



Underground Solution Specialists for Reactive Soils



EXPANDA JOINT



WaterMark
Spec 005 Lic 20081
SAI Global



SWIVEL JOINT

STORM PLASTICS (SA) PTY LTD

MANUFACTURERS OF SPECIALISED PLUMBING PRODUCTS

For Technical Enquiries Contact:

Storm Plastics (SA) Pty Ltd • Phone: (08) 8374 3277 • Fax: (08) 8374 3279

Email: info@stormplastics.com.au • Website: www.stormplastics.com.au

QUALITY ASSURED COMPANY



AS/NZS ISO 9001:2008
REGN. NO. 1274

WaterMark Certified Products

MP52 – 2001 Spec 005 Sanitary Plumbing Pipes and Pipe Fittings (related Standards AS/NZS 1260 - 2002, PVC-U Fittings for Drain, Waste and Vent Applications)

DWV Expanda Joints

100mm M&F DWV

Expanda Joint allowing up to 150mm movement
Code: DW100150



100mm M&F DWV

Expanda Joint Taped with Expanda tape allowing up to 150mm movement
Code: DW100150T



DWV Expansion Bends

100mm F&F x 45° Fabricated DWV

Expansion Bend allowing up to 155mm movement
Code: DW10045155



100mm F&F x 90° Fabricated DWV

Expansion Bend allowing up to 155mm movement
Code: DW10090155



100mm F&F x 45° Fabricated DWV

Expansion Bend allowing up to 240mm movement
Code: DW10045240



100mm F&F x 90° Fabricated DWV

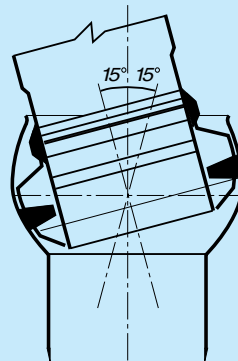
Expansion Bend allowing up to 240mm movement
Code: DW10090240



DWV Swivel Expansion Joints

100mm M&F DWV Swivel Expansion Joint

allows +/- 15° rotation and 50mm expansion
Code: SJ10015



150mm M&F DWV Swivel Expansion Joint

allows +/- 15° rotation and 60mm expansion
Code: SJ15015



WaterMark

Spec 005 Lic 20081
SAI Global

TECHNICAL NOTES – DWV & STORMWATER EXPANDA JOINTS



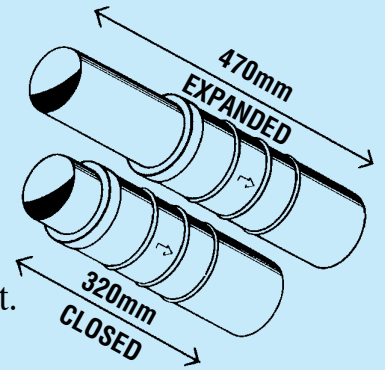
100mm DWV EXPANDA JOINT

Code DW100150

Suitable for repair, stack work, cut-ins and flexible connections.

Allows approximately 150mm longitudinal movement.

Fitting measures 470mm open, 320mm closed.



Expanda Joints provide for longitudinal movement (flexibility) in a drainage system when installed correctly. Specialised care is required to determine the most suitable location to install Expanda Joints into a drainage system. Expanda Joints are high performance low cost fittings, manufactured to tolerances that ensure an effective seal and a long service life aimed at alleviating the stresses likely to be imposed upon drainage systems. The 100mm DWV Expanda Joints have **“WaterMark” Certification**, a level of quality recognised by participating Australian Water Authorities. And although such accreditation is not required for the Expanda Joint fittings used in stormwater drainage applications, they are manufactured to the same high performance standards. Expanda Joints can be used in vertical or horizontal positions as a repair fitting or as a drainage fitting to accommodate expansion or contraction above or below ground.

Soil Engineers widely acclaim the use of Expanda Joint fittings, in conjunction with Storm Plastics Swivel Joint fittings, for drainage installations where ‘reactive soils’ are a concern.

Due to the extremes in temperature in Australia and the prevalence of reactive soils, Storm Plastics (SA) Pty Ltd recommends that provision be made for movement in the design and installation of all PVC-U drainage systems without exception, i.e., Soil Site Classes A, S, M, H, E and P. See Site Classifications on PAGE 5 of this brochure.

GENERAL ADVICE

The “Expanda Joint,” being a flexible fitting, does need extra care and attention for maximum performance. For the benefit of the installer, a removable cardboard spacer is inserted into the bottom of the main socket section. This spacer should only be removed at the time of installation. In the event that it is displaced prior to installation (when held in storage), it is important that there should always be a gap of not less than 20mm between the end of the spigot and the bottom of the socket.

At the time of installation the spacer is to be removed and the spigot pushed home to the bottom of the socket then immediately withdrawn to the nominated working position. The working position for the Expanda Joint should be set half way or as nominated by the site Soils Engineer.

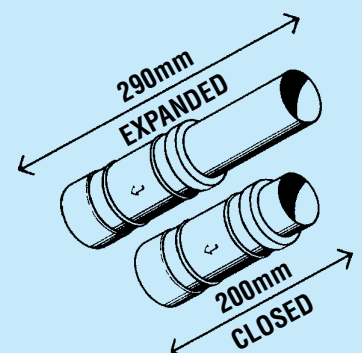
90mm STORMWATER EXPANDA JOINT

Code ST9090

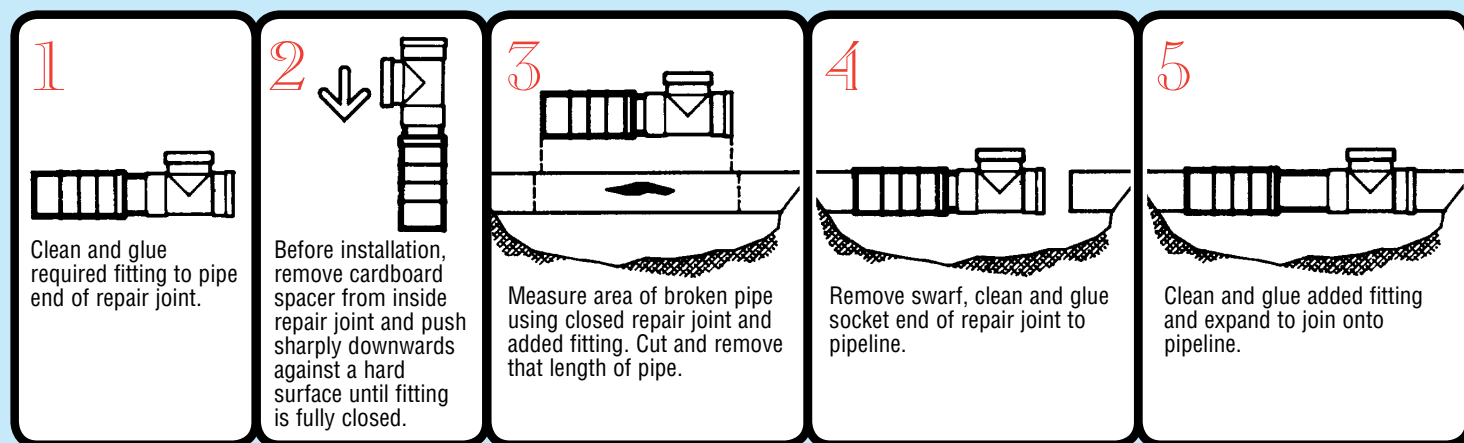
A flexible water-tight repair fitting also designed to comply with Engineers soil reports when flexible connections are specified.

Allows approximately 90mm longitudinal movement.

Fitting measures 290mm open, 200mm closed.



GUIDELINES FOR USE OF THE **EXPANDA JOINT** FOR CUT-INS, REPAIR AND STACK WORK



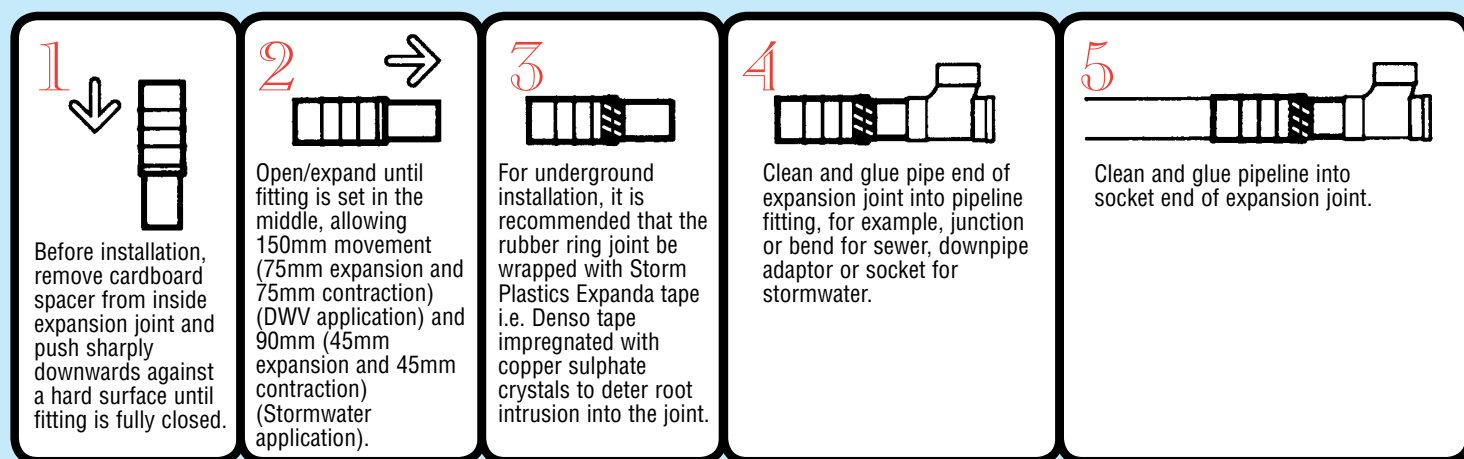
To allow for future soil movement it is preferable that the **EXPANDA JOINT** is not fully expanded.

Previous methods of repair have been considered “difficult”, “inadequate”, “inefficient” and “risky” by some government authorities, astute plumbers, drainlayers and many construction designers.

The **EXPANDA JOINT** removes the difficulty. It is most adequate and efficient and when installed correctly, ensures a water-tight seal with allowance for soil movement, which may have been the cause of the original break.

GUIDELINES FOR USE OF THE **EXPANDA JOINT** AS A FLEXIBLE COUPLING IN PLUMBING AND DRAINAGE INSTALLATIONS

Ref. AS 2870-1996 Sections 5.5.4 (b) and 6.6 (f)



Current sales of the **EXPANDA JOINT** throughout Australia confirms the demand for Sewer and Stormwater fittings which incorporate flexibility for movement in reactive soils.

The **EXPANDA JOINT** is also being used extensively in repair because they are a quick, easy and cost-effective method of cutting in to an existing drainage installation.

TECHNICAL NOTES – DWV SWIVEL JOINT ASSEMBLIES

M&F DWV Swivel Expansion Joints



100mm Code SJ10015

Allows approximately 50mm longitudinal movement.
Fitting measures 325mm open, 275mm closed.

150mm Code SJ15015

Allows approximately 60mm longitudinal movement.
Fitting measures 435mm open, 375mm closed.

An M&F flexible DWV "swivel" joint capable of rotating +/- 15° allowing stress free installation while at the same time providing flexibility at normally fixed positions to compensate for natural movement of the soil. Wrapped in a waterproofing membrane with copper sulphate inside to deter root intrusion.

Storm Plastics (SA) Pty Ltd introduced 100mm and 150mm Swivel Joint assemblies into the Australian market in 1993 to complement their range of Expanda Joints which only provided movement (flexibility) in a longitudinal direction.

The availability of the Swivel Joint assembly, with a longitudinal expansion / sliding joint, has provided the additional flexibility necessary for underground drainage systems to work more closely with the forces of Nature.

The Swivel Joint assembly, with a rotational capability of 360° and an angular deflection to 15° from its axis, combined with the longitudinal expansion / contraction component has become a much sought after compact combination unit.

It is of importance to note that Swivel Joint assemblies are not intended to be used as a bend or for a change in direction in a drainage system beyond three (3) degrees.

The Swivel Joint assembly in combination with the Expanda Joint have permitted Soil Engineers to overcome many of the problems associated with reactive soils and the structural damage caused. The movement associated with reactive soils varies considerably depending on the conditions prevailing. To generalise, when it moves it does so simultaneously in a horizontal and vertical plane, not unlike a wave action in slow motion as it expands / contracts and will inflict extreme forces upon anything before it. It is a natural force which is almost impossible to counteract without incurring considerable expense. The outcome of such events frequently cause distortion damage to drainage systems and building structures. Broken pipework, cracked walls and concrete floors are a typical outcome. The effects are well recorded throughout the nation by insurance companies, engineers and builders alike.

It has been proven with the passage of time that the Storm Plastics range of "swivel" and "expansion" joints, when installed correctly, will provide flexibility to a pipework system and prevent breakages.

To achieve maximum performance benefits, Storm Plastics recommends that swivel and expansion joints be installed in the drainage system as instructed by a competent Soils Engineer conversant with the type of soil likely to be encountered at the work site.

Due to the extremes in temperature in Australia and the prevalence of reactive soils, Storm Plastics (SA) Pty Ltd recommends that provision be made for movement in the design and installation of all PVC-U drainage systems without exception, i.e., Soil Site Classes A, S, M, H, E and P.

REACTIVE SOILS

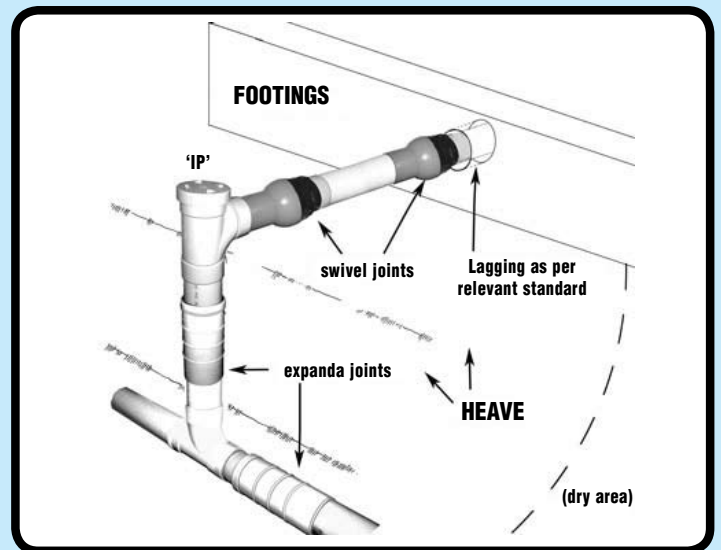
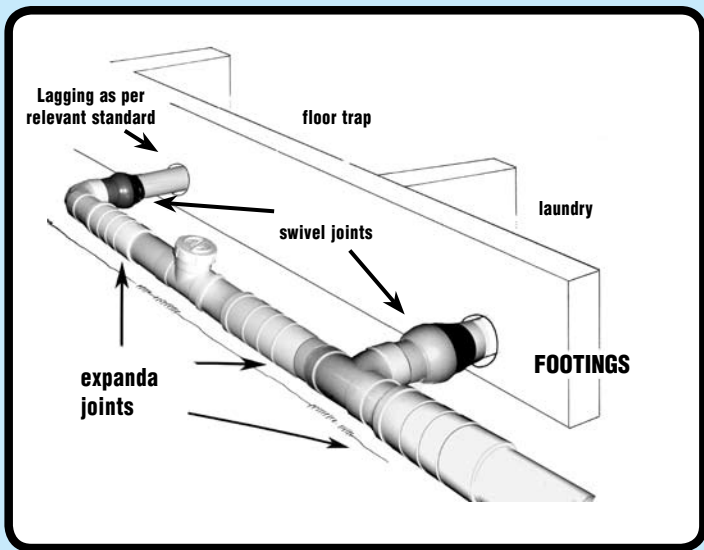
“ SITE CLASSIFICATIONS ” (In brief)

Class	A	0-10mm	Little or no ground movement (Non-reactive).		
Class	S	10-20mm	Slightly Reactive.		
Class	M	20-40mm	Moderately Reactive.	Extending to :	} “ D ” means Deep seasonal moisture variations.
Class	H	40-70mm	Highly reactive.	Extending to :	
Class	E	70+mm	Extremely reactive.	Extending to :	
Class	P		Applies to “Problem sites” (eg., filled soil or potential to collapse), special provisions apply.		

IN GENERAL TERMS reactive soils expand and contract (move), in accordance with the moisture content. Example, from a dry state to a saturated state: Class “M” may move 40mm – Class “H” 70mm – Class “E” in excess of 70mm.

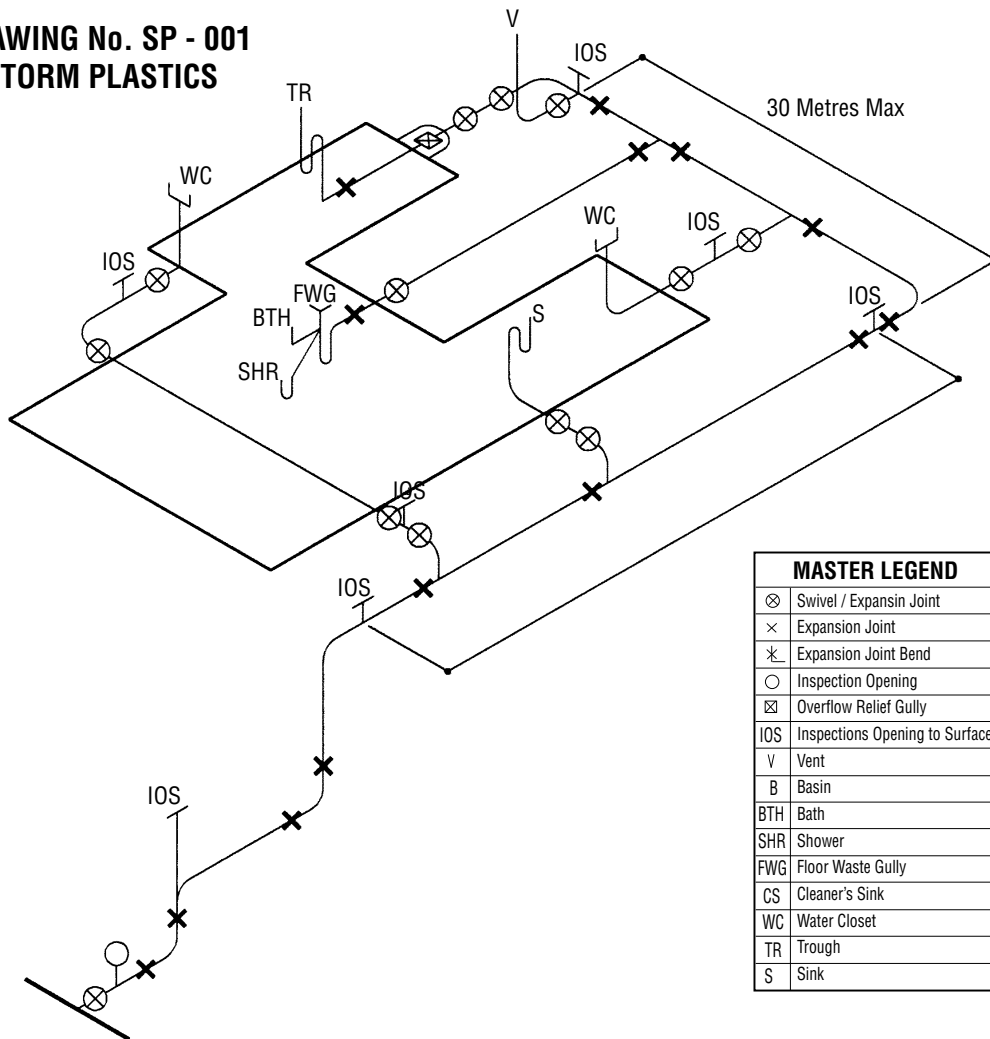
For allotments containing reactive soils classified as H , E , H - D or E - D it is a mandatory requirement for compliance with AS 2870 - 1996, Section 5 Clause 5.5.4 , that stormwater and sewer, Drain Waste and Vent (DWV) pipes be lagged through external footings and **flexible connections be provided** adjacent to the footings prior to connection to the drainage system. (AS 2870 - 1996 also contains further useful information relevant to the preparation and ongoing maintenance of work sites prior to and after construction has taken place to minimise the effects of reactive soils and subsequent damage.)

GUIDELINES OF SEWER DRAINAGE LAYOUT USING EXPANDA and SWIVEL JOINTS



RESIDENTIAL ELEVATED SITE

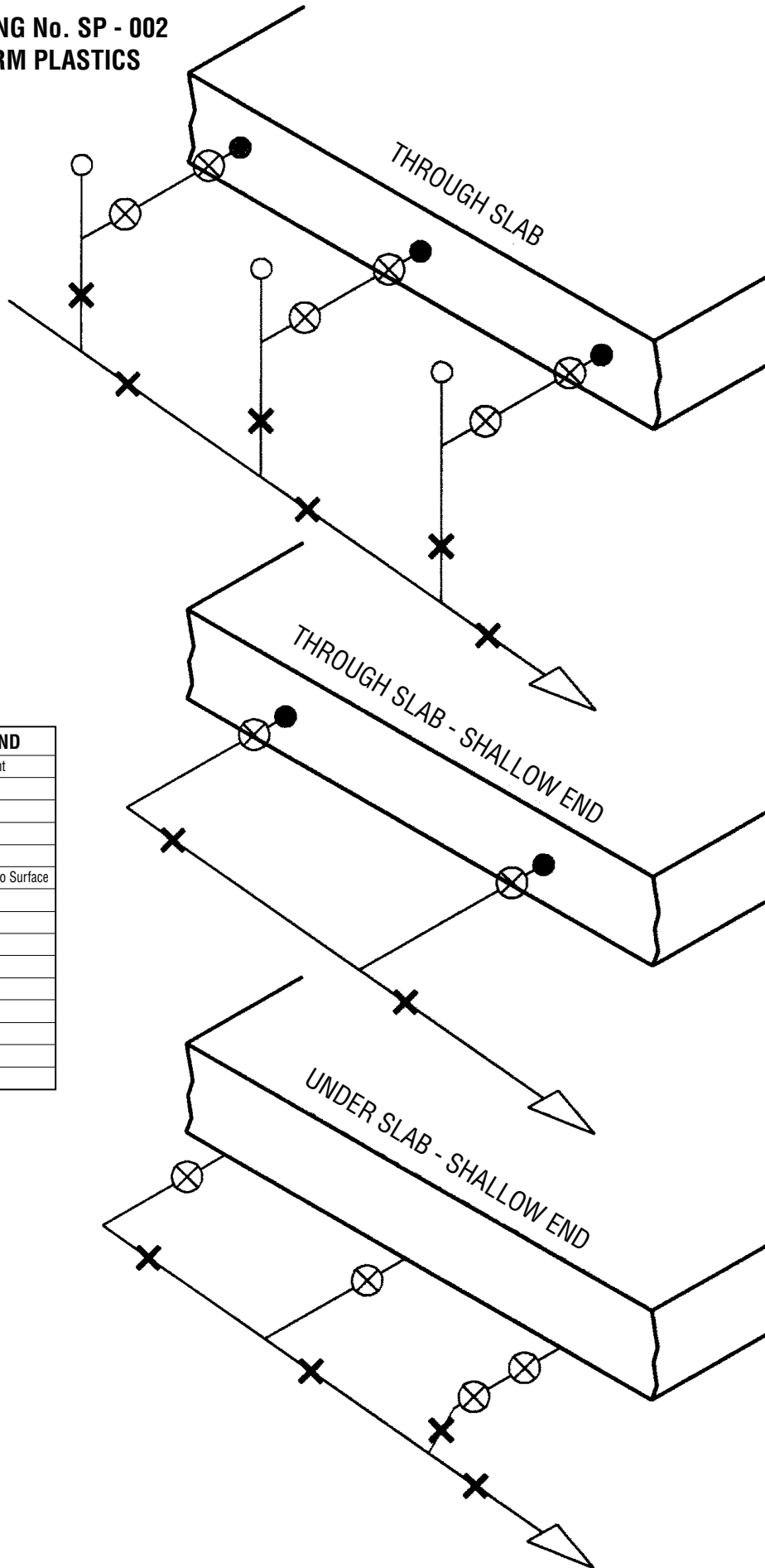
DRAWING No. SP - 001
STORM PLASTICS



MASTER LEGEND	
⊗	Swivel / Expansin Joint
×	Expansion Joint
⊗	Expansion Joint Bend
○	Inspection Opening
⊗	Overflow Relief Gully
IOS	Inspections Opening to Surface
V	Vent
B	Basin
BTH	Bath
SHR	Shower
FWG	Floor Waste Gully
CS	Cleaner's Sink
WC	Water Closet
TR	Trough
S	Sink

GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION & SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

DRAWING No. SP - 002
STORM PLASTICS

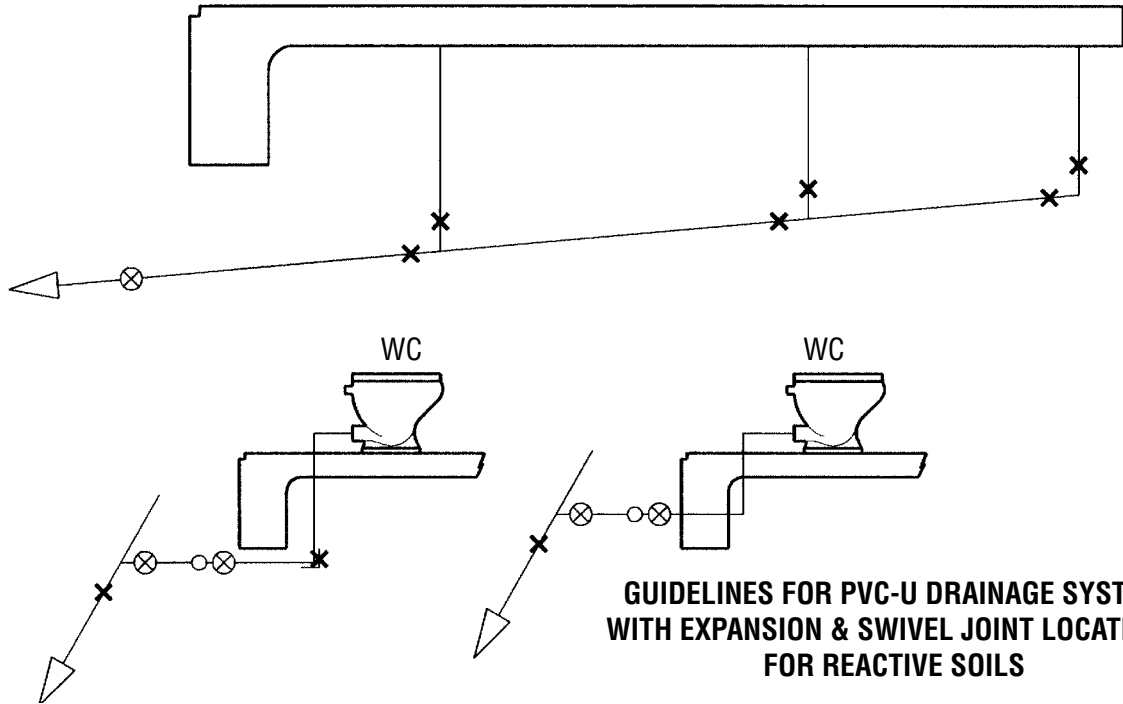


MASTER LEGEND	
⊗	Swivel / Expansin Joint
×	Expansion Joint
✱	Expansion Joint Bend
○	Inspection Opening
⊠	Overflow Relief Gully
IOS	Inspections Opening to Surface
V	Vent
B	Basin
BTH	Bath
SHR	Shower
FWG	Floor Waste Gully
CS	Cleaner's Sink
WC	Water Closet
TR	Trough
S	Sink

GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION & SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

UNDER SLAB INTERNAL DRAINS

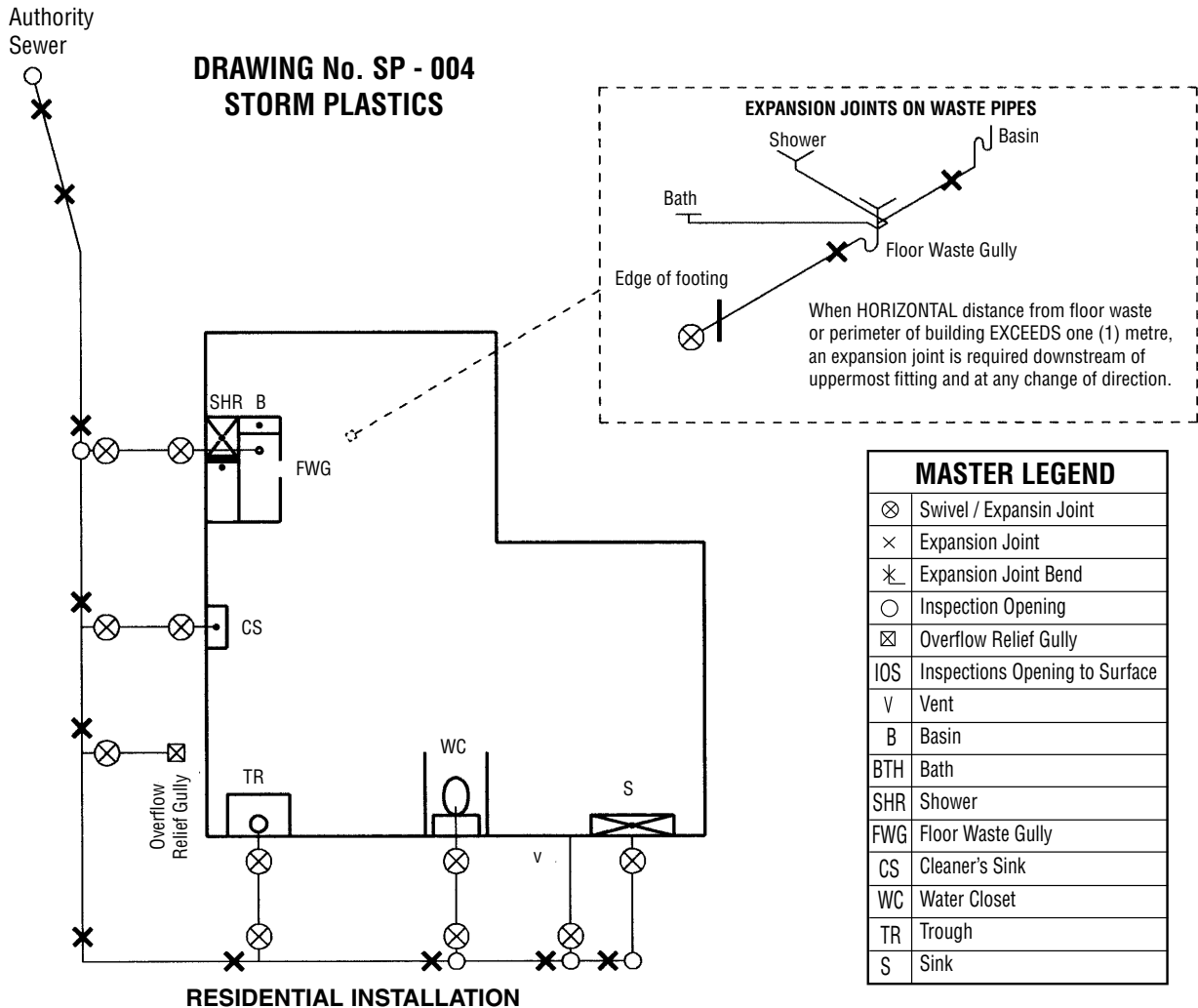
DRAWING No. SP - 003
STORM PLASTICS



GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION & SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

MANUFACTURER'S GUIDELINES FOR EXPANSION & SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

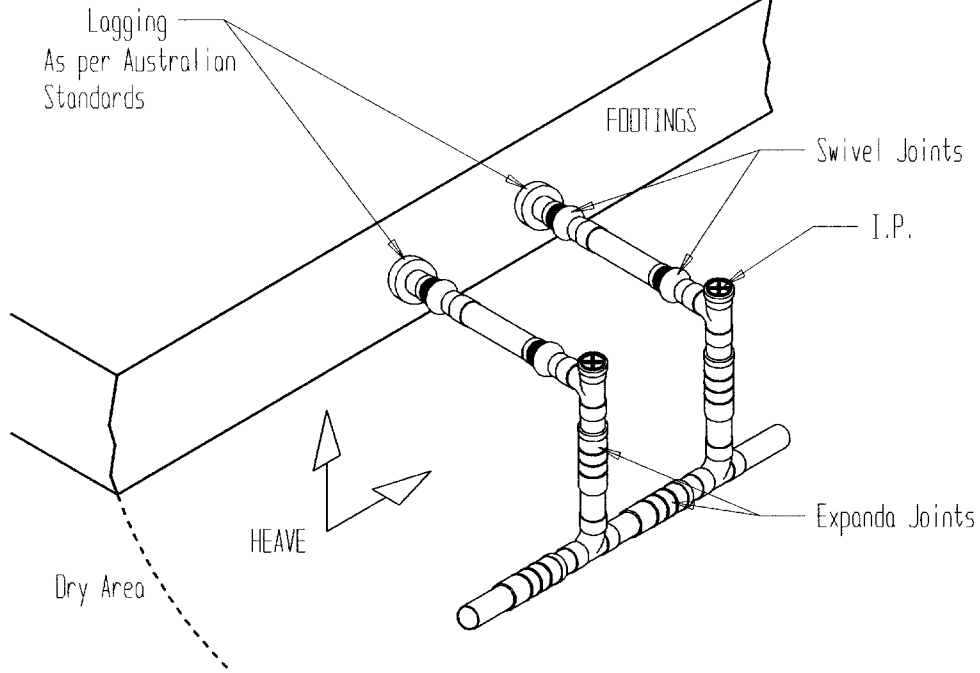
DRAWING No. SP - 004
STORM PLASTICS



RESIDENTIAL INSTALLATION

MASTER LEGEND	
⊗	Swivel / Expansion Joint
×	Expansion Joint
⊗	Expansion Joint Bend
○	Inspection Opening
⊗	Overflow Relief Gully
IOS	Inspections Opening to Surface
V	Vent
B	Basin
BTH	Bath
SHR	Shower
FWG	Floor Waste Gully
CS	Cleaner's Sink
WC	Water Closet
TR	Trough
S	Sink

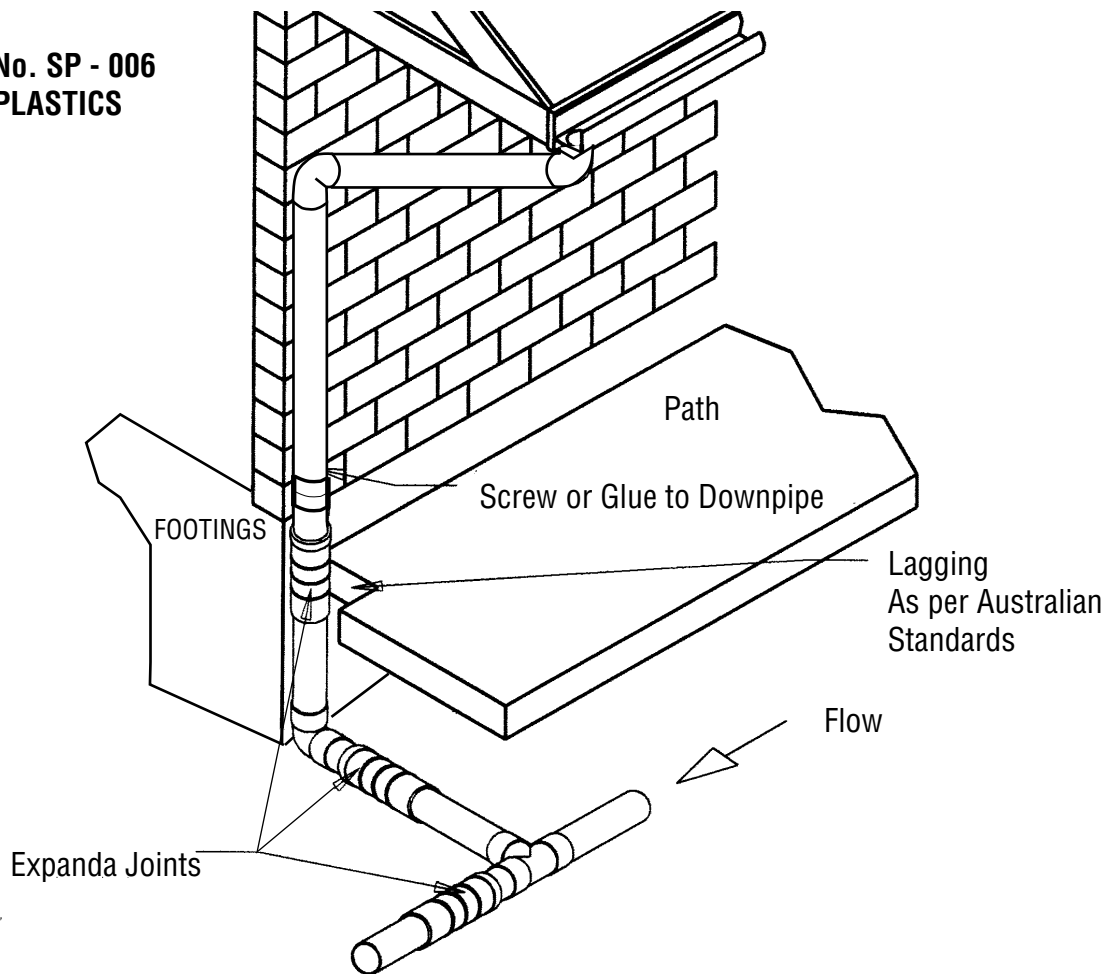
**DRAWING No. SP - 005
STORM PLASTICS**



GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION & SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

25-05-2007	ISSUE	A
DRAWING No.	SP - 005	
STORM PLASTICS		

**DRAWING No. SP - 006
STORM PLASTICS**



GUIDELINES FOR PVC-U STORMWATER SYSTEM WITH EXPANSION JOINT LOCATIONS FOR REACTIVE SOILS

Fabricated DWV Expansion Bends

	Size	Code	Expansion	Top to invert (overall measurement)
	100	DW10090155	155mm	330mm
	100	DW10090240	240mm	420mm
	100	DW10045155	155mm	300mm
	100	DW10045240	240mm	390mm
	150	DW15090240	240mm	520mm
	150	DW15045240	240mm	470mm

M & F DWV Fabricated Expansion Repair Joints

	Size	Code	Expansion	Open	Closed
	40	DW4080	80mm	290mm	210mm
	50	DW5080	80	310	230
	65	DW65120	120	395	275
	80	DW80150	150	515	365
	100	DW100280	280	720	440
	150	DW150240	240	790	550

M&F DWV Taped Expansion Joints wrapped with Expanda tape

	Size	Code	Expansion	Measures
	100	DW10040	40mm	225mm
	100	DW100100SST	100	320
	100	DW100150T	150	380
	100	DW100280T	280	580
	150	DW15060	60	315

225mm DWV Fabricated Expansion Couplings & Joints

	Size	Code	Expansion	Measures	
	225	DWS225150	150mm	270mm	
	225	DWC225210	210	390	
	225	DWEJ225210	210mm	750mm	
	225	DWER225345	345	1015	
				Open	Closed
				750mm	540mm
				1015	670

Floor Flanges



Code	Size	Code	Size
FF40	40mm	FF80	80mm
FF50	50mm	FF100	100mm
FF65	65mm		

Puddle Flange for suspended floors

Code *PF80M or PF80F*

With provision for screwing to timber floor and can be fixed to concrete floor prior to connection to pipework. Male or female.



Fine Fit Adaptor

75mm GALV / 90mm PVC STORMWATER

Code *ST7590*

A purpose built PVC stormwater adaptor that makes the installers job faster, innovative, neater and efficient (FINE).

It has been manufactured to fine tolerances that cater for the variations in the outside diameter of 75mm galvanised iron downpipe as the size varies along the length of the downpipe.

A time saving compact PVC fitting to efficiently and neatly join 75mm round galvanised iron downpipe to 90mm PVC stormwater pipe.

No longer do you need to crimp the downpipe and struggle with the two ends until finally you squeeze the downpipe inside the fitting!



100mm x 90mm M & F Stormwater Reducer

Code *ST10090* Simple and cost effective method of reducing stormwater pipe from 100mm to 90mm.

FITS PIPE TO PIPE - NO SOCKET REQUIRED.



Expanda Tape

Code *ET10440 and ET12440*



10 or 12 strips per pack of 440mm x 75mm anti corrosion tape impregnated with copper sulphate crystals on clear plumbers joining tape. For on site application to comply with Water Authority or Engineers recommendations.

Expanda Lube

Code *EL125*

125ml of lubricant particularly suitable for installation of rubber ring joints in stacks and drains.



Plaster/Solids Trap



FABRICATIONS

Plastic Welded Fabrications from PVC Sheet or Pipe (made to order) We also manufacture PVC Neutraliser Tanks

If you have a requirement for a specialised Stormwater or DWV fitting, ask your plumbing outlet to order it for you. They will advise you on availability and price and on receiving a confirmed order, will give you a confirmed delivery date.

Various Size PVC Downpipe Adaptors (made to order).



72mm x 127mm x 100mm pipe

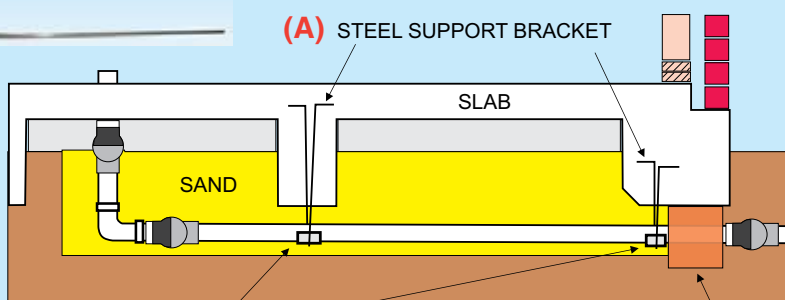
230mm x 115mm x 150mm pipe

210mm x 210mm x 225mm socket

Plastic Coated Steel Support Brackets to suspend drain under foundation, 750mm or 1500mm long



(A) STEEL SUPPORT BRACKET



(B) SPLIT PVC PIPE SUPPORTS

MOIST COMPACTED CLAY BACKFILL

Code	Size
SB75075	for up to 65mm pipe
SB750120	for up to 100mm pipe
SB750175	for up to 150mm pipe
SB150075	for up to 65mm pipe
SB1500120	for up to 100mm pipe
SB1500175	for up to 150mm pipe

A 6mm diameter plastic coated steel support bracket at 1200mm max CTS bent over 200mm each leg and cut plastic coating from the bent section.

B Cut a 50mm section of same diameter sewer pipe being suspended, split along its length and cup onto underside of sewer pipe at each bracket location.

Silt Traps Complete with Increment, Lid and Bucket

(Fabricated Approximate Dimensions)

Size 225mm x 150mm
Code S225150



Size 225mm x 100mm
Code S225100



Size 150mm x 100mm
Code S150100



Branches in riser made to order.



150mm Silt Trap Buckets

Code	Hole Size	Height
B1503	3mm	350mm
B1505	5mm	
B15010	10mm	



225mm Silt Trap Buckets

Code	Hole Size	Height
B2253	3mm	310mm
B2255	5mm	
B22510	10mm	
B225SS1.5	1.5mm	Stainless Steel



HDPE 250mm x 110mm Silt Trap

Code S250110HDPE

Complete with stainless steel lid and bucket with 1.5mm holes.



Custom Expansion Swivel Joints

Various configurations and lengths of movement made to order as per customers' requirements



Size	Code	Description
100	EXTEJ100	100mm DWV Extended Expansion Joint PVC-U
100	SJ/EXTEJ100	100mm DWV Swivel/Extended Expansion Joint PVC-U
100	DSJ/EXTEJ100	100mm DWV Double Swivel/Extended Expansion Joint PVC-U



Available from:

FOR TECHNICAL ENQUIRIES CONTACT:



STORM PLASTICS (SA) PTY LTD

ABN: 46 008 075 661

Phone (08) 8374 3277 • Fax (08) 8374 3279

Email: info@stormplastics.com.au
Website: www.stormplastics.com.au

VISIT OUR WEB PAGE TO VIEW OUR FULL PRODUCT GUIDE

All measurements in this brochure are approximate and subject to change and drawings are not to scale.