iplex™

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TECHNICAL GUIDE

Restrain™ PVC-U Sewer Pipe

MADE IN AUSTRALIA

IPLEX RESTRAIN™ DELIVERS PIPELINE SOLUTIONS IN

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IPLEX PIPELINES AUSTRALIA PTY LIMITED ABN 56 079 613 308

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Restrain™ PVC-U Sewer Pipe

1.0 GENERAL

1.1 INTRODUCTION

Iplex Pipelines has developed Restrain™ PVC-U Sewer Pipe specifically for gravity sewer applications utilising trenchless techniques for the installation, repair or replacement of underground infrastructure. Restrain™ is a rubber ring jointed PVC-U pipe, with a threaded spigot and socket, which provides axial capability during installation.

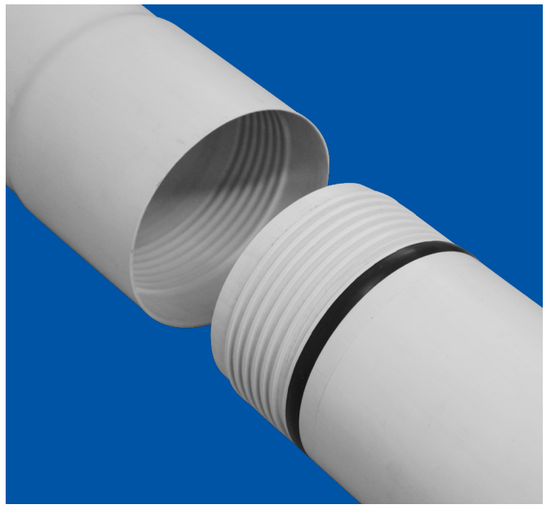


Figure 1.1 Typical joint arrangement showing rubber sealing ring and threaded spigot and socket.

1.2 APPLICATIONS

Restrain™ Sewer Pipe is suitable for installation by a range of trenchless methods, including;

- Horizontal directional drilling (HDD)
- Pipe reaming or pipe eating
- Static pipe bursting or cracking
- Auger boring or guided boring
- Micro-tunnelling

Restrain™ Sewer Pipe is not suitable for use with pneumatic or concussive pipe bursting equipment. It is also unsuitable for pipe ramming or impact moling.

1.3 ADVANTAGES

The threaded spigot and socket provides immediate axial restraint. The rubber ring seal is seated in a groove behind the spigot thread to ensure that the rubber sealing is not dislodged during installation.

Restrain™ Sewer Pipe is compatible with both solvent welded and rubber ring jointed DWV PVC-U sewer pipe and fittings conforming to AS/NZS 1260.

The following table provides a summary of features and benefits.

TABLE 1.1 FEATURES AND BENEFITS OF RESTRAIN™ SEWER PIPE

Feature	Benefit
Threaded socket and spigot joint	Provides immediate axial restraint during installation using trenchless methods Fast connection using short lengths means you can work in small spaces
Compatible with conventional DWV PVC sewer fittings to AS/NZS 1260	Allows simple connection to maintenance holes and service laterals
Two directional installation capability	Pipe can be either pushed or pulled into place to suit installation methodology
High performance rubber sealing ring	Minimises the risk of leakage and root intrusion
Complies with AS/NZS 1260	Use with full confidence
Manufactured from PVC-U	Suitable for installation on flat grades, is certified Best Environmental Practice PVC and qualifies for GBCA Green Star PVC Credit Points
Produced in stiffness class SN16	Suitable for use in deep installations

2.0 MATERIAL PROPERTIES

Restrain™ Sewer Pipe is manufactured from PVC-U (Unplasticised Polyvinyl Chloride). The properties listed in Tables 2.1 and 2.2 are typical for PVC-U sewer pipes.

TABLE 2.1 MECHANICAL PROPERTIES FOR PVC-U SEWER PIPE

Property	Value & Unit
Density	1530 kg/m^3
Ultimate Tensile Strength	52 MPa
Compressive Strength	66 MPa
Ring Bending Modulus (3min)	3200 MPa
Ring Bending Modulus (50 yr)	1400 MPa
Hardness (Shore D)	85 (ASTM D2240)
Yield Strain	5.5 %
Poisson's Ratio	0.38

Dispose of all scrap and waste in an environmentally safe manner, all PVC can be returned to the manufacturer for recycling. DO NOT INCINERATE.

2.1 TEMPERATURE EFFECTS

PVC-U pipe should not be used for continuous service temperatures above 50°C as deformation of the pipe may result. PVC-U pipe is flammable however it is self-extinguishing and does not support combustion when the source of ignition is removed.

Typical thermal properties are provided in the following table.

TABLE 2.2 TYPICAL THERMAL PROPERTIES

Property	Value & Unit
Max Continuous Service Temperature	50°C
Specific Heat	1045 J/kg/°C
Thermal Conductivity	0.138-0.150 W/m/°C
Coefficient of Linear Thermal Expansion	7 x 10^{-5} / °C
Vicat Softening Temperature	Approx. 80°C

2.2 ELECTRICAL PROPERTIES

PVC-U pipe is non-conductive and cannot be used for earthing electrical equipment.
Typical electrical properties are shown below.

TABLE 2.3 TYPICAL ELECTRICAL PROPERTIES

Property	Value & Unit
Volume Resistivity	10^{16} ohm.cm (60% RH)
Surface Resistivity	10^{13} – 10^{14} ohm
Power Factor (at 20°C)	0.015 – 0.020
Dielectric Constant (at 25°C)	3.4 – 3.6 (60 Hz)

2.3 CHEMICAL RESISTANCE

PVC-U sewer pipes have high resistance to a wide range of chemical reagents. Such resistance, however, is a function of temperature, concentration and pressure. Contact our Iplex representative for non-water applications.

In general, PVC-U is suitable to convey strong acids, alkalis and aqueous solutions (except those which are strongly oxidising), aliphatic hydrocarbons, fluorides, photographic and plating solutions, brine, mineral oils, fats and alcohols. The suitability of a pipeline for conveying a certain chemical will depend on such factors as the concentration of the chemical in the fluid to be conveyed, temperature, flow rate, the presence of pockets or 'dead spots' in the pipeline and other factors.

Restrain™ Sewer Pipes should not be used with aromatic or chlorinated hydrocarbons, ketones, esters and ethers.

A chemical resistance chart is available on the Iplex website www.iplex.com.au

2.4 IMPACT STRENGTH

PVC-U sewer pipes have good impact resistance, however at very low temperatures (eg. Below 5°C) the impact resistance of PVC-U pipes is reduced. Hence, when installing pipes at low temperatures extra care should be taken when handling and inserting.

PVC-U pipes are however installed in some of the coldest regions of Europe and North America in large quantities without difficulty.

3.0 PRODUCT DETAILS

3.1 STANDARDS AND TESTING

Restrain™ Sewer Pipe is manufactured to the Australian Product Standard under a third party accredited quality assurance program complying with ISO 9001.

Restrain™ Sewer Pipe has ISO Type 5 third-party StandardsMark certification, licence number SMKP20185 in accordance with AS/NZS 1260 'PVC-U pipe and fittings for drain, waste and vent application'.

3.2 COLOUR AND MARKINGS

Restrain™ Sewer Pipe is manufactured in a light grey colour with a semi-gloss finish which is opaque and flawless.

Restrain™ Sewer Pipes are marked in accordance with AS/NZS 1260 'PVC-U pipes and fittings for drain, waste and vent application'. Markings include:

- Manufacturers name and brand name
- Nominal Pipe Size
- PVCU DWV
- SN16
- Date of manufacture
- Manufacturers code
- AS/NZS 1260
- BEP PVC

Restrain™ Sewer Pipes are repeatedly marked in accordance with AS/NZS 1260.

3.3 RUBBER RING SEALS

Rubber ring seals are Styrene Butadiene rubber (SBR), which conforms to the requirements of AS 1646 'Elastomeric seals for waterworks purposes'. SBR rings have a high resistance to sewerage as well as mineral oils.

The rubber ring seal is supplied loose and should be stored to ensure that it is not damaged. The rubber ring seal should be placed in the pipe spigot groove during the pipe jointing process.

TABLE 3.1 RESTRAIN™ RUBBER RING SEALS

Product Code	DN
DTRR150SBR	150
DTRR225SBR	225
DTRR300SBR*	300
DTRR375SBR*	375

***Note:** Made to order products. Refer to Iplex Pipelines for availability.*

3.4 PIPE STIFFNESS

Restrain™ Sewer Pipe is manufactured with a minimum pipe stiffness of 16,000 N/m/m DN375 and is classified as SN16. Restrain™ Sewer Pipe is therefore capable of sustaining greater loads than SN6, SN8 or SN10 DWV sewer pipe.

3.5 ENVIRONMENTAL CREDENTIALS

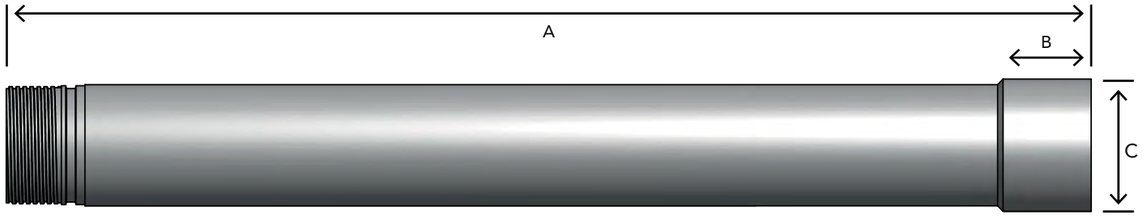
Restrain™ Sewer Pipe is certified to conform to the Best Environmental Practice PVC (BEP PVC) provisions of AS/NZS 1260.

The Green Building Council of Australia (GBCA) has defined the standards for best practice environmental performance for PVC manufacturing, against which Iplex's processes have been audited by an independent certifying body. This permits Restrain™ Sewer Pipe users to claim positive PVC Credit Points under the GBCA's Green Star rating scheme. For more information on the GBCA's Green Star rating scheme visit www.gbac.org.au.

3.6 RESTRAIN™ SEWER PIPE RANGE AND DIMENSIONS

Restrain™ Sewer Pipe is available in nominal diameters from DN100 up to DN375. The product is defined by overall length in order to facilitate on site requirements. The effective length of the pipe is the overall length less the thread length ('B').

TABLE 3.2 RESTRAIN™ SEWER PIPE RANGE AND DIMENSIONS



Product Code	Pipe DN	SN	Overall length 'A' (mm)	Effective length converter 'B' (mm)	Mean Pipe OD (mm)	Socket OD 'C' (mm)	Mean ID (mm)	Mean Wall (mm)	Weight Kg
DTR16150BY	150	16	2750	90	160.3	170	147.5	6.4	14
DTR16225BY	225	16	2750	140	250.4	260	230.6	9.9	30
DTR16300BY*	300	16	2750	140	315.5	330	290.7	12.4	59
DTR16375BY	375	16	2750	140	400.5	425	369.3	15.6	82

Note: *Non-standard lengths may be available upon request*
**Made to order products. Refer to Iplex Pipelines for availability.*

PIPE FITTINGS

Restrain™ Sewer Pipe is compatible with standard PVC-U sewer pipes and fittings for both solvent weld and rubber ring joints. A full list of the range can be found in the Iplex's 'DWV Pipe and Fittings System' technical guide available on the Iplex website: www.iplex.com.au.

4.0 STRUCTURAL DESIGN

Restrain™ Sewer Pipes are defined as flexible pipes. Flexible pipes will deflect when under load and hence rely on pipe stiffness as well as soil strength to oppose the vertical loads.

External soil and live loads on buried flexible pipes will cause a small decrease in vertical diameter and an increase in horizontal diameter. The horizontal movement of the pipe walls into the soil material at the sides develops a passive resistance within the soil to support the external load. The soil type, density and the existence of water table above the pipe will influence structural performance. The greater the effective soil modulus, the less the pipe will deflect.

4.1 ALLOWABLE COVER HEIGHT

Restrain™ Sewer Pipe is manufactured from SN16 Sewer Pipe and thus can accommodate larger fill heights compared with SN6, SN8 or SN10 DWV Sewer Pipe.

4.2 PIPE GROUTING

In most situations Restrain™ Sewer Pipe will be installed via trenchless methods – horizontal directional drilling (HDD), micro-tunnelling, pipe reaming, pipe eating, static pipe bursting or cracking, auger boring or guided boring.

Where it is necessary to pressure grout the annulus between the pipe and the hole it is important to ensure that the grout is introduced as evenly as possible in a manner not to damage the Restrain™ Sewer Pipe. The grout must not exceed the pipes safe grout pressure.

For a circular ring subject to a uniform external pressure, the critical buckling pressure PCR is defined by Timoshenko as:

$$P_{CR} = \frac{2.E}{((D-t)/t)^3} \times 10^3$$

Where:

P_{CR} = critical buckling pressure (kPa)
E = short term modulus (3200 MPa)
D = pipe OD (mm)
t = wall thickness (mm)

TABLE 4.1 – SAFE BUCKLING PRESSURE @ 20°C (FACTOR OF SAFETY = 2.5)

Pipe DN	Safe Buckling Pressure (kPa)
150	184
225	178
300	175
375	170

If necessary, the effects of grout pressures can be reduced by filling the pipeline with water prior to grouting. Alternatively it may be possible to stage the grouting process in two or three lifts, allowing the pipe to solidify in the annulus to the spring line before the top section is filled. Installers will also need to consider the effect of the grout's heat of hydration on the pipe's safe buckling pressure.

5.0 HANDLING AND STORAGE

5.1 HANDLING

Restrain™ pipes are normally delivered in timber packs designed to hold the pipes in position and protect them from point loading and ovalisation. Observe exclusion Zones when unloading trucks.

Whilst Restrain™ Sewer Pipes are easy to handle, careless handling can cause unnecessary damage to the pipe and/or its threaded joints. Pipes and fittings must not be dropped or thrown onto hard surfaces or allowed to come into contact with hard sharp objects that could inflict scratches. PVC-U pipe should not be allowed to slide across sharp edges.

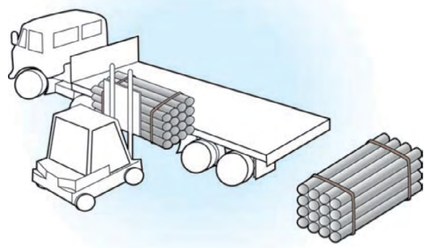
Wire slings must not be used to lift pipes.

Be aware that pipe represents a large, heavy material that can be awkward to handle and unload from shipping vehicles. Improper unloading lengths or bundles of pipe can result in personal injury or even death. Always follow best practice.

Particular care must be taken to prevent any damage to the thread on the spigot and socket keeping the thread clean and free from sand, dirt and grit which may affect the axial capacity and/or the jointing process.

Care must be taken when handling the packing material to avoid injury form sharp edges and splinters

Figure 5.1 Handling of block bundles



5.2 STORAGE

Restrain™ Sewer Pipes should be left in their packed units wherever possible until they are required to be installed.

If pipes and fittings are stored outside for more than 12 months protection from sunlight is required using a breathable material (i.e. hessian or white shade cloth) to prevent heat buildup and allow ventilation.

Pipes may be stacked on site providing the surface is firm, level and free from loose stones and other sharp objects. Socketed pipes should be stacked in alternate layers of sockets facing in opposite directions to prevent load bearing on the sockets.

Racks for long term storage are recommended and should preferably provide continuous support, however if this is not possible, supports of at least 75mm bearing width at 1m maximum centers should be placed beneath the pipes. Side restraints should be placed at centers not exceeding 1.5m and stacks should not exceed 1m in height.

When unloading alongside excavated trenches it is recommended that pipes be placed on the opposite side of the trench from excavated material if it is safe to do so.

Rubber rings and silicone spray should be stored under cover until pipe laying commences.

Figure 5.2 Typical loose pipe storage on ground

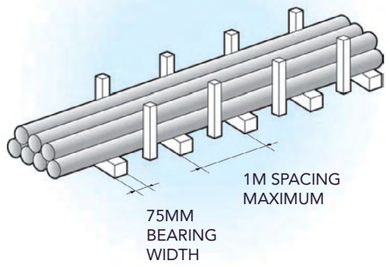
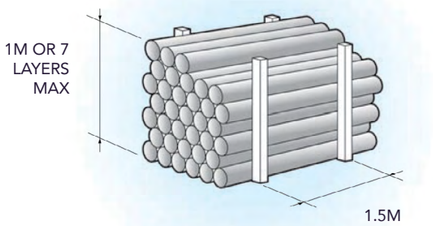


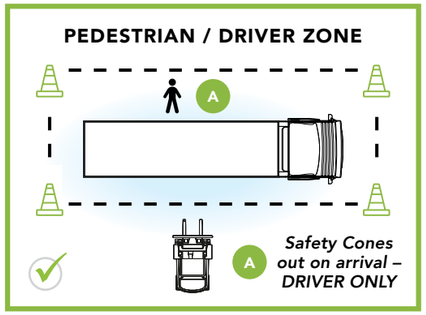
Figure 5.3 Typical loose pipes on bearers

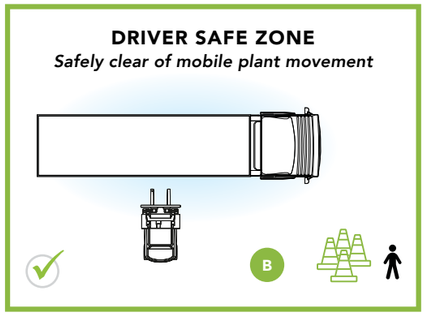


EXCLUSION ZONES AT CUSTOMER SITES

This guide is designed to be enforced when NO site exclusion zone process exists.
It provides guidance on how to effectively implement and maintain a safe exclusion zone when on customer sites. This is not designed for Vehicle Mounted Crane (VMC) truck deliveries where the Vehicle Mounted Crane is being used to load/unload.

EXCLUSION ZONE PROCESS IN PLACE & UNDERSTOOD BY MOBILE PLANT OPERATOR & DRIVER





A DRIVER SAFE ZONE CLEAR OF MOVING MOBILE PLANT AND RAISED LOADS MUST BE ESTABLISHED

NO EXCLUSION ZONE PROCESS IN PLACE DO NOT PROCEED

NO ENTRY UNLESS POSITIVE COMMUNICATION AND THE MOBILE PLANT HAS STOPPED MOVING AND FORKS/TYNES GROUNDED

SAFE OPERATION

- ✓ Upon arrival, driver communicates delivery instructions with site contact then proceeds to loading/unloading location.
- ✓ When safe, the driver defines a rectangular area with safety cones approximately 3m from the vehicle edges in which the the plant driver is prohibited from approaching.
- ✓ The driver proceeds with the removal of vehicle restraints and then notifies the loader and collects cones once complete.
- ✓ The driver them relocates to the safe zone located at a maximum safe distance from mobile plant(s), and remains there until loader is stationary, forks/tynes are grounded and positive communication is established with the loader
- ✓ Once load/unload complete, driver is informed and mobile plant leaves loading zone.
- ✓ Driver re-establishes exclusion zone to perform final restraints and then collects cones.

6.0 INSTALLATION

6.1 DRILLING LUBRICATION

Trenchless applications using Restrain™ Sewer Pipe require 'in hole' lubrication within the host hole with either water or an appropriate water/bentonite suspension lubricant mixture at all times.

6.2 OVERCUT

The amount of overcut of the host hold is dependent on many factors, including, the type of soil, lubrication, pipe size and line length. The host hole is normally at least 20mm larger than the maximum socket outside diameter and may be 30mm-50mm larger in rock or swelling clays.

6.3 JOINT ASSEMBLY AND ORIENTATION

Prior to lubrication and assembly check the pipe socket and spigot for any damage or scratches, especially on the threads and ensure both the Restrain™ pipe thread and seal ring are clean and free of dirt and grit.

For best results, ensure that the joint assembly is spigot-into-socket, (not socket-over-spigot) and that the spigot is in the direction of the pipeline insertion.

DIRECTION OF INSERTION

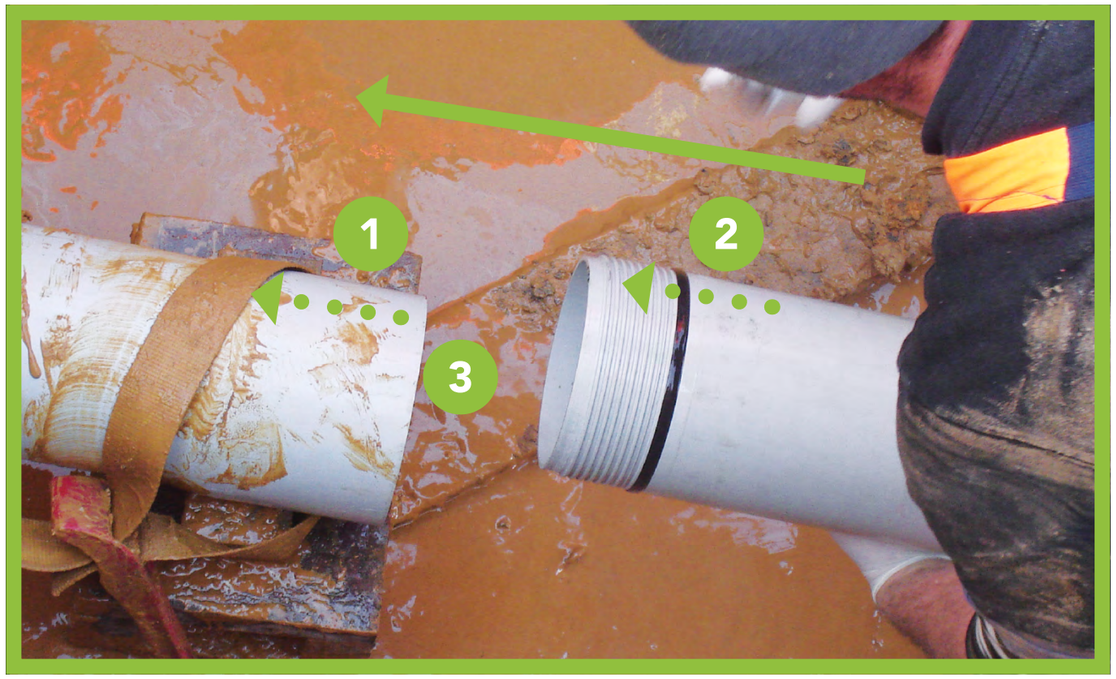
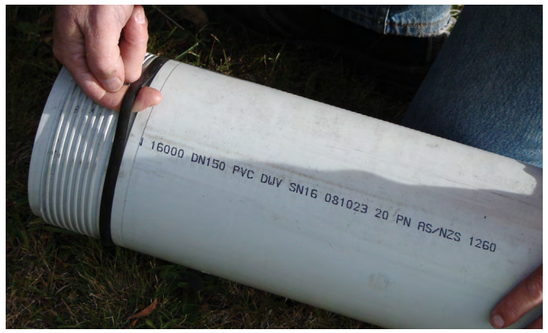


Figure 6.1 Restrain™ Sewer Pipe typical joint assembly and orientation

6.4 JOINTING INSTRUCTIONS

Regardless whether Restrain™ Sewer Pipe is installed via HDD, micro tunnelling, auger boring, static pipe bursting, pipe reaming or slip lining the method of pipe jointing will be the same.

The pipe jointing procedure is shown and described as follows;



STEP 1 *Figure 6.2 Clean ends of pipe*

With the pipe at a convenient work height, inspect the ends for damage and ensure that the thread is clean and free from damage. Use a brush and or cloth to wipe down the outside of the thread and the inside of the socket; any grit will make it harder to tighten the joint properly. Place the rubber ring in the groove (the furthest groove from the end of the pipe). The crown of the seal should be facing outwards. Ensure the witness marks can be seen on the spigot end.

STEP 2 *Figure 6.3 Lubricate surfaces*

Lubricate the spigot thread, the seal ring, the socket thread and the lead in to the socket with an approved spray lubricant. For all lubricants follow safety instruction from manufacturer.

STEP 3 *Figure 6.4 Align pipe ends*

Align the spigot with the socket in a straight line. Ensure there is a smooth initial engagement. Do not cross thread. Use temporary alignment support blocks if required.

The use of supports and guides to align the pipe make it easier to thread and tighten.

STEP 4 *Figure 6.5 Engage thread*

Initially turn the spigot by hand in a clock-wise direction. The initial thread engagement and first few turns should be smooth and free of 'binding'.

STEP 5 *Figure 6.6 Start thread*

Continue to hand screw the spigot into the socket as far as it will easily go, or up to near the seal ring.

STEP 6 *Figure 6.7 Tighten joint*

Keep strap wrenches out of the mud as a wet strap does not grip the pipe as effectively as a dry strap. Support the pipe to maintain alignment. For DN100 to DN225 apply the strap wrenches to both pipes, do not place the strap directly onto the socket allow 50mm space between the strap and the start of the socket or spigot, and screw up pipe until the seal ring completely disappears up into the socket mouth and the joint firmly resists further tightening. The end of the socket should align with the witness mark.

STEP 7 *Figure 6.8 Witness mark*

Witness mark is printed on the pipe.

STEP 8 *Figure 6.9 C Wrench*

A 'C Wrench' assembly tool may be required for the DN300 and DN375 Restrain™ Sewer Pipe due to the high torsional forces required.

6.5 APPROVED PIPE JOINTING LUBRICANT

Liberally apply a silicone lubricant to the threads and rubber seal prior to assembly.

Iplex recommend Signet 12981 food grade Silicone spray Iplex P/No DTRLUBE or 'Gensil 601', 'CRC 808' or 'Rocol' brand aerosol silicon lubricant which are suitable for use with Rubber.

Do NOT use hydrocarbon base lubricants.

The silicone spray is used to lubricate the thread and ring prior to jointing of the pipes for easier assembly.

Only use lubricants in accordance with the manufactures directions, wear appropriate PPE, aerosols should only be used in well ventilated areas.

6.6 PIPE STRAPS

Use strap wrenches with woven nylon webbing straps for pipe turning during assembly. 'RIDGID', 'Hit' or 'Super Ego' brand have been known to work effectively.

It is recommended that a strap wrench with an extended strap is used, at least 1200mm long for DN225 to DN375 Restrain™ Sewer Pipe. RIDGID product codes are shown below.

TABLE 6.1 RIDGID STRAP WRENCHES

DN	RIDGID Code
150	Model 2 Cat 31345
225	Model 5 Cat 31365
300	Model 5 Cat 31365
375	REED Cat no SW24A72 Item Code 02236

Figure 6.10 'C wrench' assembly tool used on DN300 Restrain™ Sewer Pipe

A 'C wrench' assembly tool is recommended for DN300 and DN375 Restrain™ Sewer Pipe.

If it is necessary to leave the installed pipe ends exposed, protect the threaded spigot or socket ends with temporary caps. Dress threads with a file if lightly impacted or marked.

6.7 PIPE AXIAL CAPABILITY

The Restrain™ Sewer Pipe is capable of being pulled or pushed through a bore hole. The threaded spigot and socket provide axial capability. The pipe must not be over strained during the pulling or pushing process.

The maximum tensile and compressive capabilities are shown in the following table.

TABLE 6.2 MAXIMUM TENSILE AND COMPRESSIVE LOADS

Pipe DN	Socket OD (mm)	SN	Max Tensile Load (kN)	Max Compressive Load (kN)
150	170	16	29.4	29.4
225	260	16	93.2	93.2
300	330	16	117.7	117.7
375	425	16	TBA	

6.8 PULLING HEAD

There are two types of pulling heads commonly used with Restrain™ Sewer Pipe, internal type and external type. The pulling head generally has a tapered front cone that allows drilling mud to be pushed into the annulus between the pipe and bore hole.

The pulling head is generally attached to the Restrain™ Sewer Pipe by a swivel assembly so that the pipe is not rotated during pipe reaming and/or pull back operations.

Figure 6.11 Typical external type pulling head attached to the Restrain™ Sewer Pipe

Figure 6.12 Swivel arrangements attached to Restrain™ Sewer Pipe prior to the attachment of a pulling or reaming head

6.9 INTERNAL PLUG

In some cases it is advisable to insert a plug into the lead Restrain™ Sewer Pipe in order to stop groundwater and/or drilling mud from entering the pipeline during pull back. This will ensure that the pipe joint is clean at the point of entry into the bore hole.

6.10 EXPANSION AND CONTRACTION

Distortion can occur when laying pipes in direct sunlight. When one side of the pipe is hotter than the other it might develop a slight bow. This process is reversible and the bow can be eliminated by exposing the other side to the sunlight or otherwise allowing the temperature to stabilise before installation.

Plastic pipes will expand when heated and contract when they cool. A 2.75m length of PVC pipe will expand/contract approximately 2mm for each 10°C rise or fall in temperature.

6.11 PIPE CURVATURE

Restrain™ Sewer Pipe must be axially aligned with the host hole at the point of entry. Some curvature back from the host hole is permitted, such as in HDD applications. Do not attempt to bend Restrain™ Sewer Pipe at the point of host entry.

The minimum radii of curvature is based on 300 x pipe OD and is shown below.

TABLE 6.3 MINIMUM RADII OF CURVATURE

Pipe DN	Mean Pipe OD (mm)	Min Radius (m)
150	160	48
225	250	75
300	315	95
375	401	120

6.12 SERVICE LATERAL CONNECTIONS

As Restrain™ Sewer Pipes are compatible with PVC-U pipe and fittings made in accordance with AS/NZS 1260 'PVC-U pipe and fittings for drain, waste and vent applications' connection to property or lateral connections is easily accomplished with conventional PVC sewer fittings.

Restrain pipe should be cut with a tooth blade to avoid melting of the pipe, when the pipe is melted it will release gases that can be harmful.

SOLVENT WELD SADDLES

Once the Restrain™ Sewer Pipe has been installed a solvent saddle can be applied to the Restrain™ Sewer Pipe at the point of the property or service connection.

Solvent weld saddles require straps to hold the saddle in place whilst the solvent weld joint cures.

6.4 TYPICAL SOLVENT WELD SADDLE DETAILS

			Dimensions in (mm)		
Product Code	Nom Size	Angle 'a'	'A'	'B'	'C'
D050151045	150x100	45°	250	226	55
D050221045	225x100	45°	305	250	55
D050301045	300x100	45°	305	250	55
D050301545	300x150	45°	305	330	80
D050371045	375x100	45°	305	280	55

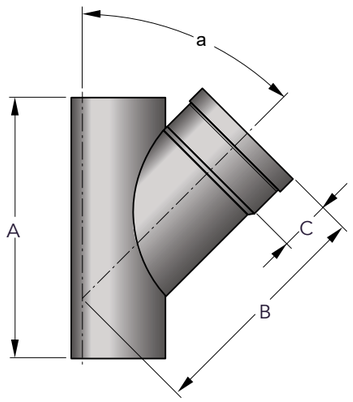


Figure 6.13 Typical solvent weld saddle details

When using solvent weld and Primer refer to supplier instruction of correct operating instructions. Always use in a well ventilated area.

OBLIQUE JUNCTIONS

After the Restrain™ Sewer Pipe has been installed a section of the Restrain™ Sewer Pipe is cut out and an oblique reducing junction is installed with the use of DWV slip couplings.

STAINLESS STEEL COUPLINGS

Alternatively stainless steel clamps with DWV sockets can be clamped directly to the Restrain™ Sewer Pipe.

7.0 FREQUENTLY ASKED QUESTIONS

Q1

IS RESTRAIN™ SEWER PIPE COMPATIBLE WITH DWV PIPE AND FITTINGS?

Yes, Restrain™ Sewer Pipe is fully compatible with DWV pipe and fittings manufactured in accordance with AS/NZS 1260 'PVC-U pipe and fittings for drain, waste and vent application'.

Q2

HOW IS RESTRAIN™ SEWER PIPE TESTED?

Restrain™ Sewer Pipe is tested in the same manner as conventional DWV sewer pipe. Refer to AS/NZS2566.2 'Installation of flexible pipelines', AS/NZS 2032 'Installation of PVC pipe systems', WSA02 Sewerage Code of Australia and/or project specific documentation.

Q3

CAN I SOLVENT WELD RESTRAIN™ SEWER PIPE TO DWV SEWER PIPE AND FITTINGS?

Yes, Restrain™ Sewer Pipe has the same outside diameter as conventional DWV sewer pipe and can be solvent welded to DWV pipe and fittings in accordance with AS/NZS 1260 'PVC-U pipe and fittings for drain, waste and vent application'. Ensure that the spigot or socket thread has been cut off before jointing to the solvent weld pipe or fitting.

Q4

WHY CAN'T I USE RUBBER RING PIPE LUBRICANT ON THE THREAD AND RUBBER RING?

The threaded joint requires specific long lasting lubricating properties that are not provided by conventional pipe jointing lubricants.

Q5

WHY IS A DIFFERENT PULLING HEAD NECESSARY?

The pulling head allows the drilling mud in the bore hole to be pushed into the annulus between the pipe and the hole. It also protects the end of the Restrain™ Sewer Pipe. Wind-up pulling heads designed for PE pipe may be unsuitable for Restrain™ Sewer Pipe as the internal engagement grooves may be unable to effectively grip the hard PVC surface. Cross-bolt style pulling heads are recommended.

NOTES

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