

# ASSEMBLY- AND INSTALLATION INSTRUCTIONS

## FOR ROMOLD PE SYSTEM CHAMBERS DN 500 TO DN 1250

### 1. TRANSPORT AND STORAGE

Store manhole elements in upright position on level ground. In case of long outdoor storage chambers must be protected from direct sunlight. All element seals have to be stored packed, protected from frost and direct sunlight.

### 2. GENERAL INFORMATION

ROMOLD PE-manholes are provided ready to connect. The delivery has to be checked for completeness. Before installation all components must be checked for damage or contamination and if necessary cleaned or replaced. Damaged components may not be installed!

Pipe seals at the inlet are already inserted and the moulded spigot at the outlet got the required nominal diameter. Inlet seal and outlet spigot are suitable for direct installation of PVC pipes according to DIN EN 1401, of PP pipes according to DIN EN 1852 and for PE-pipes according to DIN EN 12666 or DIN 8074. In special cases or if requested by customer, the centre-drilling of the manhole ground, the insertion of the inlet seal or the fitting of the outlet spigot by sawing can also take place on construction site.

### 3. ASSEMBLING AND INSTALLATION OF THE MANHOLE

All the subsequent installation parameter are necessary to ensure permanently! For example, avoid rinsing out fine material with appropriate measures (by using fleece, cross-beam out of clay or similar).

#### 3.1 BEDDING (GRANULAR SUB BASE):

Below the base minimum required thickness is 10 cm. The thickness of the lower bedding layer (subbase) according to EN 1610, Section 7.2 has to be performed as „bedding type 1“.

#### 3.2 INSTALLING AFFLUX SEAL

In order to prepare the connection at the inlet side of the manhole base, circular openings are required with the help of ROMOLD cup saws at the area marked for the respective nominal diameter. The cup saw is to be positioned in a manner, that misalignment of the pipeline can be excluded. The opening is to be deburred and cleaned. Afterwards, insert ROMOLD inlet pipe seal without using any lubricant. The precise fitting of the seal must be checked.

#### 3.2.1 PIPE CONNECTION INLET-SIDE ROMOLD

The end of the pipe must be pushed up to the stop into the inlet opening at the chamber base equipped with ROMOLD inlet seal by using sufficient lubricant. Between ROMOLD PE-manhole and inlet pipe no joint pieces for bending are required.

#### 3.2.2 PIPE CONNECTION OUTLET-SIDE

The socket of the outlet pipe is to be slipped onto the outlet spigot up to the stop, using sufficient lubricant. If necessary, the smaller, not required outlet spigot must be cut off with a saw. Afterwards, the cutting-edge is to be deburred and cleaned. Between ROMOLD PE-manhole and inlet pipe no joint pieces for bending are required.

### 3.3. WELDING WITH PE-PIPELINE

#### 3.3.1 MANHOLE WITHOUT CHANNEL

All in- and outlets are with PE-pipe spigots and can be connected to PE-pipes with electrofusion sockets directly.

All PE-spigots must be cleaned, the pipe end checked for the right angle, cutting edges deburred and sawdust removed. The oxide layer at the PE-spigot end has to be scraped away properly.

We recommend the use of a Rotational 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 followed!

#### 3.3.2 MANHOLE WITH CHANNEL

Use a saw to cut off the very end of the outlet spigot at the chamber to provide a rectangular spigot end. To connect the outlet spigot at the manhole with a PE-pipe use electrofusion sockets of type SDR 17/10 bar. Perform welding work according to point 3.2.1.

#### 3.4 PIPE CONNECTION WITH CHANGE IN MATERIAL OR IF USING ADAPTERS

With a change in material or if using special connection-adapters, a caused bed drop must be considered according to DIN EN 476 section 6.2, if applicable. The length of the pipe for the inlet as well as outlet must be taken into consideration.

#### 3.5 CONNECTION OF MANHOLE ELEMENTS

In order to create the plug-in connection, the ROMOLD element-seal of the respective nominal diameter is to be slipped onto the up-





per end of the manhole ground or the manhole ring and must be checked for proper fitting. For manholes with diameters of DN 500 and DN 625 the transport security ring needs to be removed. Remove any burrs as well.

Clean ROMOLD element-seal thoroughly and apply sufficient lubricant. Clean the locating slot of the upper element and assemble with the ROMOLD element-seal the lower element. The manhole elements must be connected up to the stop by using only body-weight or modest force.

**Installation Tip:** To avoid that an air cushion accrues between ROMOLD element seal and upper element, we recommend the use of parcel twine placed at the element seal.

After assembling the upper manhole element pull out all parcel twines. Alternatively, a cable tie can be used – set smooth side of the cable tie to the seal.

### 3.6 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 according to ATV-A 127, section 3.1. The requirements of EN 1610, Section 5.3, or DWA-A 139, Section 7.1, must be followed.

### 3.7 BEDDING OF MANHOLE BASE

#### 3.7.1 MANHOLE WITHOUT CHANNEL

The foundation of the manhole base must be stable and built in a flat, planar manner, in accordance with the planning specifications.

#### 3.7.2 MANHOLE WITH CHANNEL

After pipe connections and horizontal alignment of the manhole a proper tamping according to A-139, section 7.2 e.g. with a narrow hand rammer is necessary.

### 3.8 BACK FILLING AND COMPACTING

The compaction at the side of the manhole must be according EN 1610, table 1 for manholes DN 500 and DN 625 at each point at least 35 cm, for manholes DN 800 up to DN 1250 at least 40 cm.

In case of a installation with ground water, for uplift-retention reasons a backfilling width of at least 50 cm must be given all around.

For the road foundation to bear covers with class D 400 a deformation module EV2 of at least 100 MN/m<sup>2</sup> according to ZTVE-StB 94 must be given (compare with section „manhole covers“).

The back-filling material is to be inserted carefully and in layers of 20 – 40 cm layer thickness and compacted with a medium weight vibration stamper (approx. 50 kg). The number of required compacting passes per layer depends on back-filling material, dumping height and compacting machine and must be taken from table 4 from ATV DWA-139 or table 6 from DIN EN 1046.

A minimum degree of compaction of DPr = 97 % according to DWA-A 139, section 11.1 has to be ensured. Before back-filling and compacting,

the manhole cones and necks are to be fitted and covered temporary with a ROMOLD PE-construction-site cover (colour yellow) or if necessary with a ROMOLD cover-plate made of cast-iron. Adequate distance must be given using heavy compacting devices (e.g. vibration rollers).

### 3.9 HEIGHT ADJUSTMENT

To adjust the height, shorten the neck of the upper unit. ROMOLD PE-manholes with diameters of DN 500 and DN 625 can be shortened to a maximum of 30 cm, with diameters of DN 800 and DN 1000 to a maximum of 25 cm. The cutting is to be done with a saw along the marked ribs. The resulting cut needs to be deburred.

## 4. MANHOLE COVERS

If necessary for manholes with diameters of DN 500 and DN 625 the transport security ring needs to be removed (see picture).

ROMOLD PE-cover (black) and PE-construction-site cover (yellow):

Position the ROMOLD PE-cover after completing the height adjustment and before back-filling the manhole neck. The height of the ROMOLD PE-cover is approx. 3 cm and must be taken into account for adjusting the height of the manhole.

#### ROMOLD system-cover cl. A 15 and B 125 kN:

Position the ROMOLD cover-plate and insert the manhole cover after height adjustment and before backfilling the manhole neck. The height of the ROMOLD system-cover cl. B 125 kN is approx. 4 cm and is to be taken into account when adjusting the height of the manhole.

#### ROMOLD system-cover cl. D 400 kN:

This cover separates the traffic loads to the road foundation and the PE-manhole. Therefore it is absolutely necessary to ensure that no direct load contact between cover and PE-manhole occurs. A decoupling of the PE-manhole, the cover and its shifting security will be ensured by an overlap of 3 cm of both elements.

The construction height of the ROMOLD system cover cl. D 400 kN is approx. 13 cm and must be taken into account for adjusting the height of the manhole.

#### ROMOLD concrete load-distribution ring for common cover cl. D 400 kN:

A ROMOLD concrete load-distribution ring conducts the traffic loads in the road foundation and protects the PE-manhole. Therefore it is absolutely necessary to ensure that, after fitting the concrete load distribution ring, no direct load contact occurs between concrete ring and PE-manhole. The decoupling of the PE-manhole, the cover and its shifting security will be ensured by an overlap of 7 cm of both elements. The overall construction height of concrete load-distribution ring and commercial cover class D 400 kN is approx. 24 cm and must be considered for adjusting the height of the manhole.

## 5. LIABILITY FOR DEFECTS

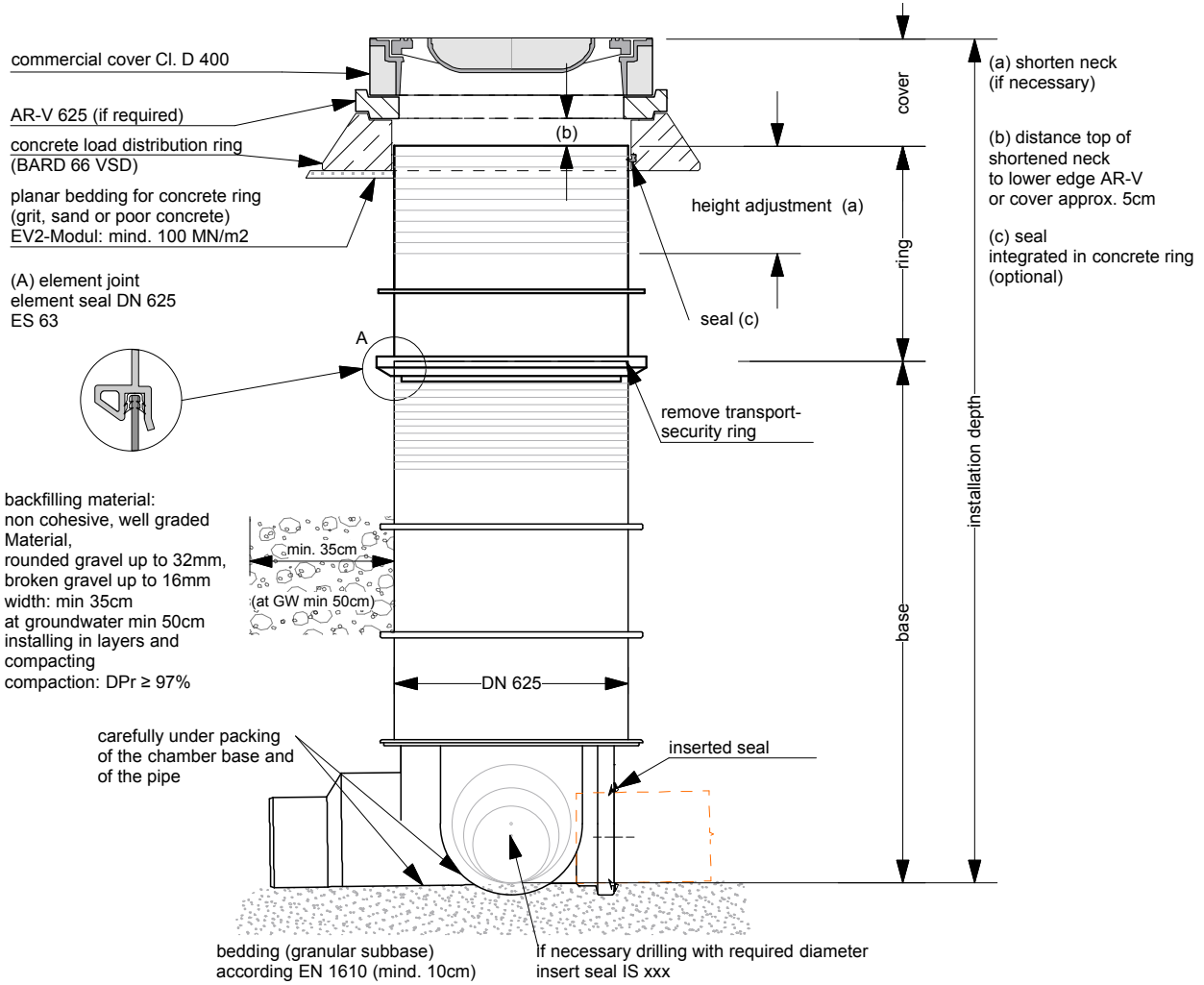
Liability for defects is excluded, if the mounting and installation does not comply with instructions, unless the customer is able to prove evidence that he is not responsible. This also applies if after a certain period installation parameters are not met anymore.

The installation instructions must be ensured permanently.

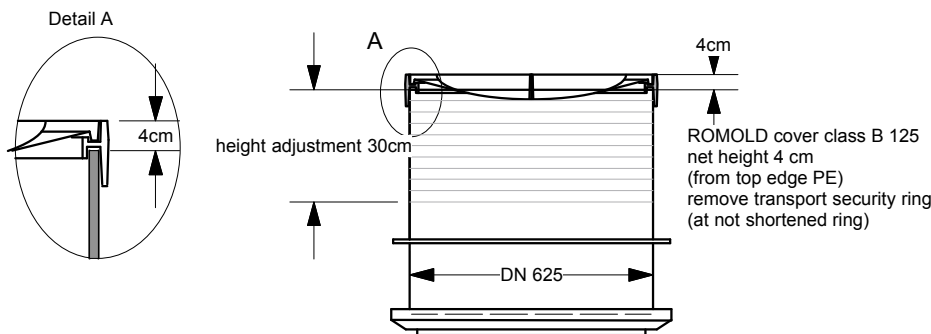
# INSTALLATION SKETCH

## FOR ROMOLD PE SYSTEM CHAMBERS DN 500 TO DN 625

### PE-CHAMBER, DN 625, concrete load distribution ring with commercial cover



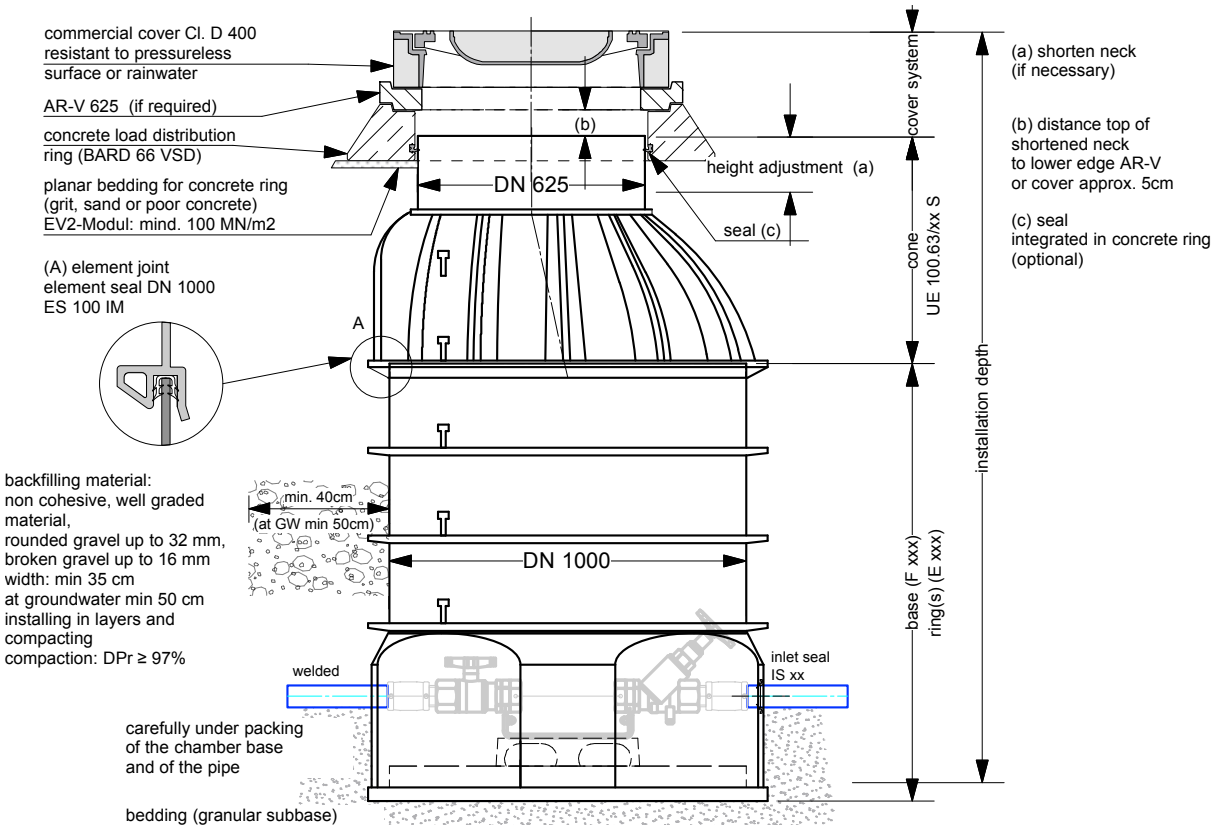
### PE-CHAMBER, DN 625, ROMOLD system cover Cl. B 125



# INSTALLATION SKETCH

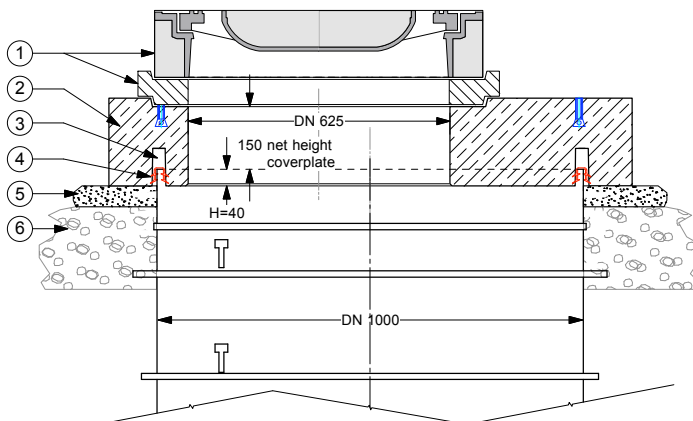
## FOR ROMOLD PE SYSTEM CHAMBERS DN 800 TO DN 1250

### PE-CHAMBER, DN 1000, concrete load distribution ring with commercial cover



### PE-CHAMBER, DN 1000 with commercial cover

- |  |   |
|--|---|
| ① commercial cover cl. B/D, AR-V 625x60, if required | ④ element seal ES 100 IM  |
| ② ROMOLD concrete cover plate                        | ⑤ planar bedding for concrete plate (grit, sand or poor concrete) |
| ③ decoupling of cover and manhole                    | ⑥ backfilling material, compacted                                 |



For Installation instructions „to go“ scan QR-Code



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