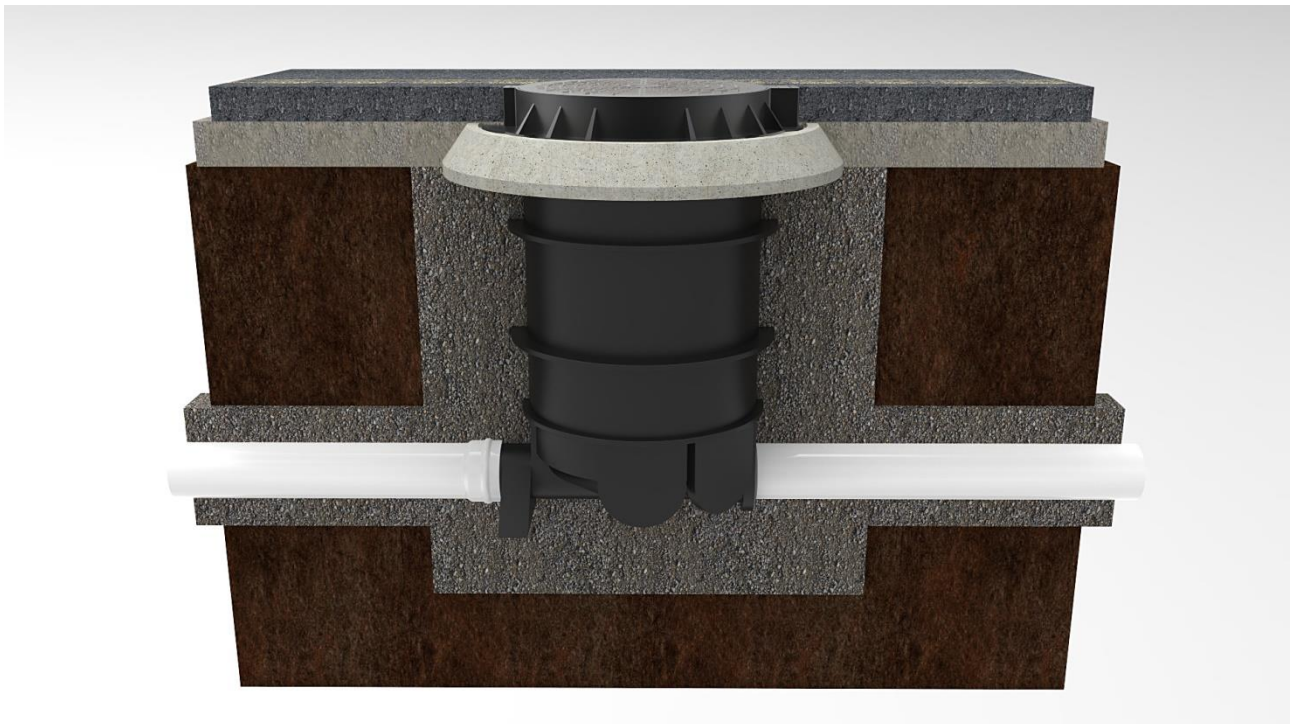


ROMOLD DN625 MAINTENANCE CHAMBER

INSTALLATION INSTRUCTIONS



We would like to thank you for choosing the ROMOLD Manhole Chamber system.

With over 20 years of experience, and in excess of 1 million chamber components sold, ROMOLD is a world leader in the plastic manhole chamber industry. Attention to detail during development, design, and production, ensures that each product provides value in every aspect of its function.

We are sure that you will have a positive experience using ROMOLD product and look forward to working with you again on future projects.

Steve McDonald
Managing Director
Australasia Moulding Ltd

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INTENT OF INSTALLATION INSTRUCTIONS

The ROMOLD DN625 Maintenance chamber is made from premium materials, using first-class manufacturing techniques, and includes design detail that will ensure an exceptional service life. The intention of these instructions is to clearly layout a process of installation that will ensure the product performs as intended for its full service life.

Step by step notes have been provided and in all cases the process has been considered to allow the use of common practices and to minimise the installation time.

It is important that these instructions are followed closely. Failure to install the product according to these instructions may result in the manufacturer's warranty being void.

IMPORTANT SAFETY INSTRUCTIONS

The ROMOLD DN625 Maintenance chamber is remarkable with regards to the weight of the product in comparison to traditional maintenance chambers. The modular nature of the product further restricts the weight of individual components. This being said, to avoid strain related injuries always follow industry guidelines for safe lifting practices and avoid the temptation to lift more than is deemed acceptable.

When lifting components into confined spaces always ensure that the risk of injury due to impact or crush related actions is eliminated by staying clear of moving items.

The ROMOLD DN625 Maintenance chamber is designed to be assembled using no more than body weight forces. If you experience difficulties with any aspect of the installation please contact us to discuss appropriate methods for completing that process in a safe manner.

TRANSPORT AND STORAGE

It is strongly recommended that product is checked for completeness against order, and for damage at the time of delivery. If a shipment is damaged it must be signed as "damaged" on the delivery docket. If the driver is not willing to wait while this check takes place then it is recommended that a note is included on delivery docket stating, "subject to final inspection as driver would not wait". Any missing or damaged product should be reported to Australasia Moulding Ltd within 24 hours of delivery taking place.

ROMOLD DN625 Maintenance chamber elements should be stored on level ground. All supplied element seals must be stored packed, protected from frost and direct sunlight.

All components must be checked for damage or contamination before installation and if necessary cleaned or replaced. Damaged components may not be installed!

QUALITY ASSURANCE

Provided with the Installation Instructions is a Quality Assurance form. This document provides a means for those responsible for the installation to track the steps of the installation process and to communicate this compliance. It is recommended that this form is reviewed prior to the start of installation, and is used as a working document during the course of the process. Your regional Council may require this document to be completed and submitted as part of the process for asset ownership transfer.

You can find the Quality Assurance form in the appendix of this document.

PRODUCT WARRANTY

ROMOLD products are made in ISO9001 conditions using the best materials, practices and processes, with the intention of providing a quality product with world class performance. If any of your parts arrive in a state that does not meet with your expectations please contact us at your earliest convenience. We will endeavour to resolve your issue with the highest of priorities.

Australasia Moulding Ltd warrants that the Products will be free from defects in design, workmanship and materials, for a period of 3 months from the date of EXW delivery.

The above warranty liability is limited to shipment of good products that are required to replace defective products during the warranty period. Products required in order to replace defective items under warranty within the warranty period, shall be shipped charge-free, pending review of the defect by Australasia Moulding Ltd. Should Australasia Moulding Ltd so demand, the defective products that are replaced shall be put at the disposal of Australasia Moulding Ltd.

LIABILITY FOR DEFECTS

Liability for defects is precluded if the installation instructions are not complied with, unless the customer is able to provide evidence that they are not responsible. This also applies if installation parameters are not maintained post original installation. The installation instructions must be ensured permanently.

INSTALLATION INSTRUCTIONS

The installation of the ROMOLD DN625 Maintenance chamber is a simple process that can be broken down into the following steps:

1. Setting the Base
2. Assembling the chamber
3. Backfill
4. Finishing

Included in the appendix of this document is a table which sets out the type of materials suitable for bedding and backfill, and recommended compaction targets. It is recommended that this table is referenced in parallel to the following instructions.

1. SETTING THE BASE

Bedding

A minimum 100mm thickness of compacted bedding material is required below the base.

Ensure the bedding is level and flat.



Reference Height

Note that there is a height difference between the lowest surface of the base and the pipe invert. This may vary between bases with different pipe diameter or benching detail. Please measure the product to determine this height off-set.

2. ASSEMBLING THE CHAMBER

Base / Pipe Connection

The base shall be positioned on the prepared support area according to the connecting pipes.

A triangular stability aid is included on the base, however this will not on its own ensure that the base is level. The Base should always be checked with a spirit level to ensure that it is sitting level on the bedding.



The outlet from the chamber is provided by a spigot sized to match rubber jointed PVC pipe according to AS/NZS1254 and AS/NZS1260.

The inlets have blank panels that can be drilled to fit a seal specifically sized for the PVC pipe.

For ROMOLD DN625 chambers pre-benched with DN150 outlet there is a 2% grade through the straight channel. This amounts to a fall of 15mm. The side ports at 90°, 135°, 225°, & 270° are 75mm higher than the channel invert level.

For ROMOLD DN625 chambers pre-benched with DN225/300 outlet there is a 2% grade through the chamber. This amounts to a fall of 15mm for all ports.

For the connection of other pipe materials couplers should be used. (Note: when changing material or using special couplers, consider a drop in bedding to suit).



The seals in the base should be inspected for damage or contamination. Cleaning may be required prior to inserting the pipes.

The leading edge of the pipe should be chamfered to aid insertion. Prior to insertion it is good practice to mark a reference line on the pipe equivalent to the insertion depth.

Apply sufficient lubricant to the pipe and seal prior to insertion. Insert the pipe up to the internal step in the channel.



For all DN625 seals horizontal angles of $\pm 5^\circ$ or gradient changes up to 8.75% are possible. Direction and gradient changes at the same time will reduce the indicated maximum values accordingly.

Transport Rib

The DN625 Maintenance Chamber is supplied with a transport rib inside the diameter at the top of the chamber. The purpose of this rib is to support the chamber and prevent it from being crushed during transportation. This rib should be removed during installation to allow the Element Seal and Riser to be fitted.

The rib includes a notch to assist its removal. Use a hammer to break out the rib. If sharp edges remain these should be removed with care using a sharp scraper.



Assembly of Manhole Elements

ROMOLD manhole elements are connected and sealed using an Element Seal. This seal is slipped onto the rib on the Base element, and then sandwiched with the Riser.

Prior to assembly thoroughly clean the Element Seal and apply sufficient lubricant. Check and clean the slot in the Riser element as required.



Modest body-weight forces are all that are required to compress the upper element over the seal. To prevent an air-spring effect, a vent can be created using the cord provided. This should be laid over the seal prior to assembly and removed once the elements are connected. Elements will be in the home position when no further downwards movement is detected and no air can be heard escaping through the vent.

3. BACKFILL

Backfilling Materials

It is important to ensure that non-cohesive, well-graded (all sizes of material), compressible materials are used for backfilling. The maximum particle size of rounded gravel material shall not exceed 32 mm, and 20 mm if broken material is used.

An AP20 material with a grading envelope which is heavy on fines (see TNZ M/4 spec) is considered to be ideal.

Backfilling and Compacting

Compacted backfill around the chamber is an important component of the assembly. It not only provides ballast to the chamber, but also protects the chamber from external loads.

The width for backfilling around the manhole must be at any point at least 40 cm. When installing the manholes in areas with high groundwater, for lift retention reasons, a backfilling width of at least 50 cm is to be maintained all around.

The area under the chamber has to be carefully packed e.g. with a narrow hand rammer, with a minimum of 20 – 30 blows on each side.

The backfilling material is to be inserted carefully and in layers of 150 – 250 mm layer thickness and compacted with a medium vibrating stamper (wacker compactor) of approx. 50kg. The number of compacting passes required per layer depends on the backfilling material.

A minimum degree of compaction of MDD = 95 % according to AS1289 is to be established for the entire depths of the manhole.



Installation Tip

Before pouring down the backfilling material, attach the ROMOLD-PE construction-site lid (yellow) for cover. Backfilling material can then be poured directly onto the lid, allowing even distribution around the manhole, whilst protecting the manhole from contamination.

Height Adjustment

The height of the chamber assembly can be shortened by cutting the neck of the Base or Riser elements. ROMOLD DN625 Maintenance chambers can be shortened by a maximum of 300mm. The cutting is to be done with a saw using the lines on the neck of the Base or Riser as a cutting guide. The lines are arranged at an even distance of 1cm. The resulting cut should be deburred to smooth the edge.

Subsequent Pipe Connection to the Riser Element

Pipe connections can be made into the Riser element. Specific seals are available for DN100 and DN150.

Using an electric hand drill with a ROMOLD cup saw, drill at the desired position through the wall of the chamber. Care should be taken to position the lateral pipe connection such that the hole drilled does not interfere with the element seal. Drilling through an external rib on the product will result in an uneven sealing surface and is not advised.

De-burr the hole and insert the seal from the outside without using lubricant. Lubricate the spigot end of the pipe as well as the inside of the seal before inserting the pipe. A slight overlap on the inside surface should be created.

Note: ROMOLD cup saws are made specifically to provide the correct diameter hole for the ROMOLD inlet pipe seal. Please do not attempt to use any other make of cup saw for this purpose.

Pipe Seal & Cup Saw Part Numbers

Part Number	Description of Component
IS110	Lateral pipe seal for DN100 PVC pipe
CS 110	ROMOLD cup saw for IS 110 seal
CSA2	Adaptor for cup saws (required)
IS 160	Lateral pipe seal for DN150 PVC pipe
CS 160	ROMOLD cup saw for IS 160 seal

Seals for larger and smaller pipes are available upon request.

Please contact us for more information: **0800 287 668**

4. FINISHING

Installation of the Cover

The concrete Load Distribution Ring (LDR) conducts the traffic loads into the road foundation, decoupling it from the Maintenance chamber. It is important to ensure there is no direct load contact between LDR and the Maintenance Chamber. An overlap of around 40mm should be allowed for between the neck of the chamber and the LDR. If necessary a ROMOLD DN625 Element Seal can be used to create a water resistant seal between the LDR and the chamber.

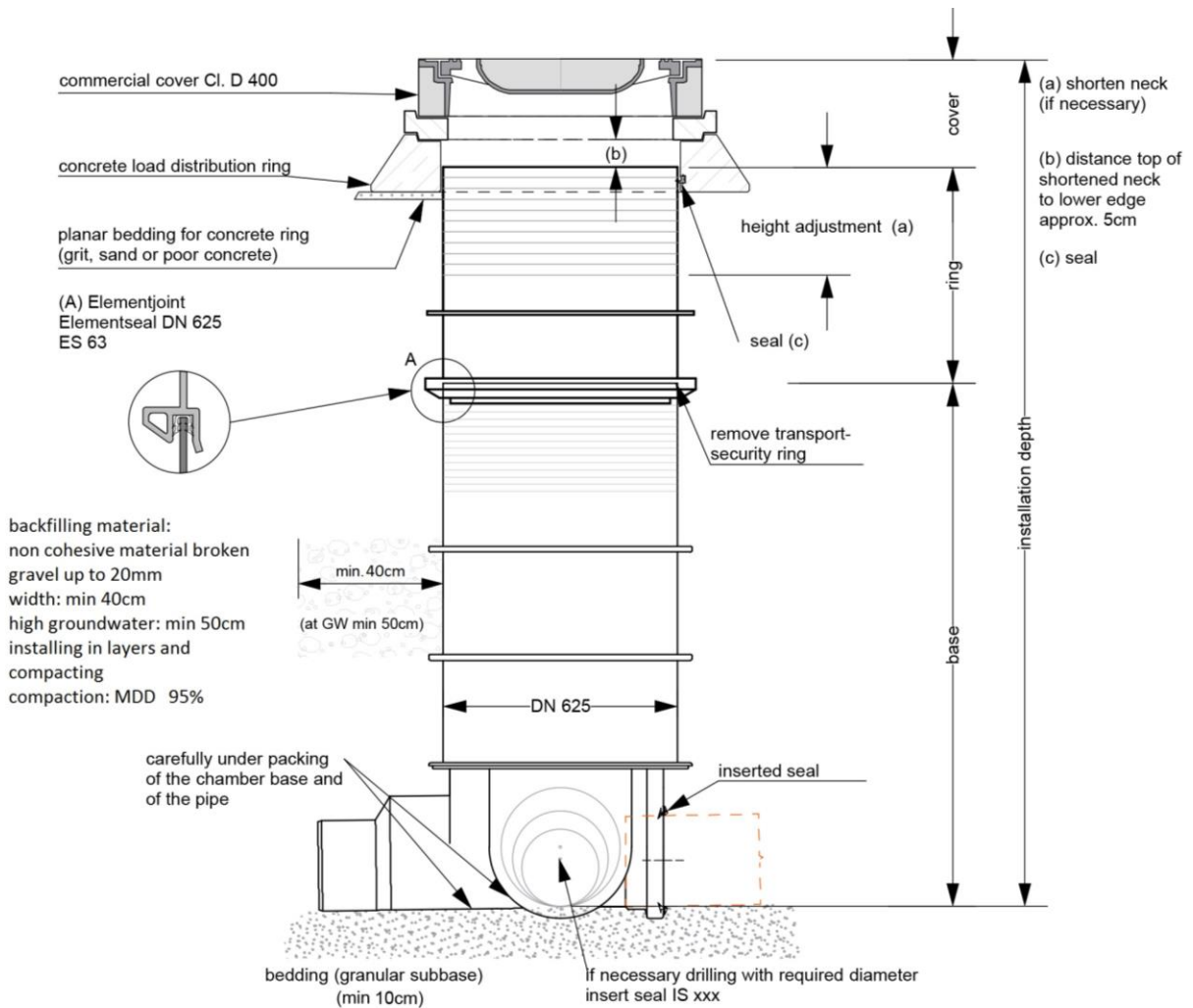


The LDR includes 4 M12 threaded inserts. M12 lifting eyes can be used to help make the shifting and installation of the LDR easier and safer.

Below the LDR the bedding must be planar and free of point loads (possibly using grit, sand or poor concrete). For class D applications, this should be prepared according to the design requirements for the road base course.

The cover & frame can be mounted directly to the Load Distribution Ring using standard practices. For ductile iron covers from Saint-Gobain PAM, threaded holes are included in the LDR which can be used to bolt down the cover.

INSTALLATION DRAWING



For ROMOLD DN625 chambers pre-benched with DN150 outlet there is a 2% grade through the straight channel. This amounts to a fall of 15mm. The side ports at 90°, 135°, 225°, & 270° are 75mm higher than the channel invert level.

For ROMOLD DN625 chambers pre-benched with DN225/300 outlet there is a 2% grade through the chamber. This amounts to a fall of 15mm for all ports.

DN625 MAINTENANCE CHAMBER PRODUCT COMPONENTS

<p>Riser Element:</p>	
<p>Base:</p>	
<p>Element Seal:</p>	
<p>Concrete Load Distribution Ring:</p>	
<p>Inlet Seal:</p>	
<p>ROMOLD Cup saw & adaptor:</p>	

LIST OF AVAILABLE ACCESSORIES

Part Number	Description of Component
ES 63	DN625 Element Seal (also for use as seal between Cone neck and LDR)
IS 110	Inlet pipe seal for DN100 PVC pipe
CS 110	ROMOLD cup saw for IS 110 seal
CSA2	Adaptor for cup saws (required)
IS 160	Inlet pipe seal for DN150 PVC pipe
CS 160	ROMOLD cup saw for IS 160 seal
PVC-Winkel 150/15	PVC rubber jointed elbow for DN150 PVC pipe - 15° bend
PVC-Winkel 200/15	PVC rubber jointed elbow for DN175 PVC pipe - 15° bend
PVC-Winkel 250/15	PVC rubber jointed elbow for DN225 PVC pipe - 15° bend
PVC-Winkel 300/15	PVC rubber jointed elbow for DN300 PVC pipe - 15° bend
PVC-Winkel 400/15	PVC rubber jointed elbow for DN375 PVC pipe - 15° bend
LGH 63 RAL1033	Yellow PE DN625 site cover for temporary use on job site
LGH 63 DD	Black PE DN625 water tight cover with EPDM seals (non-rated)
PDRD XXXX	Plastic compensation rings DN625, height 40, 60, 80, 100 & 120mm
FIS 0600 00	Active-carbon filter system for odour control at manhole cover

Also available from ROMOLD are DN1000 Manhole Chambers, Plastic Road Gullies, Electrical Chambers, Energy Compensating Chambers, and Pump Chambers.

Please enquire for more information about any of these products: 0800 287 668

APPENDIX

Table of Materials & Compaction

Layer	Property	Instruction
Sub grade	Compaction	The cleared ground should be free of any loose material and compacted. Minimum CBR of 5% is recommended.
Bedding	Material	It is important to ensure that non-cohesive, well-graded (all sizes of material), compressible materials are used for backfilling. The maximum particle size of rounded gravel material shall not exceed 32mm, and 20mm if broken material is used. In trafficable loading areas, compacted bedding of AP7 material should be applied to 100mm minimum depth.
	Compaction	Bedding should be compacted to the minimum standard dry density ratios, AS1289, 95%.
Backfill	Material	It is important to ensure that non-cohesive, well-graded (all sizes of material), compressible materials are used for backfilling. The maximum particle size of rounded gravel material shall not exceed 32mm, and 20mm if broken material is used. An AP20 material according to the TNZ M/4 spec (heavy on fines) is considered to be ideal. Larger sized broken materials shall not be used due to the risk of damage to the chamber during compaction.
	Layer Depth	Compacted in 150 – 250mm layers.
	Compaction	Compact around pipe sockets using a 15 to 20kg hand rammer or “wacker” with a minimum of 20 – 30 blows per side. For the remainder of the installation backfill shall be compacted to the minimum standard dry ratios, AS1289, 95%.
	Compaction method	Compacted with a medium vibrating stamper (wacker rammer) approx. 50kg. The number of required compacting passes per layer depends on the backfilling material and layer depth.
Surface of Bedding	Material	We recommend using small grit, sand or poor concrete for easier bedding of the concrete load distribution ring.
	Tensile	As per pavement design requirements.

Notes: This specification is provided for ideal conditions. In unsuitable ground, or if you have any doubts about the conditions, then refer to a qualified engineer for specific design.

Where there is a possibility of migration of fines between the native soil and the embedment zone, or free-draining material is used as embedment material, a geotextile filter fabric may be used to envelope the embedment material.

Applying excessive compaction at a higher trench level in the hope that the desired compaction is achieved in the critical zones may not only fail to reach the required compaction but could also damage the product.

Manhole Chamber Installation Quality Assurance Form

Company

Name: _____

Address: _____

Person Responsible for Installation

Name: _____

Email: _____

Mobile Number: _____

Office Number: _____

Project

Date of Installation: _____

Location: _____

Local Authority: _____

Product Description

Manhole Type: _____

Base Type: _____

Depth to Invert: _____

Cover Type: _____

Manhole installed in roadway or trafficable situation: YES / NO

Concrete Load Distribution Ring Used: YES / NO

Installation Process Steps (initial if completed)

1. Sub grade compacted to minimum CBR 5%: _____

2. AP20 or AP7 bedding material used: _____

3. Minimum bedding depth of 100mm applied: _____

4. Bedding material compacted: _____

 Compaction measurement from NDM or Clegg Hammer: _____

5. Grade of inlet pipe(s): _____

6. Grade of outlet pipe: _____

7. Number of additional pipe connections using ROMOLD seals: _____

8. Element Seals used between chamber elements: _____

9. AP20 backfill material used: _____

 Or describe backfill material used: _____

10. Backfill material applied to width of 400mm from chamber wall (or 500mm for installations in areas of high ground water): _____

11. Typical layer depth prior to compaction: _____

12. Backfill material compacted: _____

 Compaction measurement from NDM or Clegg Hammer: _____

Sign if form is to be supplied to the local authority

Person responsible for the installation

Name: _____

Position: _____

Signature: _____

Date: _____

Representative of local authority

Name: _____

Position: _____

Signature: _____

Date: _____