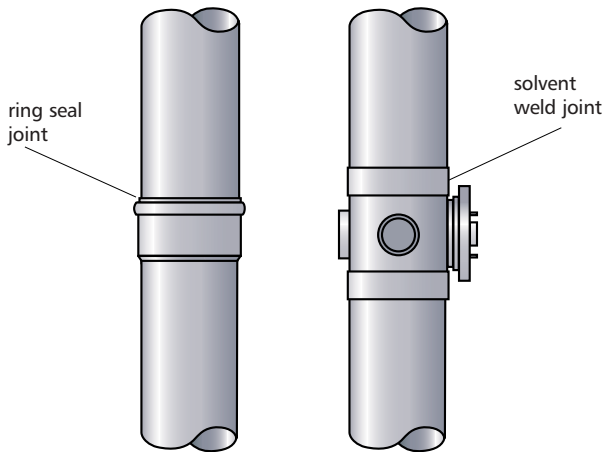


The Marley  
Soil & Waste  
Installation Guide

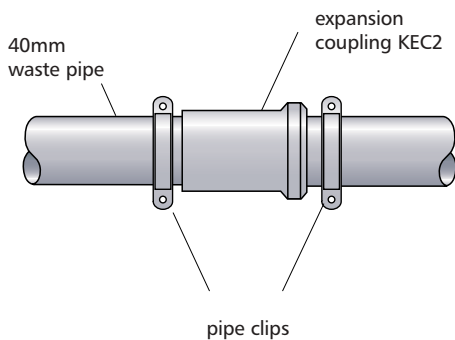
## Joining techniques

The ring seal has been successfully employed as the principal method of joining large diameter PVCu pipes and fittings since their introduction over thirty years ago. This particular technique has proved extremely reliable as the joint can accommodate thermal movement that will occur as a result of temperature variations. An expansion gap of between 5-10mm should be allowed within each ring seal socket as each full length of pipe is installed and fixed using socket and barrel pipe clips.

Solvent weld joining is also widely used and many components in the range are available with this facility to provide an effective alternative. By selecting these fittings a solvent weld system can be installed, however, ring seal joints must be incorporated to control thermal movement.



While the most popular method of joining larger size PVCu pipes and fittings is by ring seal, with small diameter waste pipework the principal choice is usually solvent weld. Where this technique is used expansion couplings must be introduced where pipe lengths exceed 1.8 metres or between fixed points. The same principle should also be adopted when the polypropylene push-fit waste system is installed.

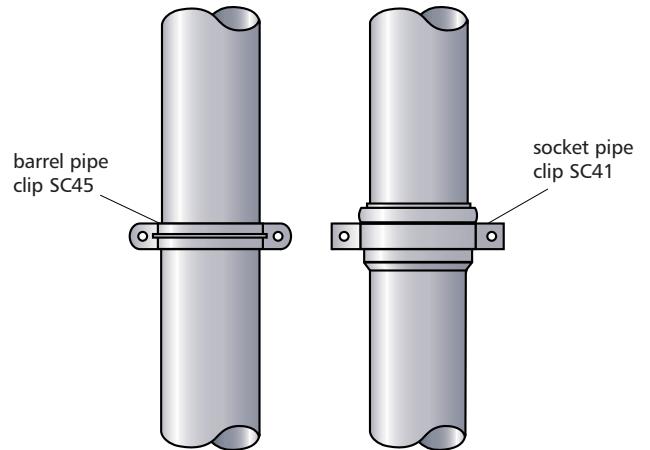


It should be noted that polypropylene cannot be solvent welded and together with the ABS waste system must not be fitted externally unless painted to protect it from ultra-violet degradation.

## Pipe support

Experience has proved that an efficient and reliable PVCu sanitary pipework system depends considerably on the attention that is placed on the correct provision of pipe support brackets. This is particularly important in multi-storey buildings where care must be taken to ensure clips are positioned to control thermal movement at each floor level.

Plastic coated metal socket clips are designed to fit ring seal sockets and act as anchor brackets. These used in conjunction with PVCu intermediate pipe clips, control expansion and contraction and maintain the vertical alignment of the stack.



Two piece socket clips SC41/61 may be adapted to suit the appropriate pipe size by using a section of barrel clip collar SC621 to provide the necessary spacer sleeve. The table below indicates the maximum recommended support centres of different size plastic pipe systems.

Pipe material	BS Nominal pipe size	Horizontal support (m)	Vertical support (m)	
PVCu	21.5	0.50	1.20	
	32	0.50	1.20	
	40	0.50	1.20	
MUPVC	32	0.50	1.20	
	ABS	40	0.50	1.20
		50	0.60	1.20
PVCu	82	1.00	2.00	
	110	1.00	2.00	
	160	1.20	2.00	

## Marley pipe support system

The Marley pipe support range was developed to meet the specific requirements of PVCu suspended sanitary pipework and drainage systems. Manufactured in zinc electro plated mild steel for internal use, the versatile range of components can be assembled to provide a robust, lightweight system suitable for most applications. The system also provides suitable control of expansion and contraction.

The arrangements of brackets and channel supports have been extensively tested and the assembly techniques used have been successfully employed on many domestic and commercial installations. Three different support methods are described and the recommended support centres are shown in the following table for each option.

Pipe Diameter (mm)	Horizontal Support (m)	Vertical Support (m)
32	0.50	1.20
40	0.50	1.20
50	0.60	1.20
82	1.00	2.00
110	1.00	2.00
160	1.20	2.00

### Single support

Recommended for waste or larger diameter pipework fixed within 500mm of the floor soffit.

### Continuous channel support

Suitable for use where pipework is fitted within 750mm of the floor soffit with structural fixings provided at a maximum of 1.2m centres.

### Double support

Developed for use with larger diameter pipework fixed within 1.0m of the floor soffit.

### Pipe brackets

The 82, 110 and 160mm two piece pipe brackets are designed to fit round the ring seal socket of a pipe or fitting. Where intermediate support brackets are located, the SC621 PVC barrel clip collar is used as a spacer sleeve between the pipe and bracket.

### Angle and side bracing

Angle braces should be provided at 6m centres to prevent lineal and thermal movement. Side bracing may also be necessary on long runs where there are no side connections to eliminate lateral movement.

### Vertical pipes

The transition between vertical and horizontal pipework should be achieved using two 45° bends or a single 87½° long radius bend with a support bracket positioned as close as possible.

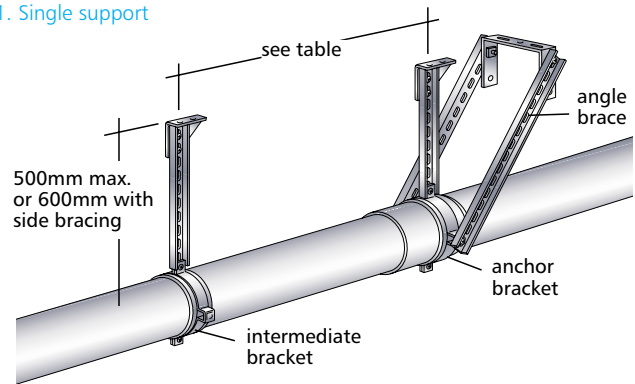
### Branch connections

All branch connections into horizontal pipework should be made at 45° to ensure the discharge is swept in the direction of flow. For small diameter waste pipework it is recommended that entry to the main run is made above the centre line of the pipe.

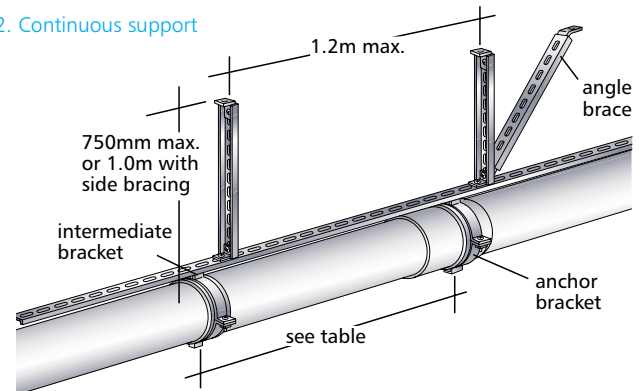
### Structural fixings

It is recommended that 6mm rawlbolt or similar proprietary fixings are used to secure base plate and angle cleats to the structure.

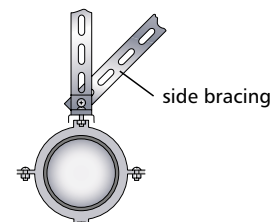
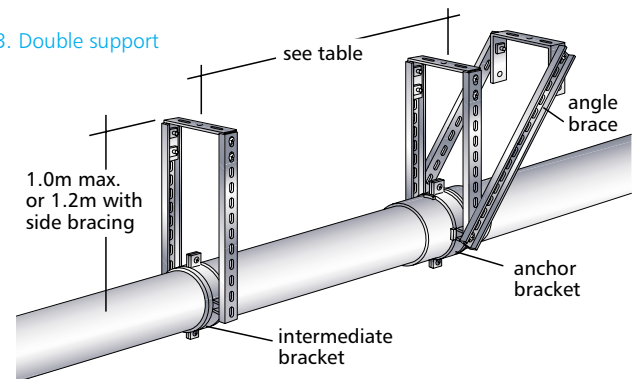
1. Single support



2. Continuous support



3. Double support



## Boss pipe connections

Four different types of fitting are available to provide alternative methods of connecting small diameter waste pipes to 82, 110 and 160mm vertical discharge stacks.

### 1. Single boss pipes.

Available with ring seal or solvent weld sockets for push-fit or solvent weld jointing, single boss pipes allow 32, 40 and 50mm waste pipe connections to be made at 87½° direct to the vertical stack.

### 2. Multiple entry boss pipes.

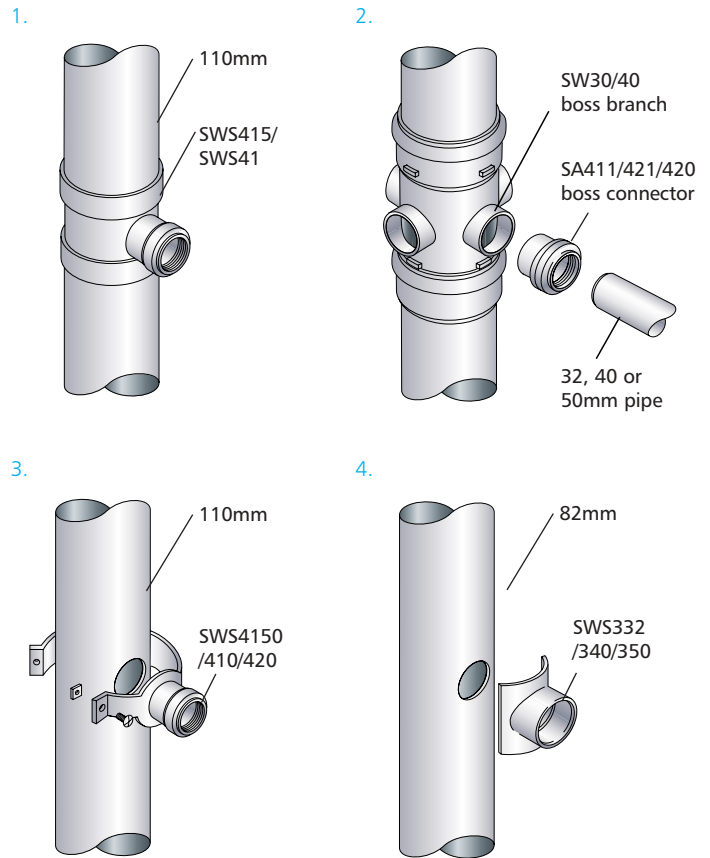
Supplied in ring seal or solvent weld options, all have 90° boss upstands moulded on each fitting with one inlet port open. Connection is made using the appropriate size Marley boss connector to suit 32, 40 or 50mm waste pipes.

### 3. Strap-on-bosses.

Primarily designed to permit 32, 40 and 50mm waste pipe connections to be made to existing 110mm PVCu discharge stacks, strap-on-bosses can also be used on new systems to provide flexibility of installation during different stages of construction.

### 4. Patch bosses.

Suitable for solvent weld jointing to new and existing 82mm diameter PVCu discharge stacks to accept 32, 40 and 50mm size MUPVC or ABS waste pipework to BS 5255.



## Boss branches

The Marley range of five boss branches are designed to allow multiple waste pipe connections to be made to the discharge stack from different directions. Four different side entry combinations are possible together with a rear if required. Staggered waste pipe connections, directly opposite are not permitted as cross-flow could occur.

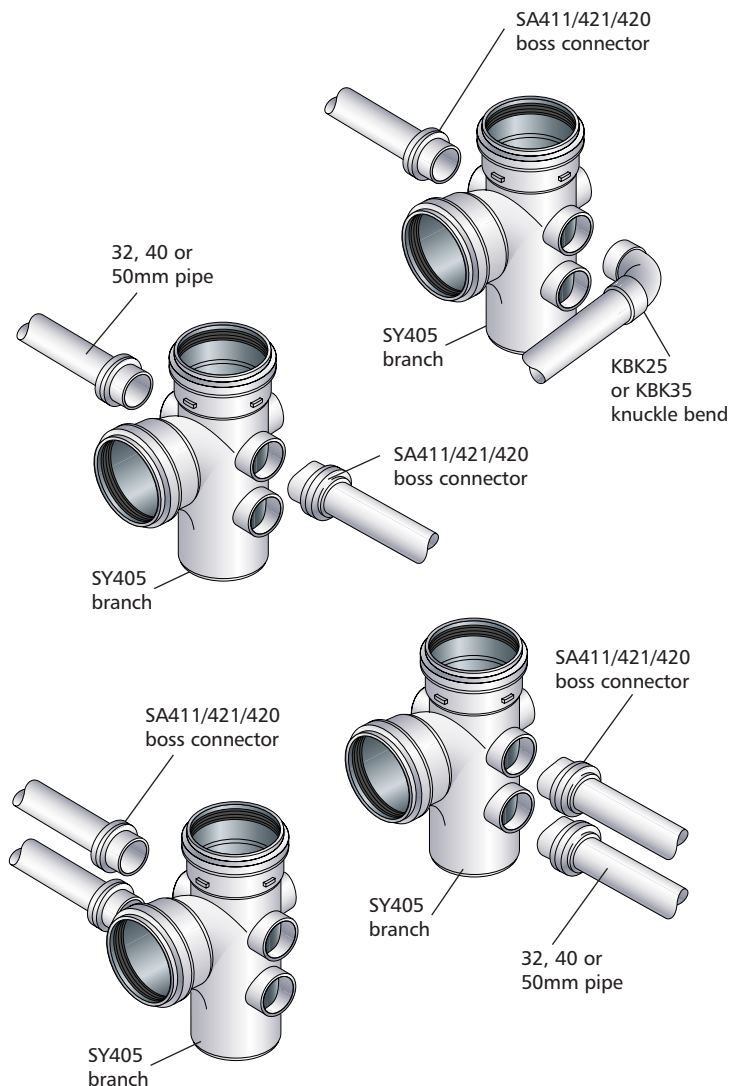
## Compatibility

Boss pipes, boss connectors and strap-on bosses fitted with multi-fit 'T' ring seals are suitable for use with MUPVC or ABS waste systems to BS 5255, polypropylene to BS 5254 and metric size copper to BS 2871.

Un-perforated boss upstands on boss pipes, branches and reducers may be drilled to accept 32, 40 and 50mm boss connectors SA411, SA421 and SA420 using a 51mm diameter hole saw. Knuckle bends KBK25 and KBK35 may also be used as 90° boss connectors for 40 and 50mm MUPVC or ABS waste pipework.

## Horizontal connections

Boss pipes SWS3135 and SWS4135 were developed for use in horizontal situations where it is recommended that connection to the larger diameter pipe is made at 45°. These together with the SWS42 have solvent weld sockets to receive 50mm diameter MUPVC or ABS waste pipes to BS 5255.

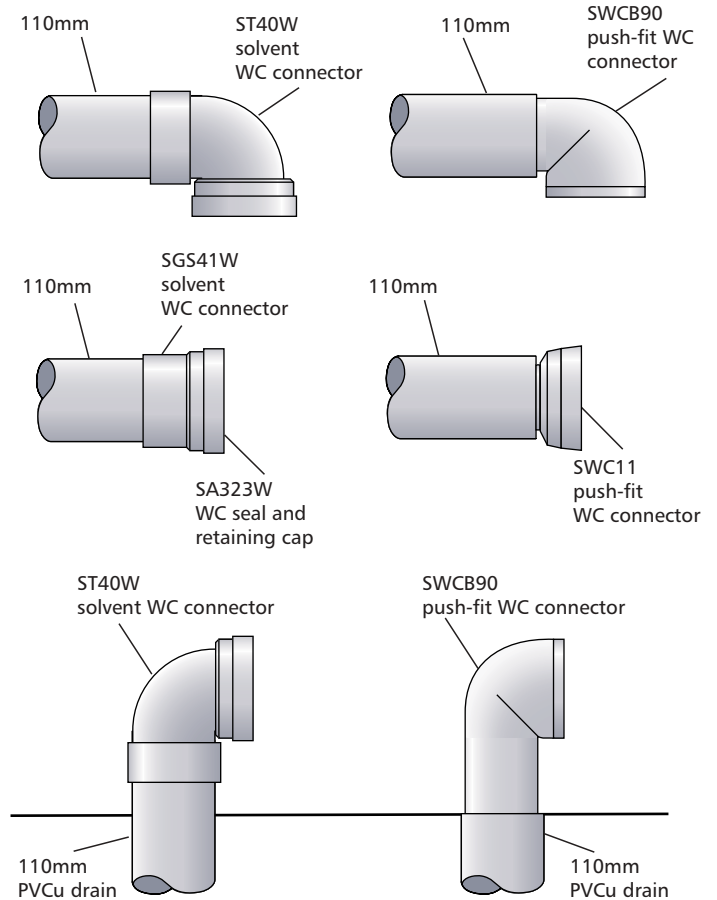


## WC connections

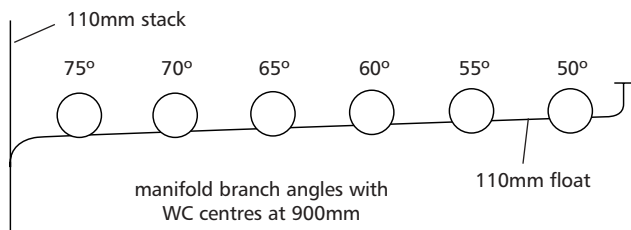
Two different types of connectors are available to allow connection to vitreous china or stainless steel WC pans, slop hoppers and other similar sanitary equipment. Manufactured in PVCu and eva (ethylene vinyl acetate) to accommodate a range of outlet sizes between 84 and 110mm sanitary pipework or underground drainage.

The 90° ST40W, ST41W and SG40W connectors are supplied complete with flexible seal and retaining cap. Where the SGS41W or STS41W pan connectors are used, the WC socket must be trimmed to suit the length of pan spigot before the SA323W is solvent welded in position.

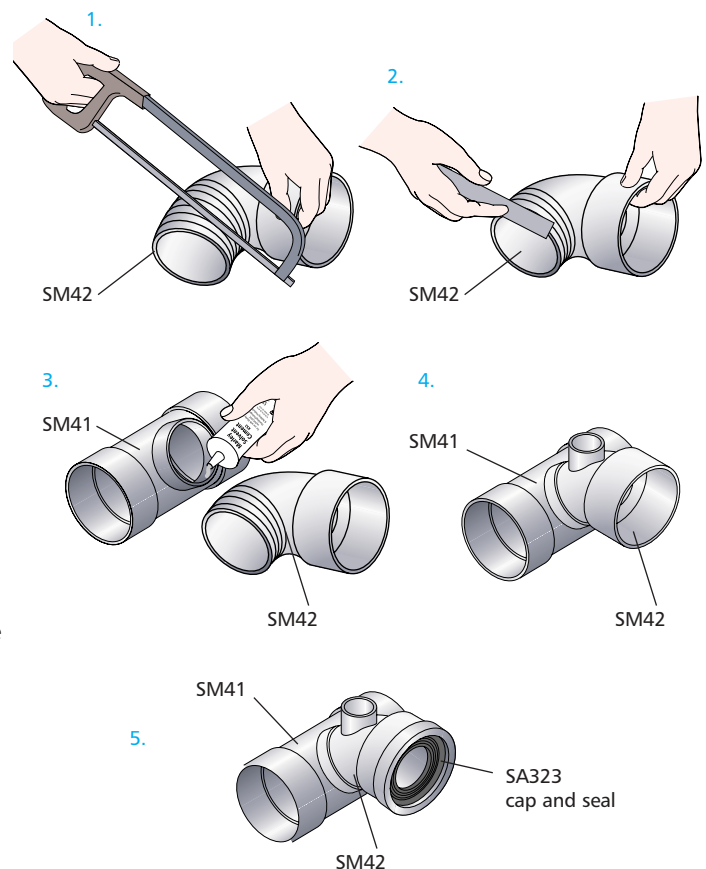
Ground floor toilets often have their own connection to the building drain to eliminate pipework and ducting. Where this occurs both types of connector are suitable for push-fit or solvent weld jointing to the 110mm PVCu drain.



## WC manifold system



1. Select the adjustable bend angle required from the above diagram according to the WC position. Cut the bend with a hacksaw, removing the unwanted portion.
2. File away any rough edges from the face of the fitting and wipe clean the bend and branch, with a dry cloth. Before jointing, the bend and branch should be checked for position and alignment, both parts being marked to ensure accurate assembly.
3. Apply a uniform coat of Marley solvent cement, to the short branch radial socket and to the external surface of the bend body.
4. Assemble the branch immediately, insuring that the marked lines on the fitting coincide. Do not twist the two parts of the branch during this operation, but maintain steady pressure until the spigot of the bend comes to rest against the internal surface of the branch socket. Quickly wipe off any surplus solvent cement from the inside and outside of the completed joint and hold in position for approximately 15 seconds.
5. Trim the WC socket to suit the toilet pan spigot length and remove any swarf with a file. Place the seal in the socket, apply a uniform coat of solvent cement about 15mm wide to the outside of the socket and inside the retaining cap. Push onto the socket and wipe off any surplus solvent cement.



To accommodate varying dimensions between the WC spigot and the centre line of the horizontal pipe run, the adjustable spigot bend SM43 or extension pipe SM45 can be used with WC connector SM44.

For design information, see page 16.