ASSEMBLY AND INSTALLATION INSTRUCTIONS

FOR ROMOLD CABLE CHAMBER ROM-BOX RECTANGULAR

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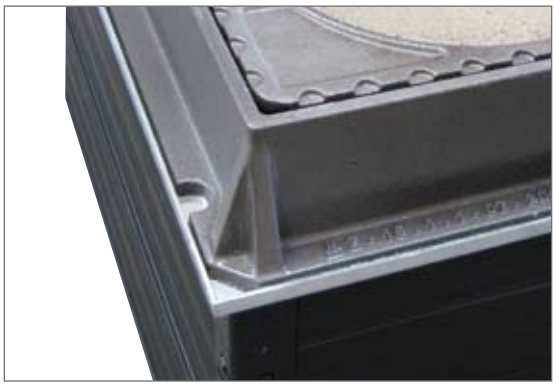


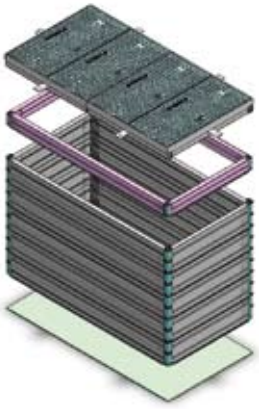
1. GENERAL INFORMATION

Cable Chamber, type ROM-BOX, rectangular, polypropylene, sand-tight, consisting of the following components:

- Chamber base made of plastic (with seepage openings for penetrating surface water, drilled out ex factory ROMOLD if needed)
- Profile frames with an element height of 100 mm and 200 mm
- Corner elements and removable connection clips fixing profile frames together
- If necessary for chambers with side lengths > 900 mm, an additional U frame, made of galvanized steel, is used—the base bar is fixed in the chamber base, the telescopable vertical bars are included or pre-installed. Chamber heights > 1,20 m are equipped with additional horizontal profile
- Entry holes for ducts can be made on site or in the factory in a flexible manner in terms of diameter and arrangement
- Plugs for sand-tight pipe connection (if needed)
- Integrated setscrews in the top-most corner element of the ROM-BOX for variable adjustment of height and slope of the cover in relation to the top edge of the roadway (as necessary)
- ROM-BOX chamber covers made of galvanized steel frame, with elastomer pad, covers made of ductile iron with interlock and lift-out opening or version for commercially available covers (depending on the required sizes)
- Carry aid (as necessary)

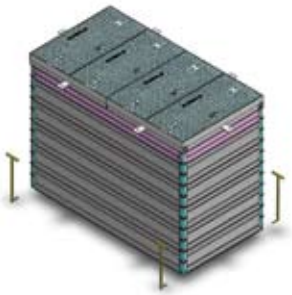
If not otherwise agreed, the ROM-BOX is delivered in an assembled state. The chamber covers and, if necessary, the U frame (base bar, vertical bars and if necessary horizontal profile) are provided for every chamber.

When using commercially available chamber covers, a head frame (Z-profile) made of galvanized steel is provided for accommodating the commercial chamber cover (version and material as per manufacturer).



2. INSTALLATION TOOLS

To make the entry holes on site, it is necessary to use a commercially available drill with a cup saw and an adapter (can be purchased from ROMOLD GmbH). For levelling joints of the height and slope adjustment it is necessary to use a highearly-strength, nonshrinking, pourable grout (see point 6.1.2) and suitable material for the external formwork.



3. INSPECTION PRIOR TO INSTALLATION

Check the delivery for completeness. Damaged parts must NOT be installed! The functionality of the cover's interlock has to be checked!

4. EXCAVATION

The excavation must be easily accessible for delivery vehicles. Excavation depth = chamber depth + cover + bedding (approx. 10 cm).

The excavation must be prepared while taking into account the chamber's outer dimensions and DIN 4124 "Excavations and Trenches - Slopes, Planking

and Strutting, Breadths of Working Spaces". The subsoil must possess sufficient bearing capacity, if necessary, the soil has to be replaced.

A bedding consisting of 10 cm of compacted gravel/sand mixture or lean concrete mix should be prepared on site at the bottom of the excavation with the appropriate slope and level.

Prior to installing the ROM-BOX, it is necessary to rectify any damage or impurities that may have occurred in the gravel/sand bed in the meantime. Any groundwater that is present must be lowered to at least 20 cm below the bottom of the building pit prior to starting to install the ROM-BOX.

In the area of the planned seepage openings, it is necessary to place gravel packs to facilitate seepage of penetrating surface water.

5. INSTALLATION

5.1 ROM-BOX

5.1.1 INSTALLATION OF CABLE CHAMBERS AND CABLE CONDUITS:

The ROM-BOX is manually placed on the prepared gravel/sand bed (depending on its size by one or two persons, an optional carry aid can be obtained from ROMOLD GmbH) or with the aid of a light lifting device such that it is aligned and leveled.

In case of factory-made entry holes, the provided plugs can be cut with a knife to the necessary diameter of the empty ducts or cables or can be removed.

The entry holes can also be made on site by marking their centers and drilling them out with the aid of a commercial drill or cordless drill with a cup saw (cup saw and adapter available from ROMOLD GmbH).

Holes can be drilled anywhere while taking into consideration the generally accepted rules of good engineering - hole diameter must be at least 12 cm from the outer edge of the chamber.

Drilling recommendation: high rotational speed, low pressure (forward and backward movement of the drill bit.

It is necessary to ensure a minimum web thickness of 3 cm between holes. The U frame must be taken into account when planning the holes! The plugs, which are provided if necessary, are cut out to the necessary diameter of the empty duct or cables with the aid of a knife.

5.1.2 OVERBUILDING OF EXISTING CABLES AND CABLE CONDUITS:

The entry holes can also be made on site by marking their drilling centers just below the element joint area (joint between individual profiles) and drilling them out with the aid of a commercial drill or cordless drill with a cup saw (cup saws and adapter available from ROMOLD GmbH). Recommendation: Drill from inside the chamber outwards.

After removing the clip system (using a screwdriver or similar) in the area of the separable element joint, the upper part of the ROM-BOX can be separated from the bottom part by hand. The bottom part of the ROM-BOX is placed under the existing empty conduits or cables and then the upper part of the ROM-BOX is placed back on the bottom part. The ROM-BOX is locked and complete again after the clips are reinserted without requiring tools.

Should the cable chambers have a side length of 900 mm or more, U frames (consisting of one horizontal and two vertical bars made of galvanized steel) are to be used.

The vertical bars are to be removed before installing the bottom part and then reinstalled.

5.2 BACKFILLING AND COMPACTING

Prior to backfilling and compacting, the vertical bars of the U frame (for side lengths greater than 900 mm), perhaps the horizontal profiles and the frame or head frame (Z profile) of the

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cover, must be installed. The vertical bars are inserted in the base bar from above. Afterwards the frame or Z frame with the mounting sleeves must be inserted at the vertical bars.

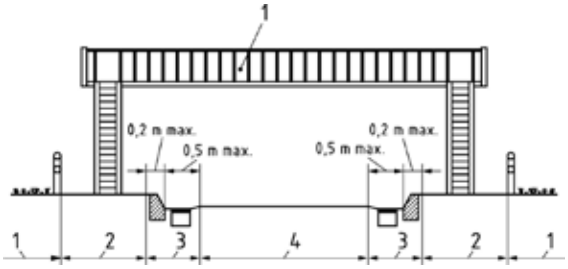
Make sure that cohesionless materials are used as backfill material. The maximum grain size of round grain material may not be larger than 32 mm, in case of crushed stone material the max. grain size may not be larger than 16 mm. The backfill material must satisfy the requirements G1 or G2 as per ATV A-127, Section 3.1.

The backfill material has to be installed carefully and in layers with a thickness of 20 to 40 cm and compacted using a medium-heavy vibratory tamper (approx. 50 kg). The number of necessary compaction passes per layer depending on backfill material, fill height and compaction equipment, can be taken from table 6 of ENV 1046 and/or table 2 of DWA A 139.

5.3 SUBSEQUENT INCREASE OF THE CHAMBER

The uppermost ROM-BOX-frame (head frame) can be lift off after removing the clip system. Place the extension frame (100 mm or 200 mm profile) and assembling of the head frame (inserting the clips for fixing). Then pull out the telescopic vertical bars to the height of the increased chamber and fix the telescopic vertical bars by screwing.

Note: possibly horizontal profiles are to be mounted in the middle (or in one third and two thirds) of the chamber height.



6 CHAMBER COVERING

Covers shall be used in accordance with its load class based on the classifications of DIN EN 124.

In combination with the ROMBOX cover class D 400 respectively a commercially available cover class D 400 according to EN 124, Group 4 (min. class D 400) the ROMBOX is suitable for use of roads and parking areas, accredited for all sorts of road vehicles.

For more heavily used areas a rolled cover is necessary (see bullet point 6.3).

6.1 ROM-BOX CHAMBER COVERS:

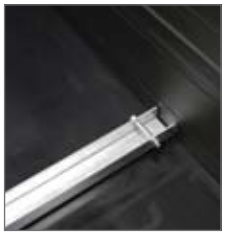
The chamber covers consist of: Cover frames made of galvanised steel and ductile iron covers with interlock, In case of multipart covers, it is necessary to ensure the proper seating of the additional horizontal cover supports (T bar). The T bars can be removed to facilitate easy access into the chamber and prevent the covers from falling into the chamber. Prior to installing the covers, the bearing areas of the chamber cover's frame and the elastomer pads are to be cleaned carefully.

Covers are to be checked for completeness and good order and condition prior to installation. Damaged parts may NOT be installed. Changes to the product and combination with products from other manufacturers could adversely impact the functionality and affect the warranty.

6.1.1 VERSION WITHOUT VARIABLE ADJUSTMENT OF HEIGHT AND SLOPE TO TOP EDGE OF ROADWAY:

The chamber cover frame is placed directly on the top-most profile frame of the ROMBOX. The top-most profile frame is equipped with protection against displacement (internal formwork wall). Prior to installing the covers, the bearing areas of the chamber cover's frame and the elastomer seal pads in the chamber cover's frame are to be cleaned carefully.

U-frame
telescopic



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6.1.2 VERSION WITH VARIABLE ADJUSTMENT OF HEIGHT AND SLOPE TO TOP EDGE OF ROADWAY:

The variable adjustment of height and slope of the chamber's cover in relation to the top edge of roadway has to be done by using grout (e.g. Dywipox HG Mörtel, P&T Schachtkopfmörtel, Topolit Fix Plast, ROMEX ROMPOX - D4000 HR or similar) in accordance with DIN 18555 in the circumferential levelling joint and with the aid of the provided setscrews.

By using the plastic setscrews located in the corner elements, the cover frame is adapted to the necessary level in a height ranging between 0 and 5 cm and required slope. A circumferential external formwork has to be provided and fixed.

Afterwards the circumferential levelling joint between the existing internal formwork and the external formwork has to be filled completely with grout. The setscrews are not designed for a point load support. The use of stones, wood, concrete chunks or similar as spacer for aligning the cover frame in relation to the surface of the pathway is NOT permitted.

When using grout on site, it is necessary to observe the manufacturer's instructions and load information.

The chamber covers shall be released for a vehicle passing over in accordance with the grout manufacturer's specifications. The covers are taken off, installed and locked using conventional tools, which can also be purchased from ROMOLD GmbH (e.g. Universal key: type US-3).

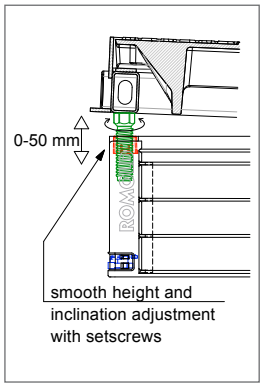
6.2 COMMERCIAL CHAMBER COVERS:

Commercial chamber covers shall be used in accordance with its load class based on the classifications of DIN EN 124. The chamber covers consist of chamber cover frames and covers (version and material based on manufacturer) and head frames (Z frames) made of galvanized steel.

The chamber covers are to be checked for completeness and good order and condition prior to installation. Damaged parts must NOT be installed. The head frame (Z profile) is placed directly on the top-most profile frame of the ROMBOX. The head frame protrudes into the ROM-BOX, thus protecting the cover from displacement..

6.3 SELFLEVEL® CHAMBER COVERING:

When using GAV Selflevel covers, the adapter frame is fastened to the top-most profile in the factory. See the GAV installation instructions for further installation of this cover!



Assembly- and installation notes „to go", scan QR-Code.

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