ROMOLD

ASSEMBLY AND INSTALLATION NOTES

FOR ROMOLD I PP/R PE MANHOLE SYSTEM DN 1000

1. TRANSPORT AND STORAGE

Store chamber elements vertically on level ground. In case of extended outdoor storage, protection of the chambers against the sun is vital. All supplied element seals have to be stored in their packaging, protected from frost and direct sunlight.

2. GENERAL INFORMATION

ROMOLD PP/PE-manholes are provided ready to connect.

Deliveries must be checked for completeness.

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

3. CHAMBER ASSEMBLY AND INSTALLATION

All of the installation parameters listed below must be permanently ensured! For example, use appropriate measures to prevent rinsing out of fine material (by using fleece, cross-beam out of clay or similar).

3.1 BEDDING (GRANULAR SUB BASE)

The minimum depth required below the base is 10 cm.
The thickness of the lower bedding layer (sub-base), must be "bedding type 1" in accordance with EN 1610, Section 7.2.

The support area of the manhole base must be load-bearing and completely levelled.

The support area of the manhole base must be established in accordance with the planning (differential between base to channel level = 20 cm).

3.2 BASE/PIPE CONNECTION

The base shall be positioned on the prepared support area in accordance with the connecting pipes.The adjustment and flow direction of the manhole base must be checked. The adjustment and flow direction of the manhole base must be controlled.

3.2.1 PP-BASE WITH SOCKETS

All pipe connections are sockets. There are flow direction arrows on the sockets and in the channel. The connecting sockets are designed for direct fitting of PVC pipes in accordance with EN 1401, PP pipes in accordance with EN 1852 or plain plastic pipes. For the connection of other pipe materials, adapters or short pipes and cuffs should be used.

(Note: when changing material or using special connection-adapters consider a Manufactured bed drop).

The inserted seals should be checked for correct fitting and inspected for damage, cleaning may be necessary.

Apply sufficient lubricant on the connecting pipe in the socket as well as at the end of the spigot and fully insert the pointed end in the socket. For all permit sockets horizontal angles of ± 3.75° and gradient changes up to 6.5 %. Simultaneous direction and gradient changes will reduce the indicated maximum values accordingly.

No connectors (short pipes or joints) are required between ROMOLD PP/PE-manholes and pipes.

If fittings are used, check insertion depths and seal position.

3.2.2 PE-BASE WITH PE-PIPE SPIGOT END

All inlets and outlets: welded-on with PE-pipe spigot ends (Standard: PE SDR 17,6) and can be connected to PE-pipes with electro-fusion sockets by welding directly.


All PE spigot ends have to be pre-cleaned, the pipe end checked for perpendicularity, cutting edges to be deburred and sawdust removed.


The oxide layer has to be scraped away properly.
We recommend the use of a eotational scraper tool. Clean all pipe ends with PE-cleaner, mark insertion depths, push in sockets and weld without causing tension. Installation instructions of the socket manufacturer must be observed!

3.3 CONNECTION OF MANHOLE ELEMENTS

To get the plug-in connection the ROMOLD element seal is to be slipped onto the upper end of the base or ring and checked for precise seating.

Thoroughly clean ROMOLD element seal and apply sufficient lubricant. Clean the slot of the upper element and join together with the element seal to the lower element without tilting.


Align all manhole elements in acordance with vertical marks to ensure the vertical alignment of the ladder.

The manhole elements are connected together fully by using bodyweight or modest force only.


Installation Tip:

To prevent the creation of an air cushion between the ROMOLD element seal and upper slot, we recommend the use of parcel twine placed over the element seal.

After fitting the upper chamber elements, remove the parcel twine. Alternatively, cable ties can be used - smooth side of the cable tie facing the seal.


3.4 BACKFILLING 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 32 mm, and 16 mm if broken material is used. The backfilling material must meet the requirements G1 or G2 in accordance with ATV-A 127, section 3.1. The requirements of EN 1610, Section 5.3, or DWA-A 139, Section 7.1, must be followed.

3.5 BACKFILLING AND COMPACTING

The width for backfilling around the manhole must be in accordance with DIN EN 1610, Table 1 at any point at least 40 cm. When installing the manholes in groundwater, a backfilling width of at least 50 cm is to be maintained all around to prevent uplift.

The area of the pipe connection to the manhole has to be carefully under-packed e.g. with a narrow hand stamper.

The backfilling material is to be inserted carefully and in layers of 20–40 cm layer thickness and compacted with a medium vibrating stamper (approx. 50kg).

The number of required compacting passes per layer depends on the backfilling material. The dumping weight and compacting device are to be taken from table 2 from DWA-A 139 or table 6 from DIN EN 1046. A minimum degree of compaction of DPr = 97 % in accordance with DWA-A 139, section 11.1 is to be established for the entire depths of the manhole. In road foundations at road level a deformation module EV2 of at least 100 MN/m2 in accordance with ZTVE-StB 94 is necessary for supporting the cover Class D 400 (compare section „Installation of the cover").

Installation Tip:

Before pouring down the backfilling material attach the upper unit (without seal) to the base or the ring and use ROMOLD-PE construction-site cover (yellow) or a steel plate on the upper unit for covering.

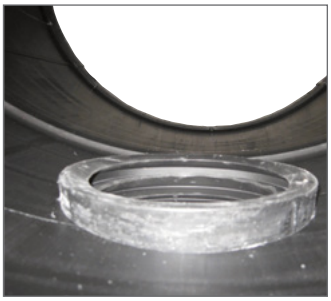
After then pour the backfilling material on the lid, wherein the backfilling material is distributed around the manhole and the manhole is protected from contamination. Now remove upper unit and assemble next component in accordance with 3.3.

3.6 HEIGHT ADJUSTMENT

To adjust the height shorten the neck of the upper unit. ROMOLD PP/PE-manholes can be shortened by a maximum of 25 cm. The cutting is to be done with a saw between two ribs of the upper unit. The ribs are arranged in a distance of 1 cm. The resulting cut needs to be deburred.

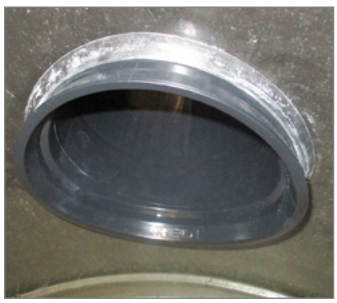
3.7 SUBSEQUENT CONNECTION TO THE ELEVATION ELEMENT

Drill with an electric hand drill at the desired position with a ROMOLD cup saw the total possible drilling depth.
Drilling in the area of a connecting element is not allowed. Deburr hole and insert the seal from the outside without using lubricant. The collar of the seal is up to the ribs at the outside of the manhole. Lubricate the spigot end of the pipe as well as the inside of the seal and insert the pipe creating an inner overlap afterwards.



3.7.1 ALTERNATIVE CONNECTION WITH CONNECTION SADDLE DN 150

Cut hole using ROMOLD Kronenbohrer (ø200mm) as described in 3.7. If the hole is cut in the are of the vertical ribs, these vertical ribs must be reduced to the depth of the horizontal ribs.



Push on the connection saddle from the outside, (assembly in accordance with the included installation notes).

Push pipe fully into the saddle.

4. INSTALLATION OF THE COVER

4.1 LOAD DISTRIBUTION RING MADE OF CONCRETE WITH COMMERCIAL COVER

The ROMOLD concrete load distribution ring conducts traffic loads to the road foundation and away from the PP/PE-manhole. It is important to ensure there occurs no direct load contact between concrete ring and PP-manhole.

Below the concrete support ring (concrete support ring extends about 4 cm above the edge of the upper unit) an EV2 module of at least 100 MN/m2 must be achieved.
The bedding of the concrete support ring must be level and free from point loads (possibly using grit, sand or poor concrete).

If needed, the upper unit seal is to be mounted on the upper unit neck before assembling the concrete ring and seal with sufficient lubricant. The concrete support ring must be set up centrally without affecting the bedding.
The concrete support ring is covered with a steel plate until the installation of the cover.

The total height of the concrete support ring and commercial cover class D 400 is about 19 cm (without using a height adjustment ring AR-V 625 x 60 mm) from the upper edge of the PP cone.

4.2 SELF LEVEL® COVERS

When using self level® covers, alternatively a small sized concrete support ring (BARB 67 VS) can be used as a bearing for the adapter rings made of concrete or steel.

For instructions and correct installation height see documents of the concerned cover manufacturer.

4.3 CONCRETE COVER PLATE

Manhole installation in accordance with step 3.1 to 3.5.

On top of PP/PE-manhole element assemble element seal ES 100 and use enough lubricant. Assemble the concrete cover plate horizontally and centered on the manhole in the prepared stable base.
It is important to ensure there occurs no direct load contact between the concrete cover plate and the manhole.
A commercial cover up to class D 400 can be assembled on the concrete cover plate. The height adjustment for the cover can be done with concrete height adjustment rings.

4.4 ODOR FILTER

In case of odour nuisance a ROMOLD activated carbon filter can be installed in the frame of the cover.

5. LIABILITY FOR DEFECTS

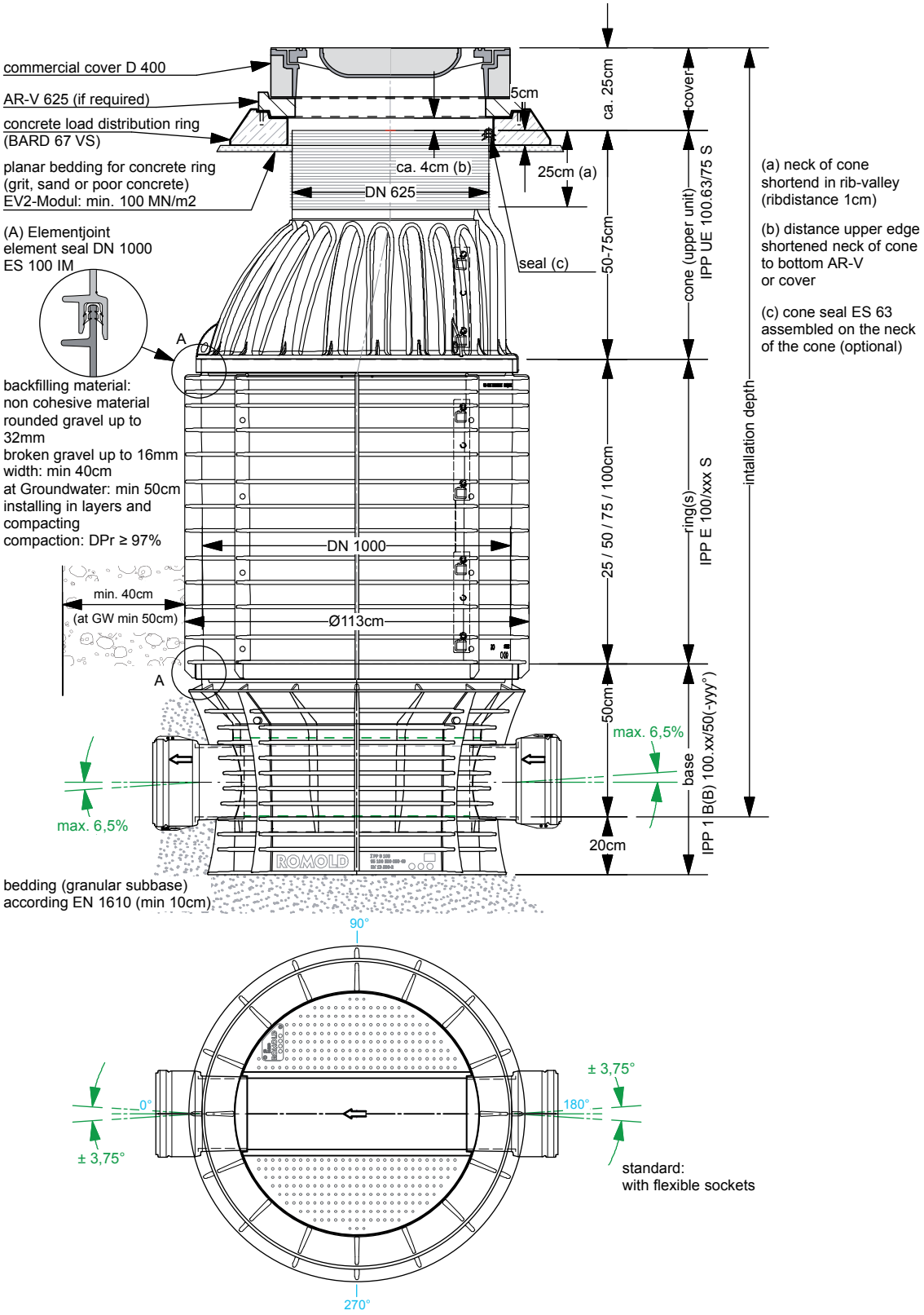
Liability for defects is excluded if mounting and installation instructions are not complied with, unless the customer is able to prove that he is not responsible. This also applies if installation parameters are not met later.

ALL OF THE INSTALLATION PARAMETERS MUST BE PERMANENTLY ENSURED!

INSTALLATION SKETCH

FOR ROMOLD IPP-MANHOLES DN 1000

I PP-manhole DN 1000, concrete load distribution ring with commercial cover



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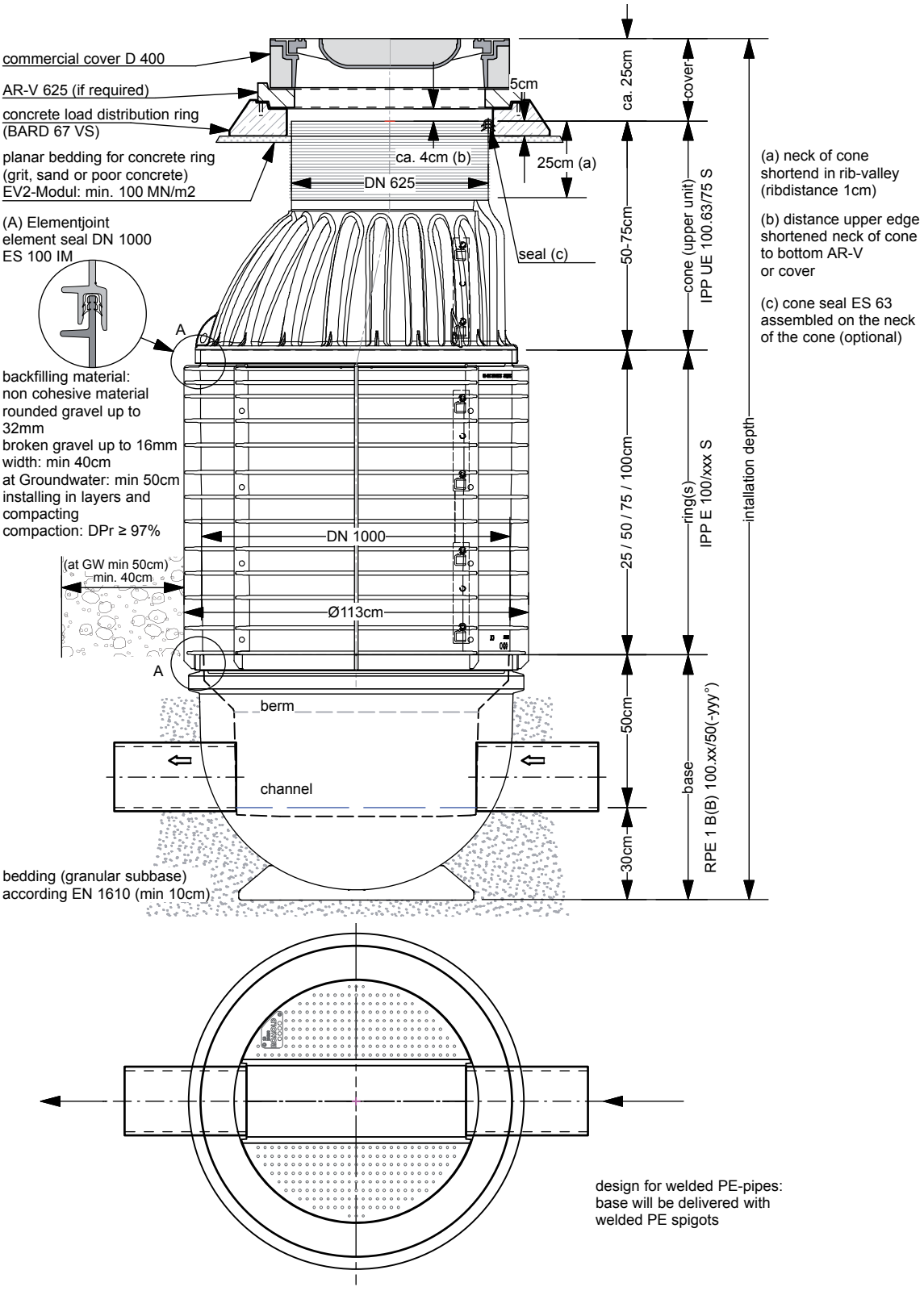
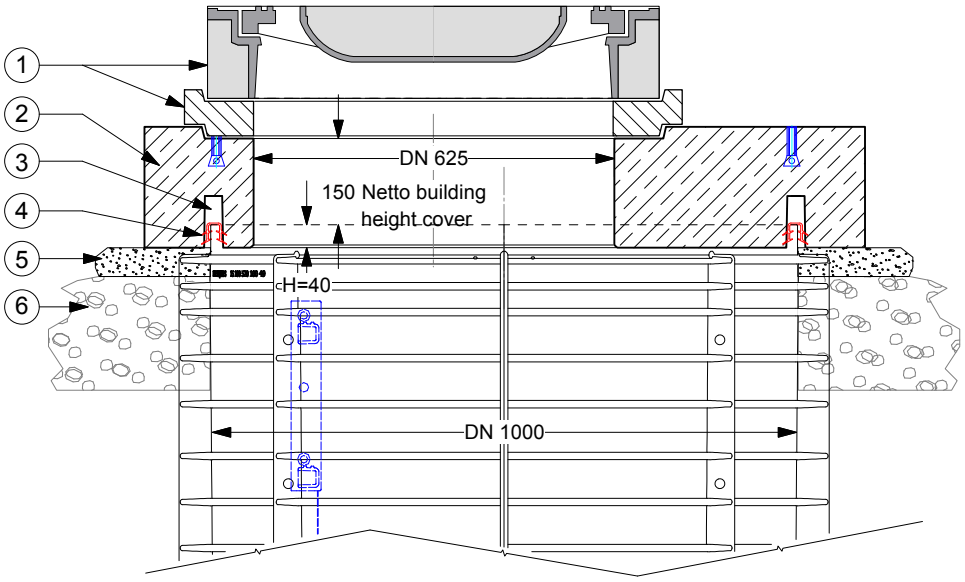
INSTALLATION SKETCH

FOR ROMOLD RPE-MANHOLES DN 1000

R PE-Manholes DN 1000, concrete load distribution ring with BEGU cover



PP/PE-manhole DN 1000, Cover plate for commercial covers



1. Standard commercial cover cl. B/D, here: with ring AR-V 625 x 60, alternative: PDRD 63/06 VS
2. ROMOLD concrete cover plate
3. decoupling of cover and manhole
4. element seal ES 100 IM
5. Level bedding for concrete plate (grid, sand or poor concrete)
6. backfilling material, compacted

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