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SOIL & WASTE TECH 1

January 2004

Soil & Waste systems

Design and Installation Guide

MARLEY PLUMBING & DRAINAGE

Contents

Front cover photo - Courtesy of Wilcon Homes Eastern, Knight's Park, Ashford, Kent

The advantage of Marley Soil & Waste Systems

Marley Plumbing & Drainage offer a complete range of soil & waste systems, with products available in a variety of colours and with either push-fit, solvent weld or compression joints. Recognising the potential of plastics in the development of sanitary pipework systems, Marley Plumbing & Drainage launched their first range of PVCu discharge pipes and fittings in 1963. Constant technical innovation and product development have served to keep Marley Plumbing & Drainage at the forefront in the field of sanitary plumbing ever since.

A wide range of systems have been developed to suit both the requirements of domestic above ground drainage and the particular needs of commercial, industrial and public buildings.

Products are manufactured at the Marley Plumbing & Drainage factory in Lenham, Kent. Marley soil & waste goods are manufactured under a quality assurance system from either unplasticised polyvinyl chloride (PVCu), polypropylene (PP) or acrylonitrile butadiene styrene (ABS). Products comply with the material and performance requirements of the relevant British and new European standards.

The Range

Marley Plumbing & Drainage offer a Solvent or Push-fit Soil and Waste system, complemented by a new range of high quality universal compression waste traps. A 'Multi-Fit' compression waste system is also available for connection to solvent or push-fit plastic pipe or copper waste pipe.

The **Soil system**, available in 82mm, 110mm & 160mm diameters consists of all the components necessary for a modern installation. Socketted or plain ended pipe is available as well as a wide range of ring seal and solvent socket fittings. The **pipe support system** in zinc electro-plated mild steel has been developed specifically to meet the requirements of supporting horizontally suspended PVCu sanitary pipework. A range of solvent and push-fit **WC connectors** and a **WC manifold system** allow connection in a variety of situations.

The **Waste ranges** are available with either push-fit, compression 'multi-fit' or solvent jointing and come in a full range of colours. The **Push-Fit** range, in 32mm and 40mm, is manufactured to BS 5254, from polypropylene. Two **Solvent systems** are available, ABS and MUPVC, both manufactured to BS 5255 and bear the British Standard Kitemark where applicable. Resistant to ultra violet attack, the MUPVC range is suitable for internal and external applications. Both solvent ranges are available in 32mm, 40mm and 50mm.

The new range of waste **Traps**, injection moulded in high temperature polypropylene, with a high gloss, wipe clean finish completes the range with easy to grasp compression fixing nuts and can be used in conjunction with any of the waste systems.

For situations where sanitary pipework is located on the external surface of buildings, 21.5mm solvent jointed overflow, 32 and 40mm MUPVC waste and 110mm soil pipework systems are available in a variety of colours, enabling exterior colour co-ordination of soil and waste pipes with rainwater gutters and downpipes.

Installation

The different elements of the Marley Plumbing and Drainage Soil and Waste Systems offer many different installation benefits. A number of different methods for connection from soil stack to waste pipework are offered: boss pipes, strap-on and patch bosses and multiple connection boss branches, with boss connectors to fit all waste systems. The Marley WC Manifold system was developed for use in commercial situations and allows a range of toilets to be connected to a horizontal float above floor level and eliminate the need for specially fabricated fittings. The pipe support system is designed specifically for suspending sanitary pipework both horizontally and vertically. The trapped floor gully has a separate main body and base to allow the bottom part of the gully to be trimmed on site prior to installation, therefore the depth of the water seal can be varied to suit different situations. For commercial applications, a choice of fire protection sleeve or pipe wraps offering up to four hours resistance. Please refer to pages 50 to 54 for further information.

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 Marley Plumbing & Drainage products.

Whilst every effort is made to ensure details are accurate and up to date, our continual product development and improvement programme, may cause dimensional details to change.

Technical Hotline: 01622 852695
Fax: 01622 858041

Availability

Marley Plumbing & Drainage Products are available from a national network of distributors and stockists. For details of your local stockist contact the Marley Plumbing & Drainage Head Office or any of our Regional Sales Offices, listed below.

Head Office
Lenham, Maidstone, Kent ME17 2DE
Telephone: 01622 858888 Fax: 01622 858725
www.marley.co.uk
www.equator.co.uk

Scotland
Birkenshaw Industrial Estate, Uddingston, Glasgow G71 5PA
Telephone: 01698 815231 Fax: 01698 810307

Export Division
Lenham, Maidstone, Kent ME17 2DE England
Telephone: +44 (0)1622 858888 Fax: +44 (0)1622 850778

Further information

For Technical advice
please call **01622 852695**
For general enquiries and details of your nearest stockist
please call the customer services department on **01622 852585**
email: marketing@marleyext.com

Environment

The environment is one of the most important issues in today's society. As a manufacturer, Marley Plumbing & Drainage places great emphasis on ensuring that all manufacturing processes and practices are environmentally responsible. This extends to packaging as well as raw material handling and process controls. Marley also play an active role at industry level via the British Plastics Federation, where broader industry wide environmental issues are addressed.

British Plastics Federation: Tel: 020 7457 5000

British & European Standards

BS EN ISO 9001: 1994, Quality systems. Model for Quality Assurance in Design, Development, Production, Installation and Servicing.

BS 4514: 1983, Specification for PVCu soil and ventilating pipes, fittings and accessories.

BS EN 1329: 2000, Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure – PVCu.

BS 5255: 1989, Specification for thermoplastics waste pipe and fittings.

BS EN 1455-1: 2000, Plastics piping systems for soil and waste (low and high temperature) within the building structure – ABS.

BS 5627: 1984, Specification for plastics connectors for use with horizontal outlet vitreous china WC pans.

BS 5254: 1976, Specification for polypropylene waste pipe and fittings.

BS 3943: 1979, Specification for plastics waste traps.

BS 6209: 1982, Specification for solvent cement for non-pressure thermoplastics pipe systems.

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

Many items bear the British Standards Institution Kite Mark symbol. This mark may be used only by those licensed under the Certification Mark scheme operated by the British Standards Institution. The presence of this mark on, or in relation to, a product is an assurance that the goods have been produced under a system of supervision, control and testing operated during manufacture. This includes periodical inspection of the manufacturer's works in accordance with the Certification Mark scheme.

o Products indicated by this symbol comprise of components not covered by Marley Plumbing and Drainage BS EN ISO 9001 Scope of Registration. However these products have been fully inspected and tested in accordance with our own Quality Management System requirements.

BBA BRITISH BOARD OF AGREMENT
Certificate No. 97/3427

CERTIFIED TO BRITISH STANDARD
BS 4514 : 1983
BS EN 1329-1 : 2000
BS 5255 : 1989

BSI REGISTERED
FM30637

Also available from Marley Plumbing & Drainage:

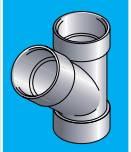
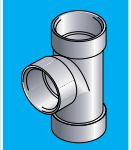
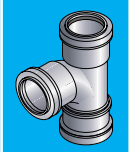
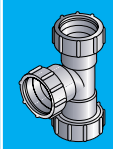
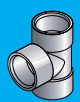
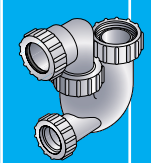
Alutec aluminium rainwater systems

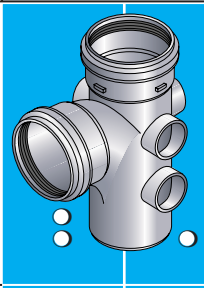
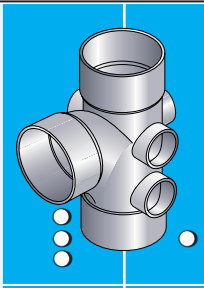
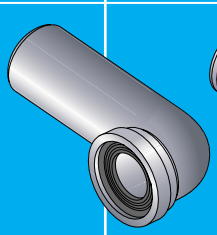
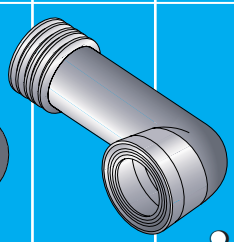
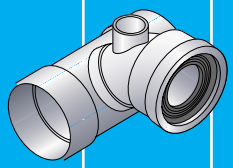
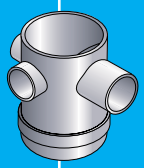
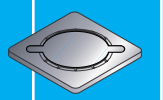
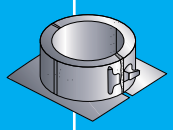
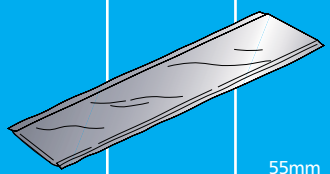
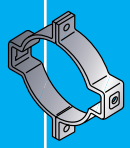
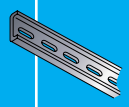
Alutec roof, floor & shower outlets

Rainwater systems

Underground drainage systems including Quantum highway & sewer systems

Equator hot & cold water systems

	Colour Availability					
	Black	Chestnut Brown	Grey	White	Size	British/ European Standard
MUPVC Solvent Weld Waste System Suitable for internal and external applications. Available in 32mm, 40mm & 50mm. See page 18	○ ○ ○	 ○ ○		○ ○ ○	32mm 40mm 50mm	BS 5255
ABS Solvent Weld Waste System Lightweight and cost effective for internal installation. Available in 32mm, 40mm & 50mm. See page 20	○ ○ ○		○ ○ ○	○ ○ ○	32mm 40mm 50mm	BS 5255 BS EN 1455-1
Polypropylene Push-Fit Waste System For internal use, ideally suited to fast installation. Available in 32mm and 40mm. See page 22	○ ○		○ ○	○ ○	32mm 40mm	BS 5254
Polypropylene Multi-Fit Waste System Multi-fit compression socket, for internal use, accepts plastic and copper pipework. Available in 32mm and 40mm. See page 23				○ ○	32mm 40mm	BS 5255/ BS 5254
PVCu Solvent Weld Overflow System A complete range of pipe work and fittings for all vent and overflow applications. Available in 21.5mm. See page 24		 ○		○	21.5mm	BS 6700
Universal Compression Joint Traps A new range of injection moulded waste traps, manufactured in high temperature polypropylene. Available in 32mm, 40mm and 50mm. See page 26				○ ○ ○	32mm 40mm 50mm	BS 3943

	Colour Availability					
	Black	Chestnut Brown	Grey	White	Size	British/ European Standard
PVCu Soil & Vent Components A complete system, available with both ring seal and solvent weld joints. Available in 82mm, 110mm and 160mm. See pages 28-40					82mm 110mm 160mm	BS 4514 BS EN 1329
WC Connectors Connectors for all BS WC pans. Available with solvent weld or push-fit joints. See pages 41-42					110mm	BS 5627
WC Manifold Components The manifold system allows ranges of toilets to be connected horizontally. Ideal for commercial applications. See page 43					110mm	
Floor Outlet Components Available as separate components or as an all in one trapped floor outlet. See page 44					50mm 82mm	
Fire Protection Range Fire sleeves and pipe wraps, providing up to 4 hours rating. See page 44-45					55mm 82mm 110mm 160mm	
Pipe Support Components Designed specifically to meet the needs of supporting horizontal or vertical suspended PVCu pipework See page 46					32mm 40mm 50mm 82mm 110mm 160mm	

Material and manufacture

Marley Plumbing & Drainage pipes and fittings for above ground sanitary pipework systems are manufactured from different plastics materials including PVCu, ABS and Polypropylene.

The table below details the important dimensions and weights of each of the systems together with the relevant British and European Standard. All pipes are manufactured using a continuous extrusion process and fittings are produced by high-pressure injection moulding.

Dimensions and weights

Pipe Material Standard	BS Nominal Size mm/inch	Mean Outside Diameter mm Min	Mean Outside Diameter mm Max	Wall Thickness mm Min	Weight kg/ metre
Soil					
PVCu	82	82.4	82.8	3.20	1.30
BS EN 1329	110	110.0	110.3	3.20	1.70
BS 4514	160	160.0	160.4	3.20	2.50
Waste					
MUPVC	32/1¼	36.15	36.45	1.80	0.33
BS 5255	40/1½	42.75	43.05	1.90	0.41
	50/2	55.75	56.05	2.00	0.57
Waste					
ABS	32/1¼	36.15	36.45	1.80	0.20
BS 5255	40/1½	42.75	43.05	1.90	0.26
BS EN 1455-1	50/2	55.75	56.05	2.00	0.35
Waste					
Polypropylene	32/1¼	34.45	34.75	1.80	0.21
BS 5254	40/1½	40.85	41.15	1.90	0.26
Overflow					
PVCu	21.5/¾	21.55	21.70	1.10	0.11
BS 6700					

Chemical and temperature resistance

Most plastics used for sanitary pipework are highly resistant to those chemicals normally found in domestic waste water and sewerage systems. Enquiries are often received regarding the specification of materials for commercial and domestic applications where chemicals and higher temperature discharges are likely to occur. Where this needs to be taken into consideration, provided the relevant details are supplied, the appropriate technical recommendations can be made regarding the suitability of different materials to ensure satisfactory performance.

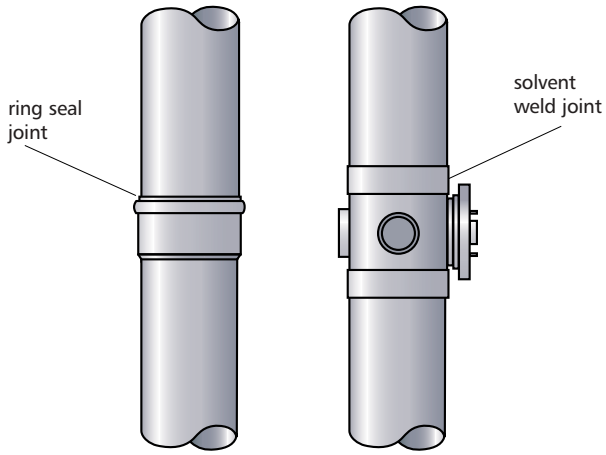
Generally the maximum working temperature of Marley PVCu and MUPVC soil and waste systems when subjected to continuous flow is 70°C and 75°C respectively. Higher intermittent discharges of up to 95°C may be accommodated provided the period of discharge does not exceed two minutes duration.

Alternatively, reference can be made to BS CP312 Part 1: 1973 and ISO publications TR10358/7620 which provide comprehensive information on chemical and temperature resistance of plastics and rubber materials.

Methods of jointing

While the principal method of jointing 82, 110 and 160mm pipes and fittings is by ring seal, many components in the range are also available with sockets that allow for solvent weld jointing. This particular technique is widely used on smaller diameter waste and overflow pipework although expansion and copper adaptor couplings include a ring seal to allow for thermal movement.

As polypropylene cannot be solvent welded, the ring seal method of jointing is used throughout the system.



Thermal movement

The coefficient of linear expansion for PVCu is 0.06mm/m/°C. As a result a 3m length of pipe will increase in length by approximately 3.6mm when subjected to a 20°C temperature variation. Therefore, it is important to ensure that any movement is controlled and ring seal joints are installed to accommodate any expansion that may occur due to increases in ambient temperature or hot water discharges.

Applications

ABS and polypropylene waste pipes and fittings are designed for internal use and should not be fitted externally as they will be subject to ultraviolet light degradation. If fitted externally it is recommended that they are protected by the application of a suitable paint or are boxed in.

The large diameter 82, 110 and 160mm pipes and fittings featured in this catalogue are also suitable for use as internal and external rainwater pipes to drain flat roofs and metal gutter systems on commercial and industrial buildings.

Sanitary pipework design

All sanitary pipework systems should be designed to satisfy the following regulations and standards where applicable.

The Building Regulations 1991:
Approved Document H, Section 1.

The Building Standards (Scotland) Regulations 1990: Part M.

The Building Regulations (Northern Ireland) 1994,
Technical Handbook N.

BS EN 12056: 2000, Parts 1 to 5.

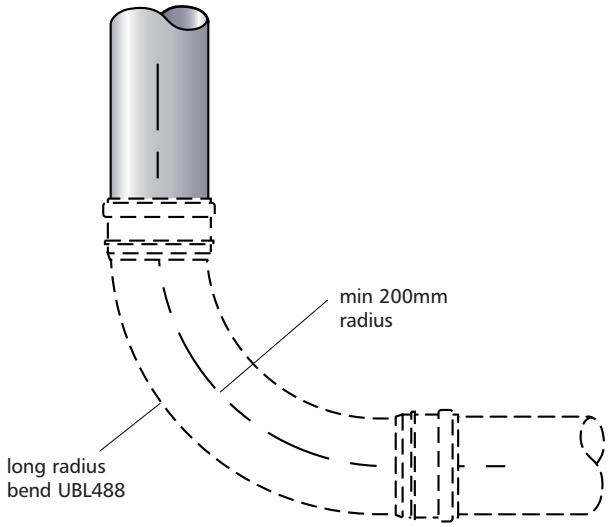
The above is a new European Standard which has British Standard status and supersedes BS 5572: 1994 Code of Practice for Sanitary Pipework which has been withdrawn. The new standard has five sections, parts 1, 2 and 5 deal specifically with sanitary pipework and parts 3 and 4 refer to roof drainage and the design of wastewater lifting plants.

Regular consultation is essential between Architects and Plumbing Engineers throughout the building design stage as the careful arrangement of kitchen and bathroom appliances will simplify the final sanitary pipework layout. This will help to ensure that an efficient sanitary pipework system is installed at minimum cost.

The design information provided in this catalogue is endorsed in the above publications and while every effort has been made to ensure accuracy, no responsibility can be accepted for errors or omissions. For detailed guidance please consult the relevant documents referred to above.

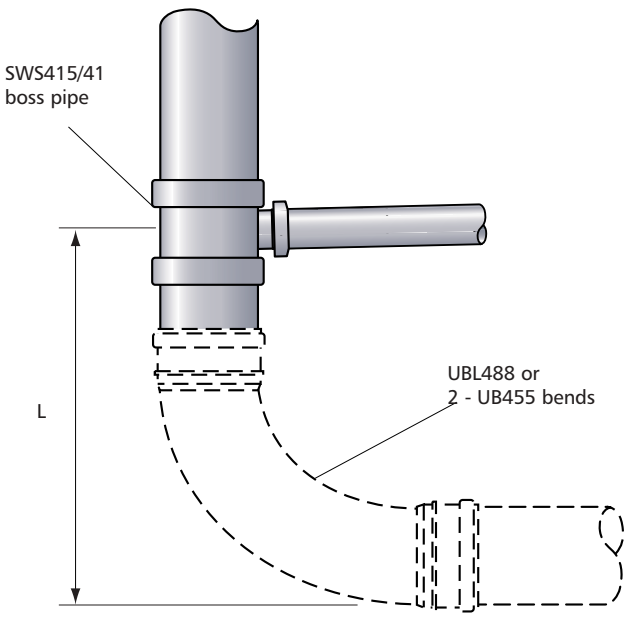
Bends at the base of stacks

Bends at the base of vertical stacks should be of long radius and have a minimum centre line radius of 200mm on a 110mm nominal size stack. Two 45° radius bends may also be used as an alternative to provide the change of direction and connection to the building drain. The same design principle should also be adopted where offsets occur in stacks of one or more storey height.



Branches at the base of stacks

For single dwellings up to three storeys high, the distance between the centre line of the lowest branch connection and the invert of the drain should be at least 450mm. For multi-storey systems up to five storeys high, the minimum distance should be 740mm and for systems higher than five floors no connections are permissible at ground floor level. Where this occurs a separate stub stack should be provided to serve the ground floor or individual appliances should have their own separate connection to the building drain.



L = 450mm up to three storeys high
L = 740mm up to five storeys high
L = one storey height, over five storeys

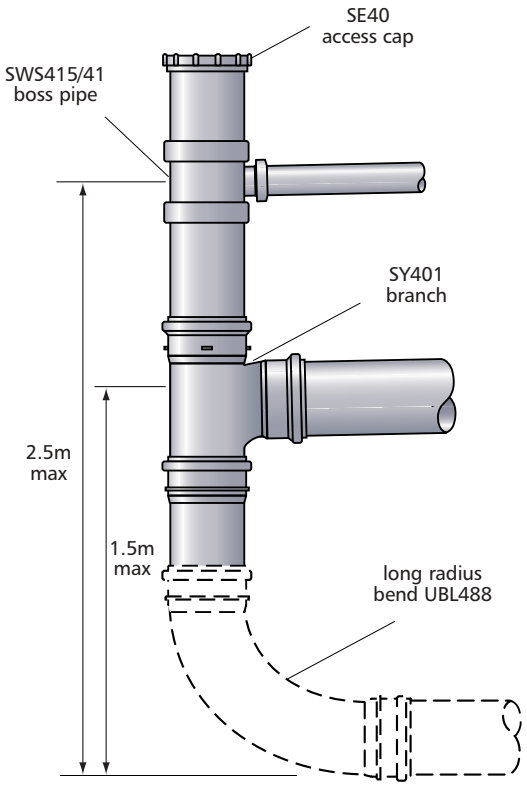
NB: Typical fittings illustrated, alternatives are available.

Offsets in stacks

Offsets in the wet portion of a discharge stack should be avoided wherever possible but where they have to be fitted a large radius or two 45° bends should be used to create each change of direction. Offsets in lightly loaded stacks up to three storeys high do not require offset venting but on multi-storey buildings this may be necessary depending on the loading of the stack and the numbers of floors above the offset. The principles previously described for bends and branches at the base of a stack should also be applied.

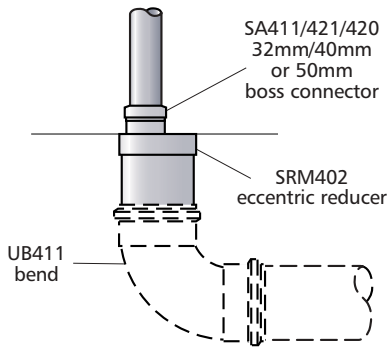
Stub stacks

An unventilated stub stack terminated with an access fitting may be used to connect a group of ground floor appliances to the building drain provided the vertical drop to the invert level of the drain does not exceed 1.5m from a WC and 2.5m from a waste appliance. Where one or more stub stacks are connected to the same drain, the head of the run should be ventilated to atmosphere or air admittance valves fitted to each stub stack arrangement.



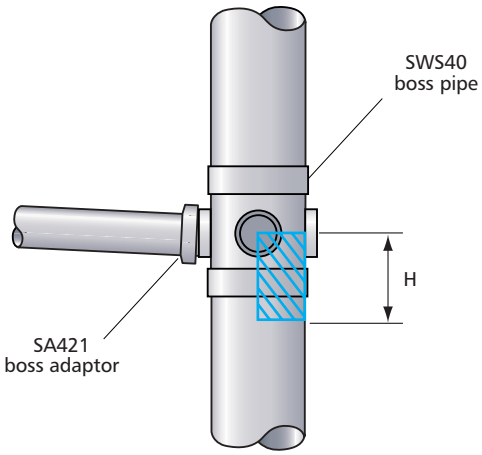
Stub waste

This technique is often used to connect isolated ground floor waste appliances such as basins, baths, shower trays and sinks to eliminate exposed pipework or low level ducting. The 110mm unventilated PVCu drain is terminated at finished floor level with a reducer and boss adaptor to suit the size of waste from the appliance.



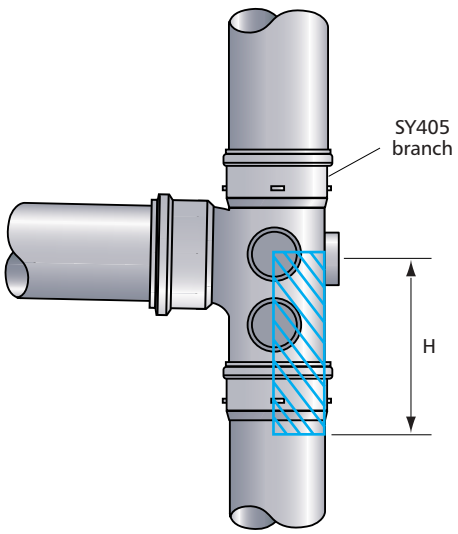
Prevention of cross-flow

Where small diameter branch waste pipes connect to a discharge stack they must be arranged to eliminate the risk of cross-flow from one branch to the other. A branch creates a no entry zone for opposing waste connections, which varies depending on the stack diameter. No connections should be made within the restricted zone although entry is permissible on the centre line of the boundary directly opposite or at right angles.



Stack size	Height of zone 'H'
82mm	90mm
110mm	110mm
160mm	250mm

To prevent cross-flow from a large diameter branch to a smaller waste connection, the latter should be made to the stack at or above the centre line of the larger branch, at right angles or at least 200mm below the restricted zone. Entry is permissible on the boundary centre line directly opposite or at right angles.

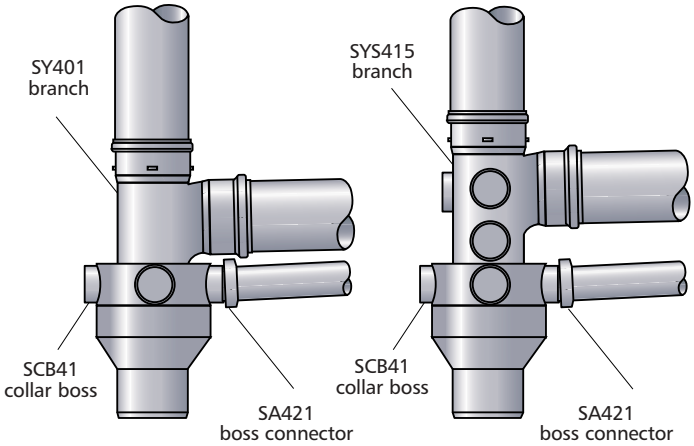


'H' = 200mm irrespective of stack diameter

Prevention of cross-flow

The Marley Collar Boss was specifically designed to overcome installation problems imposed by the 200mm restricted zone and to allow multiple low level bath or shower waste pipes to be connected to the stack above floor level. Cross-flow is prevented as the circular annular chamber protects the small diameter waste connections from the WC discharge allowing waste water to flow freely and merge below the critical zone.

Different combinations of 110mm branches can be used with the collar boss to accommodate various WC positions which may be up to 3 metres from the vertical stack.

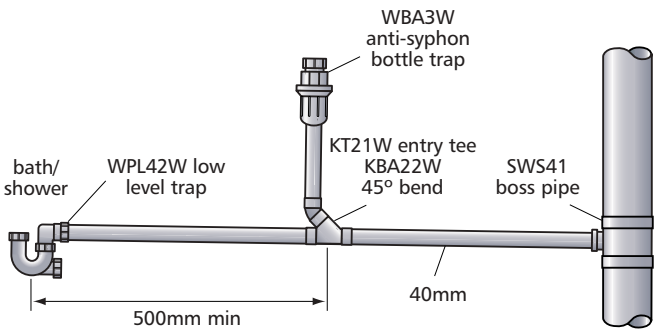


A five boss branch may be used in some situations in preference to the collar boss but its use is dependant on the position of sanitary appliances in relation to the stack.

Combined branch waste

A combined branch waste is often used to connect a bath and/or shower and basin to the discharge stack as this allows waste pipework to be neatly concealed in a low level duct.

Where this technique is adopted a 45° entry tee must be used to ensure the basin discharge is swept in the direction of flow towards the stack. The minimum distance between the bath or shower and basin connection should not be less than 500mm and it is recommended that an anti-syphon bottle trap is fitted to the basin or a vent provided to protect the appliance from self-syphonage.



It is recommended that the distance of the combined waste does not exceed 3 metres, however, experience has shown that longer runs using 40 or 50mm pipework has proved successful provided adequate fall can be obtained to ensure self-cleansing velocity is maintained.

Marley Monitor anti-syphon trap

The Marley Monitor anti-syphon bottle trap, WBA3W/WBA4W, was specially developed to prevent self-syphonage from basins, which can occur particularly where the waste pipe drops vertically from the appliance before falling at an even gradient to the discharge stack. The trap also eliminates the need for a secondary vent pipe where basins are located further than the recommended 3m maximum from the stack. Non-mechanical, the trap operates as air is drawn in through a central by-pass tube to eliminate any syphonic action and ensure the trap seal is maintained.

Generally appliances such as sinks, baths and showers do not suffer from self-syphonage as the trap seal is replenished at the end of the discharge due to the flat bottom design of the appliance. Tubular traps are recommended for such appliances as they ensure unrestricted discharge and reduce the risk of blockage and prevent the accumulation of sediment.

The WSB4W shallow trap has a 20mm water seal and is supplied to satisfy customer demand. It is recommended its use is restricted to ground floor baths and showers that discharge directly to an external trapped gully. It should not be fitted to a bath or shower where the waste pipe is connected to a soil stack.

Branch pipe gradients

The gradient of a branch pipe should be uniform and adequate to drain the pipe and appliance efficiently. A minimum gradient of 18mm/metre should be adopted for 32, 40 and 50mm nominal size pipes but larger diameter 82, 110 and 160mm branch runs may be laid flatter at 9mm/metre fall where the discharge flow rate exceeds 2.5litres/second.

Branch pipe lengths

The following information is taken from Table 8 of BS EN 12056: 2: 2000 and provides general guidance on the recommended lengths of unventilated branch pipes for a variety of sanitary appliances.

Appliances	Dia mm	Min.trap seal depth mm	Max. length of pipe m	Pipe gradient %	Max. bends No.	Max. drop (H) m
Washbasin or bidet	32	75	1.7	2.2	0	0
Washbasin or bidet	40	75	3.0	1.8 to 4.4	2	0
Bath or shower	40	50	No limit	1.8 to 9.0	No limit	1.5
Bowl urinal	40	50	3.0	1.8 to 9.0	No limit	1.5
Trough urinal	50	75	3.0	1.8 to 9.0	No limit	1.5
Kitchen sink	40	75	No limit	1.8 to 9.0	No limit	1.5
Dishwasher or washing machine	40	75	3.0	1.8 to 4.4	No limit	1.5
WC	110	50	No limit	1.8 Min	No limit	1.5

The maximum lengths given above may be increased where the branch pipe is ventilated or an air admittance valve is used. For further details refer to the above standard.

Durgo air admittance valve

The Durgo valve is designed to reduce the number of ventilating pipes and subsequent roof penetrations in domestic, commercial and public buildings. Suitable for use in sanitary pipework systems up to ten storeys high, the valve must be fitted in a vertical position above the flood level of the highest appliance connecting to the stack. Valves should be installed within the building in a ventilated duct or roof space where there is no risk of freezing and must be accessible for inspection and testing.

The 50, 82 and 110mm size valves have been assessed by the British Board of Agrément and awarded Certificate No 97/3427 which permits their use in accordance with the Building Regulations. A copy of the full certificate is available and provides comprehensive information on their use and installation.

When installed the valve will remain closed unless the system is subject to negative pressure whereby the diaphragm will lift and allow air to be drawn in to eliminate symphonic action. Positive pressure ensures the valve closes and prevents foul air escaping from the system. Each valve is supplied boxed with a polystyrene insulation cover that should remain in position after installation, as this will protect the valve against freezing, particularly when installed in a roof space.

To ventilate the underground drainage system and to minimise the effects of back pressure should a blockage occur, the branch or main drain serving a stack or stacks fitted with Durgo valves may require conventional venting at a point upstream of the stack connection.

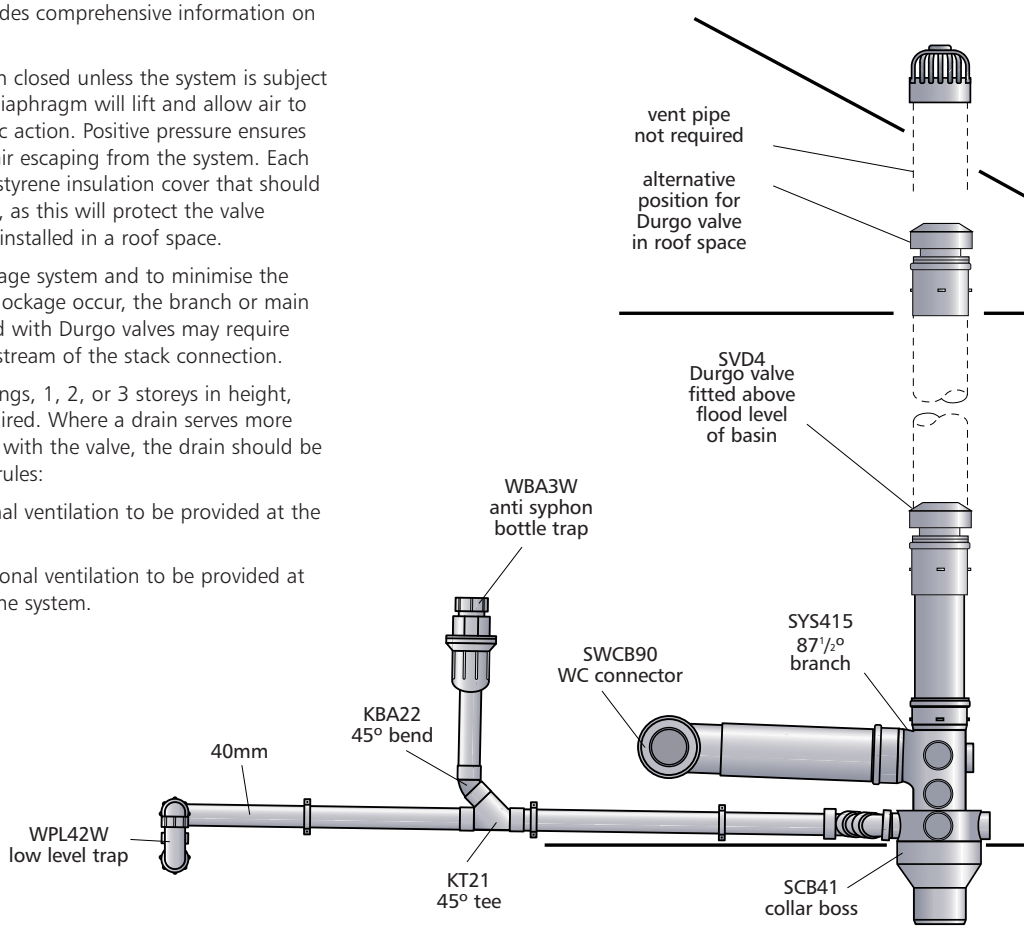
For up to and including four dwellings, 1, 2, or 3 storeys in height, additional drain venting is not required. Where a drain serves more than four such dwellings equipped with the valve, the drain should be vented according to the following rules:

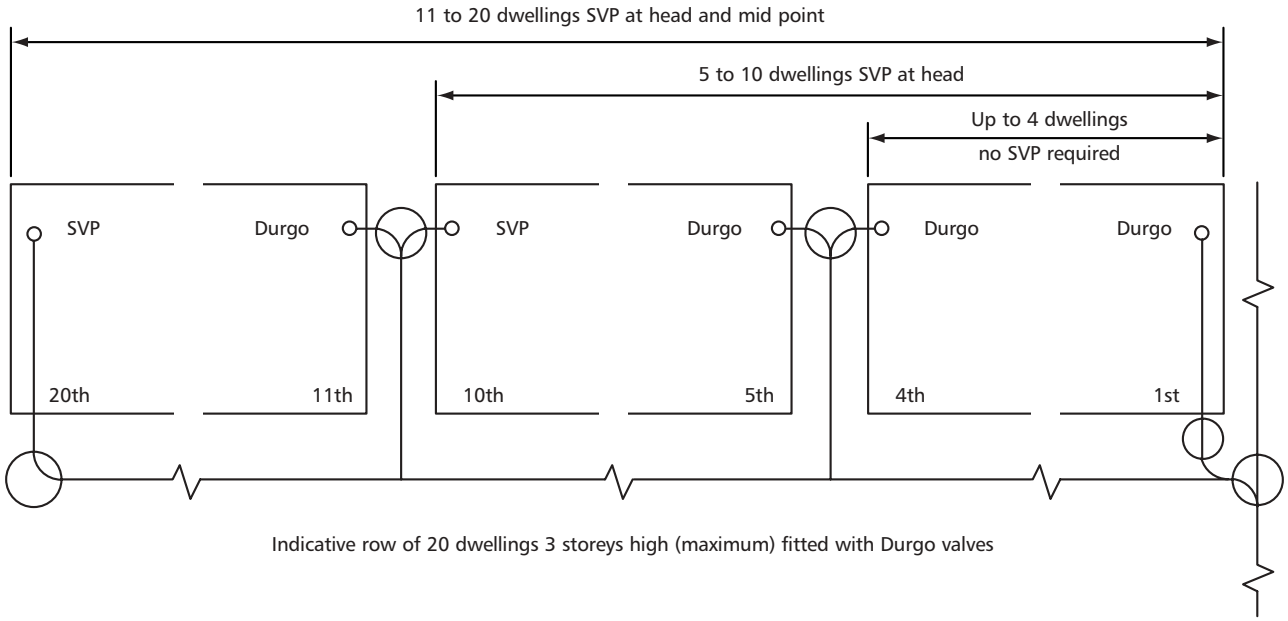
5 to 10 such dwelling – conventional ventilation to be provided at the head of the system.

11 to 20 such dwellings – conventional ventilation to be provided at the mid-point and at the head of the system.

For multi-storey domestic dwellings (other than those referred to previously) and non-domestic buildings, conventional drain venting should be provided if more than one such building, each equipped with the valves, is connected to a common drain which itself is not vented by means of a ventilating stack or a discharge stack not fitted with a valve.

Stacks should not be fitted with valves when the connecting drain is subject to periodic surcharging or is fitted with an intercepting trap. An open vent must be provided and this also applies to stacks that discharge to a cesspool or septic tank.





Indicative row of 20 dwellings 3 storeys high (maximum) fitted with Durgo valves

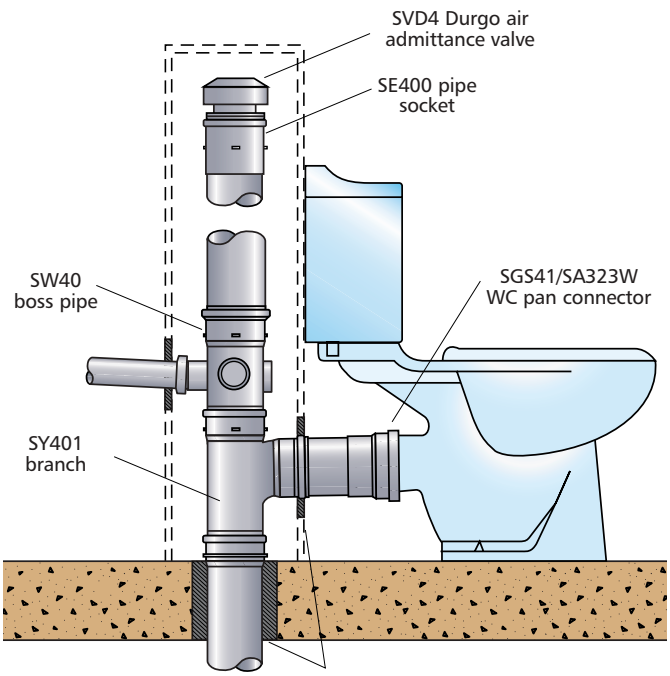
Fire protection

The Building Regulations 1991 (as amended) require that a building shall be sub-divided into compartments where necessary to inhibit the spread of fire. Plastics pipework is permitted to penetrate separating walls, compartment walls and floors provided the appropriate measures are taken to prevent the spread of fire in accordance with Part B of the Approved Document (1992).

To comply with this, pipes must be enclosed within a fire resistance enclosure which extends from floor to ceiling within each storey. The enclosure must have a class 'O' internal surface and have each side formed by a separating wall, external wall or by casing. Any casing must have a minimum ½ hour fire resistance and penetrations of the duct must be limited to 160mm vertical and 110mm horizontal.

Where longer periods of fire resistance are required, Marley fire sleeves or pipe wraps can be fitted to provide a fire rating of up to 4 hours depending on the actual construction detail. Tests carried out at the Warrington Fire Research Centre in accordance with BS 476: Part 20: 1987 verified the integrity of each construction detail shown opposite in respect of fire spread.

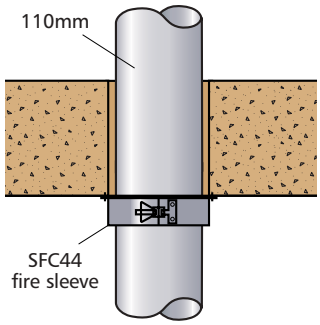
In addition to the above, tests carried out at FIRTO on a variety of typical sanitary pipework arrangements proved that it was possible to achieve up to 1½ hour fire rating through a compartment floor without a fire sleeve or pipe wrap where the stack was terminated by an air admittance valve. Various other arrangements were also tested and achieved a minimum of 2 hours integrity. The test work and technical evaluation was independently assessed by the British Board of Agrément who issued Agrément Certificate 86/1785 together with eleven detail sheets illustrating each assembly. Copies of this original certificate and the detail sheets are available from Marley Plumbing & Drainage.



Floor and enclosure fire stopped at all openings using materials meeting building regulation requirements

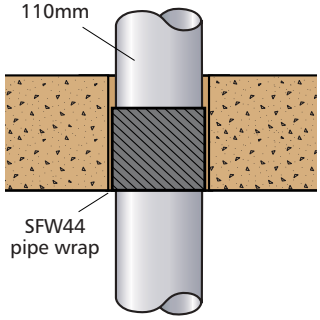
The construction illustrated above achieved a 1½ hour fire resistance rating without the need for a fire resistance enclosure. The enclosure is necessary to achieve a 2 hour rating.

Pipe size (mm)	55	82	110	160



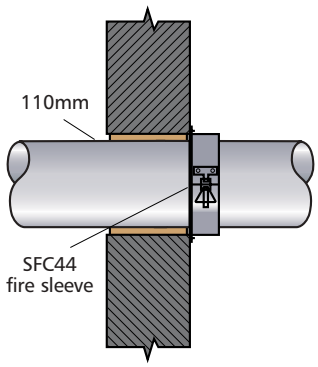
Fire sleeve
fixed to soffit of floor

Fire rating			
240 mins	180 mins	240 mins	120 mins



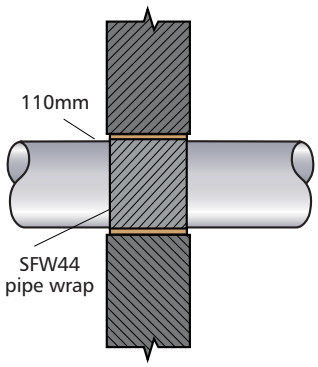
Pipe wrap
fixed to inside of floor

Fire rating			
120 mins	180 mins	240 mins	120 mins



Fire sleeve
fixed to exposed fire side on wall

Fire rating			
240 mins	240 mins	240 mins	240 mins



Pipe wrap
fixed to inside of wall

Fire rating			
240 mins	240 mins	240 mins	240 mins

WC manifold system

Developed for use in sanitary pipework systems in schools, hospitals, public and commercial buildings, the manifold system allows ranges of toilets to be connected to a horizontal float above floor level and eliminate the need for specially fabricated fittings.

The components are suitable for installation in a duct, or for fitting on the surface of the wall directly behind the pan. Where the manifold is fitted directly behind the range of toilets, the minimum distance between the end of the WC spigot and the face of the wall is 150mm. To facilitate varying angles and gradients the 110 x 90mm manifold branch has a radial socket to match both options of adjustable WC bend. When the selected bend is cut to the appropriate line and solvent welded into the socket on the manifold branch a uniform fall is obtained between each toilet on the horizontal float.

To accommodate different dimensions between the WC spigot and horizontal float, the adjustable spigot bend SM43W may be trimmed by up to 35mm or the extension pipe SM45W can be used with the pan connector SM44W and SA323W cap & seal.

The WC socket on both the SM42W and SM44W should be trimmed to suit the length of pan spigot before the SA323W is fitted.

For installation details see page 53.

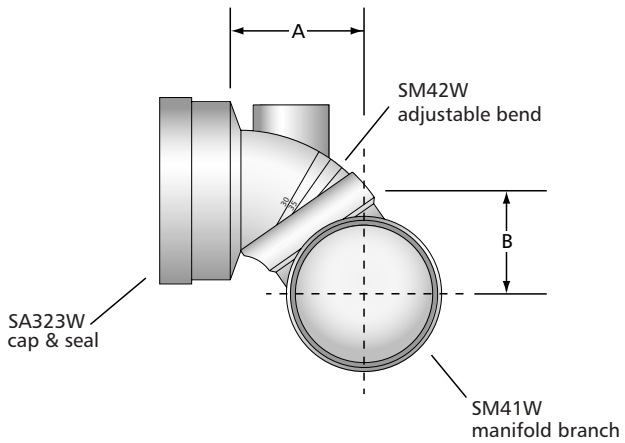
Manifold branch SM41W with SM42W

cut line	A projection	B drop
50°	93mm	69mm
55°	93mm	77mm
60°	92mm	85mm
65°	91mm	93mm
70°	90mm	101mm
75°	87mm	109mm
80°	84mm	116mm
85°	80mm	123mm
90°	75mm	130mm

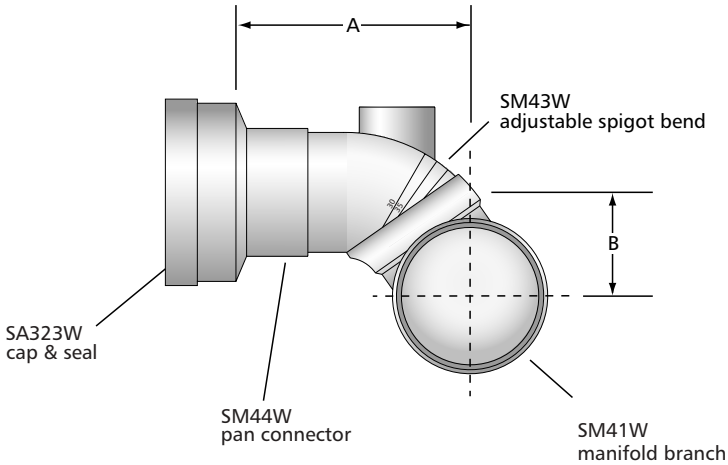
Manifold branch SM41W with SM43W

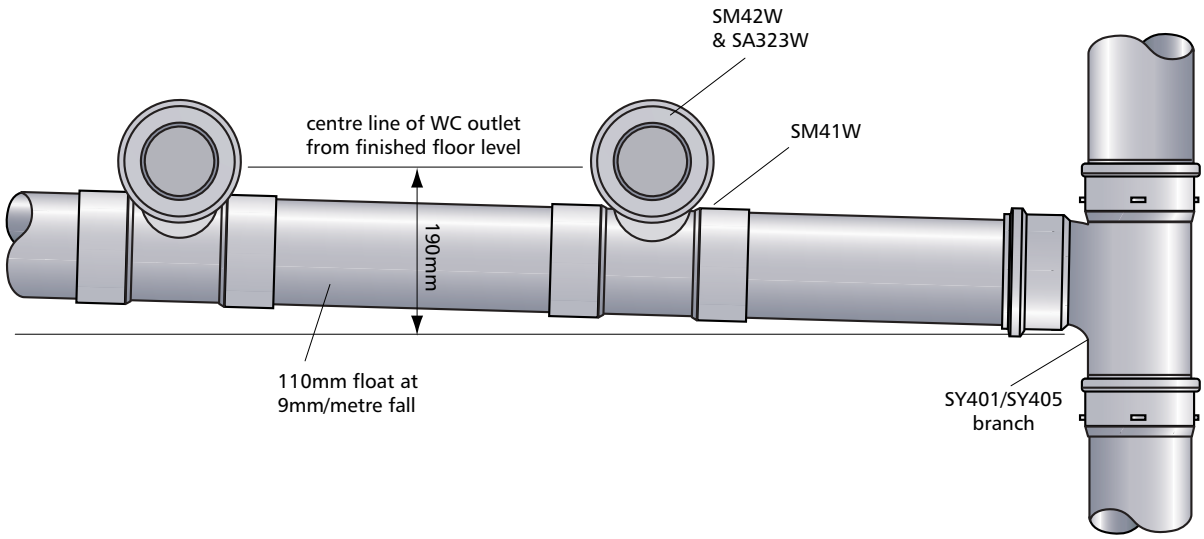
cut line	A projection	B drop
50°	180mm	69mm
55°	180mm	77mm
60°	179mm	85mm
65°	178mm	93mm
70°	177mm	101mm
75°	174mm	109mm
80°	171mm	116mm
85°	167mm	123mm
90°	162mm	130mm

Manifold branch SM41W with SM42W

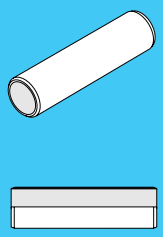


Manifold branch SM41W with SM43W





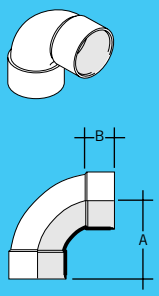
The Marley Soil & Waste Product Range



Pipe

Size mm		Code	Length m	
32	●◆	KP104	4	
40	●◆	KP204	4	
50	●	KP304	4	

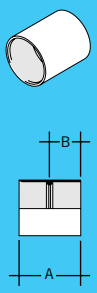
Double spigot



Bend

Size mm		Code	Angle	A	B	
32	●◆	KB1	88½°	57	18	
40	●◆	KB2	88½°	62	21	
50	●	KB3	88½°	78	28	

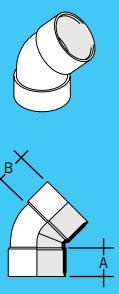
Solvent sockets



Straight coupling

Size mm		Code	A	B	
32	●◆	KSC1	46	20	
40	●◆	KSC2	53	24	
50	●	KSC3	66	28	

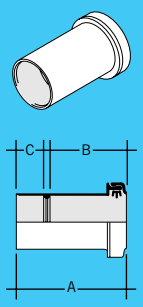
Solvent sockets



Bend

Size mm		Code	Angle	A	B	
32	●◆	KB12	45°	29	18	
40	●◆	KB22	45°	33	21	
50	●	KB32	45°	42	28	

Solvent sockets

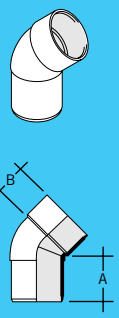


Expansion coupling /copper adaptor

Size mm	Code	A	B	C	
32	KEC1	86	61	20	
40	KEC2	90	64	23	
50	KEC3	82	50	30	

Ring seal/solvent socket

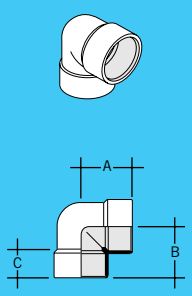
Multi-fit ring seal socket to accept plastic pipework to BS 5255 and BS 5254 and to copper to BS 2871 (metric) and BS 659 (imperial)



Spigot bend

Size mm	Code	Angle	A	B
32	KBA12	45°	24	23
40	KBA22	45°	35	26

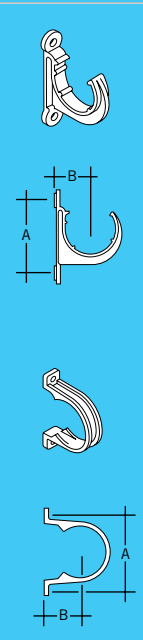
Solvent socket/spigot



Knuckle bend

Size mm		Code	Angle	A	B	C	
40	●◆	KBK25	90°	48	48	23	
50		KBK35	see page 39				

Solvent sockets



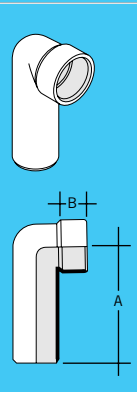
Pipe clip

Size mm		Code	A	B	
32	●◆	KF1	57	30	
40	●◆	KF2	62	30	
50	●	KF3	77	41	

PVCu (Open)

32	●	WC3	57	30	
40	●	WC4	64	30	
50		WC5	80	41	

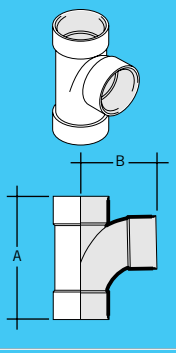
ABS (Saddle)



Long spigot bend

Size mm	Code	Angle	A	B
32	KBS1	87½°	92	18
40	KBS2	87½°	92	23

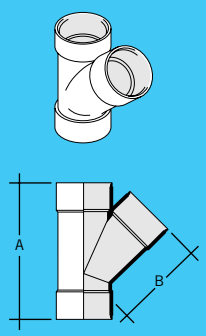
Solvent socket/spigot



Tee

Size mm	Code	Angle	A	B	
32	●◆ KT1	88½°	92	57	
40	●◆ KT2	88½°	106	62	
50	● KT3	88½°	135	78	

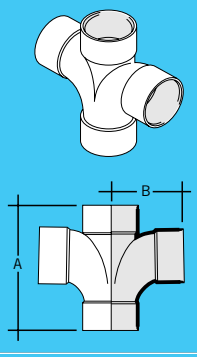
Solvent sockets



Tee

Size mm	Code	Angle	A	B	
32	KT11	45°	102	66	
40	KT21	45°	117	78	
50	KT31	45°	149	100	

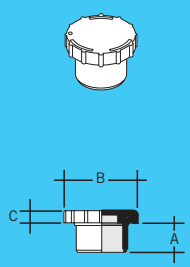
Solvent sockets



Cross tee

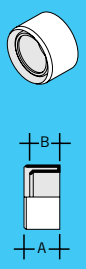
Size mm	Code	Angle	A	B	
40	KXT21	88½°	106	62	
50	KXT31	88½°	140	87	

Solvent sockets



Access cap

Size mm	Code	A	B	C	
32	●◆ KAP1	29	53	8	
40	●◆ KAP2	33	57	8	
50	● KAP3	39	71	8	



Socket reducer

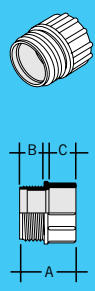
Size mm	Code	A	B	
32 x 21.5	KR175	22	20	
40 x 32	●◆ KR210	28	22	
50 x 32	● KR310	32	28	
50 x 40	● KR320	32	28	

Solvent spigot/socket

Female iron adaptor

Size mm	Code	A	B	C	
32	KFA1	50	25	20	
40	KFA2	53	25	24	
50	KFA3	60	25	28	

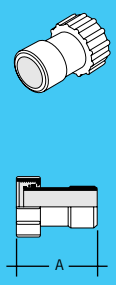
Solvent socket/BSP thread



Male iron adaptor

Size mm	Code	A	B	C	
32	KMA1	44	20	20	
40	KMA2	47	20	24	
50	KMA3	53	20	28	

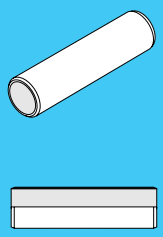
Solvent solvent/BSP thread



Cap & lining

Size mm	Code	A
32	KFC125	58

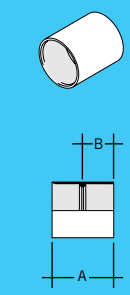
Spigot/1¼" BSP nut



Pipe

Size mm	Code	Length m	
32●▲	WAP33	3	
40●▲	WAP43	3	
50●▲	WAP53	3	

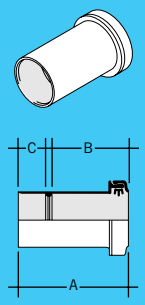
Double spigot



Straight coupling

Size mm	Code	A	B	
32 ●▲	WAC3	45	20	
40 ●▲	WAC4	49	23	
50 ●▲	WAC5	63	30	

Solvent sockets

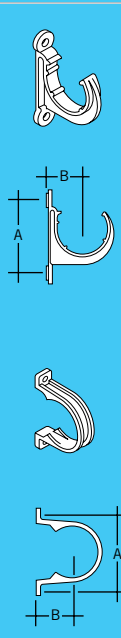


Expansion coupling /copper adaptor

Size mm	Code	A	B	C
32	WAC31	86	61	20
40	WAC41	90	64	23
50	WAC51	82	50	30

Ring seal/solvent socket

Multi-fit ring seal socket to accept plastic pipework to BS 5255 and BS 5254 and to copper to BS 2871 (metric) and BS 659 (imperial)



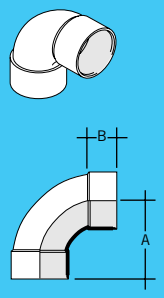
Pipe clip

Size mm	Code	A	B	
32 ●▲	KF1	57	30	
40 ●▲	KF2	62	30	
50 ●▲	KF3	77	41	

PVCu (Open)

32 ●▲	WC3	57	30	
40 ●▲	WC4	64	30	
50	WC5	80	41	

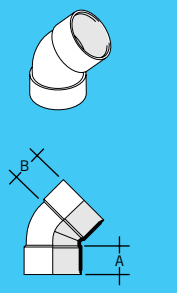
ABS (Saddle)



Bend

Size mm	Code	Angle	A	B	
32 ●▲	WAB3	88½°	55	20	
40 ●▲	WAB4	88½°	64	23	
50 ●▲	WAB5	88½°	86	30	

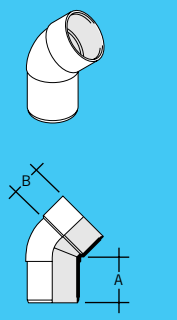
Solvent sockets



Bend

Size mm	Code	Angle	A	B	
32 ●▲	WAB31	45°	32	20	
40 ●▲	WAB41	45°	36	23	
50 ●▲	WAB51	45°	47	30	

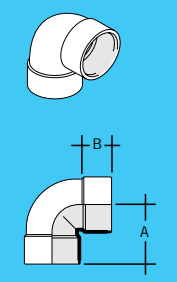
Solvent sockets



Spigot bend

Size mm	Code	Angle	A	B	
32	WAB32	45°	45	20	
40	WAB42	45°	48	23	

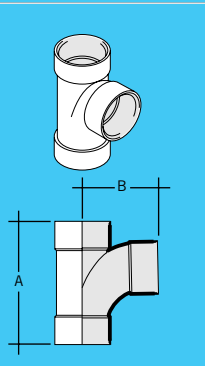
Solvent socket/spigot



Knuckle bend

Size mm	Code	Angle	A	B	
32 ●▲	WAB33	90°	44	20	
40 ●▲	WAB43	90°	53	23	

Solvent sockets

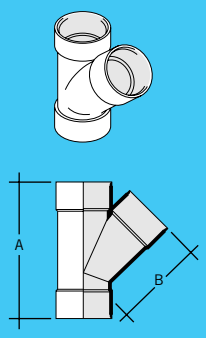


Tee

Size mm	Code	Angle	A	B	
32 ●▲	WAT3	88½°	90	55	
40 ●▲	WAT4	88½°	107	64	
50 ●▲	WAT5	88½°	140	86	

Solvent sockets

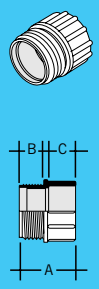
Tee



Size mm	Code	Angle	A	B	
32	WAT31	45°	102	65	
40	WAT41	45°	117	79	
50	WAT51	45°	150	100	

Solvent sockets

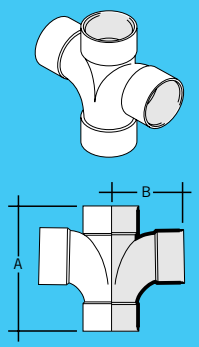
Male iron adaptor



Size mm	Code	A	B	C	
32	WAM3	44	20	20	
40	WAM4	47	20	24	
50	WAM5	53	20	28	

Solvent solvent/BSP thread

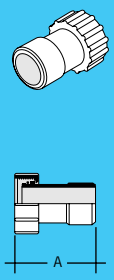
Cross tee



Size mm	Code	Angle	A	B	
40	WAT42	88½°	106	65	
50	WAT52	88½°	140	88	

Solvent sockets

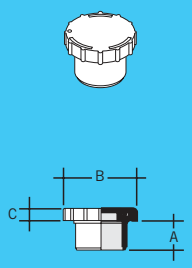
Cap & lining



Size mm	Code	A	
32 ●▲	WAM31	58	

Spigot/1¼" BSP nut

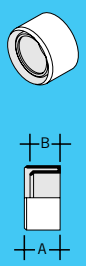
Access plug



Size mm	Code	A	B	C	
32 ●▲	WAA3	29	53	8	
40 ●▲	WAA4	33	57	8	
50 ●▲	WAA5	39	71	8	

(Spigot)

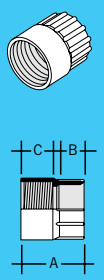
Socket reducer



Size mm	Code	A	B	
40 x 32 ●▲	WAR43	26	20	
50 x 32 ●▲	WAR53	31	20	
50 x 40 ●▲	WAR54	31	23	

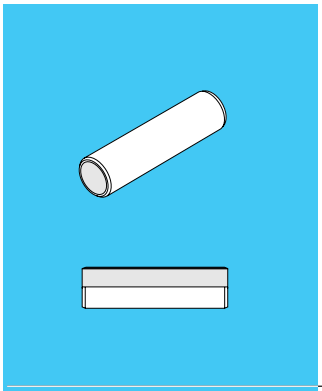
Solvent spigot/socket

Female iron adaptor



Size mm	Code	A	B	C	
32	WAF3	50	25	25	
40	WAF4	53	25	24	
50	WAF5	60	25	28	

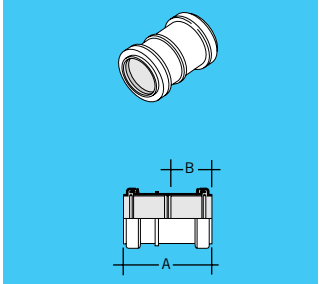
Solvent socket/BSP thread



Pipe

Size mm	Code	Length m
32	WPP33	3
40	WPP43	3

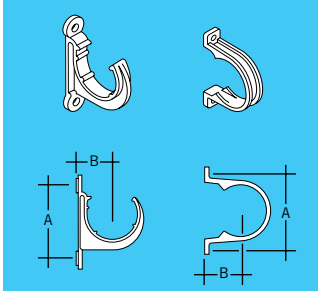
Double spigot



Straight coupling

Size mm	Code	A	B
32	WPC3	66	38
40	WPC4	69	38

Ring seal sockets



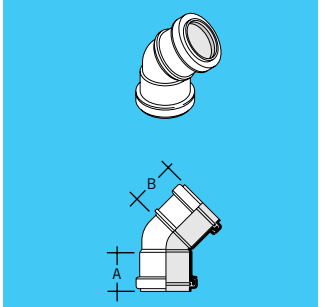
Pipe clip

Size mm	Code	A	B	
32	KF1	57	30	
40	KF2	62	30	

PVCu (Open)

32	WC3	57	30	
40	WC4	64	30	

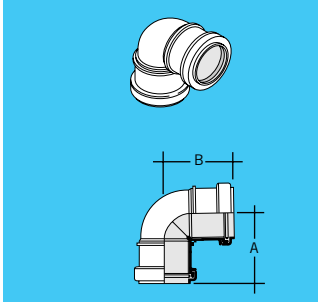
ABS (Saddle)



Bend

Size mm	Code	Angle	A	B
32	WPB31	45°	42	42
40	WPB41	45°	43	43

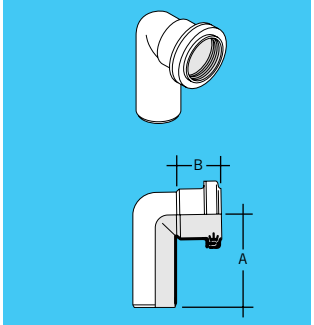
Ring seal sockets



Knuckle bend

Size mm	Code	Angle	A	B
32	WPB33	88½°	60	60
40	WPB43	88½°	65	65

Ring seal sockets

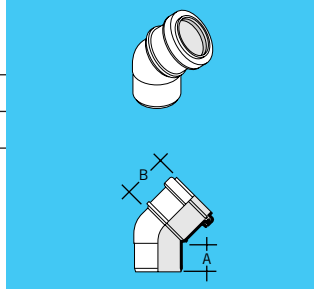


Spigot bend

Size mm	Code	Angle	A	B
32	WPB34	88½°	75	37
40	WPB44	88½°	75	37

Spigot/socket

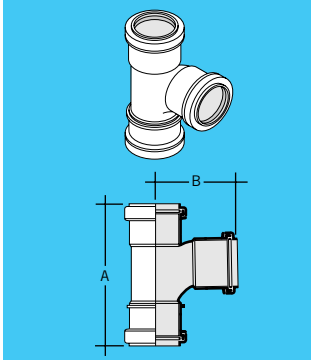
Multi-fit socket to accept plastic pipework to BS 5255 and BS 5254 and to copper pipework to BS 2871 (metric) and BS 659 (imperial)



Spigot bend

Size mm	Code	Angle	A	B
32	WPB32	45°	36	31
40	WPB42	45°	36	32

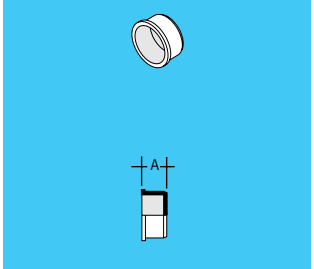
Spigot/ring seal socket



Tee

Size mm	Code	Angle	A	B
32	WPT3	88½°	105	63
40	WPT4	88½°	115	68

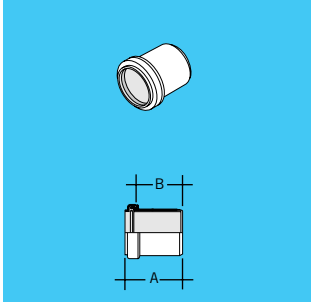
Ring seal sockets



Access plug

Size mm	Code	A
32	WPA31	20
40	WPA41	20

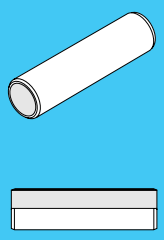
Push-fit spigot



Reducer

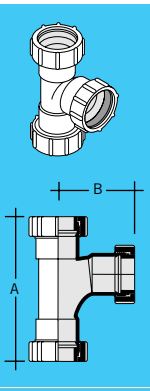
Size mm	Code	A	B
40x32	WPR43	45	36

Socket/spigot



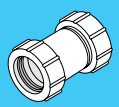
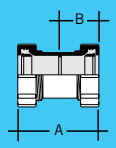
Pipe

Size mm	Code	Length m
32	WPP32WX	2
40	WPP42WX	2



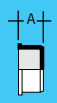
Tee

Size mm	Code	Angle	A	B
32	KMT1XR	88½°	124	65
40	KMT2XR	88½°	134	72

Straight coupling

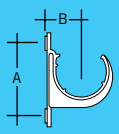
Size mm	Code	A	B
32	WCC3	75	25
40	WCC4	75	25

Access plug

Size mm	Code	A	
32	KMP1XR	22	♡
40	KMP2XR	22	♡

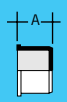
Push-fit spigot

Pipe clip

Size mm	Code	A	B	
32	KMF1XR	57	30	♡
40	KMF2XR	62	30	♡

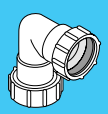
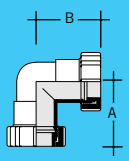
PVCu
Pack of 3

Reducer

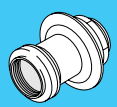
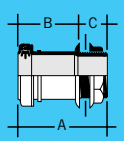
Size mm	Code	A	B
40x32	KMR1XR	32	24

Rubber

Bend

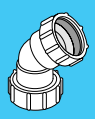
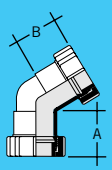
Size mm	Code	Angle	A	B
32	KMB1XR	90°	55	60
40	KMB2XR	90°	58	65

Multi-fit straight tank connector

Size mm	Code	A	B	C	Hole size	
32	WUM33	86	56	24	42	♡
40	WUM43	86	58	24	50	♡

Including washers. Grey only

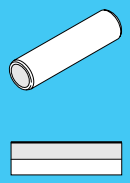



Bend

Size mm	Code	Angle	A	B
32	KMB12XR	45°	41	41
40	KMB22XR	45°	41	41

Multi-fit socket to accept plastic pipework to BS 5255 and BS 5254 and to copper pipework to BS 2871 (metric) and BS 659 (imperial)

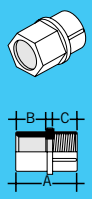
Colours: Available in White only unless indicated



Pipe

Size mm	Code	Length m
21.5	◆ OP21	4

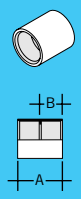
Double spigot



Female iron adaptor

Size mm	Code	A	B	C
21.5	OFA21	47	23	19

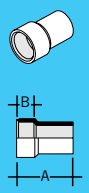
Solvent socket/BSP thread



Straight coupling

Size mm	Code	A	B
21.5	OSC21	28	13

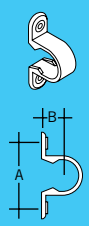
Solvent sockets



Straight adaptor

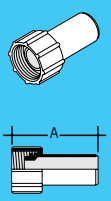
Size mm	Code	A	B
21.5	OCA21	39	13

Solvent socket - 22mm / Spigot - 21.5mm



Pipe clip

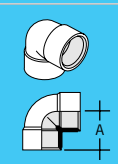
Size mm	Code	A	B
21.5	OC21	44	14



Cap and lining

Size mm	Code	A
21.5	OCL21	46

Spigot/BSP nut



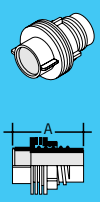
Bend

Size mm	Code	Angle	A
21.5	OB90	90°	25

Solvent sockets

Size mm	Code	Angle	A
21.5	OB45	45°	13

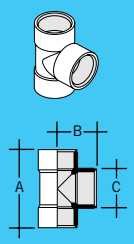
Solvent sockets



Straight tank connector

Size mm	Code	A
21.5	OTC21	50

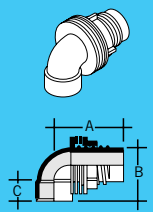
Solvent socket including polyethylene washers



Tee

Size mm	Code	Angle	A	B	C
21.5	OT90	90°	50	25	21.5

Solvent sockets

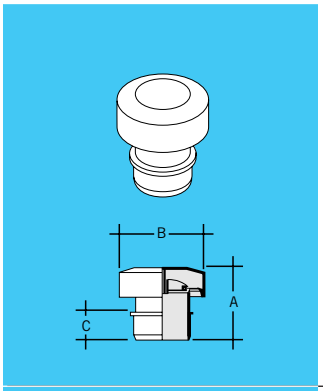


Bent tank connector

Size mm	Code	Angle	A	B	C
21.5	OBC90	90°	48	25	13

Solvent socket including polyethylene washers

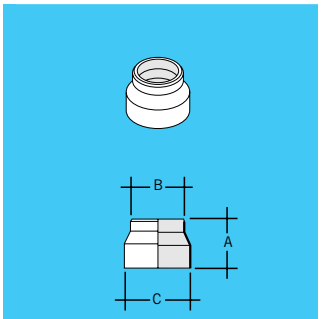
Available in White only unless indicated ◆ Available in Chestnut Brown



Durgo air admittance valve

Size mm	Code	A	B	C
50	▲SVD2	98	82	28

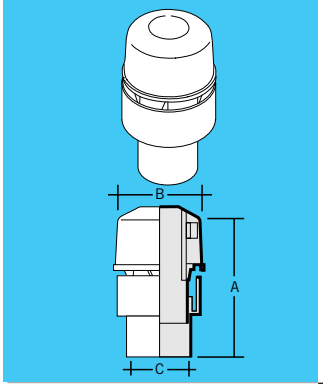
Push-fits into ring seal BS 5255 socket; includes a polystyrene insulating hood
Grey only



Vent slate cap

Size mm	Code	A	B	C
50	SV21	51	51	68

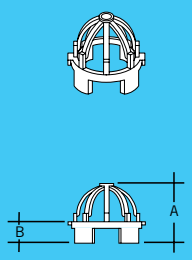
Black rubber



Marley air admittance valve

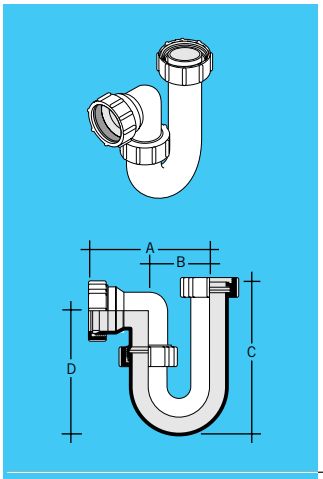
Size mm	Code	A	B	C
40	SVM12	80	63	43

Includes adaptor to 50mm and 32mm



Vent terminal

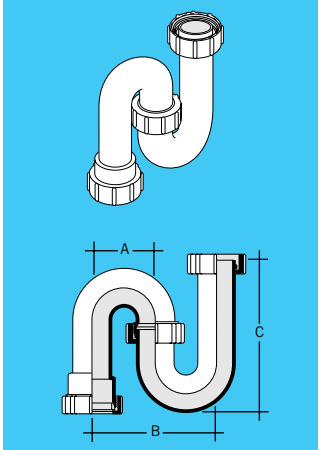
Size mm	Code	A	B
50 ●◆	RV225	55	18



Tubular 'P' trap

Size mm	Code	A	B	C	D
32	WPT3W	118	58	146	120
40	WPT4W	126	64	155	130

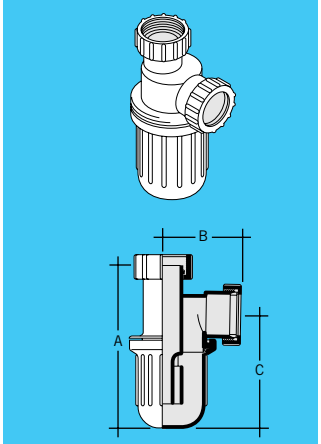
Universal compression waste outlet
75mm seal depth



Tubular 'S' trap

Size mm	Code	A	B	C
32	WST3W	58	116	146
40	WST4W	64	128	155

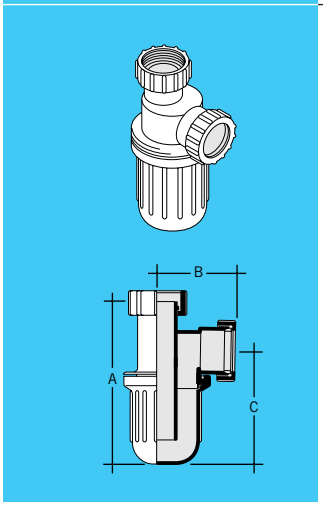
Universal compression waste outlet
75mm seal depth



Marley monitor anti-syphon bottle trap

Size mm	Code	A	B	C
32	WBA3W	163	87	114
40	WBA4W	169	87	117

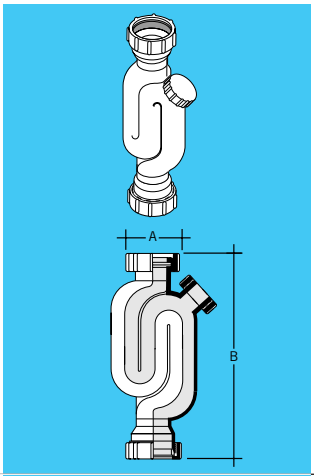
Universal compression waste outlet
75mm seal depth
Only recommended for use on basins



Bottle trap

Size mm	Code	A	B	C
32	WBT3W	163	87	114
40	WBT4W	169	87	117

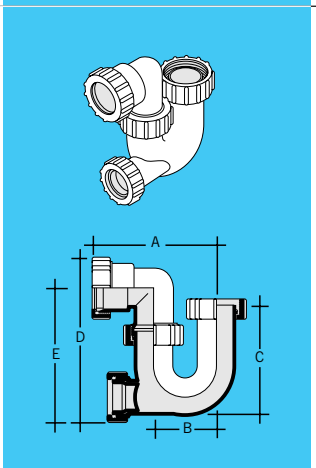
Universal compression waste outlet
75mm seal depth
Only recommended for use on basins



Slimline pedestal trap

Size mm	Code	A	B
32	KPT32XR	65	245

With access



Low inlet tubular bath trap

Size mm	Code	A	B	C	D	E
40	WPL41W	127	64	124	162	138

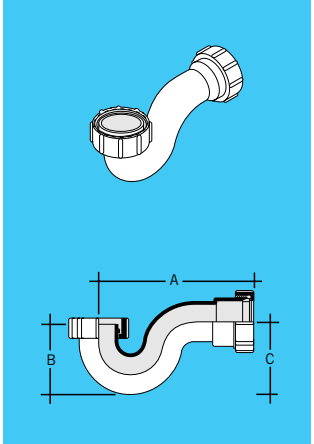
Plain

40	WPL42W	127	64	112	170	138

With access as illustrated (accepts overflow pipe)

40	WPL43W	127	64	112	170	138

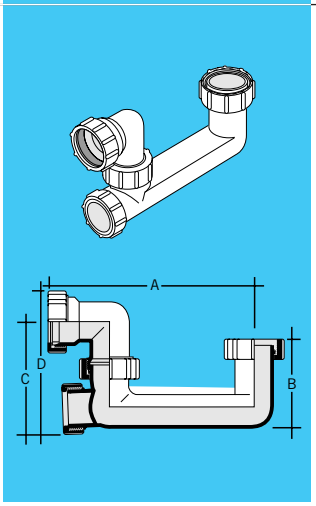
Complete with overflow and outlet, WOP1W & WBO1W
75mm seal depth to all versions



Shallow bath trap

Size mm	Code	A	B	C
40	WSB4W	145	70	75

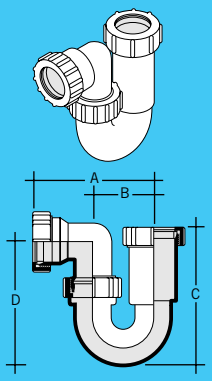
20mm seal depth
Only recommended for use on baths or showers on the ground floor or where discharge is to a trapped gully



Low level bath/shower trap

Size mm	Code	A	B	C	D
40	WBP42W	168	82	113	140

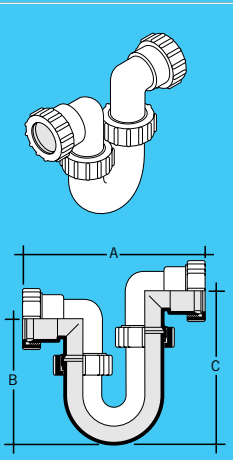
50mm seal depth with access accepts overflow pipe WOP2W



Washing machine kit

Size mm	Code	A	B	C	D
40	WPW4W	126	64	138	132

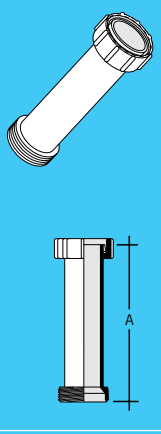
Includes 550mm upstand pipe, two clips & fixing screws
Only recommended for domestic applications



Running tubular 'P' trap

Size mm	Code	A	B	C
40	WPR4W	182	142	132
50	WPR5W	252	163	179

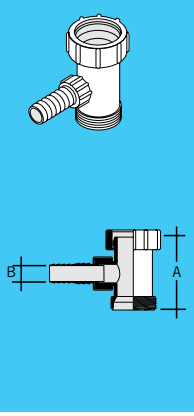
75mm seal depth



Trap height adjuster

Size mm	Code	A
32	WTA3W	130
40	WTA4W	130

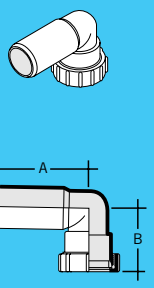
Can be trimmed to adjust trap height between 50mm and 90mm maximum



Washing machine dishwasher tee

Size mm	Code	A	B
40	WTW4W	78	19.5

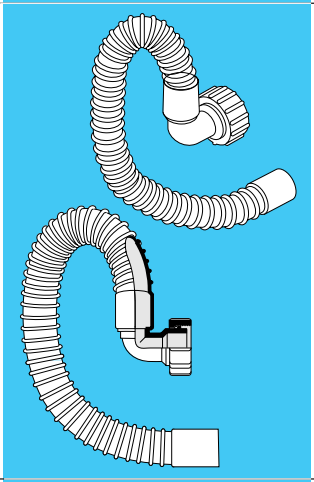
Can also be used to receive discharge from domestic condensate boilers



Universal trap bend

Size mm	Code	Angle	A	B
32	WTB3W	88½°	80	55
40	WTB4W	88½°	90	60

Converts 'P' to 'S' traps
Multi-fit compression socket accepts plastic pipework to BS 5255 and BS 5254 and copper pipework to BS 2871 (metric) and BS 659 (imperial)



Flexible overflow pipe

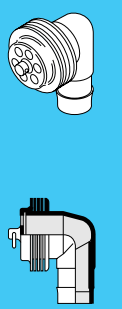
Size mm	Code
20	WOP1W

For use with WBO1W & WBO2W

20	WOP2W

For use with WBO1W & WBO2W

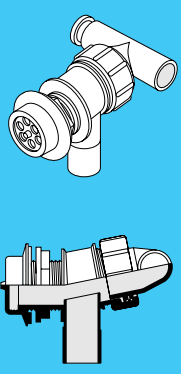
Including 1½" & 1¼" reducer for use with WBP42W



Bath overflow outlet

Size mm	Code
20	WBO1W

Chromium plated face

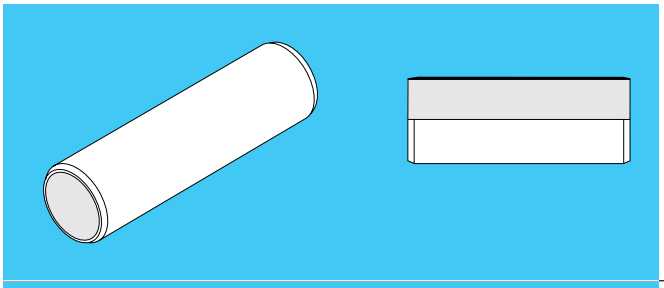


Bath overflow manifold

Size mm	Code
20	WBO2W

WRc Approval No. 891/2028
Multi-fit inlets to accept 21.5mm plastic and 22mm copper overflow pipe

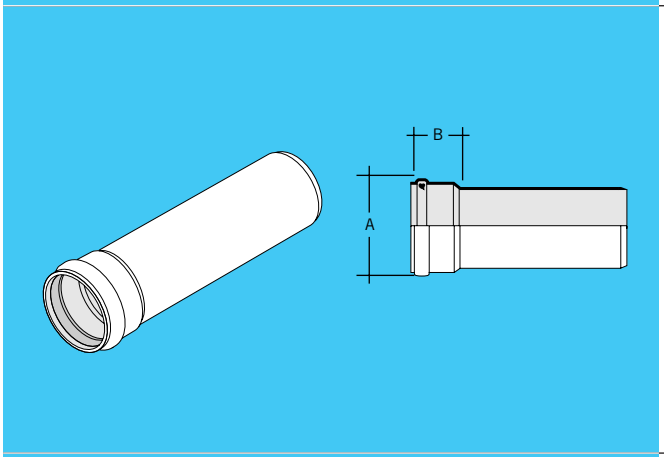
Colours: Available in White only



Pipe

Size mm		Code	Length m	
82		SL303	3	
110	●◆■	SL403	3	
110		SL404	4	

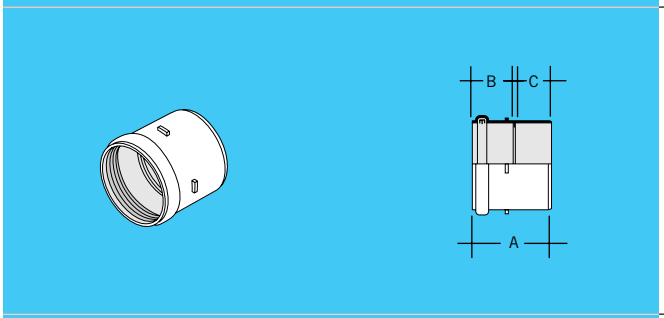
Double spigot with chamfer each end



Pipe

Size mm		Code	Length m	A	B	
82	●	SP303	3	100	76	
82		SP304	4	100	76	
110		SP4025	2.5	128	70	
110	●◆■	SP403	3	128	70	
110	●	SP404	4	128	70	
160		SP603	3	182	107	
160		SP604	4	182	107	

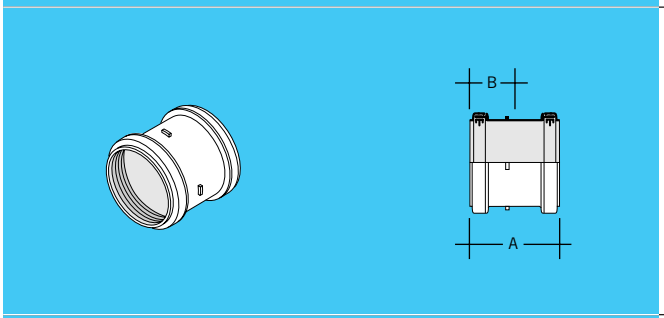
Ring seal socket/spigot



Coupling

Size mm		Code	A	B	C	
82	●	SE300	103	50	48	
110	●◆■	SE400	109	61	48	
160		SE600	190	107	77	

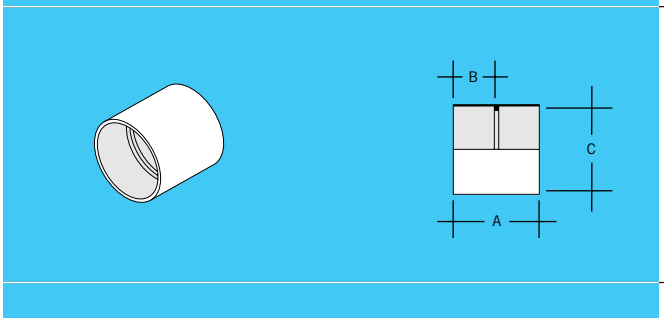
Ring seal/solvent socket



Coupling

Size mm	Code	A	B	
82	SE305	104	49	
110	SE405	121	60.5	
160	SE605	170	83	

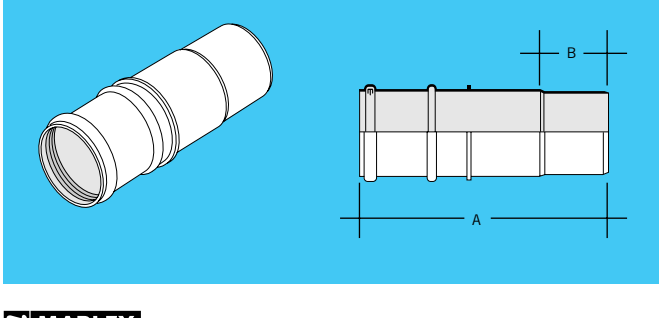
Slip/double ring seal socket



Coupling

Size mm		Code	A	B	C	
82	●	SES301	93	44	82	
110	●	SES401	110	53	110	

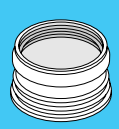
Double solvent socket

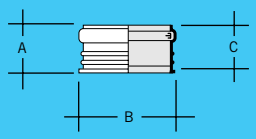


Coupling

Size mm	Code	A	B	
110	SE402	311	82	

Ring seal socket/spigot, triple socket depth

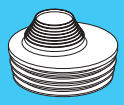


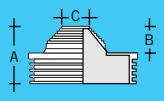


Adaptor

Size mm	Code	A	B	C
110	● SA41	66	133	60

Adaptor
PVCu socket to salt glazed socket

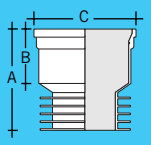




Universal adaptor

Size mm	Code	A	B	C
110	SA110	58	25	34

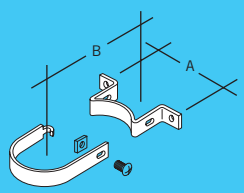
Adaptor
Waste to 110mm drain



Adaptor

Size mm	Code	A	B	C
110	SA42	130	65	130

Adaptor
Soil to drain



Socket clip

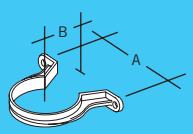
Size mm	Code	A	B
110	● SC41	152	101
160	SC61	240	121

PVC coated mild steel including 6 x 20mm nut and bolt

Barrel clip collar

Length m	Code
1	SC621

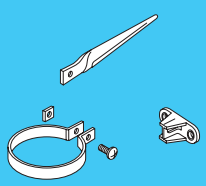
Cut to length for use to convert SC41/SC61 from socket to pipe clip, flexible PVC



Pipe clip

Size mm	Code	A	B
82	● SC35	125	93
110	■◆● SC45	150	101

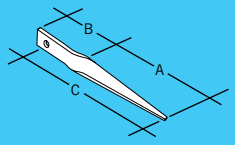
PVCu, SC45 illustrated



Pipe clip

Size mm	Code	
82	● SC35S	For use with Backplate RCB300 Or drive-in spike RSS1
110	●◆ RPC1	

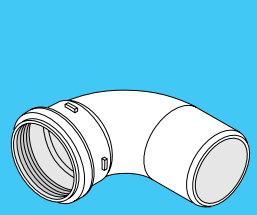
RPC1: PVC coated mild steel, includes 6 x 20mm nut and bolt

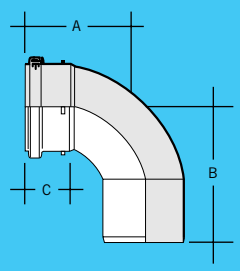


Drive-in spike

Code	A	B	C
RSS1●	115	58	19

Galvanised mild steel, for use with SC355 or RPC1





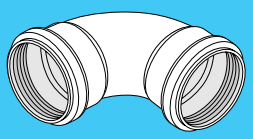
Short radius bend

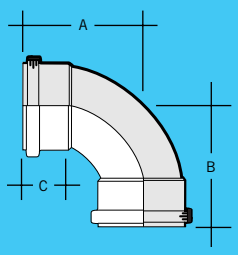
Size mm		Code	Angle	A	B	C	D	
82	●	SB31	87½°	138	115	49		
110	●◆■	SB41	87½°	158	157	70	90	
160	†	SFB61	87½°	285	275	96	184	

Ring seal socket/spigot

82	●	SB35	45°	70	78	49		
110	●◆■	SB45	45°	145	125	80		
160	†	SFB65	45°	175	160	96		

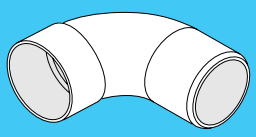
Real seal socket/spigot

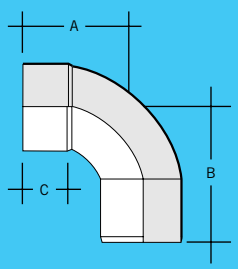




110		SB411	87½°	135	145	50		

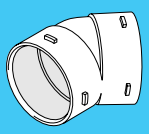
Double ring seal socket

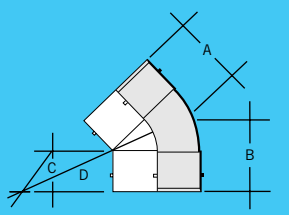




110	■	SBS41	87½°	162	168	50		

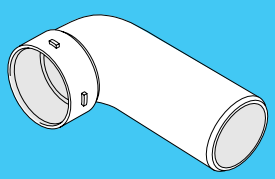
Solvent socket/spigot

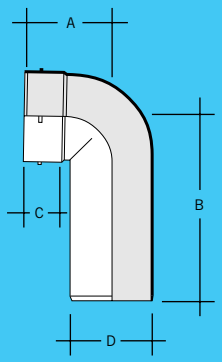




110	●	SBS42	87½°	149	149	47	119	
110	●	SBS45	45°	75	75	48		

Solvent socket/solvent socket



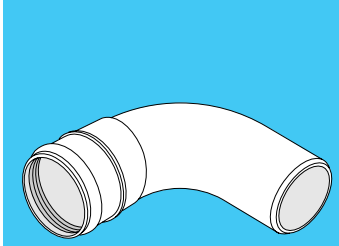


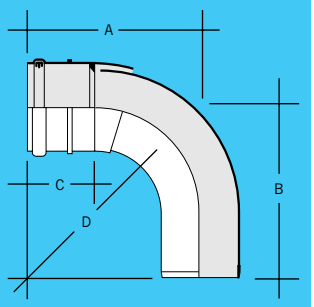
Long spigot bend

Size mm		Code	Angle	A	B	C	D
110	●	SBS40	87½°	114	240	48	110

Solvent socket/spigot

† Available to order
Colours: Available in Grey only unless indicated ● Available in Black ■ Available in White ◆ Available in Chestnut Brown

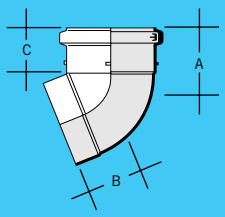




Adjustable bend

Size mm		Code	Angle	A	B	C	D
82	●	SB37	11-87½°	195	187	49	
110		SB46	5-14°	125	135	82	
110	●◆	SB47	21-90°	210	205	82	127
160		SB67	15-90°	285	275	96	184

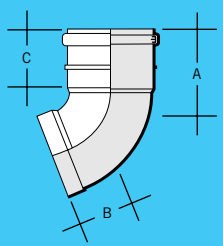
Ring seal socket/spigot



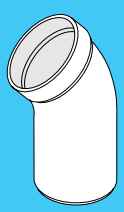
Offset bend

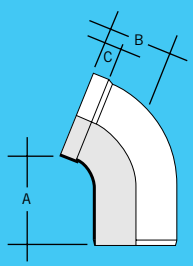
Size mm		Code	Angle	A	B	C
110	●◆■	SNE405	67½°	76	61	60

Ring seal/ solvent socket



Size mm	Code	Angle	A	B	C
82●	SNE300	67½°	88	48	49
160	SNE600	67½°	178	182	96



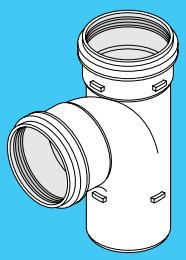


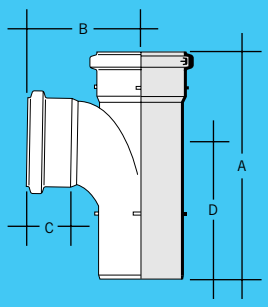
Size mm	Code	Angle	A	B	C
160	SNE601	67½°	170	172	83

Solvent socket/spigot

Colours: Available in Grey only unless indicated ● Available in Black ■ Available in White ◆ Available in Chestnut Brown

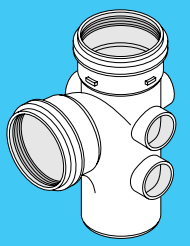
Equal branch

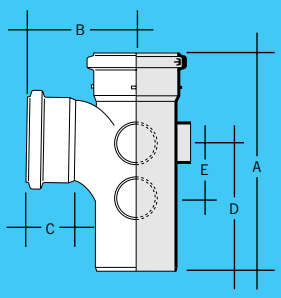




Size mm		Code	Angle	A	B	C	D	
110	●◆■	SY401	87½°	300	150	60	175	
160		SY601	87½°	438	245	96	260	

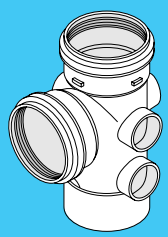
Five boss branch

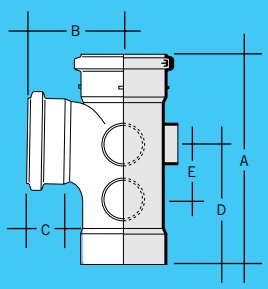




Size mm		Code	Angle	A	B	C	D	E	
110	●◆■	SY405	87½°	300	150	60	175	76	

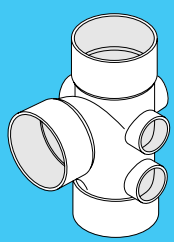
Ring seal sockets/spigot

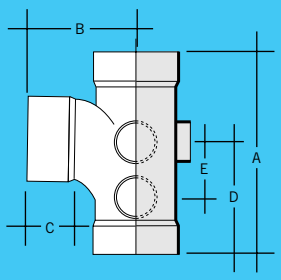




110	●◆	SYS415	87½°	290	139	48	165	76	

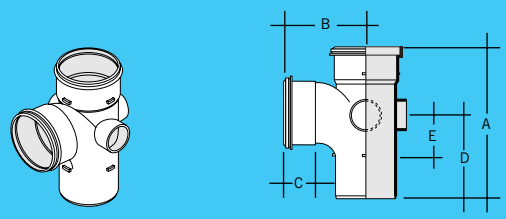
Ring seal sockets/solvent socket





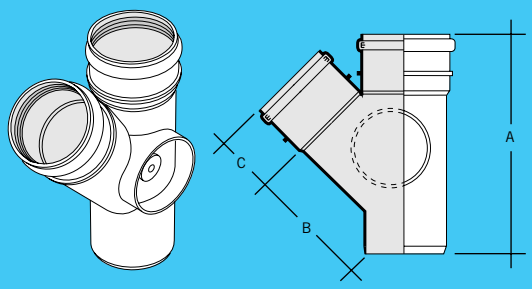
110	●	SYS405	87½°	281	150	60	165	76	

Triple solvent sockets



Three boss branch

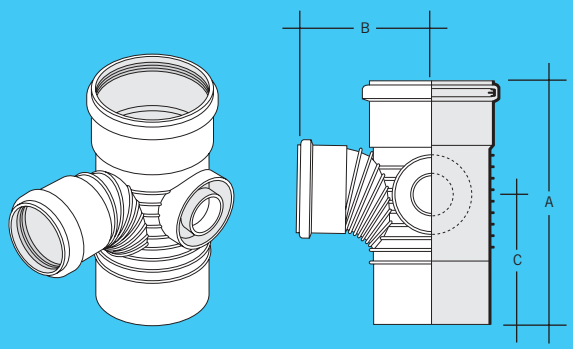
Size mm	Code	Angle	A	B	C	D	E
82	SY33F	87½°	212	122	52	126	65



Equal branch

Size mm	Code	Angle	A	B	C	
82	SY36	45°	229	130	55	♡
110	● SY460	45°	320	140	65	♡
160	SY63	45°	400	200	90	♡

Ring seal sockets/spigot



Unequal branch

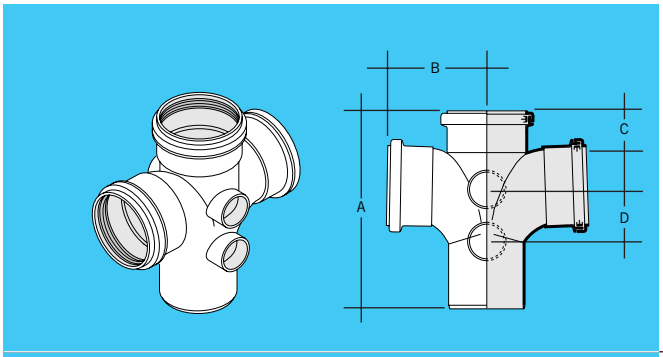
Size mm	Code	Angle	A	B	C	
160 x 110	SY64*	87½°	337	175	175	♡
160 x 110	SY66	45°	355	220	175	

Ring seal sockets/spigot, two boss/access upstands

* Illustrated

Size mm	Code	Angle	A	B	C
160 x 110	SY64E	87½°	375	229	216

Ring seal sockets/spigot, three boss/access upstands
Available to order



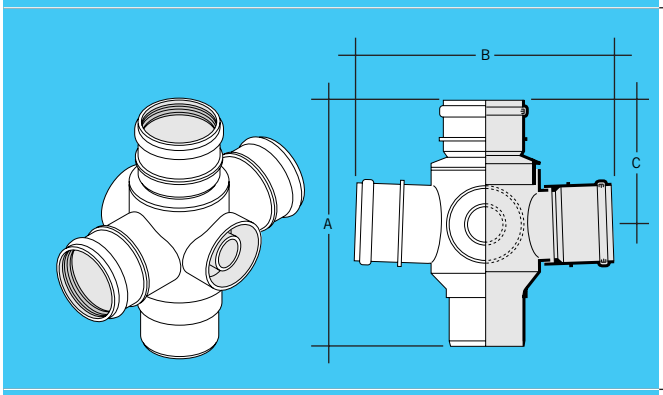
Double branch

Size mm	Code	Angle	A	B	C	D
110	SY404	87½°	288	141	54	76

Ring seal sockets/spigot, four boss upstands (illustrated)

110	SYS404	87½°	274	133	45	76

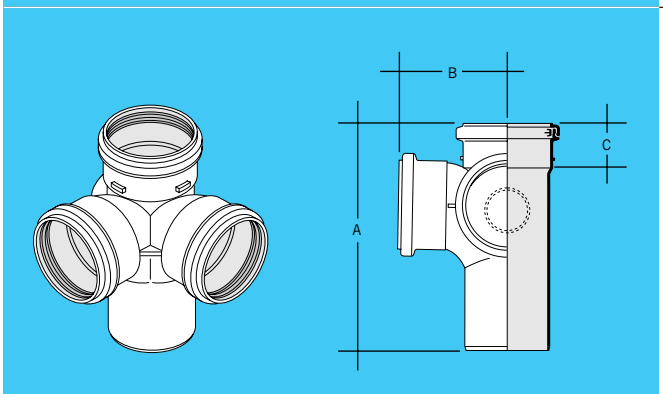
All solvent sockets, four boss upstands



Double branch

Size mm	Code	Angle	A	B	C
110	SFB415	87½°	384	324	190

Ring seal sockets/spigot, two boss/access upstands



Corner branch

Size mm	Code	Angle	A	B	C	D
110	SFB433	87½°	384	242	190	

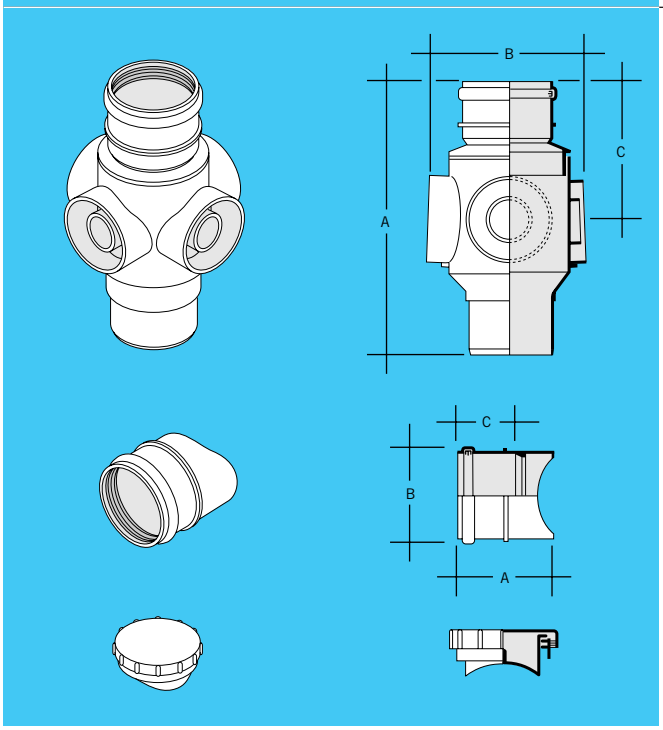
Ring seal sockets/spigot, two boss/access upstands

110	SY411	87½°	288	141	54	175

Ring seal sockets/spigot, one boss upstand (illustrated) Fabricated fitting

110	SYS411	87½°	274	133	45	165

All solvent sockets, one boss upstand Fabricated fitting



Multi-branch

Size mm	Code	Angle	A	B	C
110	SW64	87½°	384	160	192

Ring seal socket/spigot, four 110/50mm boss upstands

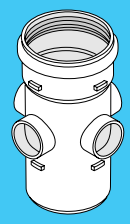
Size mm	Code	A	B	C
110	SE404	127	126	82

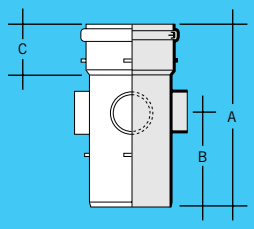
Multi-branch socket for use with SW64 & SY64

Size mm	Code
110	SE45

Access cap for use with SW64 & SY64

Twist and lock access cap which can be secured with a No. 8 screw



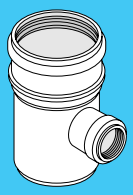


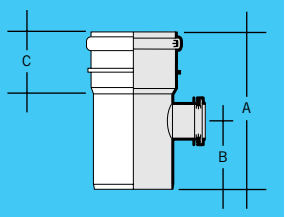
Boss pipe

Size mm		Code	Angle	A	B	C	
82	●	SW30	90°	202	101	49	
110	●◆■	SW40	90°	244	123	70	
160		SW60	90°	335	110	96	

Ring seal socket/spigot, four boss upstands, one open

SW30 - 3 boss upstands
SW60 - 4 boss upstands, one open, solvent socket



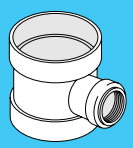


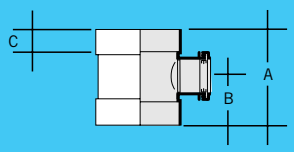
Boss pipe

Size mm		Code	Angle	A	B	C	
110 x 32	●	SW415	87½°	204	86	82	
110 x 40	●◆■	SW41	87½°	204	86	82	

Ring seal socket/spigot

Multi-fit boss connection to accept plastic pipework to BS 5255 and BS 5254 and copper to BS 2871 (metric) and BS 659 (imperial)



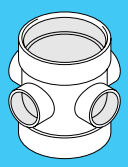


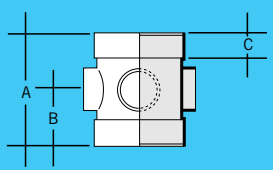
Boss pipe

Size mm		Code	Angle	A	B	C
110 x 32	●◆■	SWS415	87½°	170	85	52
110 x 40	●◆■	SWS41	87½°	170	85	52
110 x 50	●	SWS42	87½°	170	85	52

Solvent sockets

Multi-fit boss connection to accept plastic pipework to BS 5255 and BS 5254 and copper to BS 2871 (metric) and BS 659 (imperial)

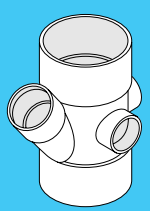


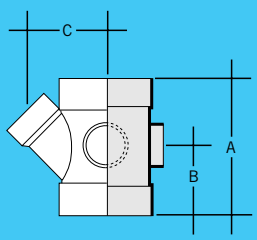


Boss pipe

Size mm		Code	Angle	A	B	C	
110	●	SWS40	87½°	150	75	32	

Solvent sockets, four boss upstands



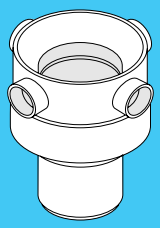


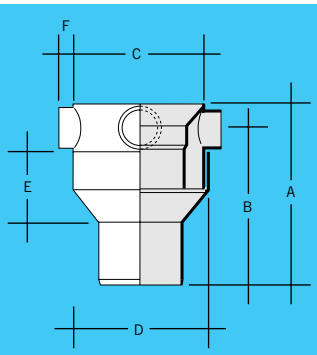
Boss pipe

Size mm		Code	Angle	A	B	C	
82	●	SWS3135	45°	160	80	86	
110		SWS4135	45°	186	93	145	

Solvent sockets, three boss upstands
Single 50mm/three boss upstands

Single 50mm 45° socket accepts plastic pipework to BS 5255

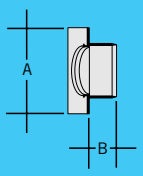




Collar boss

Size mm	Code	Angle	A	B	C	D	E	F	
110	SCB41	87½°	245	210	178	186	100	20	♆

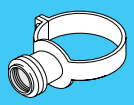
Solvent socket/spigot, four boss upstands, one open

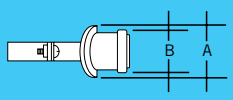


Patch boss

Size mm	Code	A	B
82 x 32	SWS332	95	18
82 x 40	SWS340	95	23
82 x 50	SWS350	95	27

Solvent/socket accepts plastic pipework to BS 5255



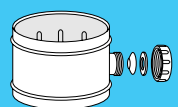


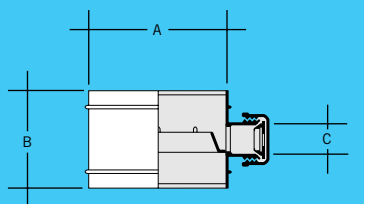
Strap-on boss

Size mm	Code	Angle	A	B	Hole size	
110 x 32 ●◆	SWS4150	90°	70	55	50	♆
110 x 40 ●◆	SWS410	90°	70	62	50	♆
110 x 50 ●	SWS420	90°	86	75	63	♆

Including nut and bolt

Multi-fit boss connection to accept plastic pipework to BS 5255 and BS 5254 and copper to BS 2871 (metric) and BS 659 (imperial)



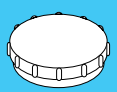


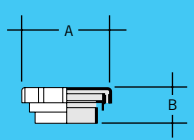
Condensation trap

Size mm	Code	A	B	C
110 x 21.5	SCT4	115	82	21.5/22

Socket/socket

To connect to 110mm pipe

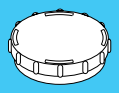


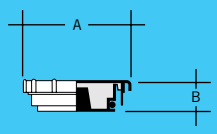


Access cap

Size mm	Code	A	B
82 ●	SE30	110	30
110	SE40	130	30

Solvent socket

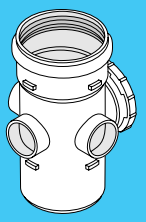


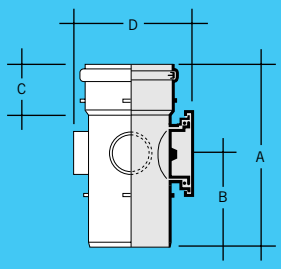


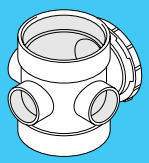
Access cap & pressure plug

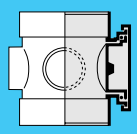
Size mm		Code	A	B
160	●	SE62	195	40

Solvent socket









Access pipe

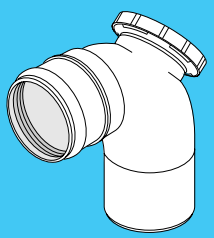
Size mm		Code	A	B	C	D	
82	●	SF31	205	101	52		♆
110	●	SF41	244	123	70	152	♆

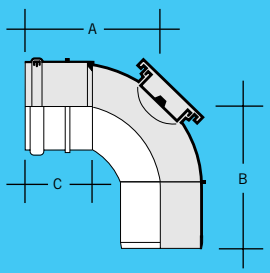
Ring seal socket/spigot, three boss upstands

110	●◆■	SFS41	150	75	32	152	
160		SF611	287	142		222	

Double solvent/socket, three boss upstands

SF31, SF41 - has a twist and lock access cap which can be secured with a No. 8 screw. SF31 and SF611 have no boss upstands





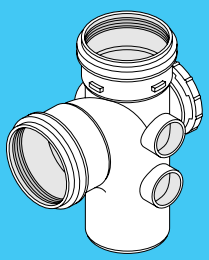
Rear access bend

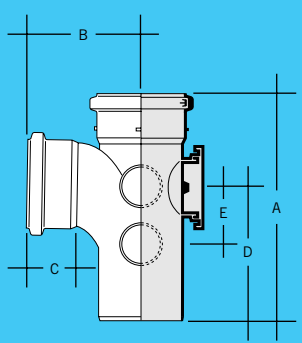
Size mm		Code	Angle	A	B	C	
110	●	SB42	87½°	172	174	80	♆

With rear access, ring seal socket/spigot
Fitted with a twist and lock access cap which can be secured with a No. 8 screw

82	●	SB38	64-87½°	195	187	49	
160	†	SB620	55-90°	285	275	96	

Adjustable, with rear access





Access branch

Size mm	Code	Angle	A	B	C	D	E
82	SY34	64 - 87½°	306	195	200		
82	SY34F	87½°	212	121	52	101	

With rear access

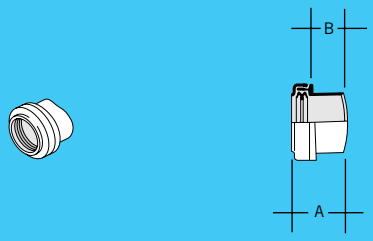
SY34 - adjustable, fitted with a twist and lock access cap which can be secured with a No. 8 screw

110	●◆	SY402	87½°	300	150	60	175	76	♆

Ring seal sockets/spigot (illustrated)

Fitted with a twist and lock access cap which can be secured with a No. 8 screw

Colours: Available in Grey only unless indicated ● Available in Black ■ Available in White ◆ Available in Chestnut Brown
† Available to order



Boss connector

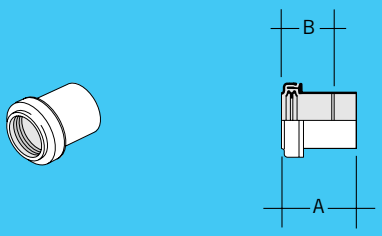
Size mm		Code	Angle	A	B
32	●◆■	SA411	87½°	43	21
40	●◆■	SA421	87½°	43	21

Ring seal socket/spigot for solvent joint to all boss upstands

Multi-fit ring seal socket to accept plastic pipework to BS 5255 and BS 5254 and copper to BS 2871 (metric) and BS 659 (imperial)

Size mm		Code	Angle	A	B
40	●	SA425	87½°	30	4

Solvent socket
Solvent weld connection for plastic pipework to BS 5255

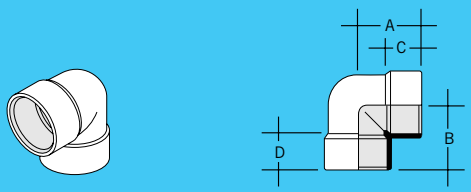


Boss connector

Size mm		Code	Angle	A	B
50	●	SA420	87½°	74	48

Ring seal socket/spigot for solvent joint to all boss upstands

Multi-fit ring seal socket to accept plastic pipework to BS 5255 and BS 5254 and copper to BS 2871 (metric) and BS 659 (imperial)

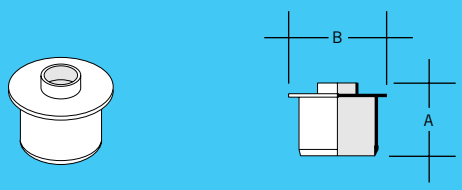


Knuckle bend

Size mm		Code	Angle	A	B	C	D	
40	●◆	KBK25	90°	48	48	23	23	♡
50		KBK35	90°	59	50	20	28	

KBK35 solvent welds over boss upstand

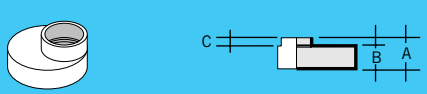
KBK25 solvent welds inside boss upstand, shown



Concentric socket plug/reducer

Size mm		Code	A	B	
110	●	SE41	105	135	♡

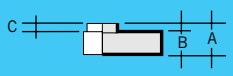
Push-fits into ring seal socket, single boss upstand



Eccentric reducer

Size mm		Code	A	B	C
82 x 68	●◆	SRM325	35	20	12

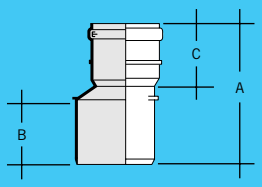
Eccentric reducer



Size mm	Code	A	B	C
82 x 50	SRM30	70	48	19
110 x 50	SRM402	48	25	19

Solvent socket, single boss upstand

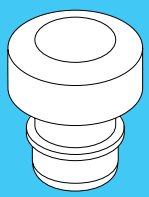
Level invert reducer

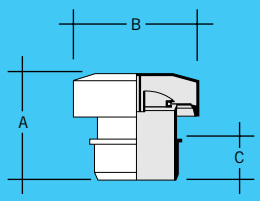


Size mm	Code	A	B	C	
110 x 82	SRM304	192	78	82	
160 x 110	SRM604	219	90	82	

Ring seal socket/spigot

Durgo air admittance valve

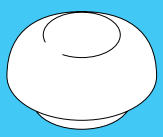


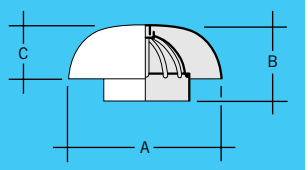


Size mm	Code	A	B	C
50	SVD2	98	82	28
82	SVD3	108	118	40
110	SVD4	124	138	50

Push-fits into ring seal socket; includes a polystyrene insulating hood which should not be removed

Roof cowl/vent terminal

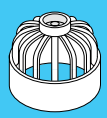


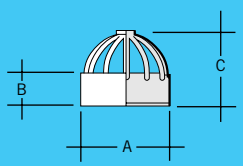


Size mm	Code	A	B	C
110 ●■	SVC1	200	98	70

Solvent socket

Vent terminal

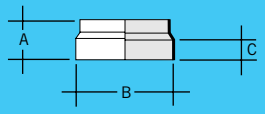




Size mm	Code	A	B	C
82 ●	SV321	90	30	75
110 ●◆■	SV42	117	34	95
160	SV62	160	75	170

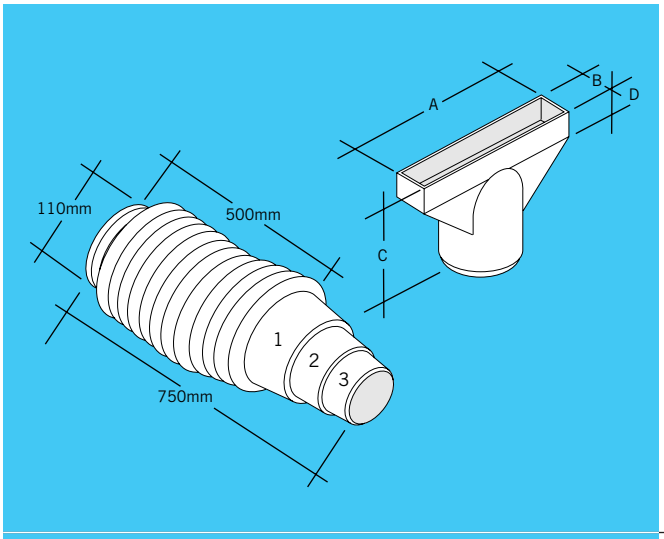
Solvent socket
SV62 available in PVC coated wire only

Weathering collar



Size mm	Code	A	B	C
82	SV31	51	94	25
110 ●◆■	SV43	57	130	25

PVCu solvent joint to pipe
SV31 is available in black rubber only



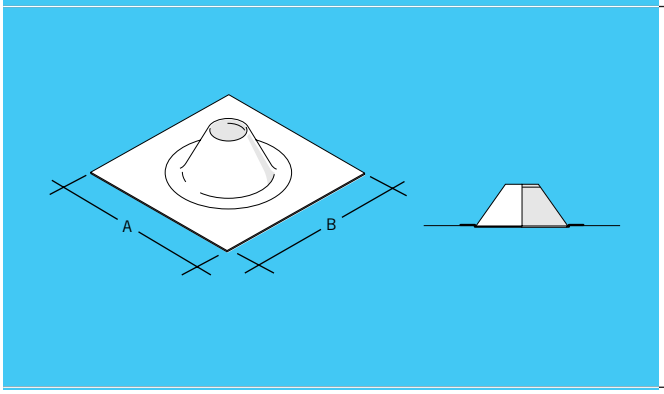
Ridge vent connector

Size mm	Code	A	B	C	D
110	SV44	276	39	175	32

Fits Marley Roofing Products Ridge vent terminal connector, comprises PVC adaptor, flexible Pipe in L.D.P.E. and 'T' seal

Spigot may be trimmed off to suit following conditions.
1. Pushes into 110mm ring seal socket
2. Pushes into 110mm pipe
3. Pushes into 82mm pipe

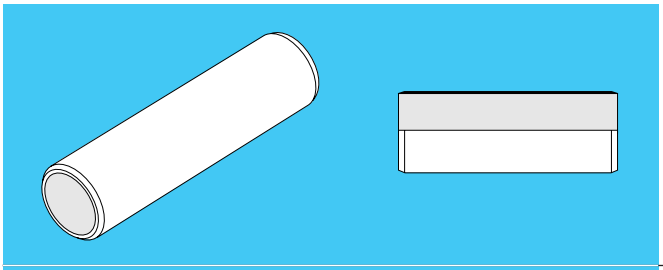
Flexible pipe can also be used to connect to Marley Roofing Products vent terminals



Weathering slates

Size mm	Code		A	B
82-110	SAS40	Flat	400	400
82-110	SAS45	Inclined	450	450
82-110	SAS61	Inclined	610	610
To suit 82mm and 110mm diameter pipes				

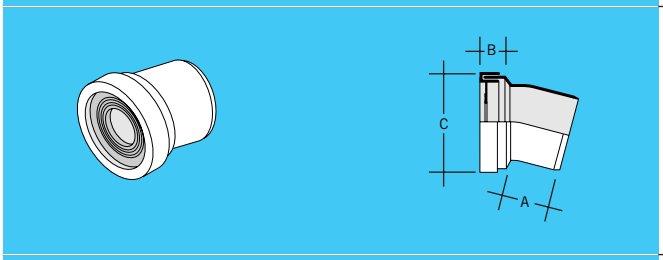
Aluminium slate with rubber hood (material to 22 SWG BS 1470)



Pipe

Size mm	Code	Length m	
110	SL401SW	1.5	

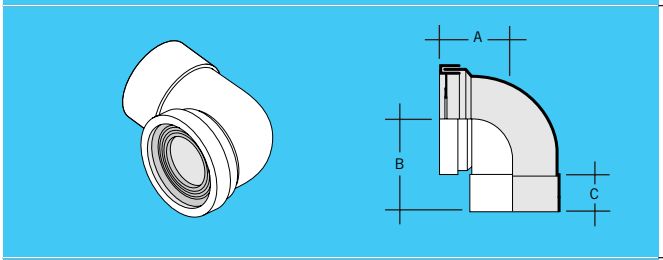
Double spigot with chamfer each end



WC connector

Size mm	Code	Angle	A	B	C	
110	SG40W	14°	63	50	134	

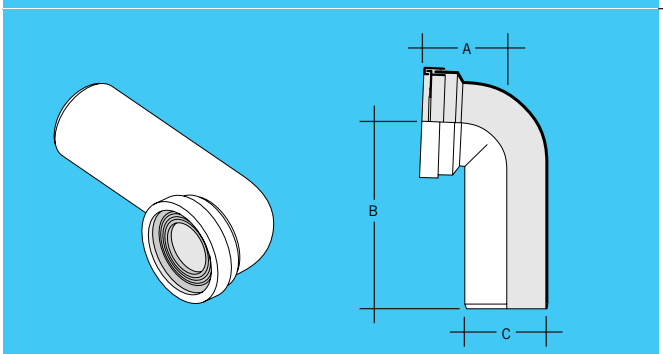
Spigot connection to ring seal socket, for use with pans to BS 5503/04.
Suits WC spigot size 83-114mm



Bent WC connector

Size mm	Code	Angle	A	B	C	
110	ST40	90°	106	125	51	

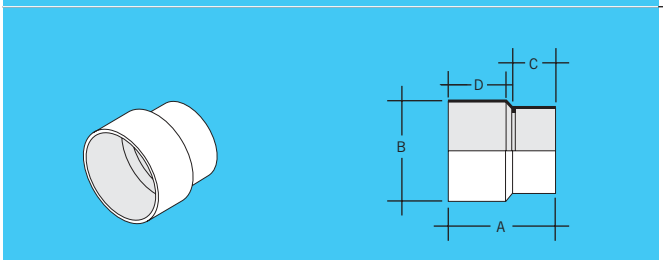
Solvent socket, for use with pan to BS 5503.
Suits WC spigot size 83-114mm



Bent WC connector

Size mm	Code	Angle	A	B	C
110	ST41W	87½°	106	240	110

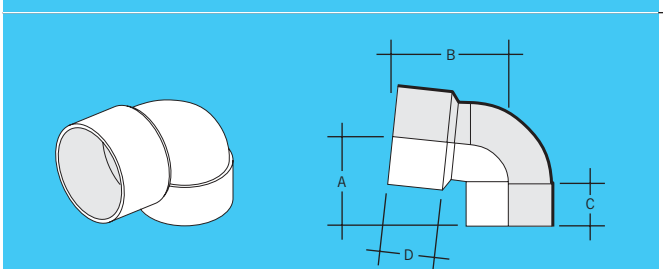
Spigot connection to ring seal socket, for use with pans to BS 5503/04.
Suits WC spigot size 83-114mm



Straight WC connector

Size mm	Code	A	B	C	D	
110	SGS41W	139	134	53	80	

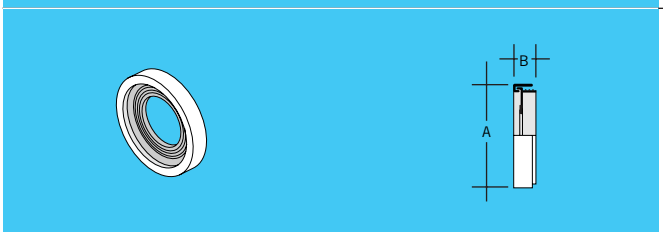
Solvent socket connection to 110mm pipe
Pan socket must be trimmed to suit WC spigot length before SA323 is fitted



Bent WC connector

Size mm	Code	Angle	A	B	C	D	
110	STS41W	85°	104	156	53	80	

Solvent socket connection to 110mm pipe
Pan socket must be trimmed to suit WC spigot length before SA323 is fitted

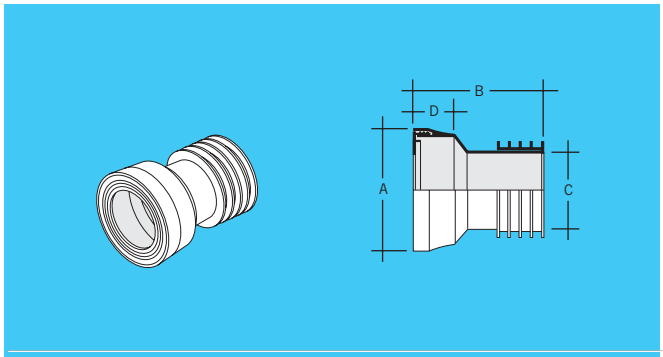


WC seal & retaining cap

	Code	A	B
	SA323W	141	24

Solvent weld joint to SGS41W and STS41W pan sockets
Suits WC spigot size 83-114mm

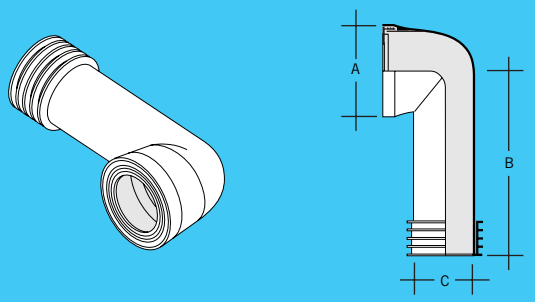
Colours: Available in White only



Straight push-fit connector

Size mm	Code	A	B	C	D
100	SWC11	132	110	81	46

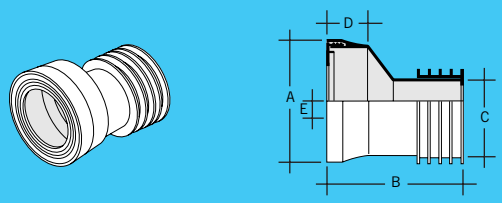
Push-fit spigot, ring seal socket for use with pans to BS 5503/04
Suits WC spigot size 97-108mm



90° push-fit connector

Size mm	Code	Angle	A	B	C
100	SWCB90	90°	132	235	81

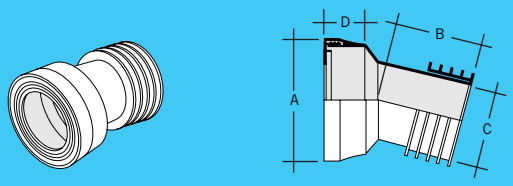
Long spigot for use with pans to BS 5503/04
Suits WC spigot size 97-108mm



Offset push-fit connector

Size mm	Code	A	B	C	D	E
100	SWC22	132	115	81	46	18

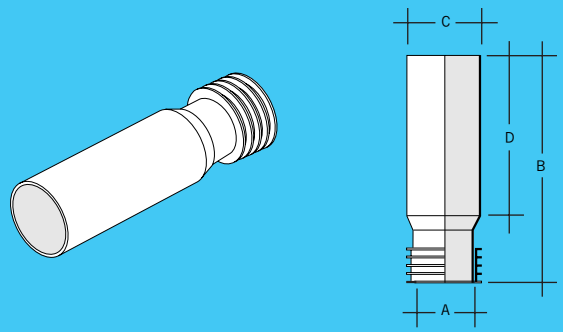
Push-fit spigot, ring seal socket for use with pans to BS 5503/04
Suits WC spigot size 97-108mm



14° push-fit connector

Size mm	Code	Angle	A	B	C	D
100	SWCB14	14°	132	61	81	46

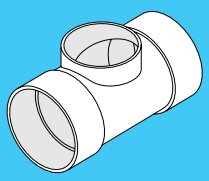
Push-fit spigot, ring seal socket for use with pans to BS 5503/04
Suits WC spigot size 97-108mm

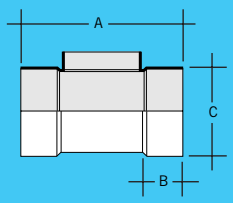


Extension push-fit connector

Size mm	Code	A	B	C	D
100	SWCE33	81	300	116	226

226mm extension piece

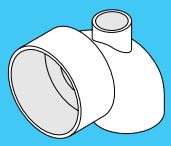


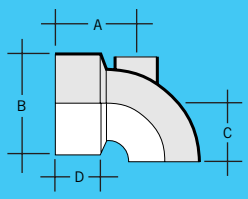


Branch

Size mm	Code	A	B	C
110 x 90	SM41W	214	50	116

Solvent sockets, for use with SM42W and SM43W bends only



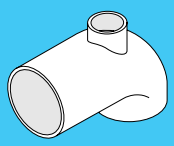


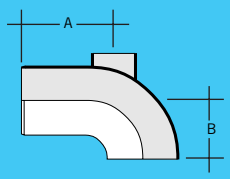
Adjustable WC bend

Size mm	Code	Angle	A	B	C	D
90	SM42W	50-90°	108	134	75	60

Solvent weld joint to radial socket on SM41W
50mm vent boss upstand

Pan socket must be trimmed to suit WC spigot length before SA323 is fitted

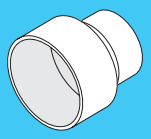


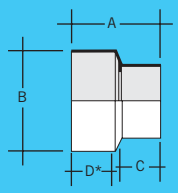


Adjustable spigot bend

Size mm	Code	Angle	A	B
90	SM43W	50-90°	119	75

Solvent weld joint to radial branch on SM41W
50mm vent boss upstand



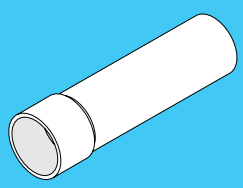


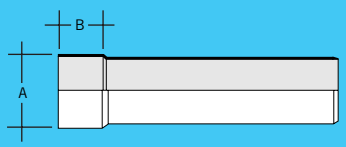
WC connector

Size mm	Code	A	B	C	D
90	SM44W	117	134	46	80

Solvent weld joint to spigot of SM43W or SM45W extension pipe

Pan socket must be trimmed to suit WC spigot length before SA323 is fitted

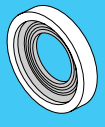


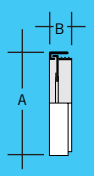


Extension pipe

Size mm	Code	A	B
90	SM45W	96	46

300mm long



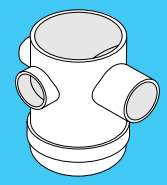


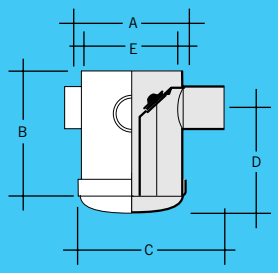
WC seal & retaining cap

Code	A	B
SA323W	141	24

Solvent weld joint to SM42W and SM44W pan sockets
Suits WC spigot size 83-114mm

Colours: Available in White only





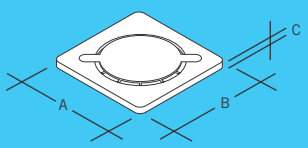
Trapped floor gully

Size mm	Code	A	B	C	D	E
50	SFG42AS	117	164	145	116	110
82	SFG43AS	117	164	175	100	110

SFG42AS illustrated

Manufactured to meet surface loading requirement K3 of EN 1253-1. Standard water seal depths are 90mm for SFG42 AS and 75mm for SFG43AS. A shallower seal can be achieved by trimming the trap body to the desired depth along the relevant line. 110mm pipe extension facility provides installation flexibility to allow for different construction applications

	Seal depth - mm	Seal depth - mm
CUT LINE	SFG42AS	SFG43AS
A	50	35
B	65	50
C	75	60
D	90	75

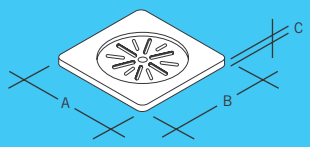


PVC Floor tile

Code	A	B	C
SGG3	150	150	7

For use with SFG42AS and SFG43AS

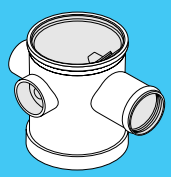
Must be fitted to a length of 110mm pipe before connection to gully body can be made

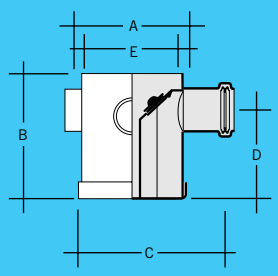


Stainless Steel tile

Code	A	B	C
SGG2	150	150	7

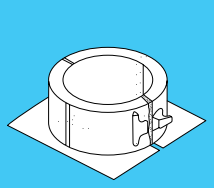
For use with SFG42/43

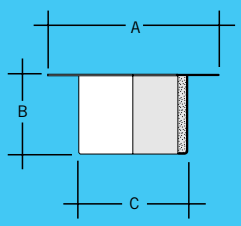


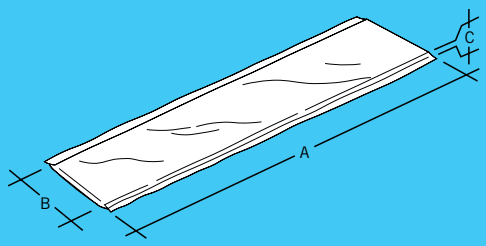


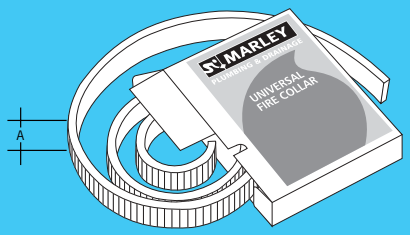
Ring seal outlet

Size mm	Code	A	B	C	D	E
82	SFG43	130	147	201	75	110









Marley fire protection range

Fire sleeves

Size mm	Code	A	B	C
Up to 4 HOUR RATING*				
55	WFC54	120	43	56
82	SFC34	140	43	83
110	SFC44	165	43	148
160	SFC64	215	74	161

(Blue only)

Pipe wraps

Size mm	Code	A	B	C
Up to 4 HOUR RATING*				
55	WFW54	222	50	10
82	SFW34	308	100	10
110	SFW44	395	100	13
160	SFW64	580	100	15

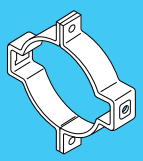
(White only)

* Fire rating can vary according to installation detail, refer to page 15

Fire collar

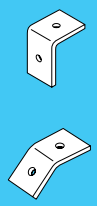
Size mm	Code	Length m	A
Up to 4 HOUR RATING*			
Up to 160	UFC1	2.2	50

Colours: Available in Grey only



Two piece pipe bracket

Size mm	Code
82	JB32
110	JB42
160	JB62

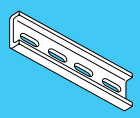


Angle cleat

Code	Angle
JAC1	90°
JAC2	45°

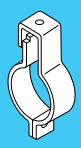
Single support bracket

Size mm	Code
32	JDB1
40	JDB2
50	JDB3



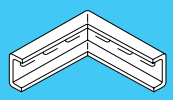
Channel strip union

Code
JCU1



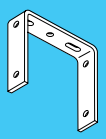
Channel bracket

Size mm	Code
50	JCB3



Channel strip angle

Code	Angle
JCA1	90°



Double support base plate

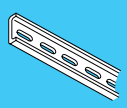
Size mm	Code
82	JBP32
110	JBP42
160	JBP62

Fixing hole size 9mm

Barrel clip collar

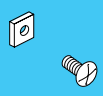
Length m	Code
1	SC621

Cut to length for use with SC41/SC61, flexible PVC



Channel strip

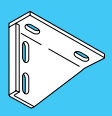
Length m	Code
2	JCS2



Nuts and bolts

Size mm	Code
20 x 6	RNB11

Supplied in packs of ten



Single support base plate

Code
JDP1

Fixing hole size 9mm

Solvent cement

Size ml	Code	
55	KS2	tube
250	KS10	can and brush

For jointing PVCu / MUPVC and ABS pipes and fittings.
Conforms to BS 6209: 1982. All cans and tubes carry date of manufacture and should be used within twelve months of this date.
Polypropylene cannot be solvent welded

'T' ring seals

Size mm	Code
82	SR31T
110	SR41T
160	SR61T

For existing fittings

Lubricant

Size mm	Code		
56	SZ56	tube	silicone
110	SZ100	tube	silicone
400	SZ400	aerosol can	silicone
500	SZ500	tub	water based

Water Research Centre approved

Ozone friendly SZ400 non flammable, C.F.C. free propellant

Universal 'T' seals

Size mm	Code
32	SR1T
40	SR2T
50	* SR3T

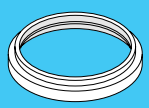
For boss pipes and ABS/PVCu waste

* This 'T' ring cannot be used in 50mm boss connector SA420 which uses SSR3

'O' ring seals

Size mm	Code
82	SR31
110	SR41
160	SR61

For refurbishment of pre 1980 fittings only



Spare snap cap

Size mm	Code
110●◆▲	SNC4
160●◆▲	SNC6

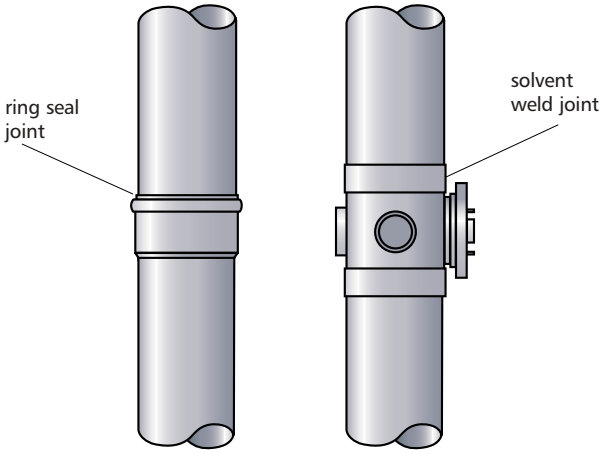
For 110mm and 160mm fittings

The Marley Soil & Waste Installation Guide

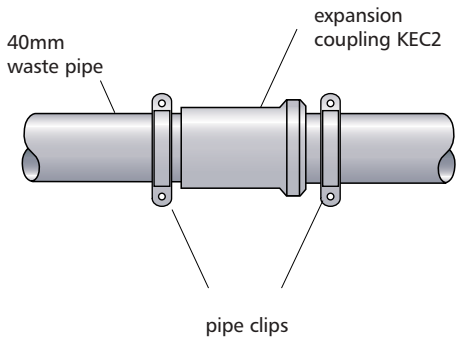
Jointing techniques

The ring seal has been successfully employed as the principal method of jointing 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 jointing 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 jointing 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.

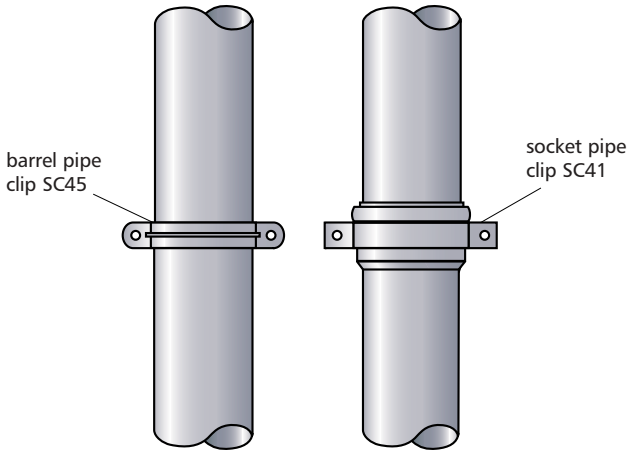


It should be noted that polypropylene cannot be solvent welded and together with the ABS waste system must not be fitted externally unless painted to protect it from ultra-violet degradation.

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
Polypropylene	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.

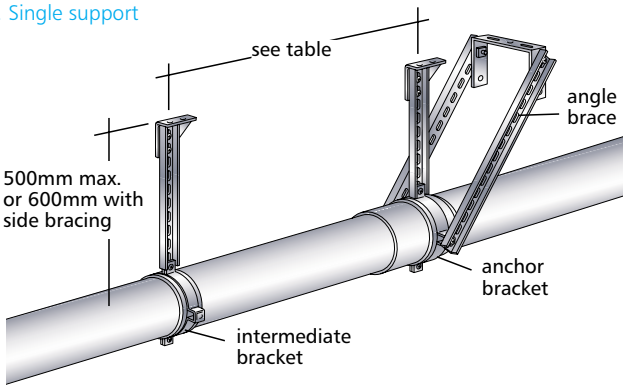
Branch connections

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.

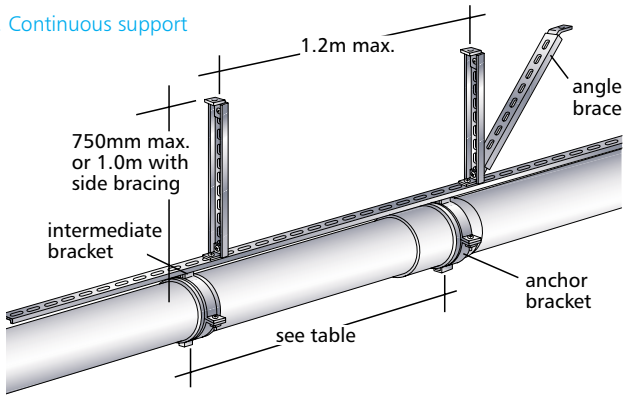
Structural fixings

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

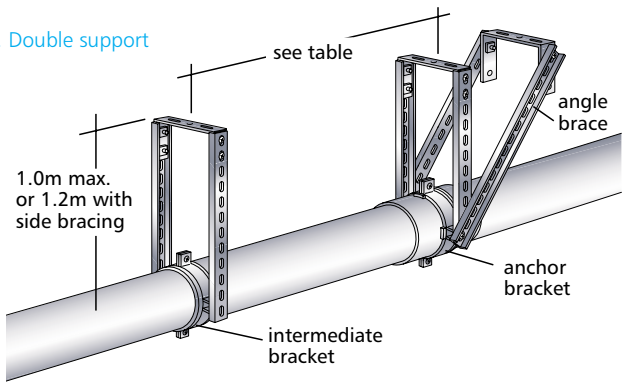
1. Single support

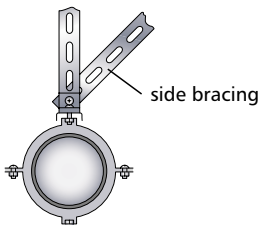


2. Continuous support



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

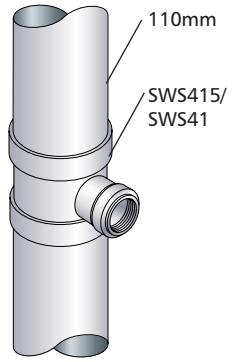
Boss pipes, boss connectors and strap-on bosses fitted with multi-fit 'T' ring seals are suitable for use with MUPVC or ABS waste systems to BS 5255, polypropylene to BS 5254 and metric size copper to BS 2871.

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.

1.



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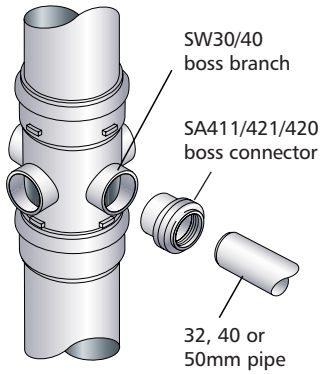

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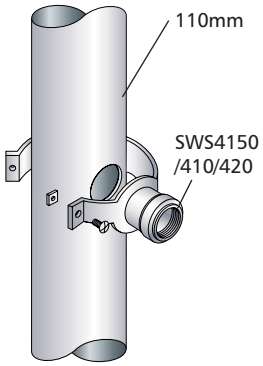

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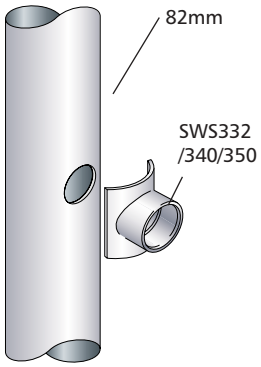
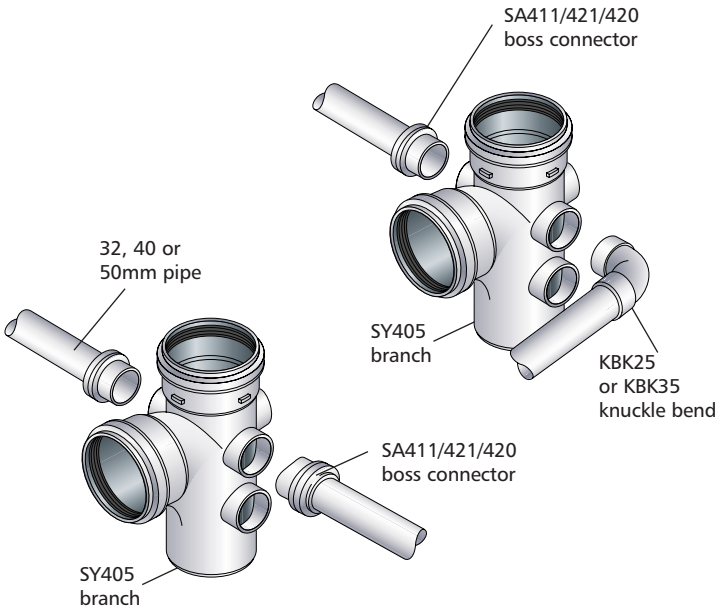
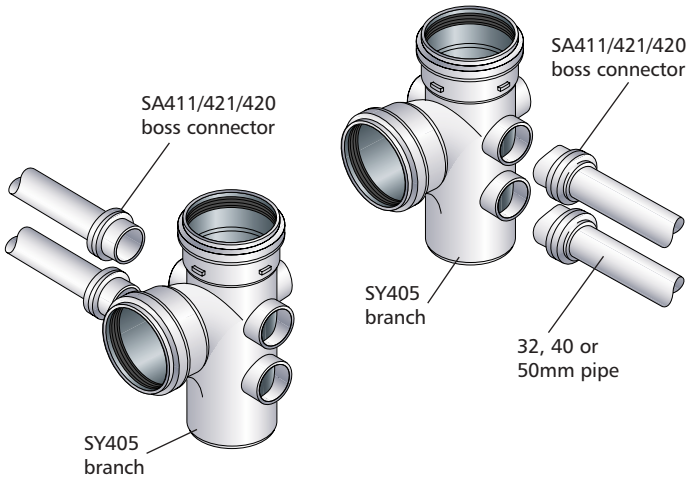




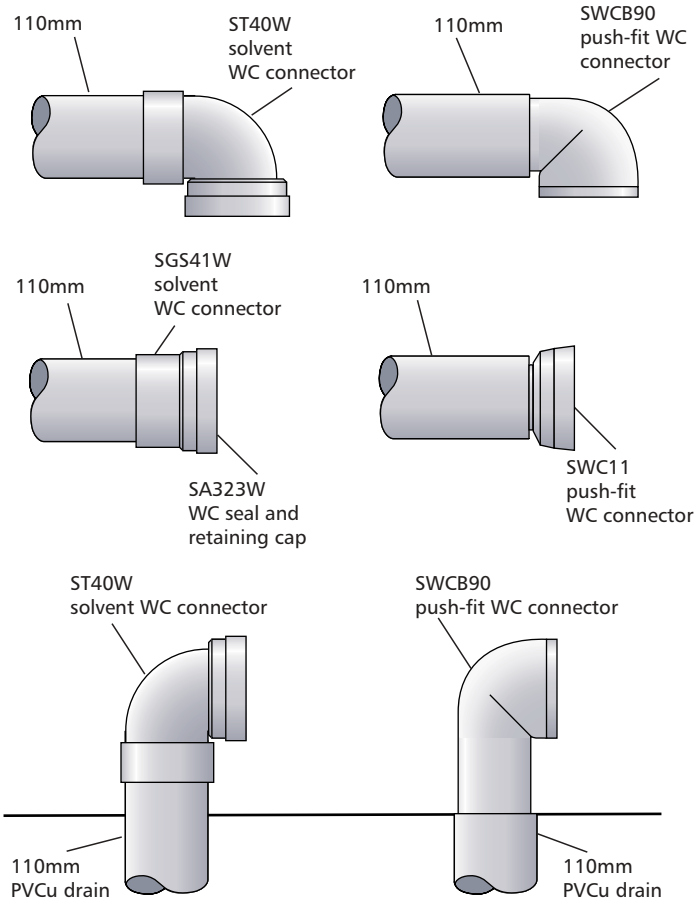


WC connections

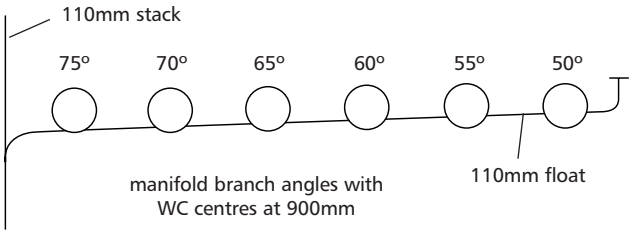
Two different types of connectors are available to allow connection to vitreous china or stainless steel WC pans, slop hoppers and other similar sanitary equipment. Manufactured in PVCu and eva (ethylene vinyl acetate) to accommodate a range of outlet sizes between 84 and 110mm sanitary pipework or undergound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

The 90º 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.



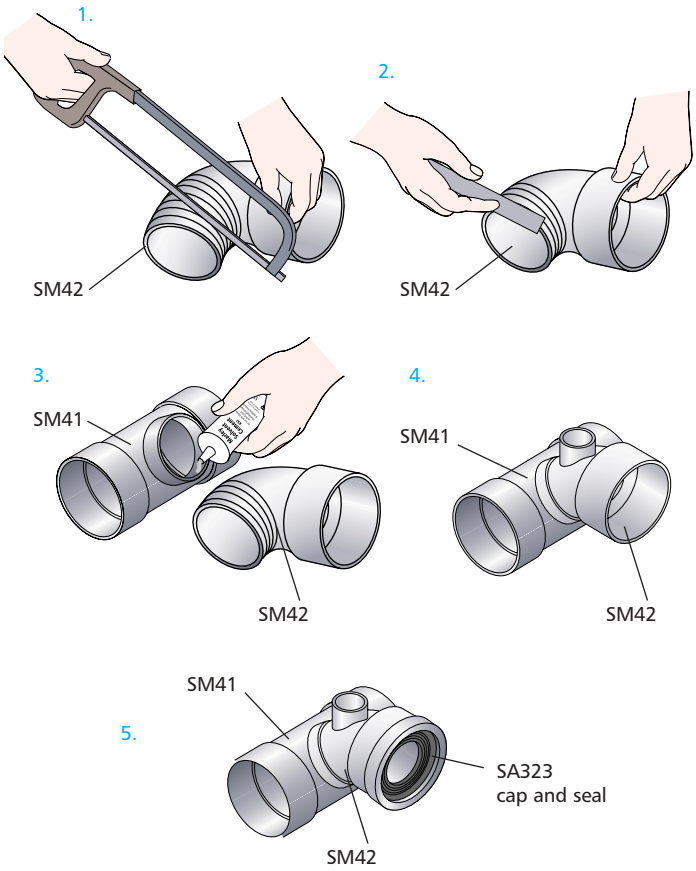
WC manifold system



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.



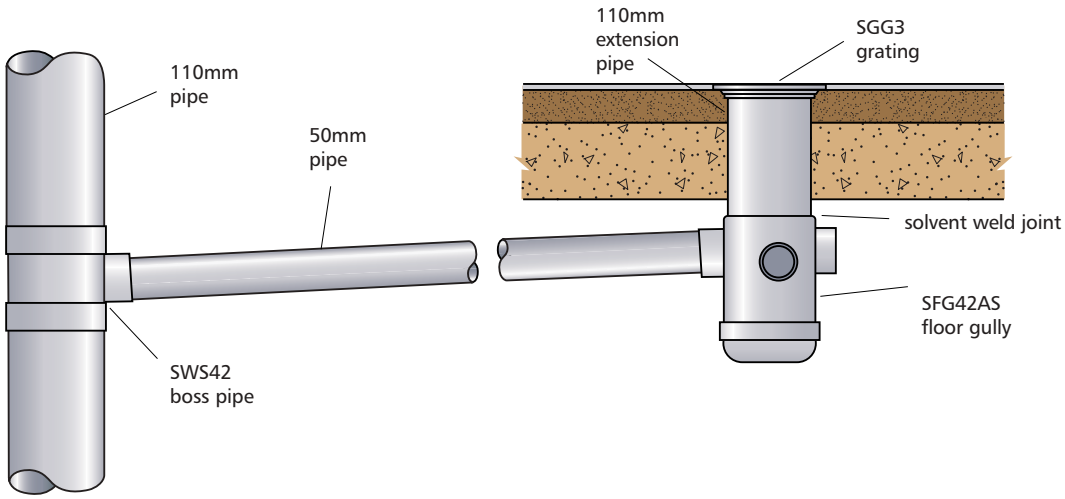
Trapped floor gully

The trapped floor gully is suitable for use as a shower outlet in bathrooms or as a floor gully for washdown areas in domestic, public and commercial buildings. Available with 50 and 82mm size solvent weld outlets for connection to MUPVC, ABS and PVCu pipework to BS 5255:1989 and BS 4515:1983 respectively, the 150mm square PVCu grating is designed to withstand normal foot traffic in accordance with the surface load requirements as defined in BS EN 1253-1.

Each size of gully has three solvent weld waste inlet connections, two 40mm an opposing sides and a 50mm rear connection which accept MUPVC or ABS small diameter sanitary pipework to BS 5255:1989.

Standard 110mm PVCu soil pipe can be used to provide an extension piece between the trap body and grating to allow for different floor constructions. Although primarily designed for use with ceramic floor tiles, sheet floor applications can be accommodated provided that the floor surface is finished to the appropriate height and the joint made with a water resistant sealant.

The main body of the trap and the base are supplied loose to allow the bottom part of the gully to be trimmed on-site prior to installation. As a result, the depth of water seal can be varied to suit different situations before the base is fitted by solvent weld jointing. Also incorporated in the trap is a push-fit access plug which allows outlet pipework to be rodded if necessary.



Alutec aluminium Floor and Shower outlet range

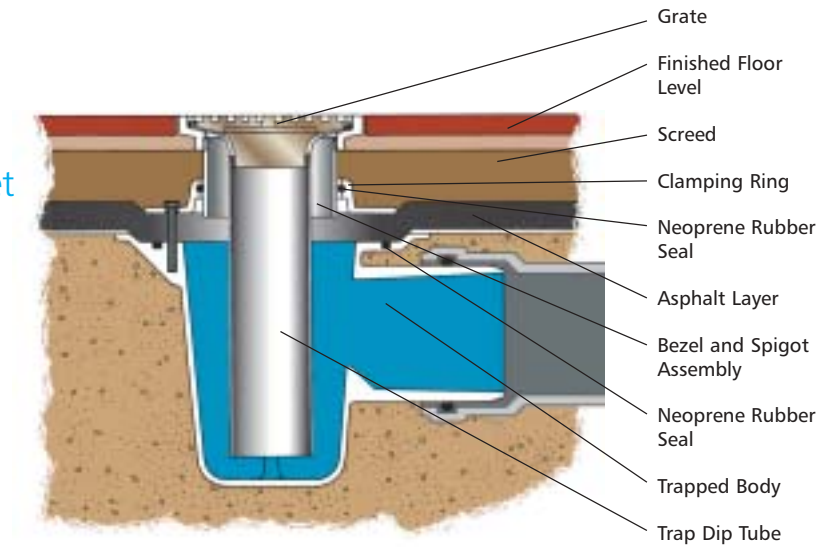
Trapped Horizontal Spigot Outlet - Tiled Floor Finish

For use in internal and external applications

Includes both trapped and untrapped versions

Offers wide range of gratings for use with sheet flooring, tile or screeded finishes

Provides ease of access for rodding or cleaning



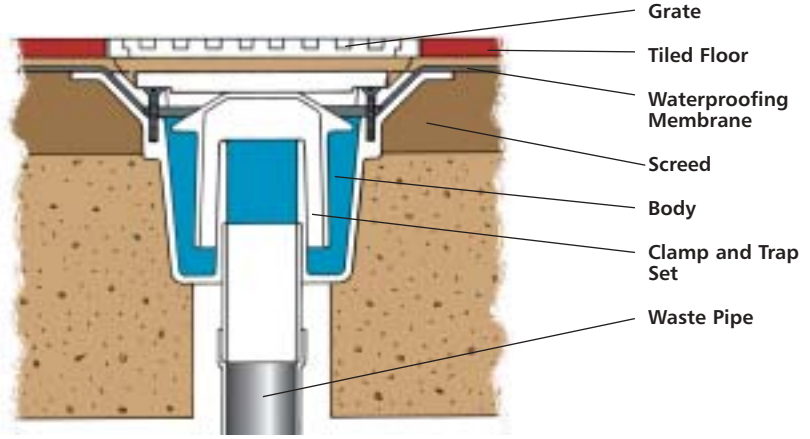
Vertical Spigot Shower Outlet – Tiled flooring

For use with sheet and tiled flooring

Vertical outlet connects directly to soil or underground drainage pipework

Gratings and tile sets are in white as standard, alternative colour options are available on request

A separate design and installation guide showing the wide range of aluminium floor and shower outlets is also available.



Site Work

Inspection and testing

Inspection and testing should be carried out in accordance with BS 12056: 2000 and Building Regulations noting especially the details given in respect of air testing and the fact that smoke testing of plastics pipework should be avoided as the materials can be adversely affected.

Air test

The installation should be capable of withstanding an air test of positive pressure of at least 38mm water gauge for at least 3 minutes. During this time every trap should maintain a water seal of at least 25mm.

Handling

PVCu pipes are strong, though lightweight and therefore very easily handled. However, reasonable care should be exercised while handling, particularly in extremely cold conditions. Pipes should preferably be loaded and unloaded by hand but if mechanical handling is used, protected slings are recommended.

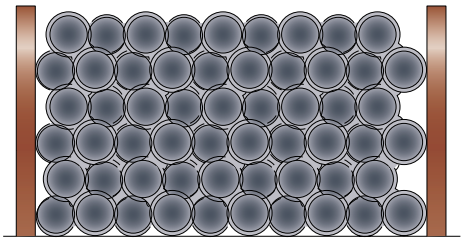
Storage

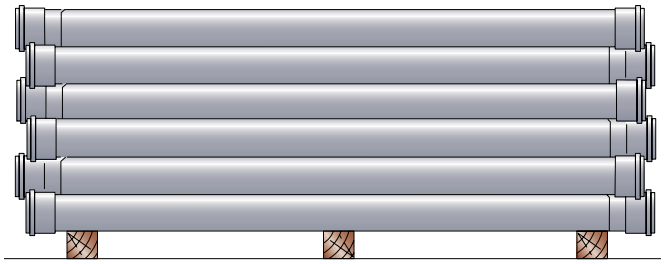
Pipes should be stacked on a reasonably flat, level surface on timber battens not less than 75mm wide spaced at a maximum of 1m centres. Side support should also be provided at intervals of not more than 1.5m.

Different size pipes should be stacked separately. However, where this is not possible, larger diameter pipes should be placed at the bottom.

Spigot and socket pipes should be stacked separately. However, where this is not possible, larger diameter pipes should be stacked with sockets at alternate ends protruding to ensure pipes are evenly supported along their length.

Pipes should not be stacked more than 7 high and when stored in the open for long periods, or exposed to strong sunlight, they should be covered with an opaque sheet. Fittings supplied in cardboard boxes or polythene bags should be stored under cover and kept packed until required. Solvent cement should be stored in a cool place out of direct sunlight and away from any heat source.





Maintenance

Provided that the system is designed and installed correctly, no maintenance will be required.

If blockage does occur, use only flexible or roller type rods. Pointed or bearing type metal fittings are not recommended. Tests have been carried out on PVCu pipes and fittings using equipment from specialist drain cleaning contractors and their standard equipment is suitable.

Safety

The relevant regulations are outlined in the Health and Safety At Work Act 1974 and The Construction (Design and Management) Regulations 1994 and should be followed. Hazard sheets, dealing with the correct storage, use, and any hazards of working with solvent cement, silicone lubricant and fire protection products are available from Marley Plumbing & Drainage.

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