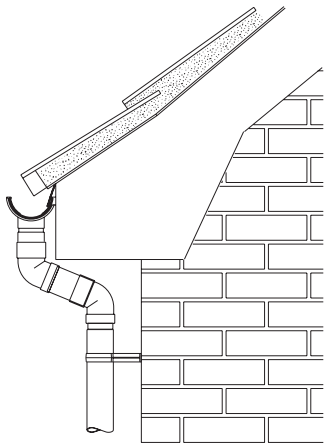
SWAPPING CLIPS

- Remove the seal from the seal recess.
- Take off the clip by removing the horizontal side first.
- Put the clip back on in the opposite orientation.
  - Place the overhanging side on first.
  - Then slide the other end of the clip along the outside of the seal recess until it snaps over the top of the fitting.
  - Ensure both sides of the clip are fully engaged with the fitting - you should hear a click.
- Reinsert the seal
  - The seal has a central hole into which the clip is designed to engage- this will ensure that the seal cannot rock out of place when in use.
  - Feed one end of the seal into the seal recess allowing the clips protrusion to engage with the seal. (You should feed the seal into the overhanging side of the clip first).
  - You should then feed the other end of the seal so that the opposite side of the clip is also engaged.
  - Flatten out the rest of the seal into its recess.
    - As you apply some pressure to the seal you should feel its feet engaging with the recess correctly.
  - Ensure that both sides of the seal are engaged with the clip to a similar extent.

DOWNPIPE INSTALLATION

Downpipe installations must accommodate thermal movement. This accommodation of approximately 10mm is made at the top of each 65mm and 68mm pipe section, but at the bottom of each 110mm and 160mm pipe section.

Spigot to socket joints in the 65mm and 68mm systems require the insertion of a piece of pipe of length equal to socket depth to produce a secure fit.



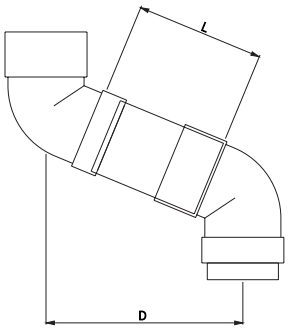


TABLE 1

MINIMUM SOFFIT DEPTHS & OFFSET PIPE LENGTHS

DOWNPIPE	MIN. SOFFIT DEPTH "D" (mm)	OFFSET PIPE LENGTH "L" (mm)
65mm	120	38
68mm	115	38
110mm	235	122
160mm	300	155

INSTALLATION SEQUENCE

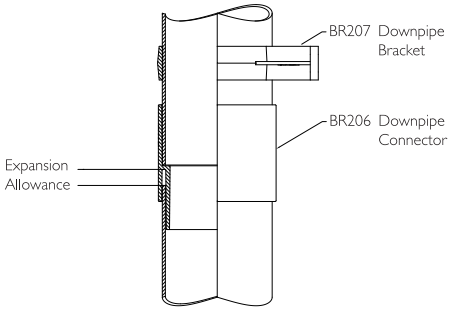
- Commence assembly of the downpipe by fabricating an offset from the gutter outlet to the wall using a top and bottom offset bend connected by a length of pipe cut to suit the soffit depth of the building - Table 2.
  The 110mm and 160mm offset bend sockets must be solvent welded to the pipe.

TABLE 2

SOFFIT DEPTHS / OFFSET PIPE LENGTHS

SOFFIT DEPTH	OFFSET PIPE LENGTH "L"			
"D"	65mm SQUARE	68mm ROUND	110mm ROUND	160mm ROUND
150	80	85		
175	107	113		
200	137	140		
225	161	167		
250	188	194	148	
275	215	221	175	
300	242	248	202	155
325	269	275	229	182
350	296	302	256	209
375	324	329	283	236
400	351	356	310	263
425	378	383	337	290
450	405	410	364	317
475	432	437	391	344
500	459	464	418	371

- Insert a piece of pipe, length at least equal to socket depth, or otherwise to suit fascia depth, into the top offset bend socket, and fit tightly underneath the running outlet. Secure the bottom offset bend to the wall with a bracket so that the entire assembly is a solid fit under the outlet.



- Fit the downpipe working from the top. When the pipe is 65mm or 68mm place the bottom end into a downpipe connector, and secure the connector to the wall using a pipe and fitting bracket, leaving a 10mm thermal movement allowance at the top. Secure 110mm and 160mm pipe at the top using a pipe and fitting bracket under the socket shoulder. The lower end of this pipe must be inserted 10mm less than the full socket depth when connecting the next pipe or fitting.
- Fit additional lengths of pipe or fittings using the same principles to achieve thermal movement allowance at the top or bottom depending on downpipe size. Secure with a bracket at each fitting or socket, and on the pipe as necessary to ensure support at centres no greater than 2m.

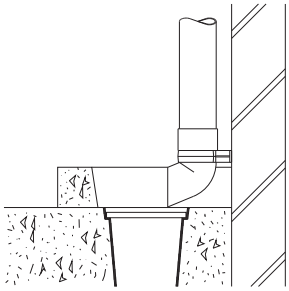
DOWNPIPE INSTALLATION EXCEEDING 10m IN HEIGHT

- Galvanised metal brackets MUST be used to support the installed weight of 110mm and 160mm systems of height greater than 10m.

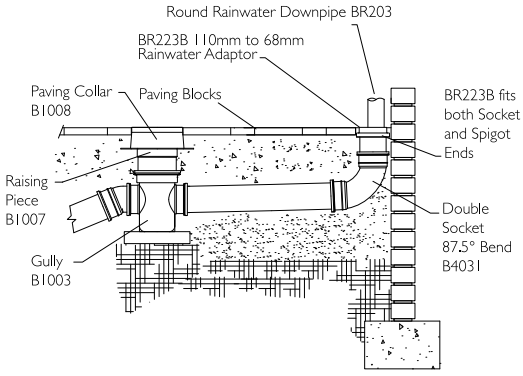
CONNECTION TO UNDERGROUND DRAINAGE

Downpipe may be connected to the underground drainage system in a number of ways.

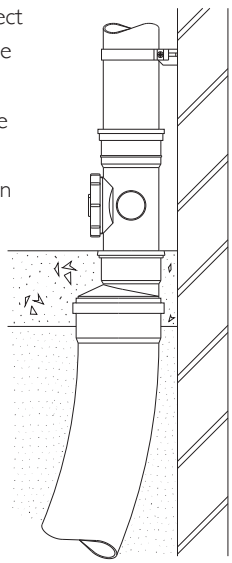
In domestic applications where the 68mm round and 65mm square downpipes are used, they commonly discharge through a shoe into the hopper of a gully.

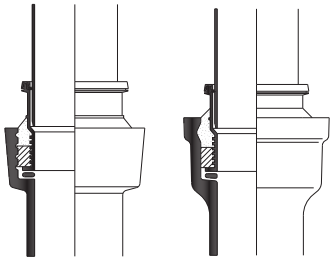


Alternatively the rainwater can discharge into a back inlet gully through an adaptor and bend.



It is possible to connect the 110mm downpipe directly to a PVC underground drainage system: where this is of greater diameter an adaptor can be used.





Adaptors are also available to connect Rainwater downpipes to underground drainage systems of other materials.

SCREWS

All fittings should be fixed with 25 x 5mm round head screws. These should be sherardised or otherwise protected against corrosion. **Do not use nails in any circumstances.**

CUTTING

Gutter and downpipe sections can be cut with a hand saw having 6-8 teeth per cm, held at a shallow angle, and sawing with slow steady strokes. A file should be used to remove any swarf or burrs. Clean all cuttings and swarf from the gutter and downpipe ends to avoid damaged or ineffective seals. Lubricate all seals in gutter and downpipe fittings for ease of installation.

TESTING

When rainwater installations are complete, gutters should be tested for watertightness under working conditions and internal downpipes should also be tested as prescribed in the relevant Building Regulations. Attention should be paid to the requirements of local authorities. Guidance is also given in BS EN 12056-3:2000.

REFERENCES

BS EN ISO 9001:2015: Quality Management Systems Requirements

BS EN12200-1:2000: Plastics rainwater piping systems for above ground external use. Unplasticized poly (vinyl chloride) (PVC-U). Specifications for pipes, fittings and the system

BS EN 607:2004: Eaves gutters and fittings made of PVC-U. Definitions, requirements and testing

BS EN 1462:2004 Brackets for eaves gutters – Requirements and testing

BS EN 1329-1:2014: Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure. Unplasticized poly(vinyl chloride) (PVC-U). Specifications for pipes, fittings and the system

BS EN 681-1:1996: Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Vulcanized rubber

The Building Regulations 2010

Building (Scotland) Regulations 2004

Building Regulations (Northern Ireland) 2012

The Building Regulations 2010 (ROI)