DWV PIPE & FITTINGS SYSTEM

INSTALLATION DWV RUBBER RING JOINT

ELASTOMERIC SEAL

DWV rubber ring joint pipe is supplied with the well known Iplex ring, which fits easily into the integral socket, and is available in sizes 100mm to 375mm.

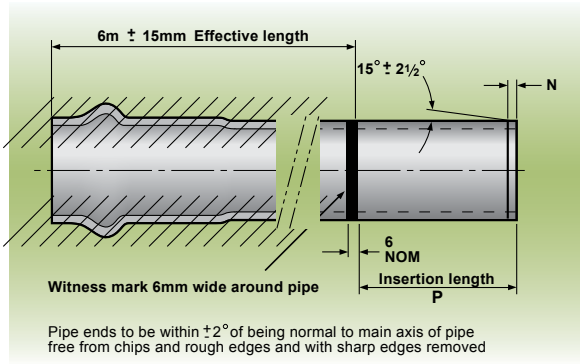
Unless otherwise requested Styrene Butadiene (SBR) rings are supplied.

POLYMER	COLOR CODE
Styrene Butadiene (SBR)	Blue
Ethylene Propylene Diene Monomer	Green

If it is necessary to cut pipes on site use a fine toothed handsaw. The cut position should be measured to allow the penetration depth of the spigot into the socket shown in table below. A mitre box is recommended to ensure the cut is square to the pipe axis and all burrs removed with a file.

A chamfer similar to the factory produced chamfer on the pipes supplied is essential before attempting to joint the pipes. The maximum length of chamfers applied on site must be no more than Dimension 'N' shown in the table below. The witness mark should then be made, using a soft pencil, at the required penetration depth.

Chamfer and witness mark details:



NOMINAL PIPE SIZE (MM)	DIM 'P' (MM)	DIM. 'N' (MM)
100		11
150		13
250		20
300		20
375		25

IPLEX LUBRICANT

Iplex lubricant is an economical lubricant for non-pressure applications where jointing forces are not critical and a bactericidal lubricant is not necessary.

Average number of joints per litre of Iplex lubricant (estimate only):

NOMINAL PIPE SIZE (MM)	APPROX. JOINTS PER LITRE
100	75
150	50
225	35
300	25
375	20

Average number of joints per litre of Iplex solvent (estimate only):

NOMINAL PIPE SIZE (MM)	APPROX. JOINTS PER LITRE
40	100
50	60
65	60
80	60
100	48
150	40
225	16
300	8
375	6

Average number of joints per litre of Iplex primer (estimate only):

NOMINAL PIPE SIZE (MM)	APPROX. JOINTS PER LITRE
40	500
50	300
65	250
80	200
150	90
225	30
300	24
375	16

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JOINTING INSTRUCTION

STEP 1 - CLEAN

Remove all dust and dirt from the pipe spigot and socket or coupling paying particular attention to cleaning behind the rubber rings.

STEP 2 - RING

Check the ring code embossed on the inner face of the thicker section of the ring is correct and the correct colour code (blue) is on the outer circumference of the thicker section of the ring.

STEP 3 - INSTALL RING

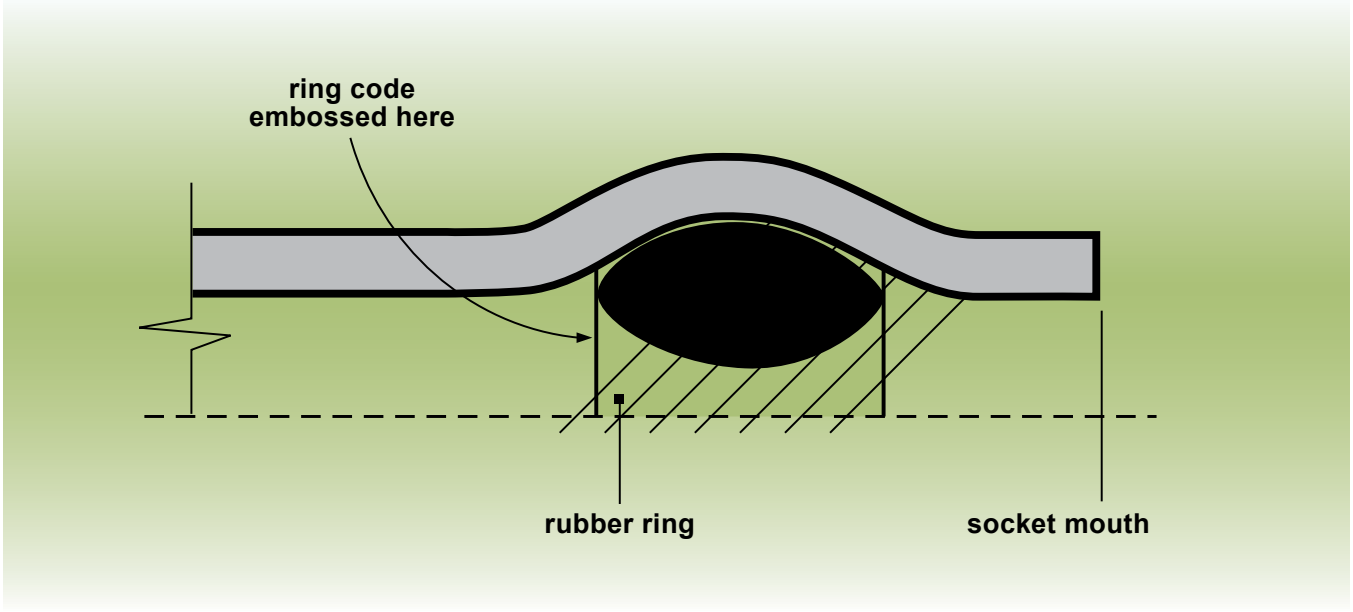
Install the rubber ring ensuring it seals evenly in the PVC-U socket.

STEP 4 - APPLY LUBRICANT

Apply lubricant to the spigot, fully covering the circumference up to the witness mark, ensuring that the lubricant also covers the pipe chamfer.

STEP 5 - INSERT PIPE

With pipes in a straight line introduce the spigot into the socket and push home until the witness mark remains just visible. In this position clearance is automatically provided to allow for expansion and contraction. Jointing may be assisted by the use of a crowbar and wooden block. The socket of the joint being made should be restrained to prevent backward movement which would close up joints already made.



NOTE: KEEP CONTAINER CLOSED WHEN NOT IN USE TO AVOID SPILLAGE OR CONTAMINATION BY DUST OR DIRT.

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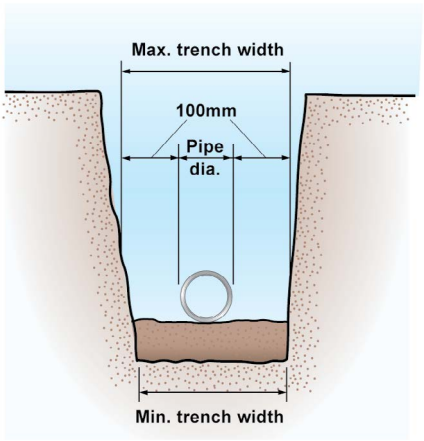
INSTALLATION DWV RUBBER RING JOINT

TRENCHING

Trenches should be excavated in accordance with plans and specifications and with reference to AS/NZS 2032. They should be as narrow as practicable at the level of the top of the pipe and, in a straight trench, have a bed width not less than 200mm wider than the pipe diameter, to provide working space for the laying crew.



Trenches when excavated are either 'stable' or 'unstable'. The category into which a trench fits is affected by the soil conditions, width, depth and method of excavation. To ensure that maximum support is given to the buried pipe by the undisturbed ground the resultant stable or unstable trench should be treated in the following way:

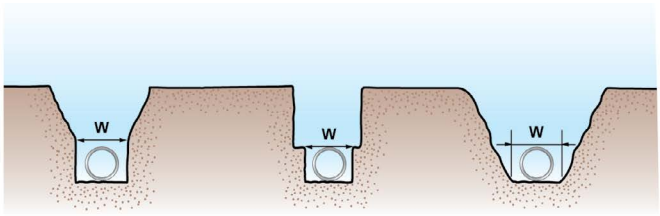
Stable conditions:

Stable conditions are those where, after excavation, the trench walls remain solid and do not show any signs of collapse or cave-in. Under such conditions the recommended trench widths are shown in the following table:

PIPE DIAMETER (MM)	NORMAL WIDTH (MM)
100	400
150-200	600
225-300	750
375	900

Unstable conditions:

Unstable conditions are those where, during or after excavation, the trench walls tend to collapse and cave-in. Under these conditions, in open or unrestricted areas, the top of the trench can be widened until stability is reached. A smaller trench should then be dug in the bottom of the excavation to contain the pipe as shown. In areas where space is limited, e.g. in streets, it may be necessary to support trench walls by timber or other suitable shoring.



Trench depths:

The minimum trench depth should be such that pressures created by the weight of fill material plus anticipated traffic or other superimposed loads will not damage the pipes. As a guide the recommended minimum clear cover above is listed below:

CONDITION	MIN. COVER DEPTH
Where no subject to vehicular loading	300mm
Where subject to vehicular loading:	
Under driveways	450mm
In sealed roadways	600mm
In unsealed roadways	750mm

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DWV PIPE & FITTINGS SYSTEM

INSTALLATION DWV RUBBER RING JOINT

LAYING AND COMPACTION

Preparing the trench:

The trench bottom should be as level as possible, so that the barrel of the pipe is fully supported. The trench bottom should have sandy or loamy soil, free from rocks and stones to ensure continuous support for the pipe.

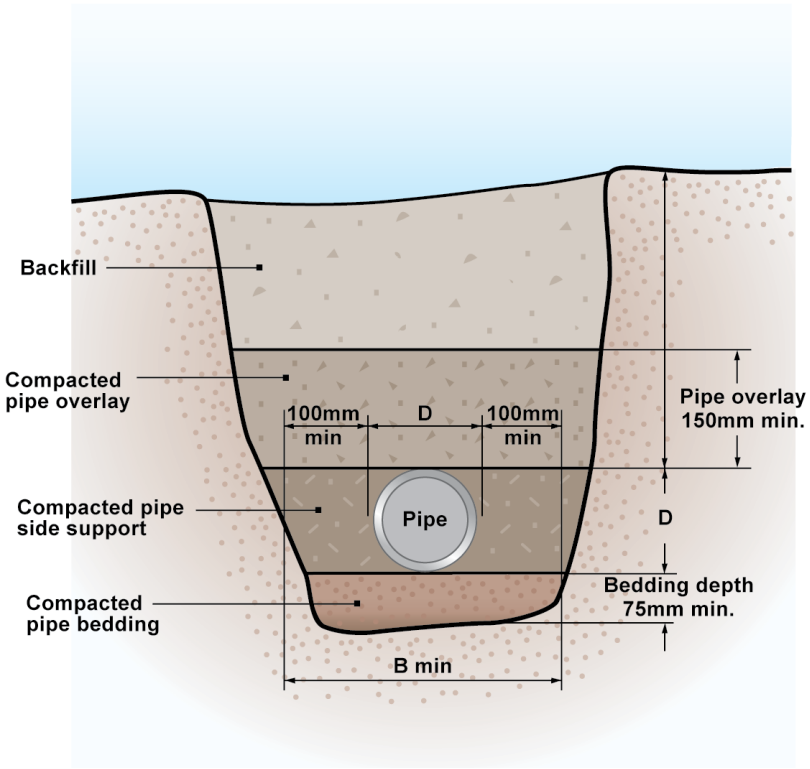
Wet conditions:

In wet ground, sloppy working conditions can be alleviated by first placing a layer of hard granular material, or by de-watering the area in and around the trench. If patches of ground are so wet that there is a risk of subsidence and possible damage to sections of the pipeline, these areas should be consolidated by the addition of suitable fill material.

Trench installation:

The trench should be excavated deeply enough to allow for the specified grade, the required depth of bedding, and the minimum cover over the pipe.

AS/NZS 2032 - "Installation of PVC-U Pipe Systems", suggests the following typical installation in a trench, which Iplex recommends.



AS/NZS 2032 suggests the following materials as suitable for bedding and overlay in the trench:

A. Suitable sand, free from rock or other hard or sharp objects.

B. Crushed rock or gravel of approved grading up to a maximum size of 14mm

C. Cement mortar, containing one part of cement and four parts of sand by volume, mixed with clean water to a workable consistency (bedding only).

DWV PIPE & FITTINGS SYSTEM

INSTALLATION DWV RUBBER RING JOINT

BACKFILLING

Use of short lengths of pipe

PVC-U pipe may be cut on site when shorter lengths are required for the installation of fittings.

The cutting of PVC-U pipe is easily achieved using a fine-toothed handsaw or a PVC-U pipe cutter. The position of the cut should be measured and carefully re-checked before cutting: reasonable accuracy should be exercised to ensure that the cut is square to the axis of the pipe and all burrs must be removed from the cut end before making a joint.

Completing sitework

Once the pipe is laid in the trench backfilling can commence. Two distinct phases are involved with pipelines:

a. backfilling prior to testing the pipeline
b. backfilling after testing the pipeline

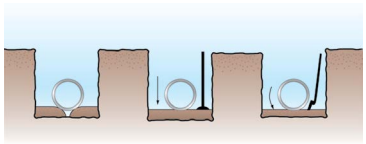
Backfilling usually follows pipe installation as closely as possible in order to protect the pipe from external damage. This eliminates the possibility of the pipe floating due to flooding of open trenches, and avoids shifting the pipe out of line due to cave-ins.

It should be remembered that the purpose of backfilling is not only to protect the pipe by covering it, but to provide firm continuous support under the pipe. Where concrete or mortar bedding has been used, the bedding has to take its initial set before overlay materials is added.

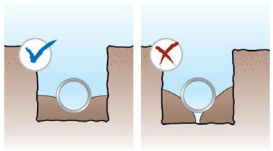
Initial backfilling

The first step in providing firm continuous support for the pipeline is to tamp soil solidly under the entire barrel of the pipe, care being taken not to disturb the grade.

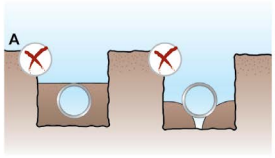
The embedment material should be free from stones, rock or clay. If the native, excavated soil is not suitable, then imported materials should be used for the embedment zone. The initial backfill should be placed by hand-shovel in layers not exceeding 100mm deep. Each layer should be well tamped round and under the pipeline using the long tamper illustrated. In this way air pockets are eliminated from beneath the pipe.

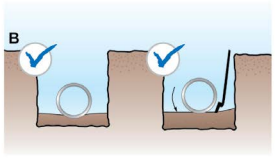


The layers should be shovelled in and tamped, the process being repeated until the pipe is firmly bedded. The flat tamper illustrated is used to consolidate this fill to heights of 300mm above the top of the pipe for diameters up to 300mm.



The illustrations A and B below show the wrong and right ways of tamping the initial backfill.





Case A, too much soil is present and the tamping bar cannot compact it properly leaving a void underneath the pipe.

Case B, shows the correct fill of a 100mm layer of soil which can be compacted to form a firm bed for the pipe.

Pipe joints should be temporarily left exposed when placing the initial backfill, to enable pressure tests to be carried out. After testing the line, backfilling and final filling may be completed.