Backfilling & compacting

Only non-cohesive materials may be used for backfilling, which must take place immediately after installation (e.g. sand-gravel mixture). In addition, a slip or studded membrane must be attached to the well beforehand. Place and compact the homogeneous filling material in layers. DIN 18300 must be heeded during this work. Use a vibrator and tamper to maintain sufficient distance from the light shaft (at least 0.3 m).
A light shaft width of 1520 mm and above carries the risk of cracking due to heavy pressure loads on the front of the shaft during filling and compacting. The light shaft should therefore be supported over its entire width from the inside by squared lumber with a pressure-absorbing crossbar after it has been mounted on the wall or before being compacted.

For light shaft heights above 1800 mm, two horizontally supported squared timbers must be evenly distributed. Backfill and compress gradually and with low compressive load.

Further notes:

Concrete light shafts must not be used as supports (for scaffolding or similar).

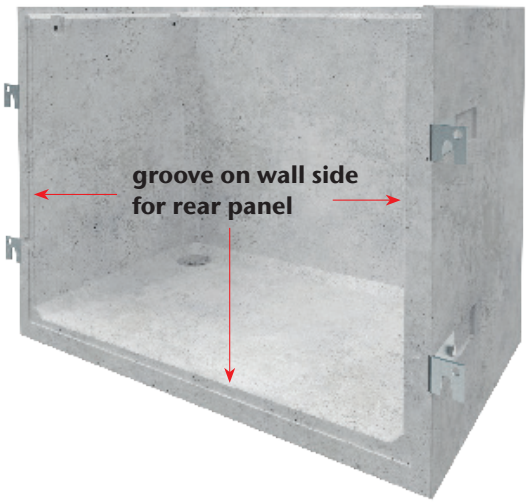
Installing the lift-off guard

Insert the four lift-off guard plates through the four oblong holes in the supporting bar of the grating (two on each side).

Screw all four sheets to the light shaft.

Using a rear panel

1. Slide the rear panel into the groove near the rear panel.
2. Mark the window recess from the inside. To do so, use the insulation already installed as a guide. Take the outside dimension of the insulation connection profile into account. Cut the insulation if necessary.
3. Remove the rear panel and cut out the window cut-out with a jigsaw. Remove the protective film.
4. Push the rear panel back in.
5. Assemble and insert the insulation connection profile according to the assembly instructions.
6. Apply adhesive sealant on the upper side behind the rear panel. Press on the rear panel.
7. Apply the adhesive sealant again in the transition from back wall to insulation and groove.



ACO concrete light shafts

Installation directly to the concrete basement wall or insulation

Ladies and gentlemen, we are very pleased that you have chosen a concrete light shaft from ACO and thank you very much for your trust. These installation instructions form the basis for a clean and safe installation of your light shaft by the installer. Our products are intended for installation by qualified personnel. In case of doubt, overriding regulations such as building site ordinances, accident prevention regulations, safety guidelines and industrial safety measures take precedence over the specifications in this manual. The same applies to health and safety requirements.

Transporting the concrete light shaft on the construction site:
If the weight of the light shaft exceeds 1000 kilos, it may only be transported or moved on the construction site by crane. In this case, transport via excavator or similar is no longer permitted.

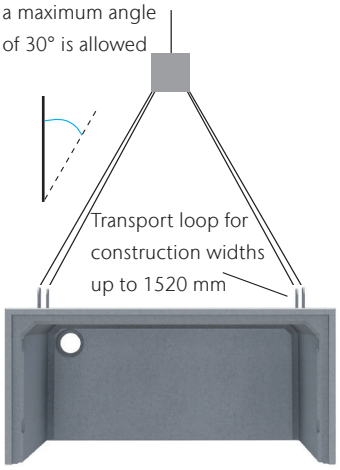
Transport by means of transport loops set in concrete on the side of the cover
When transporting using the concrete transport loops, always use all 4 loops. The transport loop may only be loaded up to a maximum of 30° in a diagonal pull along the plane of the component. Diagonal pull perpendicular to the surface of the panel (=cross pull) is not permitted. Therefore use sufficiently long 4-leg chain slings. The radius of the load hook should at least correspond to the curve of the rope loop to avoid crushing.
If the loop is damaged (e.g. by kinking, strand breakage, crushing or bulging), it must not be used.

Transport by means of threaded sleeves embedded in concrete on the lid
Necessary for light shafts with widths of 2050 and 2520 mm. Screw in 4 rope loops M 16. Ensure that the load is evenly distributed over the chain sling. Light shafts weighing more than 1000 kg may only be moved by crane. The permissible maximum load of the rope loops must not be exceeded.
The rope loop may only be loaded up to a maximum of 30° in a diagonal pull along the plane of the component. Diagonal pull perpendicular to the surface of the panel (=cross pull) is not permitted. Therefore use sufficiently long 4-leg chain slings.
The radius of the load hook should at least correspond to the curve of the rope loop to avoid crushing. If the loop is damaged (e.g. by kinking, strand breakage, crushing or bulging), it must not be used.

Offsetting the concrete light shafts via the internally threaded sleeves:
Please screw in 4 rope loops M 16.
Ensure that the load is evenly distributed over the chain sling. Light shafts weighing more than 1000 kg may only be moved by crane. The permissible maximum load of the rope loops must not be exceeded.
The rope loop may only be loaded up to a maximum of 30° in a diagonal pull along the plane of the component. Diagonal pull perpendicular to the surface of the panel (=cross pull) is not permitted. Therefore use sufficiently long 4-leg chain slings.
The radius of the load hook should at least correspond to the curve of the rope loop to avoid crushing.
If the loop is damaged (e.g. by kinking, strand breakage, crushing or bulging), it must not be used.

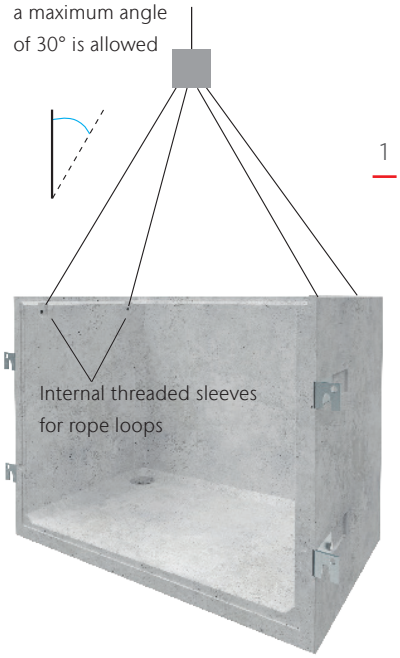
Rope loop
Art No. 377220:

Transport:
a maximum angle of 30° is allowed



For widths 2050 and 2520 mm there are threaded sleeves M 16 in the cover. Use rope loops here.

Moving:
a maximum angle of 30° is allowed



Important information before installation:

Light shafts **with a base** and **car-accessible light shafts** always require a 2 fold fastener (4 brackets). For detailed information please refer to the following table.
For...

- Installation in **bricked basements**
- Light shafts with a total weight **from 1500 kg**
- Light shafts mounted on an **insulation thickness of 200 mm or more**
- **Car-accessible** light shafts with a total weight from 1500 kg
- **Car-accessible** light shafts mounted on an insulation thickness from **160 mm**

... a load-bearing base or a strip foundation of 30x30 cm (WxH) and a length of light well width + 40 cm must always be created. The strip foundation must be positioned under the shaft on the cover side. When using the drainage opening, the strip foundation should be positioned behind the drainage opening.

Fastening kits

Required fastening kits (light shafts without base)

clear opening width [mm]	clear opening depth [mm]	clear opening height [mm]	directly to the concrete basement wall	Insulation 60-160 mm	Insulation 180-300 mm
820	500	1000-1500	1	1*	1
		1800-2000	2	2	1
	600	1000-1500	1	1*	1
		1800-2000	2	2	1
1020	500	1000-1500	1	1*	1
		1800-2000	2	2	1
	600	1000-1500	1	1*	1
		1800-2200	2	2	1
	800	1000-2200	2	2	1
	1000	1000-2200	2	2	1
1270	500	1000-1500	1	1*	1
		1800-2000	2	2	1
	600	1000-1500	1	1*	1
		1800-2200	2	2	1
	800	1000-2200	2	2	1
	1000	1000-2200	2	2	1
1520	500	1000-2000	2	2	1
	600	1000-2200	2	2	1
	800	1000-2200	2	2	1
	1000	1000-2200	2	2	1
2050	500	1000-2000	2	2	1
	600	1000-2200	2	2	1
	800	1000-2200	2	2	1
	1000	1000-2200	2	2	1
2520	600	1000-1800	2	2	1
	800	1000-1800	2	2	1
	1000	1000-1800	2	2	1

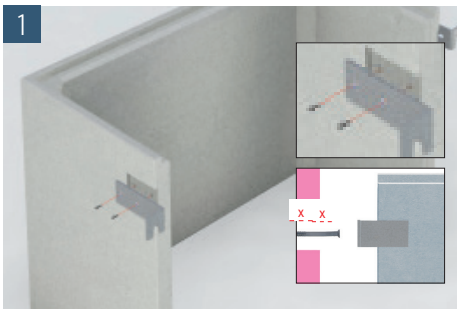
* For single fastening (2 brackets) on insulation, 2 spacers must always be used in accordance with the insulation thickness.

Fastening kits for mounting on insulation with a thickness of 180 to 300 mm already contain 4 fastening brackets.
Light shafts with base as well as light shafts that can be driven over always require 2 fastening kits.
When mounting on masonry walls in basements, always use a double fastening with sleeve, threaded rod and mounting bracket. In addition, a load-bearing substrate or a strip foundation must be provided.

ACO generally recommends using only 1 top element for all types of installation.
ACO light shafts can be stacked above the rebate. When stacking, each shaft must be mounted to the wall with double fastening (4 brackets).
The light shaft must remain secured until after the complete assembly has been carried out in accordance with these instructions. It is not permitted to stack the shaft without wall mounting and without securing them with a crane.

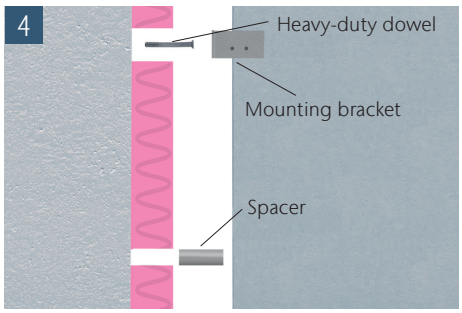
Please have the following tools ready for assembly: socket spanner (24 mm), measuring stick, spirit level, carpenter's pencil, drill, drill bit (Ø 16 mm, for concrete walls, or 20 mm, for brick walls), mason's hammer.

1



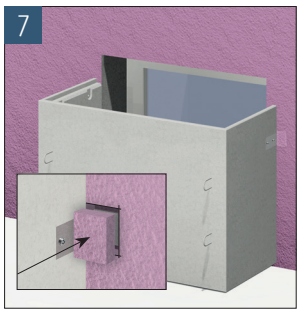
First install the mounting brackets on the outside of the side walls of the light shaft using 2 of the supplied screws
M 16x30. Note: Depending on the light shaft, you need a total of 2 or 4 brackets. You can see this in the overview on the previous page. Also make sure that the angles protrude over the edge of the light shaft by the thickness of the insulation when installing on the insulation.

4



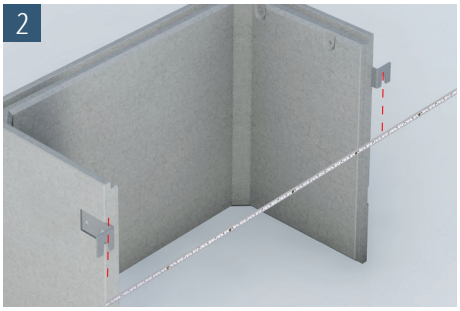
For simple fastening (2 brackets) on insulation, two spacers must always be used in accordance with the insulation thickness. Please provide a recess in the insulation for the spacers.

7



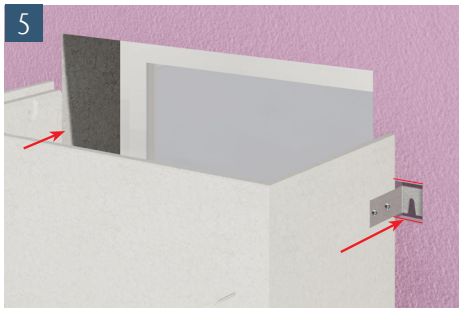
The light shaft must remain secured until after the complete assembly has been carried out in accordance with these instructions. Finally, the insulation which has been cut out beforehand is now inserted back into the recess to secure the light shaft.

2



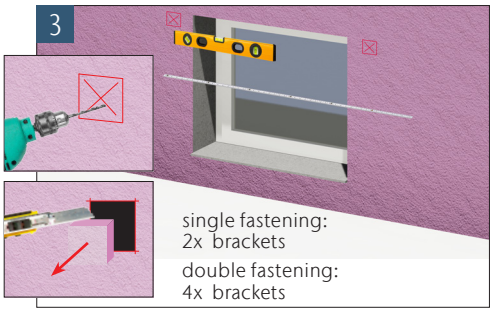
Now measure the axial dimension of the previously mounted mounting brackets. Please use the long holes of the mounting brackets for standard mounting

5



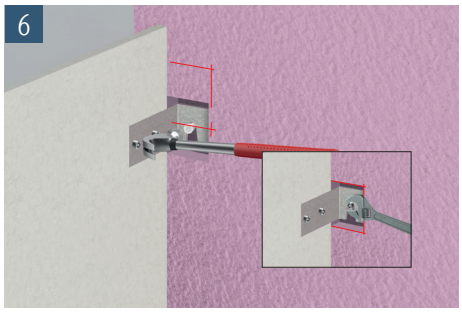
The light shaft can now be set and fixed. Please observe the notes on transport and relocation in these assembly instructions.

3



Then mark the 2 or 4 holes so that they are aligned horizontally and centrally on the basement wall and there is a distance of at least 15 cm between the bottom edge of the light shaft or floor and the bottom edge of the window. Then you can drill and clean the holes When mounting on insulation, cut out the recesses for the fixing brackets from the insulation after drilling

6



Using the hammer, the heavy-duty anchors can **then be set in concrete walls** and the screws tightened alternately with the socket spanner. When installing on **brick walls**, the installation kit with sleeve, threaded rod and installation mortar must be used. In addition, a load-bearing substrate or a strip foundation must be provided. For the minimum requirements for bricks see below.

Minimum requirements for bricks when using the installation kits 375144 and 375145 and the injection mortar 375146

- Solid bricks
  > Mz 12
- Solid lime sandstone
  > KS 12
- Solid brick made of lightweight concrete
  > V4
- Vertically perforated bricks
  > HLz 12
- Perforated lime sand brick
  > KSL 12
- Hollow block of lightweight concrete
  > HBl 4
- Autoclaved aerated concrete
  > G4 (Compressive strength > 4 N/mm2)