

February 2020

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BRETT MARTIN  
PLUMBING SYSTEMS

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PRODUCT GUIDE

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PRODUCT RANGE  
INSTALLATION DETAILS

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PLUMBING SYSTEMS

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# PLUMBING

P R O D U C T G U I D E



Plumbing & Drainage



## Plumbing & Drainage

Brett Martin is a multi-site international organisation producing not only an extensive range of plastic Underground, Rainwater and Plumbing systems but also Europe's largest range of GRP, PVC, Polycarbonate and Acrylic rooflight sheet products.

Our reputation for excellence in product quality and technical service is founded on over 60 years manufacturing experience.



# PLUMBING

## PRODUCT GUIDE

Brett Martin Plumbing & Drainage is the UK and Ireland's largest independent plastic building products manufacturer offering complete drainage solutions.

Brett Martin's Soil & Waste ranges include both Push-fit and Solvent Weld options in a variety of dimensions and a comprehensive range of components for the complete assembly of soil ventilation stacks on domestic, commercial and industrial buildings.

A comprehensive range of polypropylene traps and adaptors facilitate connection of any appliance and an Overflow System in PVC-C is also available, completing the package offered.

### **Flexible Plumbing Systems**

Brett Martin also offers the Plumbfit flexible plumbing system for hot and cold water installations as well as a range of MDPE potable water pipe and a comprehensive range of fittings in sizes 20mm - 63mm. Details of these systems are available on request.



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PRODUCT

## **BRETT MARTIN PLUMBING SYSTEMS**

Brett Martin Plumbing Systems are comprehensive above ground plastic drainage systems, suitable for conveying sanitary waste from domestic, commercial and public buildings.

Installers can select either push-fit or solvent weld systems. Both types offer easy and fast installation and excellent durability. Traps and an overflow system are also provided.

In view of the diversity of new and refurbished buildings, systems are provided in a range of colours to provide the most aesthetic options for any specific building.

Brett Martin Plumbing Systems are complemented by Brett Martin Underground Drain in 110 and 160mm diameters manufactured to BS EN 1401, and Brett Martin Sewer systems in diameters up to 400mm manufactured to BS EN 1401.

## **PRODUCT AND COLOUR RANGE**

### **BRETT MARTIN PUSH-FIT SOIL**

Brett Martin Push-fit Soil systems are highly adaptable 110mm and 160mm diameter systems, manufactured to BS EN 1329, and compatible with any other 110mm and 160mm above ground drainage systems. The 110mm diameter system is available in white, grey, black and brown, the 160mm diameter system in grey only.

### **BRETT MARTIN SOLVENT WELD SOIL**

Brett Martin Solvent Weld Soil system is a complete 110mm diameter system, also manufactured to BS EN 1329, with all components specifically designed for jointing with solvent cement. This system is available in white, olive grey and black.

Both types of system include several different branches, bends, boss fittings and adaptors to give maximum versatility and efficiency in installation.

### **BRETT MARTIN PUSH-FIT WASTE**

Brett Martin Push-fit Waste systems, manufactured in polypropylene, are cost effective, easy to install, and ideal for domestic and commercial installations, particularly in conditions where access is limited.

The ring sealed push-fit joints not only permit ease of assembly, but also produce watertight connections which can accommodate thermal movement. Brett Martin Push-fit Waste 32mm and 40mm diameter systems are available in grey, white, black and brown, while the 50mm system is available in grey and black.

### **BRETT MARTIN SOLVENT WELD WASTE**

Brett Martin Solvent Weld Waste systems, manufactured in PVC-C and conforming to BS EN 1566, are very durable and designed to provide secure solvent weld jointing. PVC-C exhibits superior fire performance to other thermoplastics, and its high softening point means it is not adversely affected by very hot water discharges over prolonged periods. Brett Martin Solvent Weld Waste is available in 32, 40, and 50mm diameter systems, in olive grey, white, black and brown.

### **BRETT MARTIN COMPRESSION WASTE**

Brett Martin Compression Waste systems are produced in white polypropylene, in 32mm and 40mm diameters. Effective sealing is produced by tightening of the threaded seal retaining rings. The Compression Waste system can take high temperature discharges, and thermal movement allowances are accommodated in the design. It is often used for refurbishing and extending existing waste systems.

### **BRETT MARTIN WASTE TRAPS**

A comprehensive range of traps is available to suit the 32mm and 40mm systems, manufactured in white polypropylene, and conforming to BS EN 274. These include bottle, tubular, "P" and "S" traps, as well as traps for specific appliances, such as washing machines and baths. All have compression joints for ease of connection.

## BRETT MARTIN OVERFLOW SYSTEM

Brett Martin Overflow System, manufactured in white and grey PVC-C, can be push-fit assembled or solvent weld jointed. It can cope with hot as well as cold water overflows, and is 21.5mm in diameter.

All push-fit components, compression components and traps have long lasting rubber seals, manufactured to BS EN 681, and retained by strong snap caps. These components offer advantages with quick and easy installation, instant and reliable sealing and can accommodate thermal movement.

## PRODUCT GUIDE

The Brett Martin Plumbing Product Guide illustrates all the components of the systems. Information relating to dimensions, performance, design criteria and installation is provided. The Brett Martin Plumbing Product Guide is a comprehensive manual for architect, specifier and builder alike.

The information provided in this Product Guide is based on BS EN 12056-2:2000 Gravity drainage systems inside buildings. Sanitary pipework, layout and calculation, and all reasonable care has been taken in its compilation. However, Brett Martin accepts no responsibilities for any errors or omissions: it is the specifier's / installer's responsibility to ensure that each product is fit for its intended purpose, and that the actual conditions of use are suitable.

## AVAILABILITY

Brett Martin Plumbing Systems are available throughout the UK and Ireland from builders' merchants who can, by agreement, make use of the Brett Martin direct-to-site delivery service which is available for larger quantities of material.

## CONDITIONS OF SALE

Brett Martin Plumbing Systems are sold subject to the Brett Martin standard Conditions of Sale, copies of which are available on request.

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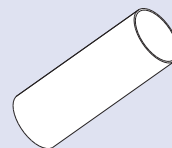
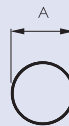


## PUSH-FIT SOIL SYSTEM

### 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

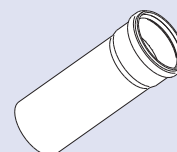
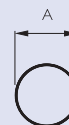
#### SOIL PIPE - PLAIN ENDED

| CODE         | LENGTH | SIZE - A | CODE         | LENGTH | SIZE - A |
|--------------|--------|----------|--------------|--------|----------|
| <b>BS402</b> | 2.5m   | 110      | <b>BS603</b> | 3m     | 160      |
| <b>BS403</b> | 3m     | 110      | <b>BS604</b> | 4m     | 160      |
| <b>BS404</b> | 4m     | 110      | <b>BS605</b> | 6m     | 160      |
| <b>BS405</b> | 6m     | 110      |              |        |          |



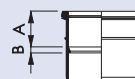
#### SOIL PIPE - SINGLE SOCKET

| CODE         | LENGTH | SIZE - A | CODE  | LENGTH | SIZE - A |
|--------------|--------|----------|---|--------|----------|
| <b>BS413</b> | 2.5m   | 110      | <b>LG03</b>   | 3m     | 110      |
| <b>BS414</b> | 3m     | 110      | <b>LG04</b>   | 4m     | 110      |
| <b>BS415</b> | 4m     | 110      | <b>LG06</b>   | 6m     | 110      |
| <b>BS430</b> | 6m     | 110      |   |        |          |
| <b>BS623</b> | 3m     | 160      | Note: LG03, LG04 and LG06 Single Socket Pipes are manufactured for Republic of Ireland. |        |          |
| <b>BS624</b> | 4m     | 160      |   |        |          |
| <b>BS625</b> | 6m     | 160      |   |        |          |
|              |        |          |   |        |          |



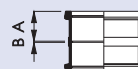
#### PIPE CONNECTOR - SINGLE SOCKET

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>BS432</b> | 110  | 60 | 10 |
| <b>BR607</b> | 160  | 80 | 13 |



#### PIPE CONNECTOR - DOUBLE SOCKET

| CODE         | SIZE | A  | B |
|--------------|------|----|---|
| <b>BS406</b> | 110  | 51 | 2 |
| <b>BR627</b> | 160  | 80 | 4 |



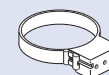
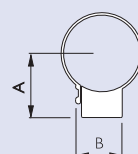
#### SLIP COUPLER - DOUBLE SOCKET

| CODE         | SIZE | A   |
|--------------|------|-----|
| <b>BS478</b> | 110  | 104 |



#### SOIL PIPE BRACKET - SINGLE FIXING

| CODE         | SIZE | A   | B  |
|--------------|------|-----|----|
| <b>BS438</b> | 110  | 90  | 67 |
| <b>BR619</b> | 160  | 121 | 88 |

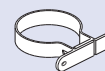
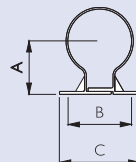


# PUSH-FIT SOIL SYSTEM

## 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

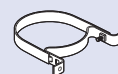
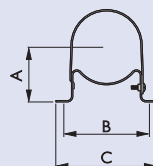
### SOIL PIPE BRACKET - DOUBLE FIXING

| CODE         | SIZE | A  | B       | C       |
|--------------|------|----|---------|---------|
| <b>BS407</b> | 110  | 92 | 109-135 | 139-165 |



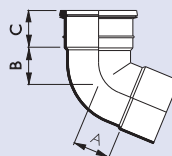
### METAL PIPE BRACKET

| CODE         | SIZE | A   | B   | C   |
|--------------|------|-----|-----|-----|
| <b>BR450</b> | 110  | 93  | 150 | 172 |
| <b>BR620</b> | 160  | 116 | 220 | 240 |



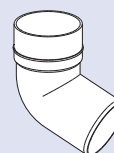
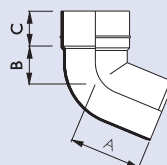
### BEND - 112 1/2° SINGLE SOCKET TOP OFFSET

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>BS408</b> | 110  | 64 | 63 | 63 |
| <b>BR630</b> | 160  | 99 | 67 | 79 |



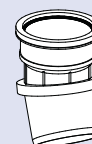
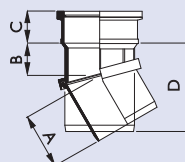
### BEND - 112 1/2° SINGLE SOCKET BOTTOM OFFSET

| CODE         | SIZE | A   | B  | C  |
|--------------|------|-----|----|----|
| <b>BS409</b> | 110  | 124 | 65 | 61 |
| <b>BR631</b> | 160  | 161 | 88 | 76 |



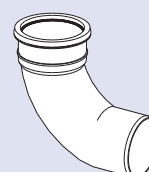
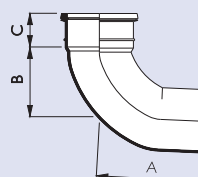
### BEND - SINGLE SOCKET ADJUSTABLE 0° - 30°

| CODE         | SIZE | A  | B  | C  | D   |
|--------------|------|----|----|----|-----|
| <b>BS424</b> | 110  | 88 | 51 | 50 | 140 |



### BENDS - SINGLE SOCKET

| CODE         | SIZE | ANGLE    | A   | B   | C  |
|--------------|------|----------|-----|-----|----|
| <b>BS420</b> | 110  | 92 1/2°  | 156 | 100 | 50 |
| <b>BS421</b> | 110  | 112 1/2° | 125 | 63  | 63 |
| <b>BS422</b> | 110  | 135°     | 116 | 50  | 63 |
| <b>BR608</b> | 160  | 92 1/2°  | 212 | 141 | 80 |
| <b>BR609</b> | 160  | 112 1/2° | 169 | 83  | 80 |
| <b>BR610</b> | 160  | 135°     | 128 | 59  | 80 |

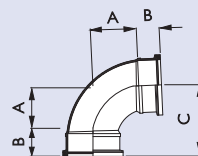


## PUSH-FIT SOIL SYSTEM

### 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

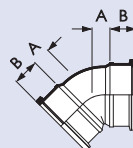
#### BENDS - DOUBLE SOCKET 92<sup>1</sup>/<sub>2</sub>°

| CODE         | SIZE | A   | B  | C   |
|--------------|------|-----|----|-----|
| <b>BS480</b> | 110  | 101 | 50 | 168 |



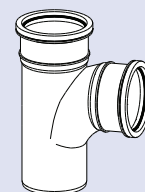
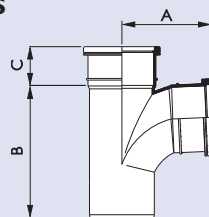
#### DOUBLE SOCKET BEND 135°

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>BS482</b> | 110  | 34 | 50 |



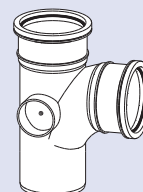
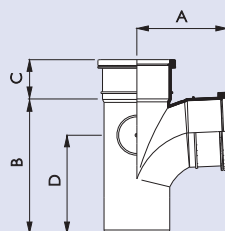
#### BRANCHES - DOUBLE SOCKET WITHOUT BOSSES

| CODE           | SIZE | ANGLE                            | A   | B   | C  |
|----------------|------|----------------------------------|-----|-----|----|
| <b>BS417</b>   | 110  | 92 <sup>1</sup> / <sub>2</sub> ° | 156 | 228 | 67 |
| <b>BS419</b>   | 110  | 135°                             | 145 | 253 | 58 |
| <b>BR615</b>   | 160  | 92 <sup>1</sup> / <sub>2</sub> ° | 223 | 312 | 80 |
| <b>BR616</b>   | 160  | 135°                             | 180 | 334 | 80 |
| (110mm Branch) |      |                                  |     |     |    |
| <b>BR617</b>   | 160  | 135°                             | 205 | 334 | 80 |



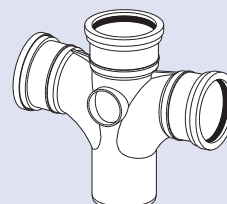
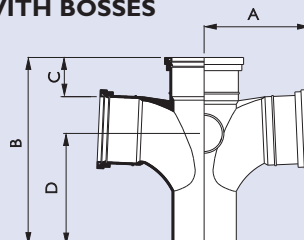
#### BRANCHES - DOUBLE SOCKET WITH BOSSES

| CODE         | SIZE | ANGLE                            | A   | B   | C  | D   |
|--------------|------|----------------------------------|-----|-----|----|-----|
| <b>BS451</b> | 110  | 92 <sup>1</sup> / <sub>2</sub> ° | 156 | 228 | 67 | 167 |
| <b>BS458</b> | 110  | 104°                             | 147 | 234 | 67 | 155 |
| <b>BS459</b> | 110  | 135°                             | 145 | 253 | 58 | 152 |



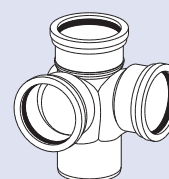
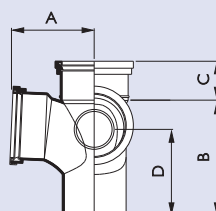
#### DOUBLE BRANCH - 92<sup>1</sup>/<sub>2</sub>° TRIPLE SOCKET WITH BOSSES

| CODE         | SIZE | A   | B   | C  | D   |
|--------------|------|-----|-----|----|-----|
| <b>BS490</b> | 110  | 156 | 253 | 67 | 167 |



#### CORNER BRANCH - 92<sup>1</sup>/<sub>2</sub>° TRIPLE SOCKET WITH BOSS

| CODE         | SIZE | A   | B   | C  | D   |
|--------------|------|-----|-----|----|-----|
| <b>BS491</b> | 110  | 156 | 228 | 67 | 167 |

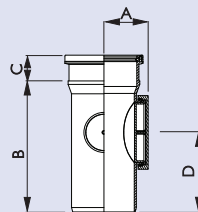


# PUSH-FIT SOIL SYSTEM

## 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

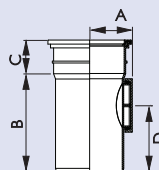
### ACCESS PIPE - SINGLE SOCKET

| CODE         | SIZE | A  | B   | C  | D   | E   |
|--------------|------|----|-----|----|-----|-----|
| <b>BS410</b> | 110  | 75 | 213 | 53 | 135 | 103 |



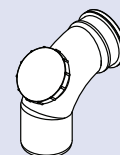
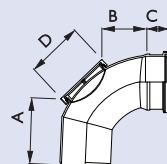
### ACCESS PIPE - SINGLE SOCKET

| CODE         | SIZE | A   | B   | C  | D   | E   |
|--------------|------|-----|-----|----|-----|-----|
| <b>BS629</b> | 160  | 100 | 230 | 78 | 155 | 103 |



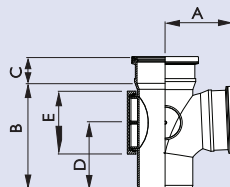
### ACCESS BEND - 92 1/2° SINGLE SOCKET

| CODE         | SIZE | A   | B  | C  | D   |
|--------------|------|-----|----|----|-----|
| <b>BS436</b> | 110  | 142 | 94 | 53 | 103 |



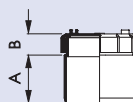
### ACCESS BRANCH - 92 1/2° DOUBLE SOCKET

| CODE         | SIZE | A   | B   | C  | D   | E   |
|--------------|------|-----|-----|----|-----|-----|
| <b>BS447</b> | 110  | 135 | 210 | 53 | 132 | 103 |



### ACCESS PLUG

| CODE         | A  | B  |
|--------------|----|----|
| <b>BS431</b> | 75 | 33 |



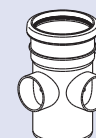
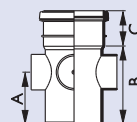
### SOCKET PLUG

| CODE         | SIZE | A  |
|--------------|------|----|
| <b>BS439</b> | 110  | 55 |



### TRIPLE BOSS PIPE - SINGLE SOCKET

| CODE         | A   | B   | C  |
|--------------|-----|-----|----|
| <b>BS445</b> | 100 | 150 | 68 |

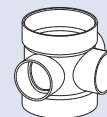
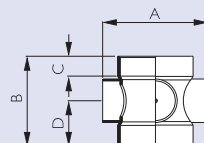


## PUSH-FIT SOIL SYSTEM

### 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

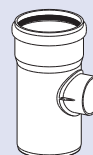
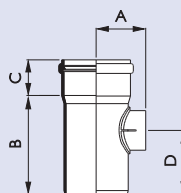
#### SHORT BOSS PIPE - DOUBLE SOLVENT WELD

| CODE         | SIZE | A   | B   | C  | D  |
|--------------|------|-----|-----|----|----|
| <b>BS425</b> | 110  | 165 | 138 | 31 | 69 |



#### SINGLE BOSS PIPE

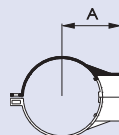
| CODE         | SIZE | A  | B   | C  | D   |
|--------------|------|----|-----|----|-----|
| <b>BS444</b> | 110  | 85 | 169 | 61 | 109 |



Ireland Only

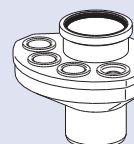
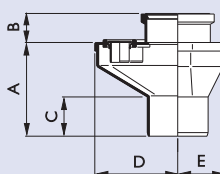
#### STRAP-ON BOSS - 50mm OPEN BOSS

| CODE         | SIZE | A   |
|--------------|------|-----|
| <b>BS426</b> | 110  | 85  |
| <b>BS626</b> | 160  | 109 |



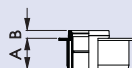
#### WASTE INLET MANIFOLD

| CODE         | SIZE | A   | B  | C  | D   | E  |
|--------------|------|-----|----|----|-----|----|
| <b>BS435</b> | 110  | 169 | 53 | 71 | 150 | 86 |



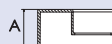
#### SOLVENT WELD WASTE ADAPTOR - 50mm

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>BS441</b> | 110  | 55 | 14 |



#### PUSH-FIT WASTE ADAPTOR - 50mm

| CODE         | SIZE | A  | B |
|--------------|------|----|---|
| <b>BS442</b> | 110  | 55 | 3 |

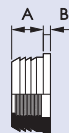


## PUSH-FIT SOIL SYSTEM

### 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

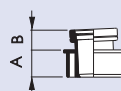
#### WASTE ADAPTORS - RUBBER FOR PUSH-FIT (For connecting push-fit waste system to soil stack)

| CODE       | SIZE          | A  | B |
|------------|---------------|----|---|
| <b>BW1</b> | 1 1/4" / 32mm | 26 | 3 |
| <b>BW2</b> | 1 1/2" / 40mm | 26 | 3 |
| <b>BW3</b> | 2" / 50mm     | 26 | 3 |



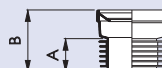
#### 2 1/2° ANGLED WASTE BOSS ADAPTORS - RING SEAL CONNECTION (For solvent welding BS EN 1566 waste systems to soil stack)

| CODE       | SIZE          | A  | B  |
|------------|---------------|----|----|
| <b>BW4</b> | 1 1/4" / 32mm | 30 | 22 |
| <b>BW5</b> | 1 1/2" / 40mm | 30 | 22 |
| <b>BW6</b> | 2" / 50mm     | 30 | 37 |



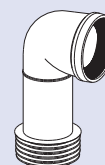
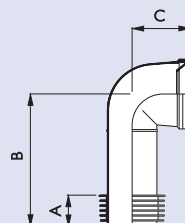
#### WC ADAPTOR - STRAIGHT

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5151</b> | 57 | 115 |



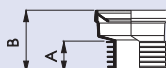
#### WC ADAPTOR - BENT

| CODE         | A  | B   | C   |
|--------------|----|-----|-----|
| <b>B5152</b> | 54 | 227 | 115 |



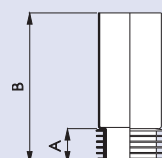
#### WC ADAPTOR - OFFSET

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5153</b> | 54 | 115 |



#### WC ADAPTOR - EXTENSION PIECE

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5154</b> | 55 | 258 |

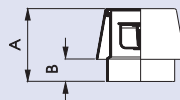


# PUSH-FIT SOIL SYSTEM

## 110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

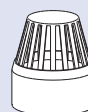
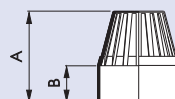
### AIR ADMITTANCE VALVE

| CODE         |  | A   | B  |
|--------------|--|-----|----|
| <b>BS437</b> |  | 125 | 39 |



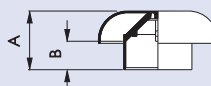
### VENT COWL

| CODE         | SIZE | A   | B  |
|--------------|------|-----|----|
| <b>BS427</b> | 110  | 129 | 52 |
| <b>BS627</b> | 160  | 69  | 24 |



### EXTRACT COWL

| CODE         | SIZE | A   | B  |
|--------------|------|-----|----|
| <b>BS497</b> | 110  | 100 | 48 |



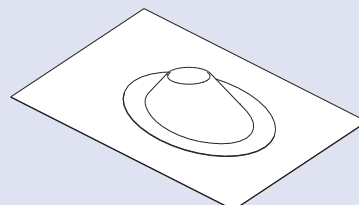
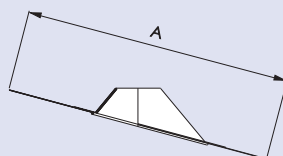
### WEATHERING COLLAR

| CODE         | SIZE | A  |
|--------------|------|----|
| <b>BS428</b> | 110  | 57 |
| <b>BS628</b> | 160  | 57 |



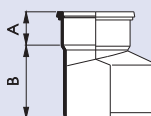
### WEATHERING SLATE

| CODE         | A         |
|--------------|-----------|
| <b>BS429</b> | 457 X 457 |



### DRAIN CONNECTOR - 110mm SOIL PIPE TO 160mm DRAIN

| CODE         | A  | B   |
|--------------|----|-----|
| <b>BS423</b> | 57 | 126 |



## PUSH-FIT SOIL SYSTEM

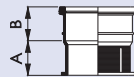
110mm & 160mm PVCu PIPE & FITTINGS TO BS EN 1329

## SOLVENT WELD SOIL SYSTEM

110mm PVCu PIPE & FITTINGS TO BS EN 1329

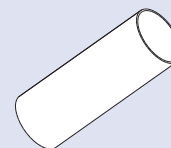
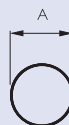
### DRAIN CONNECTOR - TO CAST IRON & SALT GLAZE

| CODE         | SIZE | A   | B  |
|--------------|------|-----|----|
| <b>BS434</b> | 110  | 59  | 58 |
| <b>BR621</b> | 160  | 107 | 95 |



### SOIL PIPE - PLAIN ENDED

| CODE         | LENGTH | SIZE - A |
|--------------|--------|----------|
| <b>BS402</b> | 2.5m   | 110      |
| <b>BS403</b> | 3m     | 110      |
| <b>BS404</b> | 4m     | 110      |



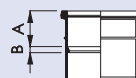
### PIPE CONNECTOR - DOUBLE SOCKET

| CODE         | A  | B |
|--------------|----|---|
| <b>BS406</b> | 51 | 2 |



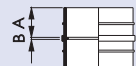
### PIPE CONNECTOR - SINGLE SOCKET

| CODE         | A  | B  |
|--------------|----|----|
| <b>BS432</b> | 60 | 10 |



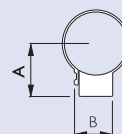
### PIPE CONNECTOR - DOUBLE SOLVENT WELD SOCKET

| CODE         | A  | B |
|--------------|----|---|
| <b>BS460</b> | 51 | 3 |



### SOIL PIPE BRACKET - SINGLE FIXING

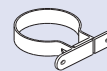
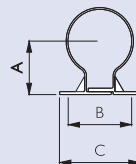
| CODE         | A  | B  |
|--------------|----|----|
| <b>BS438</b> | 90 | 67 |





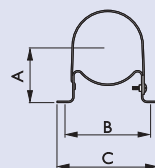
### SOIL PIPE BRACKET - DOUBLE FIXING

| CODE         | A  | B       | C       |
|--------------|----|---------|---------|
| <b>BS407</b> | 92 | 109-135 | 139-165 |



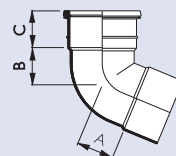
### METAL PIPE BRACKET

| CODE         | SIZE | A  | B   | C   |
|--------------|------|----|-----|-----|
| <b>BR450</b> | 110  | 93 | 150 | 172 |



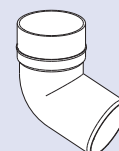
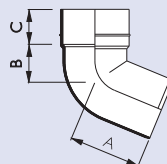
### BEND - 112 1/2° SINGLE SOCKET TOP OFFSET

| CODE         | A  | B  | C  |
|--------------|----|----|----|
| <b>BS408</b> | 64 | 63 | 63 |



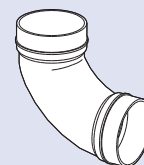
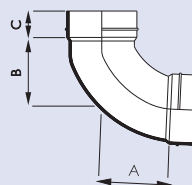
### BEND - 112 1/2° SINGLE SOCKET BOTTOM OFFSET

| CODE         | A   | B  | C  |
|--------------|-----|----|----|
| <b>BS409</b> | 124 | 65 | 61 |



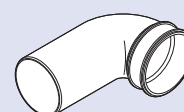
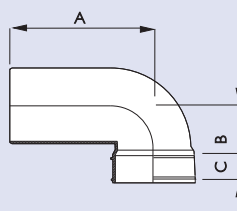
### DOUBLE SOCKET BENDS

| CODE         | ANGLE   | A   | B   | C  |
|--------------|---------|-----|-----|----|
| <b>BS473</b> | 92 1/2° | 116 | 116 | 44 |
| <b>BS474</b> | 135°    | 51  | 51  | 45 |



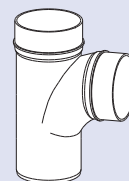
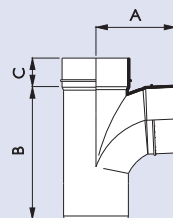
### SOIL BEND - 92 1/2° LONG SPIGOT

| CODE         | A   | B  | C  |
|--------------|-----|----|----|
| <b>BS479</b> | 205 | 69 | 40 |



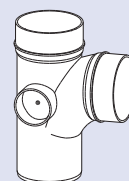
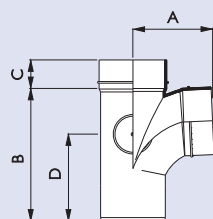
### BRANCHES - DOUBLE SOCKET WITHOUT BOSSES

| CODE         | ANGLE              | A   | B   | C  |
|--------------|--------------------|-----|-----|----|
| <b>BS461</b> | 92 $\frac{1}{2}$ ° | 137 | 228 | 49 |
| <b>BS463</b> | 135°               | 135 | 252 | 43 |



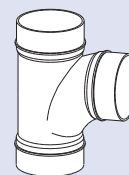
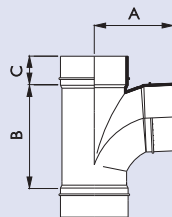
### BRANCHES - DOUBLE SOCKET WITH BOSSES

| CODE         | ANGLE              | A   | B   | C  | D   |
|--------------|--------------------|-----|-----|----|-----|
| <b>BS453</b> | 92 $\frac{1}{2}$ ° | 137 | 228 | 49 | 149 |
| <b>BS466</b> | 135°               | 135 | 252 | 43 | 153 |



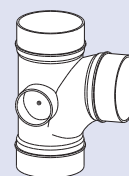
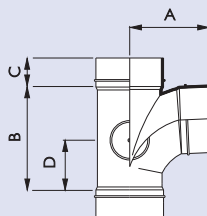
### BRANCHES - TRIPLE SOCKET WITHOUT BOSSES

| CODE         | ANGLE              | A   | B   | C  |
|--------------|--------------------|-----|-----|----|
| <b>BS467</b> | 92 $\frac{1}{2}$ ° | 137 | 179 | 49 |
| <b>BS469</b> | 135°               | 135 | 187 | 43 |



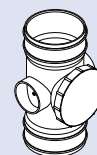
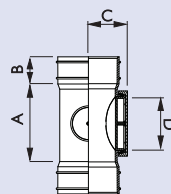
### BRANCHES - TRIPLE SOCKET WITH BOSSES

| CODE         | SIZE               | A   | B   | C  | D  |
|--------------|--------------------|-----|-----|----|----|
| <b>BS452</b> | 92 $\frac{1}{2}$ ° | 137 | 179 | 49 | 86 |



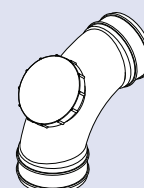
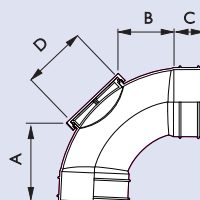
### ACCESS PIPE - DOUBLE SOCKET

| CODE         | A   | B  | C  | D   |
|--------------|-----|----|----|-----|
| <b>BS477</b> | 160 | 52 | 75 | 103 |



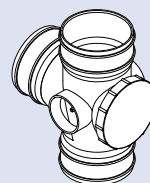
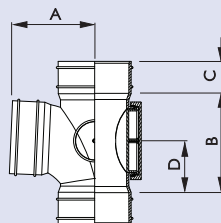
### ACCESS BEND - 92 $\frac{1}{2}$ ° DOUBLE SOCKET

| CODE         | A  | B  | C  | D   |
|--------------|----|----|----|-----|
| <b>BS476</b> | 81 | 92 | 52 | 103 |



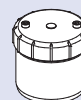
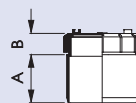
### ACCESS BRANCH - 92<sup>1</sup>/<sub>2</sub>° TRIPLE SOCKET

| CODE         | A   | B   | C  | D  | E   |
|--------------|-----|-----|----|----|-----|
| <b>BS475</b> | 132 | 160 | 52 | 84 | 103 |



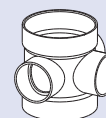
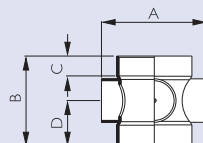
### ACCESS PLUG

| CODE         | A  | B  |
|--------------|----|----|
| <b>BS431</b> | 75 | 33 |



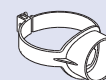
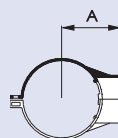
### DOUBLE SHORT BOSS PIPE

| CODE         | A   | B   | C  | D  |
|--------------|-----|-----|----|----|
| <b>BS425</b> | 165 | 138 | 31 | 69 |



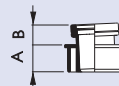
### STRAP-ON BOSS - 50mm OPEN BOSS

| CODE         | A  |
|--------------|----|
| <b>BS426</b> | 85 |



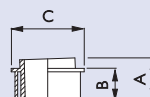
### 2<sup>1</sup>/<sub>2</sub>° ANGLED WASTE BOSS ADAPTORS - RING SEAL CONNECTION (For solvent welding BS EN 1566 waste systems to soil stack)

| CODE       | SIZE                                   | A  | B  |
|------------|--|----|----|
| <b>BW4</b> | 1 <sup>1</sup> / <sub>4</sub> " / 32mm | 30 | 22 |
| <b>BW5</b> | 1 <sup>1</sup> / <sub>2</sub> " / 40mm | 30 | 22 |
| <b>BW6</b> | 2" / 50mm                              | 30 | 37 |



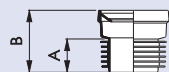
### 2<sup>1</sup>/<sub>2</sub>° ANGLED WASTE BOSS ADAPTORS - SOLVENT WELD CONNECTION (For solvent welding BS EN 1566 waste systems to soil stack)

| CODE       | SIZE                                   | A  | B  | C  |
|------------|--|----|----|----|
| <b>BW7</b> | 1 <sup>1</sup> / <sub>4</sub> " / 32mm | 40 | 30 | 68 |
| <b>BW8</b> | 1 <sup>1</sup> / <sub>2</sub> " / 40mm | 40 | 30 | 68 |
| <b>BW9</b> | 2" / 50mm                              | 53 | 30 | 68 |



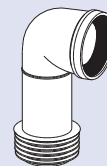
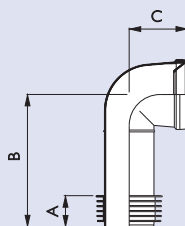
### WC ADAPTOR - STRAIGHT

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5151</b> | 57 | 115 |



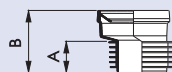
### WC ADAPTOR - BENT

| CODE         | A  | B   | C   |
|--------------|----|-----|-----|
| <b>B5152</b> | 54 | 227 | 115 |



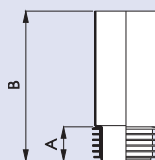
### WC ADAPTOR - OFFSET

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5153</b> | 54 | 115 |



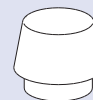
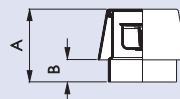
### WC ADAPTOR - EXTENSION PIECE

| CODE         | A  | B   |
|--------------|----|-----|
| <b>B5154</b> | 55 | 258 |



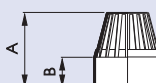
### AIR ADMITTANCE VALVE

| CODE         | A   | B  |
|--------------|-----|----|
| <b>BS437</b> | 125 | 39 |



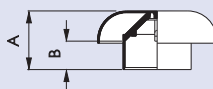
### VENT COWL

| CODE         | A   | B  |
|--------------|-----|----|
| <b>BS427</b> | 129 | 52 |



### EXTRACT COWL

|              |     |    |
|--------------|-----|----|
| CODE         | A   | B  |
| <b>BS497</b> | 100 | 48 |



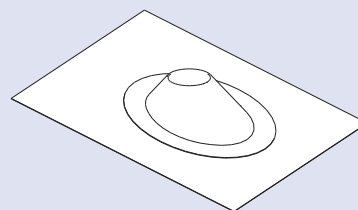
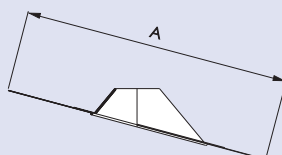
### WEATHERING COLLAR

|              |    |
|--------------|----|
| CODE         | A  |
| <b>BS428</b> | 57 |



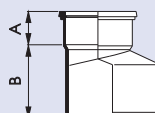
### WEATHERING SLATE

|              |           |
|--------------|-----------|
| CODE         | A         |
| <b>BS429</b> | 457 x 457 |



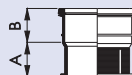
### DRAIN CONNECTOR - 110mm SOIL PIPE TO 160mm DRAIN

|              |    |     |
|--------------|----|-----|
| CODE         | A  | B   |
| <b>BS423</b> | 57 | 126 |



### DRAIN CONNECTOR - TO CAST IRON & SALT GLAZE

|              |    |    |
|--------------|----|----|
| CODE         | A  | B  |
| <b>BS434</b> | 59 | 58 |

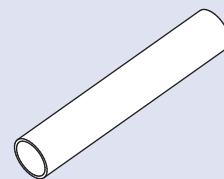


## PUSH-FIT WASTE SYSTEM

### 32mm, 40mm & 50mm POLYPROPYLENE PIPE & FITTINGS

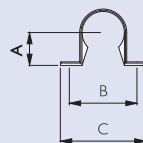
#### POLYPROPYLENE WASTE PIPE 3m - LENGTHS

| CODE         | SIZE - A |
|--------------|----------|
| <b>W9200</b> | 32       |
| <b>W9600</b> | 40       |
| <b>W9800</b> | 50       |



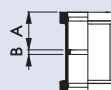
#### PIPE CLIP

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1180</b> | 32   | 28 | 53 | 69 |
| <b>W2180</b> | 40   | 33 | 58 | 74 |
| <b>W3180</b> | 50   | 40 | 72 | 88 |



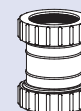
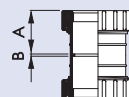
#### STRAIGHT CONNECTOR

| CODE        | SIZE | A  | B |
|-------------|------|----|---|
| <b>W902</b> | 32   | 33 | 2 |
| <b>W922</b> | 40   | 35 | 2 |
| <b>W982</b> | 50   | 36 | 2 |



#### COMPRESSION STRAIGHT CONNECTOR

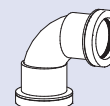
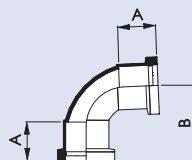
| CODE        | SIZE | A  | B |
|-------------|------|----|---|
| <b>W940</b> | 32   | 44 | 2 |
| <b>W941</b> | 40   | 45 | 2 |



(white only)

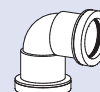
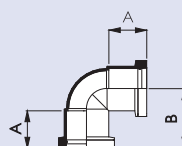
#### SWEPT BEND - 92½°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W900</b> | 32   | 33 | 65 |
| <b>W920</b> | 40   | 35 | 79 |
| <b>W980</b> | 50   | 37 | 96 |



#### KNUCKLE BEND - 90°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W907</b> | 32   | 33 | 53 |
| <b>W927</b> | 40   | 35 | 58 |
| <b>W987</b> | 50   | 37 | 65 |

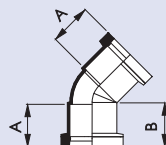


## PUSH-FIT WASTE SYSTEM

### 32mm, 40mm & 50mm POLYPROPYLENE PIPE & FITTINGS

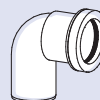
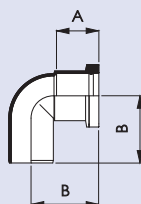
#### OBTUSE BEND - 135°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W901</b> | 32   | 33 | 34 |
| <b>W921</b> | 40   | 35 | 37 |
| <b>W981</b> | 50   | 37 | 38 |



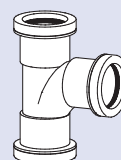
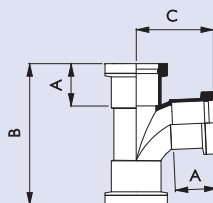
#### CONVERSION BEND - 90°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W906</b> | 32   | 33 | 56 |
| <b>W926</b> | 40   | 35 | 58 |
| <b>W986</b> | 50   | 37 | 72 |



#### SWEPT TEE - 92 1/2°

| CODE        | SIZE | A  | B   | C  |
|-------------|------|----|-----|----|
| <b>W903</b> | 32   | 33 | 111 | 61 |
| <b>W923</b> | 40   | 35 | 129 | 75 |
| <b>W983</b> | 50   | 37 | 137 | 82 |



#### SOCKET PLUG

| CODE        | SIZE | A  |
|-------------|------|----|
| <b>W904</b> | 32   | 25 |
| <b>W924</b> | 40   | 27 |
| <b>W984</b> | 50   | 28 |



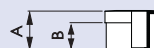
#### SOCKET REDUCER

| CODE        | REDUCTION                 | A  | B  |
|-------------|---------------------------|----|----|
| <b>W928</b> | 40mm fitting to 32mm pipe | 42 | 32 |



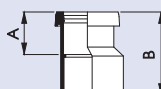
#### SOCKET REDUCER

| CODE        | REDUCTION                   | A  | B  |
|-------------|-----------------------------|----|----|
| <b>W909</b> | 32mm fitting to 21.5mm pipe | 26 | 18 |
| <b>W929</b> | 40mm fitting to 21.5mm pipe | 30 | 18 |



#### SOCKET REDUCER

| CODE        | REDUCTION                 | A  | B  |
|-------------|---------------------------|----|----|
| <b>W988</b> | 50mm fitting to 40mm pipe | 34 | 82 |



## PUSH-FIT WASTE SYSTEM

32mm, 40mm & 50mm POLYPROPYLENE PIPE

& FITTINGS

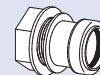
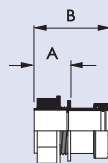
## SOLVENT WELD WASTE SYSTEM

32mm, 40mm & 50mm PVC-C PIPE

& FITTINGS TO BS EN 1566

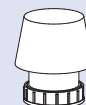
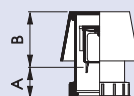
### STRAIGHT TANK CONNECTOR

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W905</b> | 32   | 33 | 70 |
| <b>W925</b> | 40   | 33 | 73 |



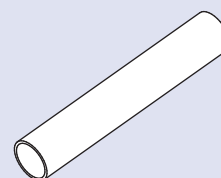
### AIR ADMITTANCE VALVE - UNIFIX

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W137</b> | 32   | 32 | 48 |
| <b>W237</b> | 40   | 40 | 48 |
| <b>W337</b> | 50   | 38 | 68 |



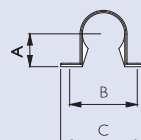
### PVC-C WASTE PIPE - 3m LENGTHS

| CODE         | SIZE - A |
|--------------|----------|
| <b>W1010</b> | 32       |
| <b>W2010</b> | 40       |
| <b>W3010</b> | 50       |



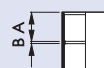
### PIPE CLIP

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1180</b> | 32   | 28 | 53 | 69 |
| <b>W2180</b> | 40   | 33 | 58 | 74 |
| <b>W3180</b> | 50   | 40 | 72 | 88 |



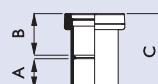
### STRAIGHT CONNECTOR

| CODE         | SIZE | A  | B |
|--------------|------|----|---|
| <b>W1100</b> | 32   | 25 | 2 |
| <b>W2100</b> | 40   | 28 | 2 |
| <b>W3100</b> | 50   | 33 | 2 |



### EXPANSION COUPLING

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1200</b> | 32   | 25 | 36 | 64 |
| <b>W2200</b> | 40   | 27 | 36 | 65 |
| <b>W3200</b> | 50   | 33 | 36 | 72 |





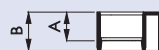
# SOLVENT WELD WASTE SYSTEM

## 32mm, 40mm & 50mm PVC-C PIPE & FITTINGS

### TO BS EN 1566

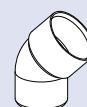
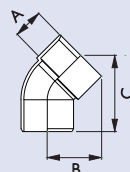
#### SOCKET REDUCER

| CODE         | REDUCTION                 | A  | B  |
|--------------|---------------------------|----|----|
| <b>W1110</b> | 40mm fitting to 32mm pipe | 25 | 33 |
| <b>W2110</b> | 50mm fitting to 32mm pipe | 25 | 33 |
| <b>W3110</b> | 50mm fitting to 40mm pipe | 27 | 33 |



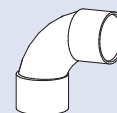
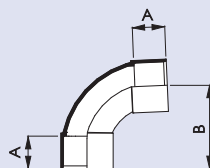
#### OBTUSE SPIGOT BEND - 45°

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1230</b> | 32   | 21 | 37 | 52 |
| <b>W2230</b> | 40   | 24 | 45 | 67 |



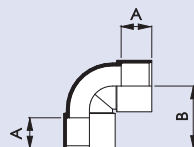
#### SWEPT BEND - 92 1/2°

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>W1140</b> | 32   | 25 | 65 |
| <b>W2140</b> | 40   | 28 | 68 |
| <b>W3140</b> | 50   | 33 | 95 |



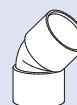
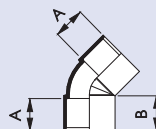
#### KNUCKLE BEND - 90°

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>W1120</b> | 32   | 24 | 49 |
| <b>W2120</b> | 40   | 28 | 56 |
| <b>W3120</b> | 50   | 33 | 67 |



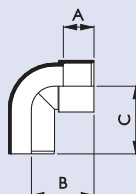
#### OBTUSE BEND - 135°

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>W1130</b> | 32   | 25 | 27 |
| <b>W2130</b> | 40   | 28 | 30 |
| <b>W3130</b> | 50   | 33 | 35 |



#### CONVERSION BEND - 90°

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1210</b> | 32   | 24 | 49 | 53 |
| <b>W2210</b> | 40   | 28 | 56 | 64 |
| <b>W3210</b> | 50   | 33 | 68 | 82 |

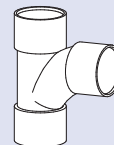
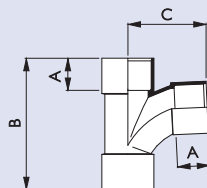


## SOLVENT WELD WASTE SYSTEM

### 32mm, 40mm & 50mm PVC-C PIPE & FITTINGS TO BS EN 1566

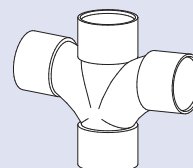
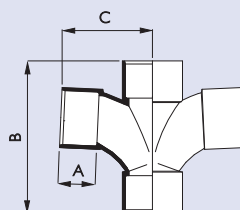
#### SWEPT TEE - 92<sup>1</sup>/<sub>2</sub>°

| CODE         | SIZE | A  | B   | C  |
|--------------|------|----|-----|----|
| <b>W1160</b> | 32   | 25 | 103 | 61 |
| <b>W2160</b> | 40   | 28 | 114 | 71 |
| <b>W3160</b> | 50   | 33 | 136 | 80 |



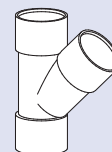
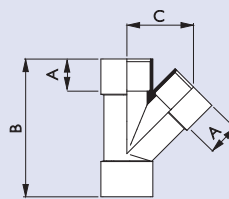
#### CROSS TEE - 92<sup>1</sup>/<sub>2</sub>°

| CODE         | SIZE | A  | B   | C  |
|--------------|------|----|-----|----|
| <b>W3150</b> | 50   | 33 | 136 | 80 |



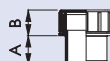
#### BRANCH - 135°

| CODE         | SIZE | A  | B   | C  |
|--------------|------|----|-----|----|
| <b>W1170</b> | 32   | 25 | 108 | 52 |
| <b>W2170</b> | 40   | 28 | 123 | 60 |
| <b>W3170</b> | 50   | 33 | 154 | 76 |



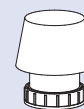
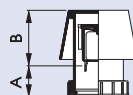
#### ACCESS PLUG

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>W1190</b> | 32   | 25 | 22 |
| <b>W2190</b> | 40   | 28 | 24 |
| <b>W3190</b> | 50   | 33 | 25 |



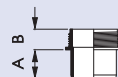
#### AIR ADMITTANCE VALVE - UNIFIX

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W137</b> | 32   | 32 | 48 |
| <b>W237</b> | 40   | 40 | 48 |
| <b>W337</b> | 50   | 38 | 68 |



#### MALE IRON ADAPTORS

| CODE         | SIZE | A  | B  |
|--------------|------|----|----|
| <b>W1111</b> | 32   | 25 | 20 |
| <b>W2222</b> | 40   | 27 | 20 |

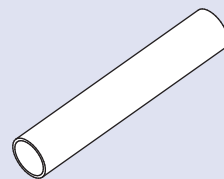


## COMPRESSION WASTE SYSTEM

### 32mm & 40mm POLYPROPYLENE PIPE & FITTINGS

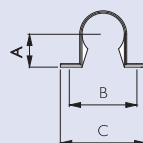
#### POLYPROPYLENE WASTE PIPE - 3m LENGTHS

| CODE         | SIZE - A |
|--------------|----------|
| <b>W9200</b> | 32       |
| <b>W9600</b> | 40       |



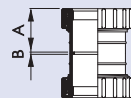
#### PIPE CLIP

| CODE         | SIZE | A  | B  | C  |
|--------------|------|----|----|----|
| <b>W1180</b> | 32   | 28 | 53 | 69 |
| <b>W2180</b> | 40   | 33 | 58 | 74 |



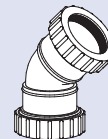
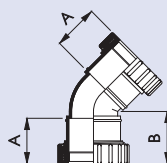
#### STRAIGHT CONNECTOR

| CODE        | SIZE | A  | B |
|-------------|------|----|---|
| <b>W940</b> | 32   | 44 | 2 |
| <b>W941</b> | 40   | 45 | 2 |



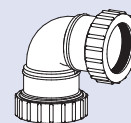
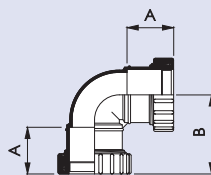
#### OBTUSE BEND - 135°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W401</b> | 32   | 39 | 47 |
| <b>W411</b> | 40   | 39 | 45 |



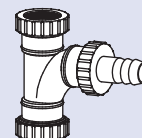
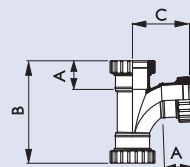
#### KNUCKLE BEND - 90°

| CODE        | SIZE | A  | B  |
|-------------|------|----|----|
| <b>W402</b> | 32   | 41 | 69 |
| <b>W412</b> | 40   | 40 | 68 |



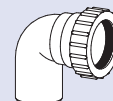
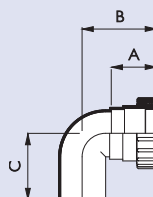
#### WASHING MACHINE TEE

| CODE        | SIZE | A  | B   | C  |
|-------------|------|----|-----|----|
| <b>W414</b> | 40   | 40 | 143 | 80 |



#### SWIVEL ELBOW - 90°

| CODE        | SIZE | A  | B  | C  |
|-------------|------|----|----|----|
| <b>W408</b> | 32   | 39 | 64 | 59 |
| <b>W418</b> | 40   | 39 | 64 | 58 |

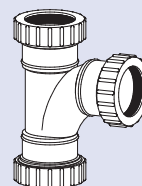
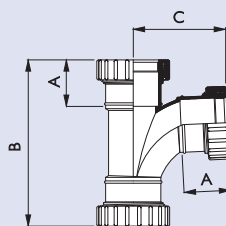


## COMPRESSION WASTE SYSTEM

### 32mm & 40mm POLYPROPYLENE PIPE & FITTINGS

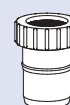
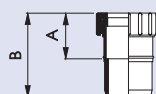
#### SWEPT TEE - 92<sup>1</sup>/<sub>2</sub>°

| CODE        | SIZE | A  | B   | C  |
|-------------|------|----|-----|----|
| <b>W403</b> | 32   | 41 | 143 | 80 |
| <b>W413</b> | 40   | 40 | 143 | 80 |



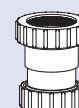
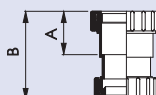
#### REDUCER - SINGLE

| CODE        | REDUCTION                    | A  | B  |
|-------------|------------------------------|----|----|
| <b>W404</b> | 40mm fitting to<br>32mm pipe | 39 | 72 |



#### REDUCER - DOUBLE

| CODE        | REDUCTION                 | A  | B  |
|-------------|---------------------------|----|----|
| <b>W416</b> | 40mm pipe to<br>32mm pipe | 37 | 76 |

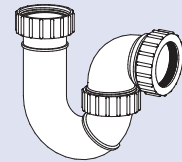
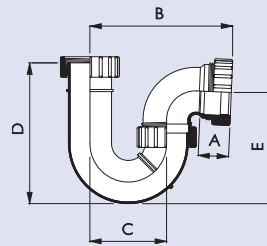


## WASTE TRAPS

### 32mm & 40mm POLYPROPYLENE PIPE & FITTINGS

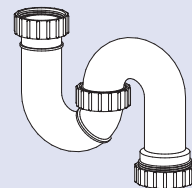
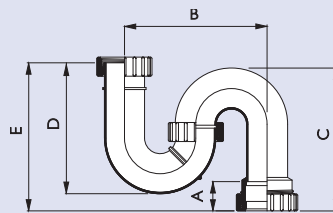
#### TRAP - 'P' OUTLET

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C  | D   | E   |
|---------------|------|---------------|----|-----|----|-----|-----|
| <b>WTT100</b> | 32   | 38            | 40 | 140 | 76 | 151 | 95  |
| <b>WTT102</b> | 32   | 76            | 40 | 140 | 76 | 151 | 135 |
| <b>WTT104</b> | 40   | 38            | 40 | 134 | 72 | 165 | 104 |
| <b>WTT106</b> | 40   | 76            | 40 | 155 | 90 | 170 | 145 |



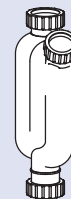
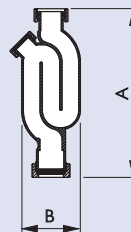
#### TRAP - 'S' OUTLET

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C   | D   | E   |
|---------------|------|---------------|----|-----|-----|-----|-----|
| <b>WTT101</b> | 32   | 38            | 40 | 135 | 134 | 124 | 146 |
| <b>WTT103</b> | 32   | 76            | 40 | 135 | 134 | 151 | 151 |
| <b>WTT105</b> | 40   | 38            | 29 | 144 | 144 | 132 | 149 |
| <b>WTT107</b> | 40   | 76            | 35 | 152 | 184 | 162 | 220 |



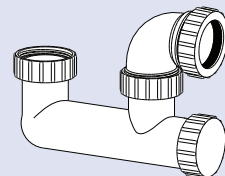
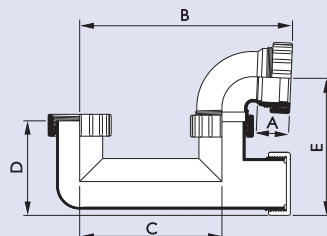
#### TRAP - PEDESTAL BASIN

| CODE          | SIZE | SEAL<br>DEPTH | A   | B  |
|---------------|------|---------------|-----|----|
| <b>WPT120</b> | 32   | 50            | 244 | 85 |



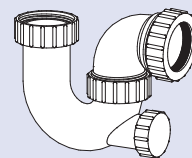
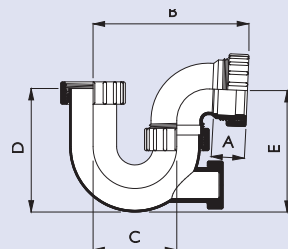
#### BATH & SHOWER TRAP WITH CLEANING EYE

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C   | D  | E   |
|---------------|------|---------------|----|-----|-----|----|-----|
| <b>WBT602</b> | 40   | 50            | 29 | 184 | 125 | 73 | 115 |



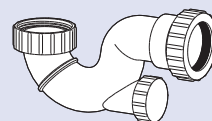
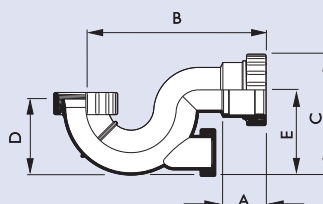
#### BATH & SHOWER TRAP - TWO PIECE

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C  | D   | E   |
|---------------|------|---------------|----|-----|----|-----|-----|
| <b>WBT108</b> | 40   | 38            | 29 | 134 | 72 | 106 | 104 |
| <b>WBT110</b> | 40   | 76            | 31 | 165 | 72 | 129 | 127 |



#### BATH & SHOWER TRAP - WITH CLEANING EYE

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C   | D  | E  |
|---------------|------|---------------|----|-----|-----|----|----|
| <b>WBT608</b> | 40   | 19            | 37 | 146 | 105 | 65 | 74 |

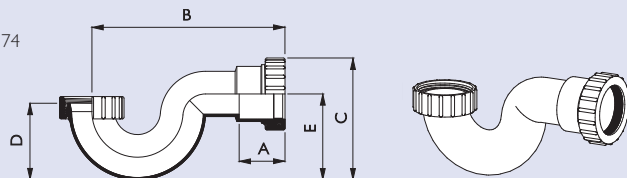


## WASTE TRAPS

### 32mm & 40mm POLYPROPYLENE PIPE & FITTINGS

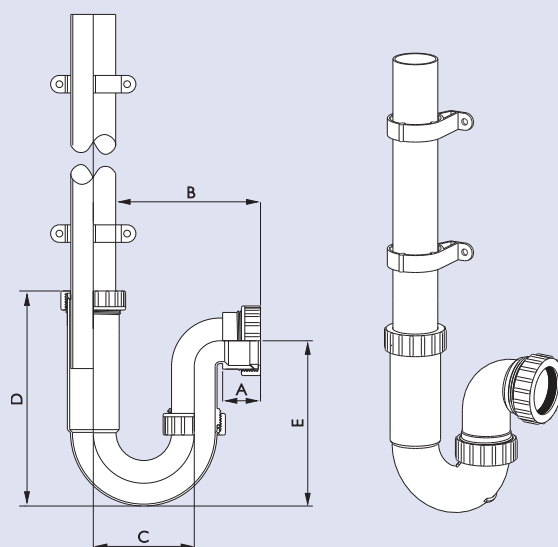
#### BATH & SHOWER TRAP

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C   | D  | E  |
|---------------|------|---------------|----|-----|-----|----|----|
| <b>WBT604</b> | 40   | 19            | 39 | 166 | 105 | 66 | 74 |



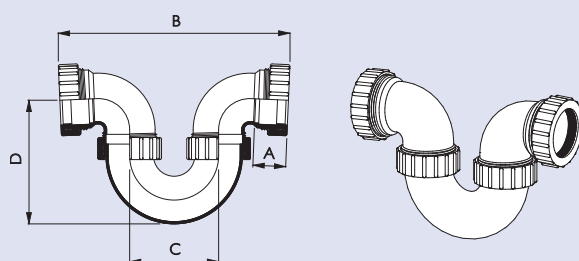
#### WASHING MACHINE TRAP

| CODE  | SIZE | SEAL<br>DEPTH | A  | B   | C  | D   | E   |
|---|------|---------------|----|-----|----|-----|-----|
| <b>WWT356</b><br>(with 600mm<br>stand pipe) | 40   | 76            | 37 | 163 | 90 | 160 | 140 |



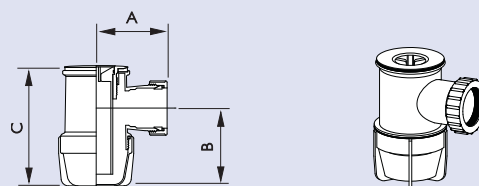
#### RUNNING TRAP

| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C  | D   |
|---------------|------|---------------|----|-----|----|-----|
| <b>WRT804</b> | 40   | 38            | 29 | 196 | 77 | 108 |
| <b>WRT806</b> | 40   | 76            | 31 | 252 | 77 | 136 |



#### SHOWER BOTTLE TRAP (includes removable waste)

| CODE          | SIZE | SEAL<br>DEPTH | A  | B  | C   |
|---------------|------|---------------|----|----|-----|
| <b>WBT603</b> | 40   | 50            | 80 | 86 | 133 |

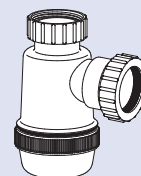
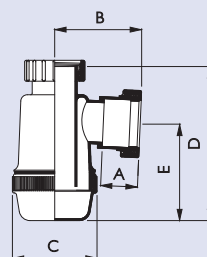


## WASTE TRAPS

### 32mm & 40mm POLYPROPYLENE PIPE & FITTINGS

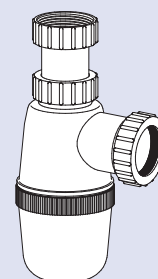
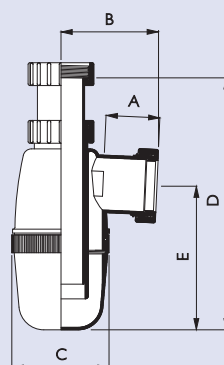
#### BOTTLE TRAP

| CODE          | SIZE | SEAL<br>DEPTH | A  | B  | C  | D   | E   |
|---------------|------|---------------|----|----|----|-----|-----|
| <b>WBT752</b> | 32   | 76            | 31 | 75 | 71 | 168 | 117 |



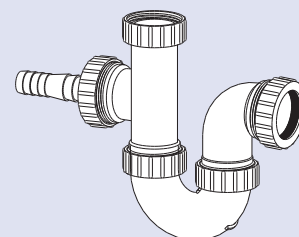
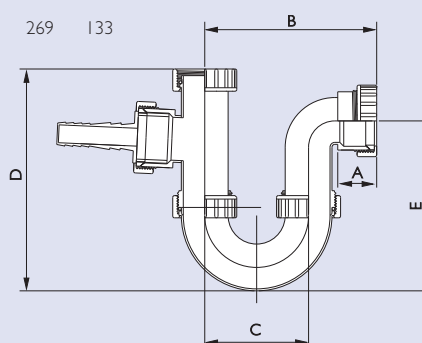
#### BOTTLE TRAP - TELESCOPIC

| CODE          | SIZE | SEAL<br>DEPTH | A  | B  | C  | D         | E   |
|---------------|------|---------------|----|----|----|-----------|-----|
| <b>WBT726</b> | 40   | 76            | 45 | 82 | 82 | 200 - 300 | 121 |



#### COMBINED SINK & WASHING MACHINE TRAP

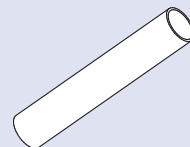
| CODE          | SIZE | SEAL<br>DEPTH | A  | B   | C  | D   | E   |
|---------------|------|---------------|----|-----|----|-----|-----|
| <b>WWT566</b> | 40   | 76            | 31 | 163 | 73 | 269 | 133 |



# **OVERFLOW SYSTEM PUSH-FIT & SOLVENT WELD** **21 1/2mm (3/4") PVC-C PIPE & FITTINGS**

## **OVERFLOW PIPE - 3m LENGTHS**

CODE      SIZE - A  
**W100**      21.5mm



## **SNAP ON PIPE CLIP**

CODE      A  
**W190**      23



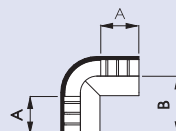
## **STRAIGHT COUPLER**

CODE      A      B  
**W120**      25      2



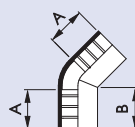
## **KNUCKLE BEND - 90°**

CODE      A      B  
**W130**      25      38



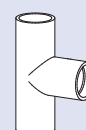
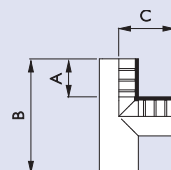
## **OBTUSE BEND - 135°**

CODE      A      B  
**W140**      25      26



## **TEE - 90°**

CODE      A      B      C  
**W110**      25      76      38

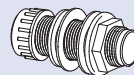
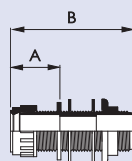




# **OVERFLOW SYSTEM PUSH-FIT & SOLVENT WELD 2 1/2mm (3/4") PVC-C PIPE & FITTINGS**

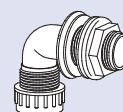
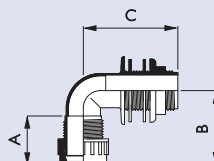
## **STRAIGHT COMPRESSION SOCKET TANK CONNECTOR**

| CODE        | A  | B  |
|-------------|----|----|
| <b>W150</b> | 32 | 83 |



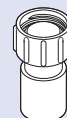
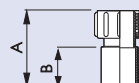
## **BENT COMPRESSION SOCKET TANK CONNECTOR**

| CODE        | A  | B  | C  |
|-------------|----|----|----|
| <b>W170</b> | 32 | 49 | 63 |



## **CAP & LINING**

| CODE        | A  | B  |
|-------------|----|----|
| <b>W180</b> | 53 | 28 |

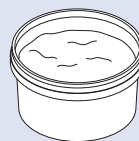


## ANCILLARY ITEMS

### LUBRICANT, SOLVENT CLEANER, SOLVENT CEMENT & FIRE SLEEVES

#### LUBRICANT - GEL

| CODE         | SIZE  |
|--------------|-------|
| <b>B9333</b> | 0.5Kg |
| <b>B9444</b> | 5Kg   |



#### LUBRICANT - SPRAY

| CODE         | SIZE  |
|--------------|-------|
| <b>B9555</b> | 400ml |



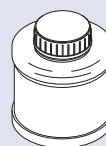
#### SOLVENT CLEANER

| CODE         | SIZE  |
|--------------|-------|
| <b>B9031</b> | 250ml |
| <b>B9032</b> | 500ml |



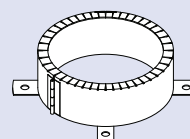
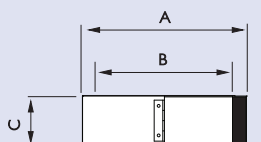
#### SOLVENT CEMENT

| CODE         | SIZE  |
|--------------|-------|
| <b>B9020</b> | 125ml |
| <b>B9021</b> | 250ml |
| <b>B9022</b> | 500ml |



#### FIRE PROTECTION SLEEVES

| CODE        | SIZE | A   | B   | C  |
|-------------|------|-----|-----|----|
| <b>BFS2</b> | 50   | 72  | 56  | 62 |
| <b>BFS4</b> | 110  | 132 | 112 | 48 |
| <b>BFS6</b> | 160  | 196 | 162 | 60 |



| DESIGN                             | Page  |
|------------------------------------|-------|
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DESIGN/TECHNICAL

**FUNCTION**

Brett Martin Plumbing Systems consist of extruded pipe sections, injection moulded fittings and traps to efficiently convey sanitary waste from all types of building.

The components in these systems enable the construction of Soil and Waste installations complying with the requirements of BS EN 12056-2:2000, and with the Building Regulations. Reference should be made to page 37 of this Product Guide.

There are complementary Brett Martin Underground Drain and Sewer systems to provide a complete solution for all drainage requirements.

**AUTHORITY**

Brett Martin Plumbing Systems will enable installers to satisfy the requirements of the following:

- The Building Regulations 2010, as amended
- Building (Scotland) Regulations 2004, as amended
- Building Regulations (Northern Ireland) 2012, as amended
- The Building Regulations 2010 (ROI), as amended

**STANDARDS**

Brett Martin Plumbing Systems are manufactured, as applicable, to the following British Standards:

|                 |  |
|-----------------|--|
| BS EN 274:2002  | Waste fittings for sanitary appliances. Requirements   |
| BS EN 1329:2014 | Plastics piping systems for soil and waste discharge within the building structure - Unplasticized poly (vinyl chloride) PVC-U |
| BS EN 1566:2000 | Plastics piping systems for soil and waste discharge within the building structure - Chlorinated poly (vinyl chloride) PVC-C   |

All components are manufactured under a quality management system registered under BS EN ISO 9001:2015.

The air admittance valve is British Board of Agrément Approved, Certificate 90/2396.

**COMPOSITION**

Extruded pipe sections and injection moulded fittings are made from PVCu, PVC-C and polypropylene compounds complying with the material requirements of the relevant British standards. They contain the necessary processing additives, stabilisers and pigments to give products excellent appearance, durability and performance.

### MATERIAL PROPERTIES

Material properties determine the correct selection of a system. The main materials used are PVCu, modified PVCu and polypropylene. Polyethylene is used in the manufacture of snap caps to retain the ring seals. Unplasticised polyvinyl chloride, PVCu, is a most versatile material: many processing methods can be used, it can be coloured, is light in weight, and has good chemical resistance, fire performance and weatherability. PVCu can be modified to increase its resistance to higher temperature discharges. Polypropylene has excellent chemical resistance and can tolerate higher temperatures.

### SERVICE TEMPERATURE

PVCu has a softening point in excess of 70°C, and PVCu soil stacks can cope with short intermittent discharges with temperatures up to 90°C.

Modified unplasticised polyvinyl chloride, PVC-C, has a softening point above 90°C so, in addition to the normal properties of PVCu, it can also cope with higher temperature discharges over prolonged periods.

The higher softening point of polypropylene, above 140°C, means it can cope with high temperature discharges, such as boiling water; and it is the most appropriate material for the manufacture of traps.

### UV LIGHT RESISTANCE

While polypropylene has good chemical resistance, resistance to UV light is poor:

**Exterior applications require protection using paint or enclosures.** PVCu can be formulated to give excellent resistance to UV light, and so is suitable for exterior uses, requiring no additional protection.

### FIRE PERFORMANCE

PVCu in almost all forms has superior fire performance to most plastic materials: this makes it a suitable choice for indoor applications as it will require no additional fire protection. Polypropylene has poor fire performance: interior applications require protection.

### THERMAL EXPANSION

PVCu has a coefficient of expansion of approximately 0.06mm/m/°C. Consequently a 2m length of soil or waste pipe will expand by 2.4mm for a 20°C rise in temperature.

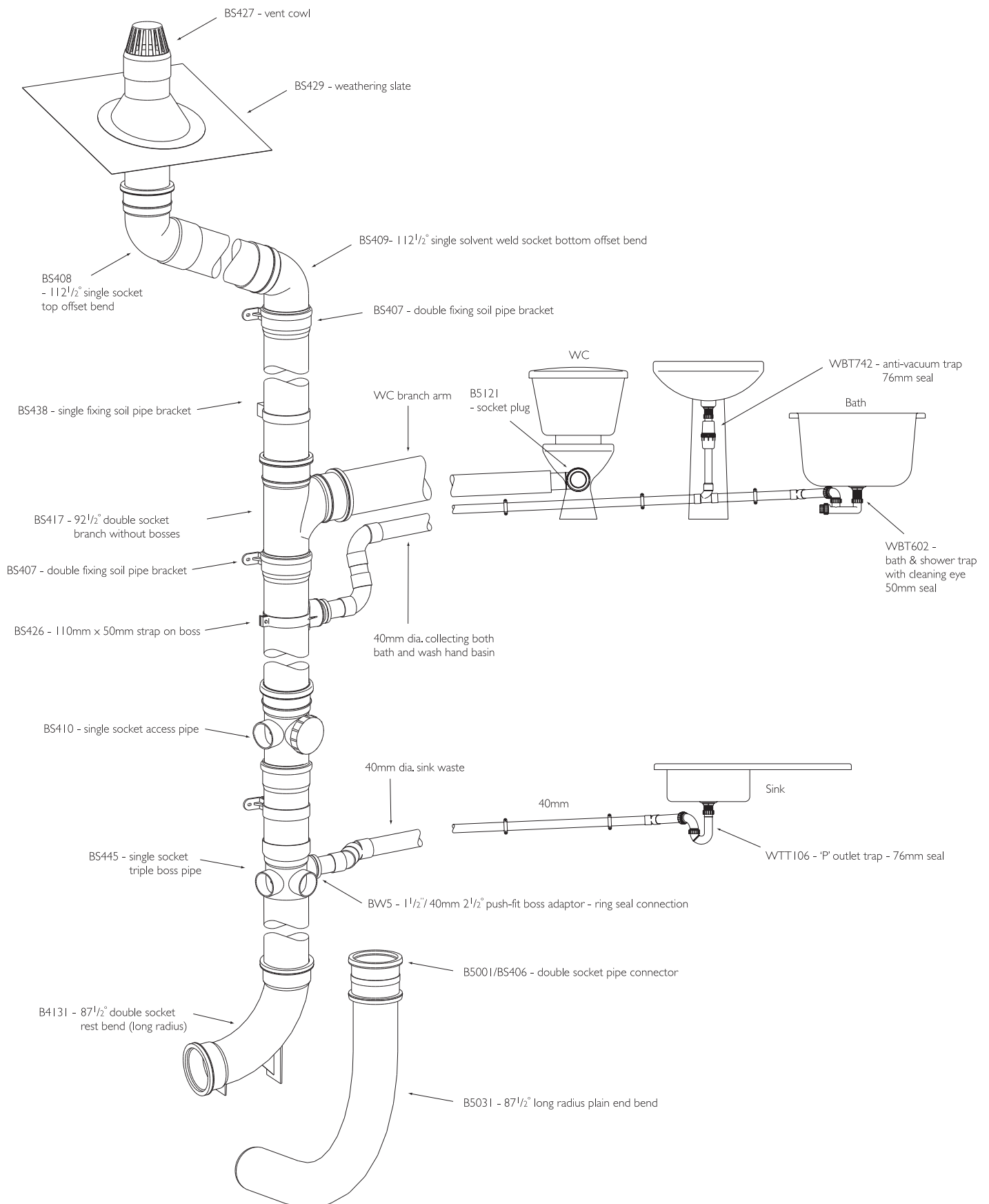
This expansion is taken into consideration in the design of systems and components, and must be accommodated when installing. A similar allowance should be made when installing polypropylene and PVC-C systems.

### BIOLOGICAL AND CHEMICAL RESISTANCE

Polluted industrial atmospheres will not affect Brett Martin Plumbing Systems. PVC and polypropylene are rot and vermin proof and resistant to most commonly occurring chemicals, so it will not be affected by domestic effluents. Notable exceptions however are solvents, including those incorporated in most timber preservatives. Brett Martin Plumbing Systems should not be used for the disposal of industrial or chemical wastes.

### TIMBER PRESERVATIVES

Before any component is fixed to a timber surface treated with wood preservative, the preservative must be dried thoroughly. The solvent content of wet preservatives can attack and embrittle plastic materials.



**BUILDING REGULATIONS**

Soil and Waste installations must be designed to comply with the following:

- The Building Regulations 2010, Approved Document H, Section H1
- Building (Scotland) Regulations 2004, Technical Handbook (Domestic & Non-Domestic) Section 3: Environment
- Building Regulations (Northern Ireland) 2012, Technical Booklet N, Section 2
- Building Regulations 2010 (ROI), Part H, Section 1.2

Comprehensive guidance on the design of soil and waste systems is given in BS EN 12056:2000 Gravity Drainage Systems inside buildings. Following the recommendations of this Code is also deemed to satisfy the requirements of the above Building Regulations.

All information in this Product Guide is based on the above documents, which should in any case be consulted for all installations.

All sanitary discharge system designs should be evolved by all professions involved in a building's construction. Positioning of appliances and associated pipework can have important implications both for the materials and time required for assembly. Extensive guidance is also provided in BS 6465-1:2006+A1:2009 Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances, and BS 6465-3:2006 Sanitary installations. Code of practice for the selection, installation and maintenance of sanitary and associated appliances.

## UNDERGROUND DRAINAGE

It is necessary to dispose of the waste collected by Brett Martin Plumbing Systems in an efficiently designed underground drainage system. Complete Brett Martin Underground systems are available for this application, in diameters from 110mm to 400mm, and are detailed in the Brett Martin Underground Product Guide.

## PERFORMANCE CRITERIA.

In order to satisfy National and Local Regulations, a well designed and installed sanitary waste system will satisfy the following basic criteria:

1. Be of sufficient capacity, with appropriate pipe sizes and gradients, to convey foul water to a suitable drainage system for disposal.
2. Have minimal risk of blockage or leakage and be provided with access for inspection and cleaning.
3. Prevent foul air from entering the building under normal working conditions, through provision of water seal traps.
4. Be ventilated to maintain water seal integrity.
5. Be fixed securely to cope with structure and environmental conditions and changes.

## WASTE TRAPS

Every appliance which discharges into a soil and waste system must be fitted with a water-sealed trap which will prevent foul air from within the system entering the building. Under test and working conditions, traps should retain a minimum water seal of 25mm. All traps must be removable, or fitted with a cleaning eye to give access for clearing blockages.

For each appliance there is a minimum trap size and seal depth which must be used. These are given in the following table:

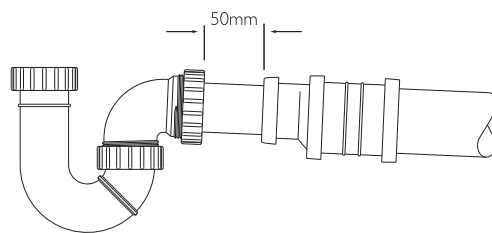
TYPICAL MINIMUM TRAP SIZES AND SEAL DEPTHS

| Appliance          | Trap Size (mm) | Seal Depth (mm) |
|--------------------|----------------|-----------------|
| Wash basin         | 32             | 75              |
| Bidet              | 32             | 75              |
| * Sink             | 40             | 75              |
| * Bath             | 40             | 50              |
| * Shower           | 40             | 50              |
| Urinal (bowl)      | 40             | 75              |
| WC Pan (min. size) | 75             | 50              |

\* The appliances indicated, when situated on a ground floor and discharging directly to an external gully, may have the seal depth reduced to a minimum of not less than 38mm.

In BS EN 12056-2:2000 Sanitary Pipework Layout Calculation, there is a recommended trap water seal depth of not less than 38mm. However in some areas a 19mm seal is found to be acceptable and, to suit customer requirements, traps WBT604 and WBT608 - illustrated on page 27 and page 28 - are offered. Clarification on the suitability of these shallow traps should be sought from the relevant local Building Control department. Another alternative is the 50mm seal trap, WBT602 which is illustrated on page 27.

The waste pipe connected to a trap must not be of a smaller diameter than the trap outlet. Where the waste pipe is larger than the trap outlet, the outlet should be extended by 50mm before the connection to the larger size pipe.





## APPLIANCE DISCHARGE VOLUMES

The size of pipe required in any system is dependent on the volume of waste which is to be conveyed, which in turn is determined by the type, grouping and number of appliances. The Discharge Unit Method gives a method of determining the size of stacks and branch pipes where a large number of appliances are in use. This method is comparable to that detailed in BS EN 12056-2:2000 sanitary pipework layout and calculations.

A numerical value is given to each type of appliance: the table below gives typical values. On the basis of this information and the flow capacities of vertical and branch pipes, correct pipe diameters can be selected or their adequacy confirmed.

### DISCHARGE RATES OF APPLIANCES

| Appliance                       | Frequency of use minutes | Discharge Units |
|---------------------------------|--------------------------|-----------------|
| WC (7 l)                        | 20                       | 10              |
|                                 | 10                       | 15              |
|                                 | 5                        | 20              |
| Wash basin                      | 20                       | 1               |
|                                 | 10                       | 3               |
|                                 | 5                        | 6               |
| Spray tap basin                 | Add 0.6 l/s per spray    |                 |
| Bath (domestic)<br>(commercial) | 75                       | 7               |
|                                 | 30                       | 18              |
| Shower                          | Add 0.1 l/s per shower   |                 |
| Automatic washing machine       | 250                      | 4               |
| Sink                            | 20                       | 6               |
|                                 | 10                       | 14              |
|                                 | 5                        | 27              |
| Urinal (commercial per person)  | 5                        | 27              |
|                                 | 20                       | 0.3             |

## PIPE SIZING

### VERTICAL PIPE CAPACITY

Each diameter of pipe fixed vertically in a soil stack can convey a given number of discharge units. Alternatively this can be expressed as a flow capacity in litres per second, as is illustrated in the table opposite.

### VERTICAL PIPE CAPACITY

| Pipe size mm<br>(Nominal Dia.) | Flow capacity<br>litres/second | Flow capacity<br>Discharge units |
|--------------------------------|--------------------------------|----------------------------------|
| 50                             | 1.2                            | *10                              |
| 65                             | 2.1                            | *60                              |
| 75                             | 3.4                            | 200                              |
| 90                             | 5.3                            | 350                              |
| 100                            | 7.2                            | 750                              |
| 125                            | 13.3                           | 2500                             |
| 150                            | 21.7                           | 5500                             |

\* WC's should not be connected to vertical pipes of 50mm and 65mm diameter.

### BRANCH PIPE CAPACITY

The flow capacities of branch discharge pipes differ from those of vertical pipes, since this capacity is reduced by the pipe gradient. Gradients for waste pipes must not be below 22mm/m (1.25°). The diameter of a branch pipe must not be less than that of the appliance trap outlet to which it is connected.

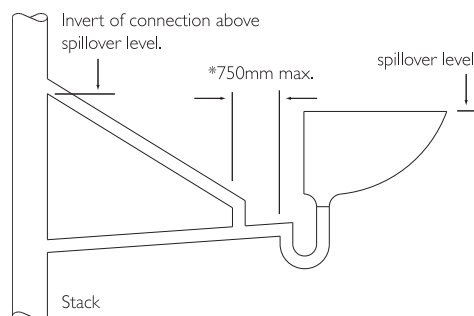
The table below illustrates the flow capacities of various unvented branch pipe sizes for different pipe gradients.

### BRANCH PIPE CAPACITY

| Pipe size mm | Gradient                        |                 |                |
|--------------|---------------------------------|-----------------|----------------|
|              | 0.5°<br>9mm/m                   | 1.25°<br>22mm/m | 2.5°<br>45mm/m |
|              | Flow capacity - discharge units |                 |                |
| 32           | -                               | 1               | 1              |
| 40           | -                               | 2               | 8              |
| 50           | -                               | 10              | 26             |
| 110          | 230                             | 430             | 1050           |

Where the conditions of the above table are not satisfied, the branch pipe must be ventilated, usually with a 25mm pipe connected not more than \*750mm from the trap: the principle is illustrated in the diagram on the following page.

\*300mm max NI only



\*300mm max NI only

Note that a 32mm ventilating pipe must be used where pipe length will be in excess of 5m, or when it contains more than five bends. Alternatively anti-vacuum traps, WBT742 and WBT746 illustrated on page 29 can be used.

The branch ventilating pipe must terminate as illustrated in the diagram on page 41, or be connected to a ventilating stack which is similarly terminated.

### SINGLE STACK SYSTEMS

Most sanitary waste disposal requirements, for buildings up to twenty storeys high, can be satisfied using a single ventilated effluent-conveying soil stack, as opposed to having two parallel stacks, one for waste conveyance and a second to provide ventilation to the first.

One soil stack may be used for buildings up to five storeys high: the ground floors of buildings between five and ten storeys high, and the lower two storeys of buildings between ten and twenty storeys high should have their own soil stacks.

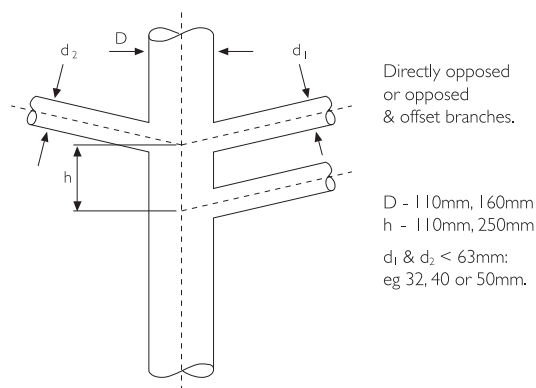
External stacks are not permitted where building height exceeds three storeys. Those sections of stack in which effluent flows should not have any offsets, and pipe diameter must not decrease in the direction of flow.

### BRANCH CONNECTION SPACING

Building Regulations and BS EN 12056:2000 place dimensional restrictions on the vertical spacing of branch pipe connections to single stack soil and ventilating systems, and on the lowest connection height.

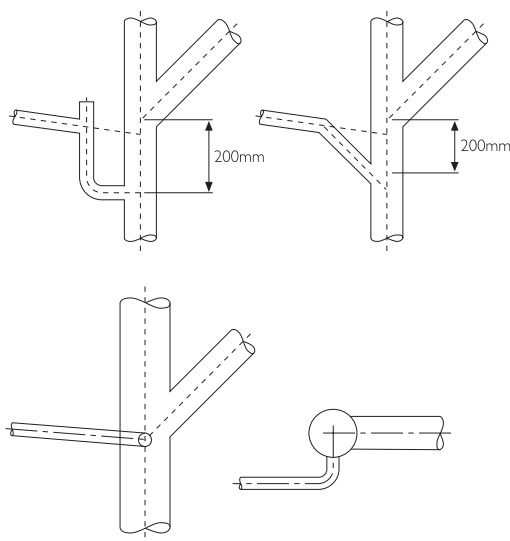
These restrictions can be summarised as follows:

1. Branches of any diameter should not be positioned opposite each other such that effluent could discharge across between them, or potentially cause blockages. Waste branches may be connected in opposing directions if there is an adequate vertical spacing.



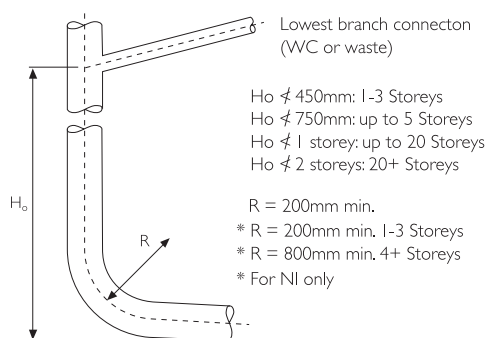
Opposed branches serving WC's can be connected to a stack at the same level using a double branch fitting, in which the branch pipes are angled or swept into the main stack.

2. No other connection should be made less than 200mm lower than an opposing WC branch connection: a 50mm parallel branch connection can prevent this situation, or the connection can be at the same level if perpendicular to the WC connection.



A facility to make several waste connections at the same level, while avoiding cross flow conditions, is provided by the waste inlet manifold. This fitting accepts waste connections close to the WC branch connection, but discharges into the main stack below the 200mm restricted area.

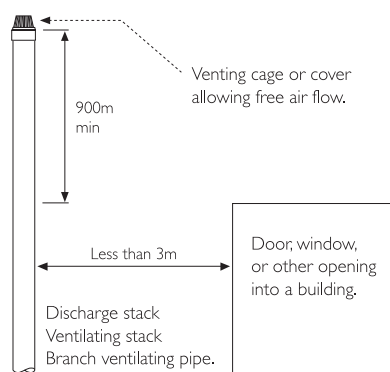
- The distance between the lowest connection to the stack and the foot of the stack is dependent on the building height and should be as indicated in the diagram below.



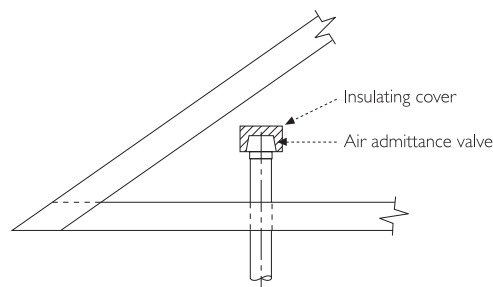
## VENTILATION

Ventilation of a soil and waste system is necessary to prevent water seals in traps being broken due to negative pressure or pressure fluctuations within the system. Broken seals permit foul air and smells to escape from the system, contaminating the air in and around the building. There are two ways of ventilating a soil stack: either externally to the atmosphere, or internally to a non-inhabited space within a building.

The termination of an externally vented system must comply with the dimensional requirements illustrated in the following diagram.

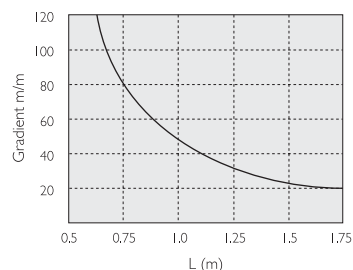
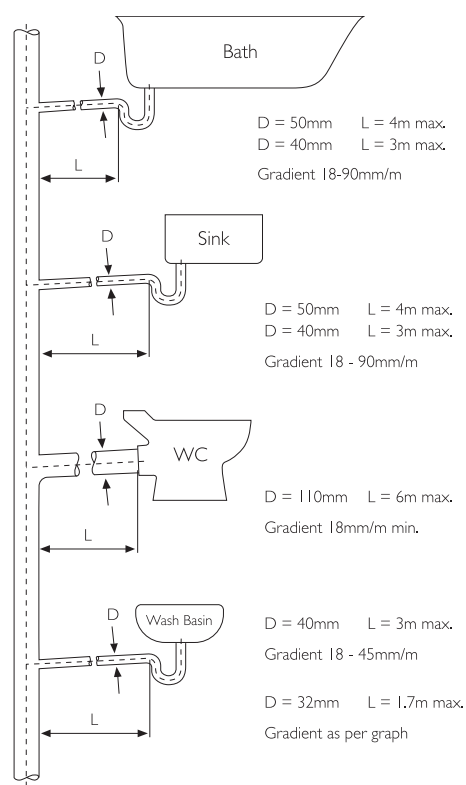


Where an internal method of ventilation is approved, the stack is terminated, e.g. in the roofspace, using an air admittance valve.

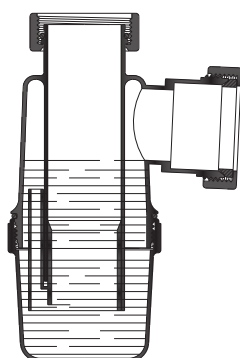


Air admittance valves are detailed on page 43.

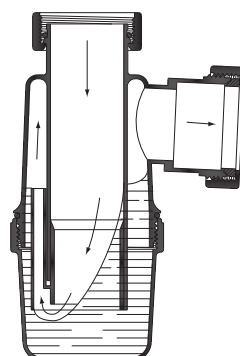
Individual branch pipes require separate ventilation if their length and slope exceed those illustrated in the diagram below.



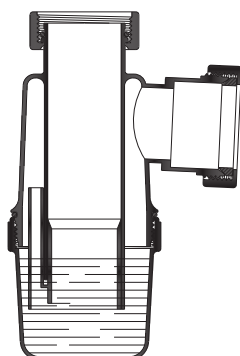
In circumstances where maximum lengths of branch pipes exceed those permitted by Building Regulations or local Bye Laws, then the branch pipe should be ventilated using a branch ventilation pipe or an anti-vacuum trap. The diagrams below illustrates typical arrangements.



Full water seal-trap under normal conditions.



Negative pressure creates a syphon effect which is broken when air flows through the by-pass tube.



Discharge terminates, pressure differential disappears, and trap is resealed by water.

In the case of large numbers of ventilating pipes being required, or if their length is considerable, then a separate ventilating stack, at least 32mm diameter, should be considered.

In addition to the length and slope limitations placed on unvented branch pipes, there is also a maximum number of appliances which can be connected to one branch. The table below details the maximum number of appliances that can be connected to unvented branch pipes.

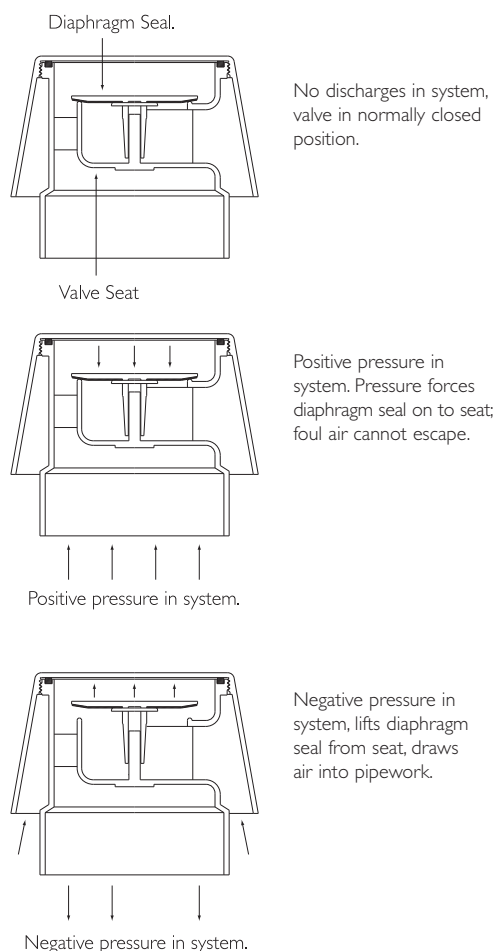
UNVENTED BRANCH PIPES - APPLIANCE CAPACITY

| Appliance     | Maximum number that can be connected |
|---------------|--------------------------------------|
| WC            | 8                                    |
| Urinal: bowl  | 5                                    |
| Urinal: stall | 6                                    |
| Washbasin     | 4                                    |

### AIR ADMITTANCE VALVES

Air admittance valves are designed to decrease the number of external roof and wall surface penetrations required to accommodate soil and ventilating stacks without reducing the effectiveness or performance of the system. They also reduce the quantity of components required to complete a system.

The valve contains a diaphragm which under light spring pressure is normally held closed, containing foul air within the system. When there is a discharge from an appliance, a negative air pressure is produced in the system. This pressure causes the diaphragm in the valve to lift from its seat, allowing air to be drawn into the system: this intake and the rapid equalisation of air pressure prevents foul air escaping and prevents the water seals in traps from being broken.



Air admittance valves are packaged in formed polystyrene boxes, the tops of which should be fitted to the valve top after installation, providing insulation for the valve when in use.

Air admittance valves can be fitted to sanitary pipe work systems of buildings up to ten storeys high. An air admittance valve must be installed in a vertical position above the flood level of the highest appliance connected to any soil stack. It should be situated in a non-habitable area of the building, e.g. the roof space, where it will be easily accessible and there is reduced risk of freezing.

The underground drain or branch drain which serves a stack or stacks to which air admittance valves are fitted may require additional ventilation at a position further up stream from the stack connection. This will minimise the effects of excessive back pressure if a blockage should occur in a drain. In determining the requirement for additional ventilation to the underground drainage system the following rules can be used for general guidance.

1. Up to and including four domestic dwellings up to three storeys high, additional drain ventilation is not necessary.
2. Where an underground drain serves more than four such dwellings which have soil systems fitted with an air admittance valve, the drain must be vented as follows:
  - a. In the case of five to ten such dwellings, additional conventional ventilation must be provided at the head of the underground drainage system.
  - b. In the case of eleven to twenty such dwellings, additional conventional ventilation must be provided at the head and midpoint of the underground drainage system.

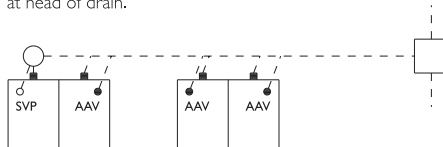
All multi-storey dwellings require additional venting of their underground drainage system if more than one such building, equipped with air admittance valves, is connected to a common drain not ventilated by conventional means.

These principles are illustrated in the diagrams:



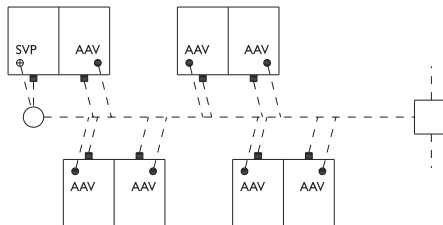
#### 1-4 Dwellings

Maximum 2 storeys high: additional open venting at head of drain.



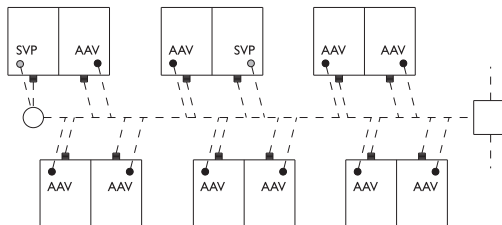
#### 5-10 Dwellings

Maximum 2 storeys high: conventional ventilating stack at head of drain.

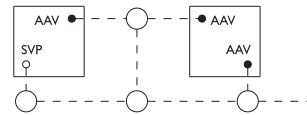


#### 11-20 Dwellings

Maximum 3 storeys high: conventional ventilating stack at mid-point and head of drain.



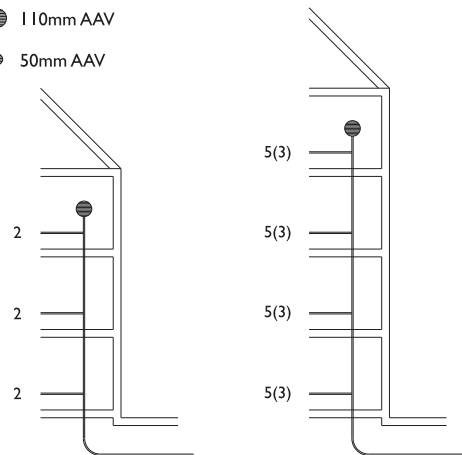
More than one multi-storey domestic or non-domestic building, each having a maximum of 2 stacks, and connected to the same drain: conventional ventilation at head of drain.



Appliance group = one WC and one Wash Basin

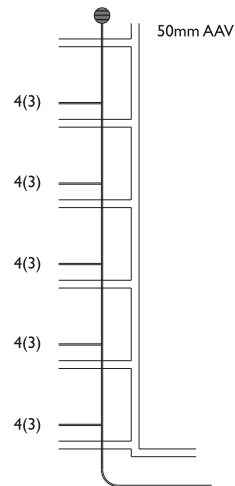
● 110mm AAV

● 50mm AAV



#### 1-3 Storeys

Maximum 2 appliance groups per storey

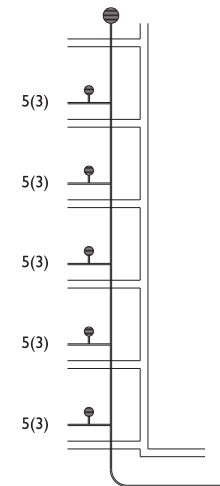


#### 1-5 Storeys

Maximum 4 appliance groups per storey, 3 if use frequency  $\geq$  5 mins.

#### 1-4 Storeys

Maximum 5 appliance groups per storey, 3 if use frequency  $\geq$  5 mins.



#### 1-5 Storeys

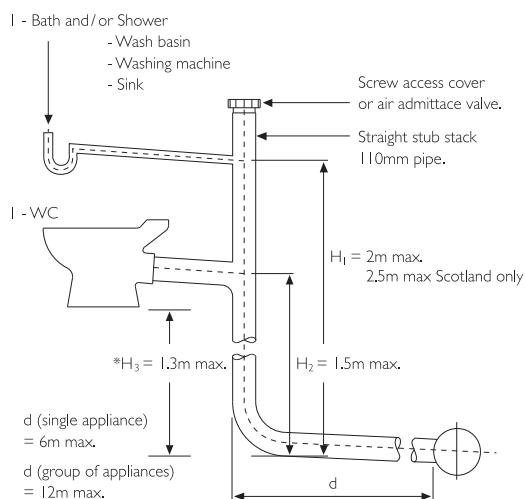
Maximum 4 appliance groups per storey, 3 if use frequency  $\geq$  5 mins.

## STUB STACKS

Where a group of appliances or a WC on a ground floor is connected directly to an underground drain, a stub stack of 110mm diameter pipe can be used.

Ventilation is necessary if the distance from the highest appliance connection from the stack to the invert of the drain is in excess of \*2m, or if the distance from the crown of the WC connection to the invert of the drain is in excess of 1.5m.

\*2.5m max Scotland only



\* $H_3$  applies to England and Wales only

## GULLIES

Ground floor washing appliances, producing waste water only, may discharge into a gully: waste pipes from these appliances must terminate between the top of the gully water seal and the level of the gully grid. Several appliances may discharge to the same gully.

## WASTE SYSTEM CONNECTIONS BOSS FITTINGS

Various fittings in the Brett Martin Soil range have integrally moulded bosses which facilitate connection of waste systems - bossed pipes and branches, bossed access pipes, and strap on bosses. The use of these connections is outlined in the installation section on pages 48-49.

## WASTE INLET MANIFOLD

The waste inlet manifold allows up to four appliances to be connected to the soil stack within

the 200mm restricted area around the WC connection. The manifold also enables bath and shower connections to be made above floor level where suitable.

## WC CONNECTIONS

Connection to most WC units with outlet diameters 82-110mm is effected using the range of adaptors detailed on pages 11-12. They provide sealed socketed fitting to the pan outlet spigot, and multiple sealing in the bore of 110mm pipe and fittings.

## UNDERGROUND SYSTEM CONNECTIONS

A soil stack may be connected at ground level to an underground drainage system of PVCu, cast iron or earthenware material. A range of adaptors and couplers is available for these connections, as illustrated in the installation drawings on page 50.

## CLEANING ACCESS

By definition, traps must be removable for cleaning or be fitted with a rodding eye for cleaning access. Where any other section of the system is not accessible for cleaning with the trap removed, suitably positioned rodding eyes should be fitted.

## FIRE STOPPING

Where services penetrate separating walls, compartment walls, floors, cavity barriers or protecting elements of a building, there is an obvious potential for fire spread: protection against spread can be provided in several ways.

Requirements for penetrations by any diameter of pipe can be satisfied if it is fitted with a proprietary fire seal device of proven performance, or for any diameter up to 160mm, if it is sleeved for at least 1m on each side of the penetrated element with a non-combustible material. A proprietary fire-stopping material of proven fire resistance can also be used. In the case of internal 160mm PVCu soil stack pipes and 110mm PVCu branch pipes, the pipes must be housed in an enclosure details, of which are provided in Building Regulations.

In all cases the appropriate fire protection method used should be agreed with the Local Authority.

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**HANDLING**

Brett Martin Plumbing Systems are light in weight and therefore easy to handle. As with all other quality materials, the components should be handled with due care at all times to avoid damage and preserve appearance, particularly in low temperatures.

**STORAGE**

All components should be stored under conditions which will prevent damage and preserve appearance. Pipes and fittings should be kept in a cool dry store, with lengths of pipe stacked horizontally on a smooth level and continuous base to avoid distortion. Extra care should be taken when stacking socketed pipes so that adjoining sockets do not exert undue pressure on each other. Stacks should not be more than 1.2m high to prevent overloading and damage to bottom layers in the stack. Where pipe and fittings are stored outdoors, cover securely with an opaque waterproof cover to avoid exposure to the elements.

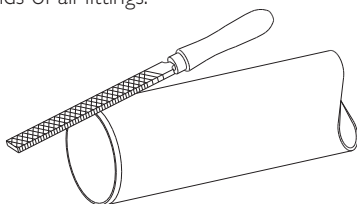
**CUTTING**

Pipes can be cut with a hand saw having 6-8 teeth per cm, held at a shallow angle and sawing with slow steady strokes. A file should be used to remove any swarf and a chamfer should be made around the full circumference of the pipe.

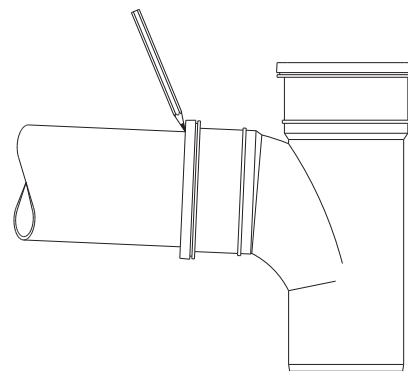
**PUSH-FIT JOINTING**

To ensure watertight jointing the following procedure should be followed:

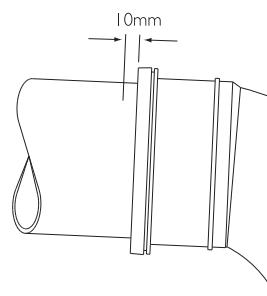
1. Pipe ends must be cut square. Chamfer the end to about half the wall thickness and at an angle of about 15° using a file or rasp. Remove all swarf. Chamfers are moulded on spigot ends of all fittings.



2. Check all seals, sockets on pipes and fittings, and pipe ends are clean for a distance equivalent to socket depths.
3. Apply Brett Martin lubricant around the pipe end or spigot end of fittings - not around the ring seals.
4. Align components and push the pipe end or fitting spigot fully into the ring seal socket; mark the pipe or fitting spigot at the socket face.



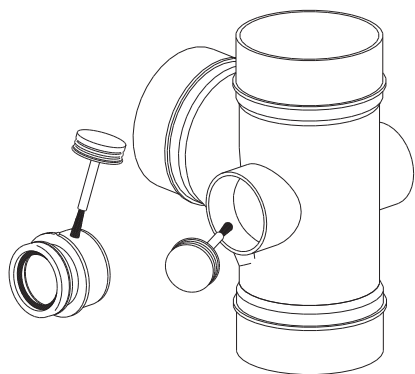
5. Withdraw the pipe or spigot until the mark is 10mm away from the socket face: this creates a thermal movement allowance within the socket.



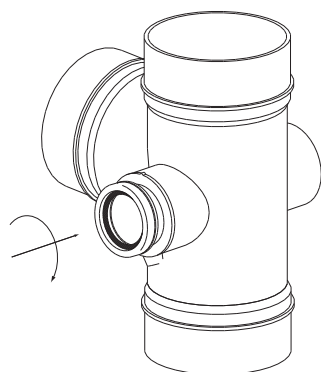
## SOLVENT CEMENT JOINTING

To ensure a permanent solvent cement joint, the following procedure should be followed:

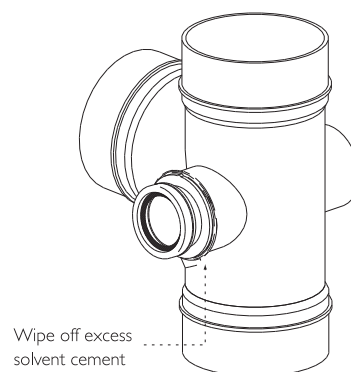
1. When a solvent joint involves a pipe, the pipe end must be cut square and all burrs removed.
2. Clean both surfaces to be joined, making sure they are free from dirt, grease and water.
3. With a clean brush apply Brett Martin solvent cleaner.
4. Again with a clean brush apply Brett Martin solvent cement to both surfaces to be joined: apply the brush along the surface, not around it.



5. Immediately insert the coated pipe end or fitting spigot into the coated fitting socket, using a slight twisting motion to ensure correct spread of adhesive and removal of air bubbles. If cemented surfaces are left unjoined for longer than 90 seconds, bonding will not be totally effective.



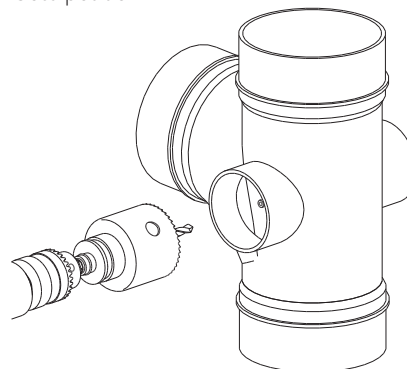
6. Hold the joint still for 30 seconds for initial bonding to take place; wipe off excess solvent cement: leave for a further 2 hours to gain strength: do not test for at least 24 hours.



## BOSS CONNECTIONS

When making a connection to a fitting incorporating a boss, the following procedure should be followed:

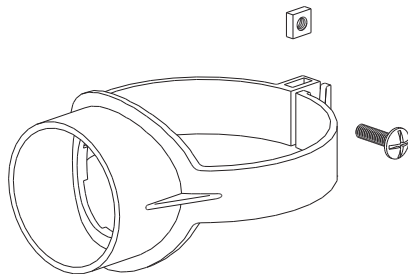
1. Locate the point of an appropriate size drill bit in the central locator moulded at each boss position.



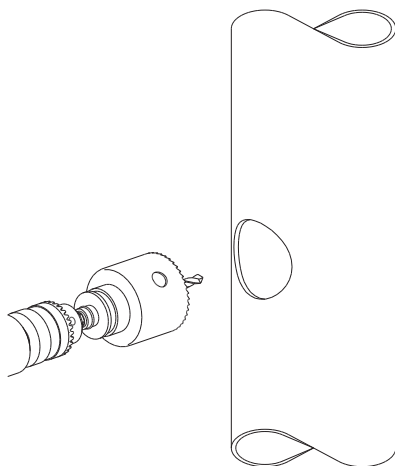
2. Drill out the fitting wall in the centre of the boss and remove swarf.
3. Select the boss adaptor appropriate to the boss size and the size of the branch connection being made, and push-fit or solvent weld in position using the procedure for solvent welding outlined above.

## STRAP-ON-BOSS CONNECTION

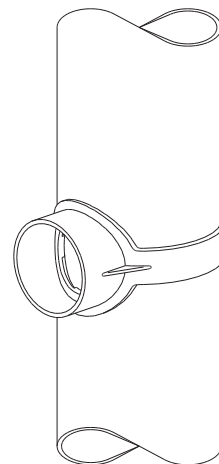
The strap-on-boss permits connection of a discharge pipe up to 50mm diameter to a soil stack at any time after the stack has been erected. The fitting procedure is fairly simple



1. At the desired position on the downpipe drill a hole to accommodate the rear locating flange of the boss.



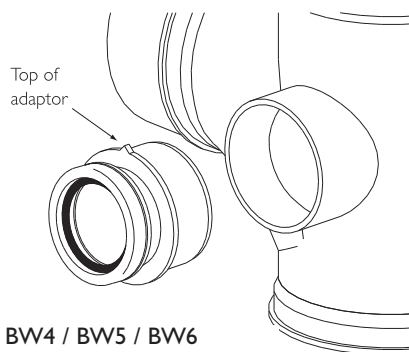
2. Apply solvent cement to the edge of the hole and around the flange: locate the straps around the pipe with the flange located in the drilled hole, and hold for two minutes for initial bonding to take place.



3. Remove excess cement and fit the nut and bolt to the rear of the straps. When the join is thoroughly dry fit the boss adaptor appropriate for the diameter of discharge pipe to be accommodated.

## BOSS ADAPTOR SELECTION

When the branch connection is of a push-fit type, select adaptor BW1, BW2, or BW3 for 32mm, 40mm and 50mm diameters respectively, and insert into the boss using the same technique as for any other push-fit connection. When the branch connection is of a solvent weld type, select adaptor BW4, BW5, or BW6 for 32mm, 40mm and 50mm diameters respectively, and solvent weld into the boss. These adaptors have an inbuilt fall of 2.5°. To ensure correct fitting there is a mark on each adaptor which should always be at the top.



BW4 / BW5 / BW6

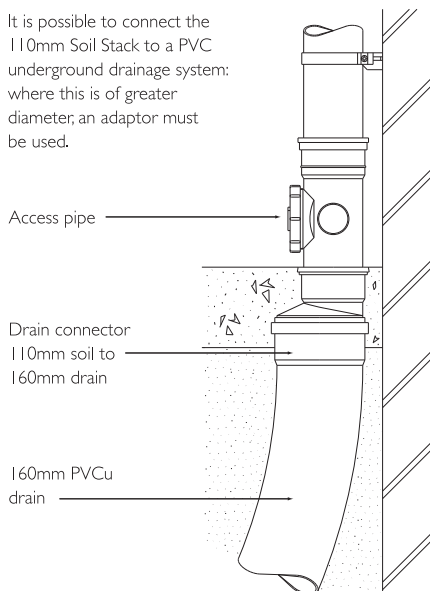


Alternatively **BW7**, **BW8** or **BW9** provide a solvent weld connection for the incoming waste pipe.

## CONNECTION TO UNDERGROUND DRAINAGE

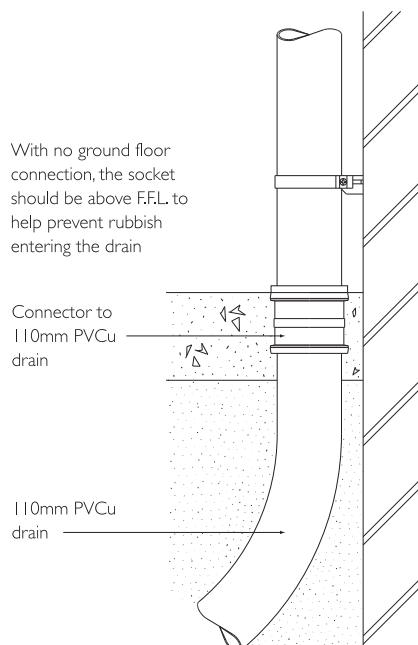
Connection to PVCu drain socket.

It is possible to connect the 110mm Soil Stack to a PVC underground drainage system: where this is of greater diameter; an adaptor must be used.

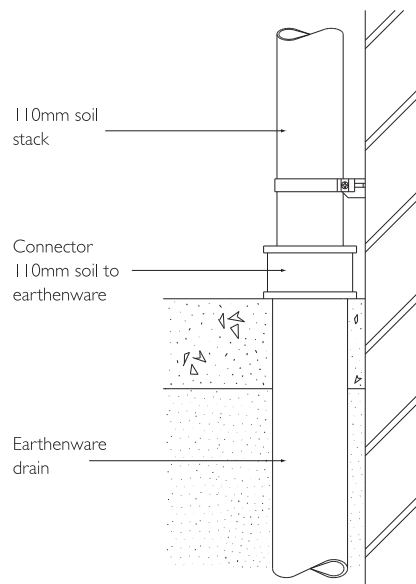


Connection to PVCu drain spigot.

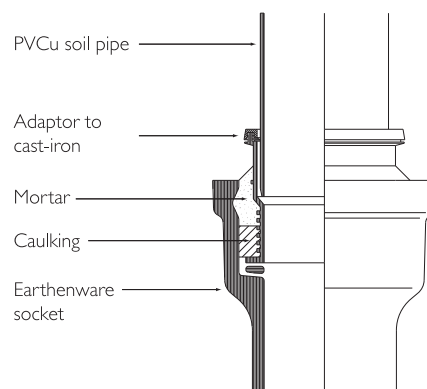
With no ground floor connection, the socket should be above F.F.L. to help prevent rubbish entering the drain



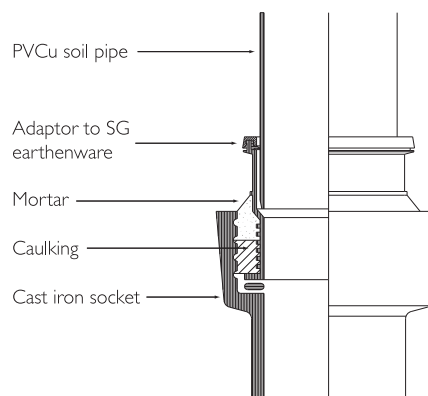
Connection to thin-wall earthenware sleeve.



Connection to cast iron drain socket.



Connection to earthenware socket.



### PROVISION FOR THERMAL MOVEMENT

All plastic soil and waste systems move with changes in temperature. It is vital to accommodate this movement when making push-fit joints.

An expansion allowance is also necessary in solvent weld systems. As installation of a system progresses, a continuous check should be made to ensure that the expansion allowance has not been lost.

### PIPE SUPPORT

All soil and waste pipes must be securely fixed, but not so rigidly as to prevent thermal movements. Distances between pipe supports are determined by pipe material, diameter and gradient.

| Material | Size | Spacings |              |
|----------|------|----------|--------------|
|          |      | Vertical | Low Gradient |
| PVCu     | 110  | 2.0      | 1.0          |
|          | 160  | 2.0      | 1.2          |
| PVC-C    | 32   | 1.2      | 0.5          |
|          | 40   | 1.2      | 0.5          |
|          | 50   | 1.2      | 0.6          |
| PP       | 32   | 1.2      | 0.5          |
|          | 40   | 1.2      | 0.5          |
|          | 50   | 1.2      | 0.6          |

Two types of bracket are available for 110mm pipe: BS407 has two side fixing holes; BS438 has three centrally positioned holes, and is especially suitable where only narrow surfaces are available for fixing.

### PIPE ROUTING

The flow through discharge pipework is most efficient where, in branch pipes in particular, the pipe routing is as straight as possible, and bends where necessary are of generous radius to assist smooth effluent flow. Minimum bend centre line radii for components are given in the various British Standards.

### OVERFLOW DISCHARGE

Overflows can discharge into soil stacks or branches, in which case the discharge must be through a trap. This allows appliance overflow to be detected, and prompt maintenance carried out.

Where the discharge is not into the soil system, it must be designed such that there is no potential for damage to the building fabric from water.

### TESTING

#### FINAL INSPECTION

On completion, the sanitary discharge system should be meticulously inspected to ensure that requirements of relevant codes of practice have been adhered to. No cement droppings, rubble or other objects should be left inside the system and no jointing material should intrude into the bore. When fully inspected, the system can be pressure tested.

#### AIR TEST

The pipes, fittings and joints 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 in the system should maintain a water seal of at least 25mm. Chemicals released by smoke test cartridges adversely affect plastics materials, particularly PVCu, making this method unsuitable.

### MAINTENANCE

Provided that the system has been designed and installed correctly, minimal maintenance will be required. Security of retaining clips, brackets and joints of exposed sections of systems should be inspected on at least an annual basis and any faults rectified to ensure correct functioning is not impaired.

Blockages, provided not due to poor design, may occur through misuse. Blockages can be cleared using flexible or roller type rods. The equipment used by drain and pipe cleaning contractors is generally suitable.

### SAFETY

Hazard data sheets dealing with Brett Martin solvent cleaner, solvent cement and lubricants are available on request.

## REFERENCES

**BS 6465-1:2006+A1:2009:** Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances.

**BS 6465-3:2006:** Sanitary installations. Code of practice for the selection, installation and maintenance of sanitary and associated appliances.

**BS EN 274:2002:** Waste Fittings for Sanitary Appliances. Requirements

**BS EN 1329:2014:** Plastics piping systems for soil and waste discharge within the building structure - Unplasticized poly (vinyl chloride) PVC-U.

**BS EN 1566:2012:** Plastics piping systems for soil and waste discharge within the building structure - Chlorinated poly (vinyl chloride) PVC-C.

**BS EN ISO 9001:2015:** Quality Management Systems Requirements.

**BS EN 752:2008:** Drain and sewer systems outside buildings.

**The Building Regulations 2010,**  
**Approved Document H, Section H1**

**Building (Scotland) Regulations 2004, Technical Handbook (Domestic & Non-Domestic)**  
**Section 3: Environment**

**Building Regulations (Northern Ireland) 2012,**  
**Technical Booklet N, Section 2**

**Building Regulations 2010, Part H, Section 1.2 (ROI)**

**BS EN 12056:2000** Gravity Drainage Systems inside Buildings.

**BS EN 1401:2009:** Plastic piping systems for non-pressure underground drainage and sewerage.

**BS EN 681** Elastomeric Seals. Material requirements for pipe joint seals used in water and drainage applications. Vulcanised rubber.

All reasonable care has been taken in the compilation of the information contained within this literature. All recommendations on the use of our products are made without guarantee as conditions of use are beyond the control of Brett Martin. It is the customer's responsibility to ensure that each product is fit for its intended purpose and that the actual conditions of use are suitable.

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