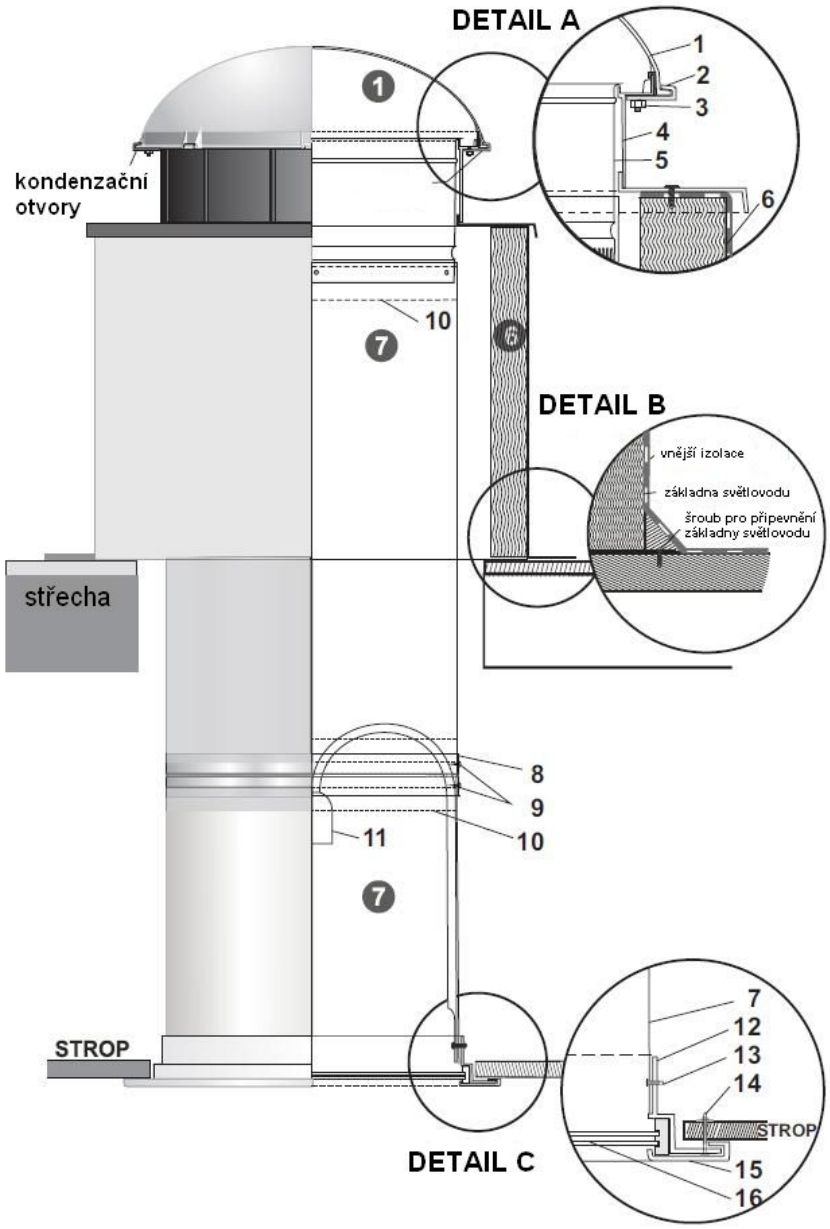
INSTALLATION INSTRUCTIONS (for a flat roof)

Tubular Light Tunnel ALLUX 250, 350, 550 (version **ALLUX Flexi** or **ALLUX Plus)**



1. Dome (unbreakable polycarbonate)
2. Dome fixture
3. Nut for attaching the dome
4. Roof frame with sheeting
5. Upper reflective ring
6. Insulated base (cuff) of the light tunnel (delivery by ALLUX or construction)
7. firm mirror tube Plus (or flexible tube Flexi)
8. Connecting ring between mirror firm tubes Plus
9. Screws for attaching the mirror Plus tube to the connecting ring
10. Polyvinyl silver tape
11. Bulb holder (light kit – optional accessory)
12. Ceiling frame – white, circular
13. Thread-cutting screw for mounting the mirror Plus tube (or for mounting the bottom reflective ring for the Flexi tube) to the ceiling frame
14. Anchoring and screw for mounting the ceiling frame (or only mounting foam for concrete ceilings)
15. Ceiling diffuser cover – white, circular
16. Double ceiling diffuser (acrylic glass) with rubber seal

INITIAL COMMENTS

In order to achieve the optimum use of the characteristics of the ALLUX light tunnel as well as maximum efficiency, the following principles must be observed during the installation:

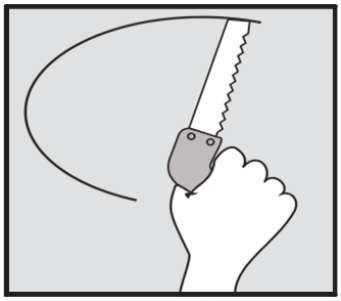
- Place the dome on the most sunlit part of the roof, make sure to omit shaded areas (if you have a roof with a slight incline towards the north, we recommend wedging the base into a flat plane – see Annex 2 to the Installation Instructions)
- Lead the light tunnel tube in the shortest and simplest way possible (the shorter and straighter the tube, the greater the amount of light)
- Mount the tube so that it is naturally tight (applies only to the flexible tube Flexi)
- During installation, remove film from elements protected by film - from all parts !!

(Unremoved film in an installed light tunnel may cause permanent damage to light guiding elements)

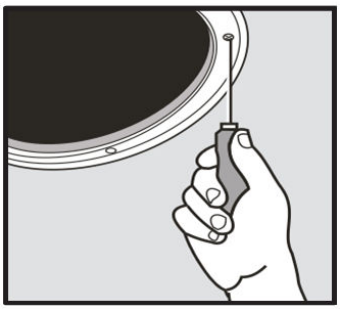
- Install according to the installation instructions

In the case of non-standard installation, which is not specified in these installation instructions, contact ALLUX – STAV s.r.o., phone: +420 281 865 636 email: info@allux.cz website: http://www.svetlovod.cz/en/

1. BOTTOM PART OF THE ALLUX LIGHT TUNNEL



A. Select a spot for installation of the light tunnel on the ceiling; in the case of beamed ceiling, it must be an opening between the beams.
Select the diameter of the opening according to the type of the light tunnel - see Table 1



B. Cut an opening in the indicated location. When cutting the opening in a concrete ceiling, it is required to consult a building designer.

C. Using the included clips and screws (14) attach the ceiling frame (12) in the cut-out opening.

Table 1:

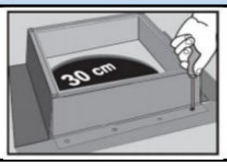
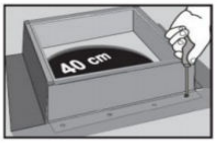
Type of the light tunnel (diameter in mm)	**Circular opening in the ceiling (plasterboard ceiling)**	**Circular opening in the ceiling (cassette ceiling)**	**Circular opening in the ceiling (concrete ceiling)**
ALLUX 250	diameter 260 mm	diameter 260 mm	diameter 300 mm
ALLUX 350	diameter 385 mm	diameter 385 mm	diameter 400 mm
ALLUX 550	diameter 585 mm	diameter 585 mm	diameter 600 mm

2. TOP PART OF THE ALLUX LIGHT TUNNEL

A. Mark and cut out an opening with the corresponding diameter in the roof according to the type of the light tunnel - see Table 2:
The opening in the roof should be a perpendicular projection to the opening in the ceiling. The opening in the roof can be round or square.

Check that the process of making the opening in the roof did not affect the statics of the roof (or consult with a designer).

Table 2:

světlovod	kruhový otvor nebo čtvercový otvor ve střeše	
ALLUX 250	prům. 300 mm	
ALLUX 350	prům. 400 mm	
ALLUX 550	prům. 600 mm	

světlovod = light tunnel
kruhový otvor nebo čtvercový otvor ve střeše = circular opening or square opening in the roof
prům. = diameter

B. Place the base (cuff) of the light tunnel (6) on the opening in the roof.

The height of the base supplied by ALLUX is 30 cm or 60 cm. We select the height of the base with regard to the area of installation (snow zone) and with regard to the depth of sinking of the base into the composition (thermal insulation) of the roof cladding. Layout dimensions of the bases - see Annex 1 of the Installation Instructions

Base - standard design (delivery ALLUX):

- height 30 cm
- mineral insulation thickness 6 cm
- use - if the base is not sunk into the composition (thermal insulation) of the roof cladding

Base - raised design (delivery ALLUX):

- height 60 cm
- mineral insulation thickness 6 cm
- use - when the base is sunk in by no more than 30 - 40cm into the composition (thermal insulation) of the roof cladding

C. Place the base (cuff) symmetrically with respect to the opening. Align the base using wedges or pads to flat plane and then screw onto the roof structure – see Annex 2 of the Installation Instructions. Wedges or pads are not included with the light tunnel. Select appropriate wedges with regard to the incline of the roof.

The base can be anchored only on a hard surface of the roof, not on unsteady thermal insulation of the roof !!!

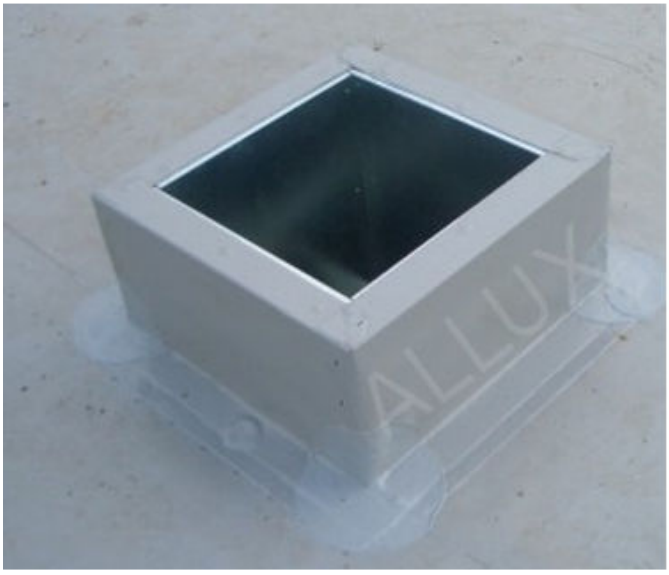
D. Insulate the base from the **outside using a steamproof film** – see Fig.1. The steamproof film must be always pulled above the level of the composition (thermal insulation) of the roof cladding.

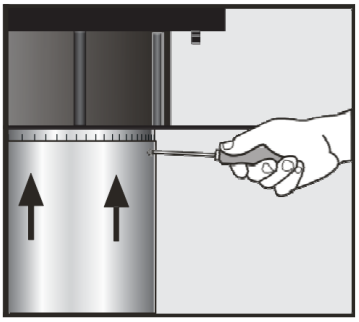
E. After that, insulate the base from the outside **with the final waterproofing against moisture and water (e.g. PVC foil).** The waterproofing must overlap the upper surface of the base of the light tunnel - see Fig. 2.

F. The overlap of the final insulation must not create bumps in the corners of the upper surface of the base. We recommend cutting the waterproofing in the corners of the base to 45 degrees and then attaching it to the upper edge of the base.

Fig. 1

Fig. 2





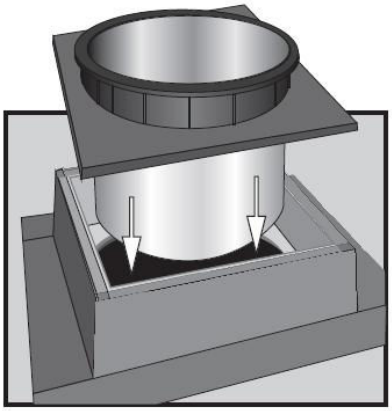
G. Mount the light tunnel tube to the top ring (5) of the roof frame:

- **For firm Plus tubes:** attach the prepared module of the firm tube using screws, wrap the included polyvinyl silver tape (10) over the connection; for more information see Part 3.1. of the Installation Instructions.

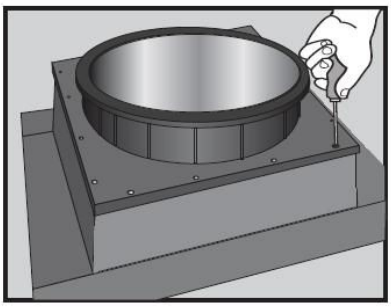
- **For flexible Flexi tubes:** measure the length of the tube that connects the roof part with the bottom roof part, set the tube on top of the upper ring (5), wrap the connection with the polyvinyl silver tape (10) and tighten using the tightening strip, finish the second part of the tube with the bottom ring - for more information see Part 3.2.

H. We recommend to wrap the tube in the upper part along the length of about 30-60 cm (depending on the height of the base) with mineral wool and to tighten it using the polyvinyl tape.
This way, you will limit the likelihood of condensation on the tube.

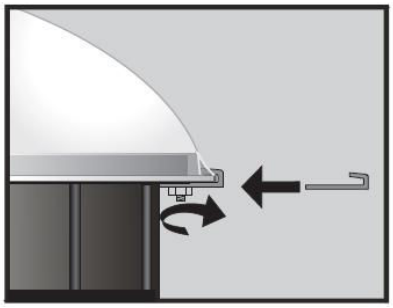
If technically feasible, try to wrap the tube with mineral wool along the entire length or along the longest part of the tube.



I. Place the roof part (frame) of the ALLUX light tunnel on the base together with the installed light tube. The condensation openings must be in the bottom part aligned with the incline of the roof (for slightly sloping roofs).



J. Attach the roof part of the ALLUX light tunnel to the base using screws with seals. The contact surface between the base and the roof part of the ALLUX light tunnel should be provided with a waterproof sealing tape, or bitumen (silicone) sealant (not included) should be applied.

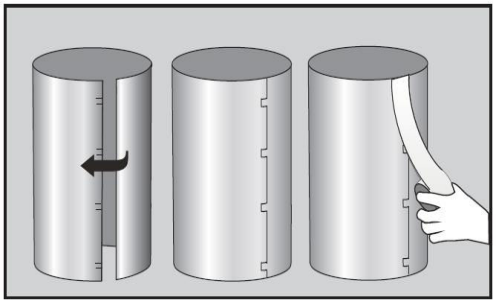


K. Fit the dome (1) onto the roof frame (4) so that the mounting openings in the dome cover the protruding screws. Insert the dome fixtures (2) and screw them on using the included nuts (3). Gently tighten the nuts.

ATTENTION! *Do not clean the dome using agents containing alcohol, petrol, nitro.*

During installation of the roof part and the dome, it is necessary to remove the protective film from the reflective ring (5) which is located inside the roof frame of the ALLUX light tunnel. After removing the film from the reflective ring, make sure not to make its inside (reflective) side dirty.

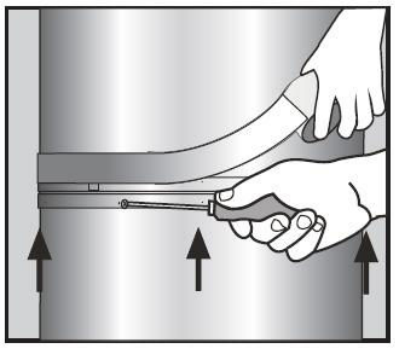
3.1.a) FIRM LIGHT TUBE (PLUS tube)



A. Remove the protective film from the light tube. During the installation, keep the inside (reflective) part clean.

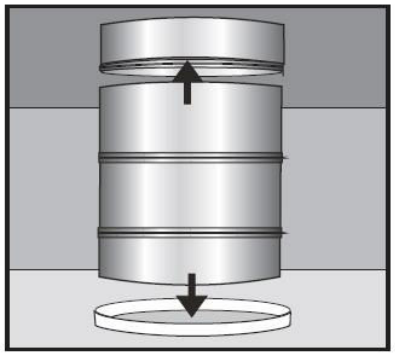
Connect the light tube (61 cm module) by inserting the edge into the slits.

B. Tape the area of connection of the tube using the polyvinyl silver tape (10).

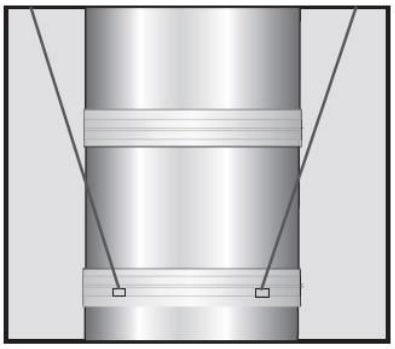


C. In order to reach the desired length of the light tube (connecting the upper ring (5) with the roof frame (12), connect the appropriate number of tube modules (61 cm) using connecting rings (8) and by trimming the last (bottom) module to the desired length.

The connection consists in inserting the light tubes into the connecting ring (8) and screwing them on. Then, seal the connection using the polyvinyl silver tape.



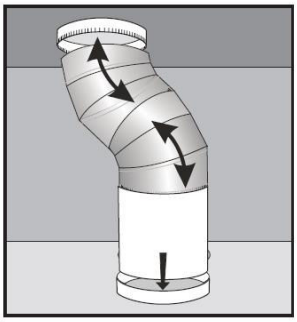
D. Connect the upper tube module (mounted into the roof frame) with the roof frame (12) using the prepared set of tubes.



E If you are using multiple modules of the tube, we recommend to make the connected tubes more sturdy by using their suspension on cords attached to the roof structure (cords are not included).

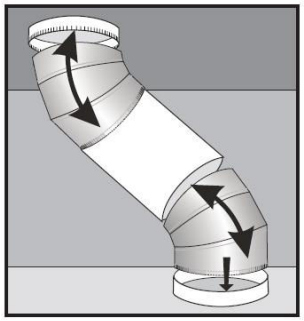
Attach (screw) the cord on the tube in the connecting ring (8).

3.1. b) ELBOW (from the Plus tube)



In the case that it is not possible to cut out the roof and ceiling openings in one axis (vertical), use the Plus elbow.

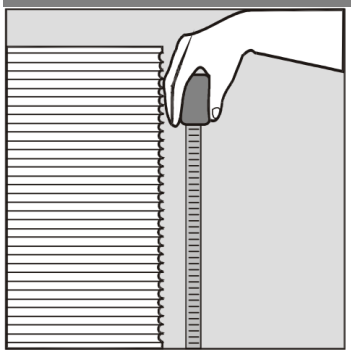
The angle of inclination of each Plus elbow is in the range of 0°-65°. Usually, it is necessary to use 2 Plus elbows (elbow from a mirror tube).



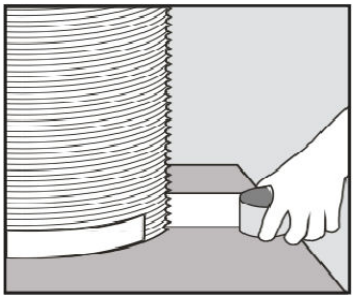
Optionally, you can use the Flexi elbow, for more information see part 3.2. of the installation instructions "Flexi Tube", or a combination of the Plus elbow and the Flexi elbow. The flexible tube will make the installation easier.

***ATTENTION**! Determine the required angle of incline of the elbow before ordering.*

3.2. FLEXI LIGHT TUBE (flexible tube)



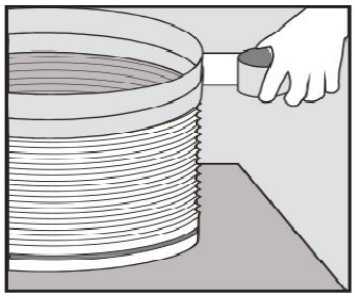
A. . Measure the distance between the roof opening and the roof frame (12) taking into account the bend of the tube. Cut the Flexi light tube to the desired length. Cut through the tube with a knife, separate the steel wound wire using cutting pliers.



B. Push one end of the Flexi light tube onto the upper ring (5) of the roof frame while two or three structural wrappings of the tube must be placed above the groove.

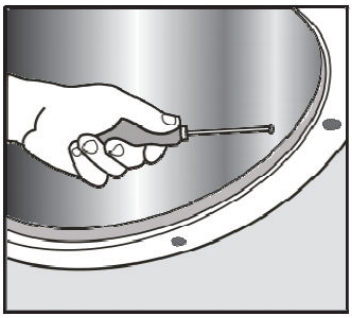
C. Wrap the polyvinyl silver tape three times around the connection point and the groove under the tightening strip.

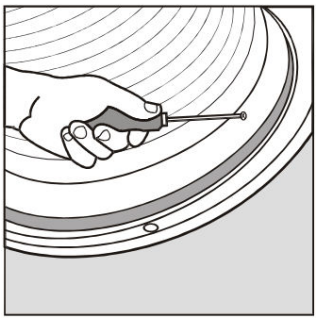
D. Put the tightening strip on the groove and tighten firmly.



E. Put the other end of the light tube on the bottom ring and attach it using the polyvinyl silver tape which must be wrapped around the ring at least three times.

4. BOTTOM PART OF THE ALLUX LIGHT TUBE

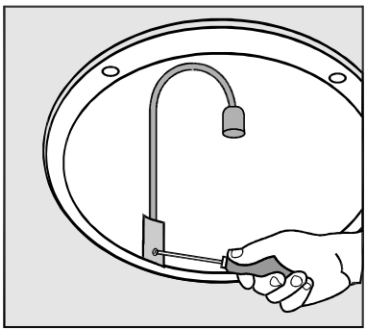




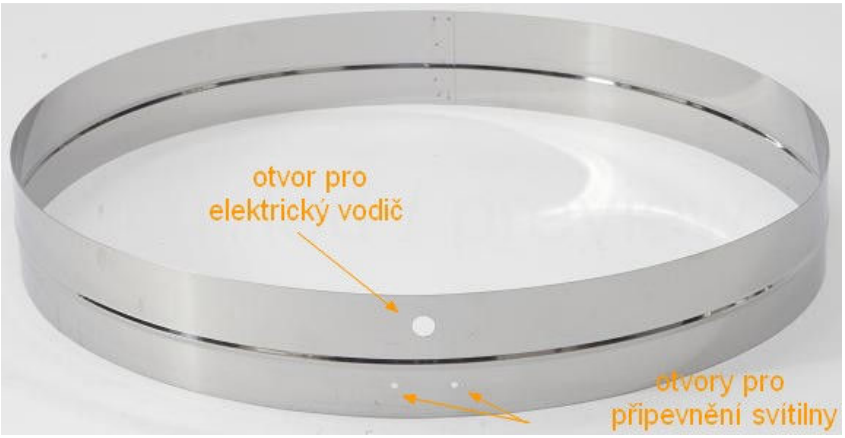
A. Insert the bottom part of the Plus light tube (or the bottom ring (14) in the case of the flexible Flexi tube) into the ceiling ring (12) and attach it using screws.

Attention!! *Remove the protective film from the inside of the bottom and upper rings*

5. OPTIONAL ACCESSORIES - Light kit (bulb holder)



A. Install the light kit (11) inside the light tube 5 cm from the edge of the ceiling frame. The light kit must be attached to the bottom reflective ring into preformed openings. Thread-cutting screws are necessary for the installation. In the case of a firm Plus tube, it is also necessary to use the bottom ring with preformed openings.



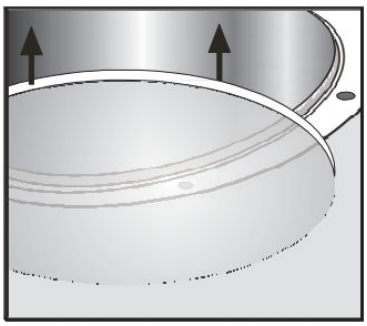
B. Connect the wire from the lighting unit holder to existing electrical wiring.

WARNING! !
Such connection to the electrical wiring should be performed only by an authorised person. Only use energy efficient light bulbs (fluorescent lamps) or LEDs that emit less heat than incandescent light bulbs.

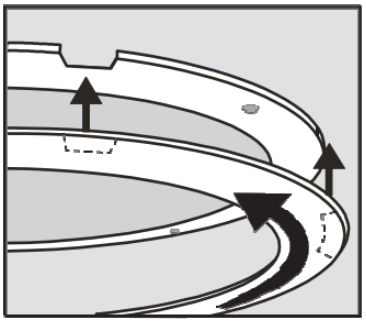
Light bulbs are not included.

otvor pro elektrický vodič = opening for an electrical wire
otvory pro připevnění svítilny = openings for attaching the lighting unit

6. INSTALLATION OF A DIFFUSER OF THE ALLUX LIGHT TUNNEL

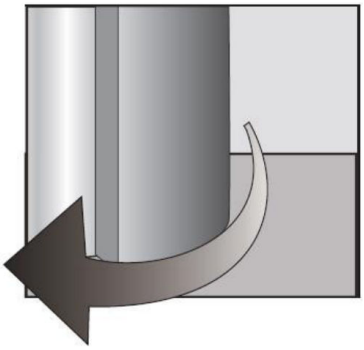


B. Place the set of diffusers in the seal (16) into the opening in the ceiling white circular frame.



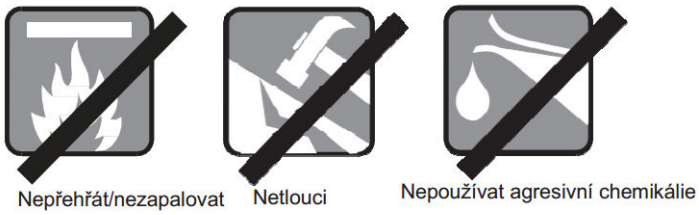
C. Place the ceiling cover (15) on the roof frame (12) so that the tabs of the ceiling cover fit into the openings in the ceiling frame (12). Push and fasten by turning right or left (make sure that all tabs are fastened).

7. INSULATION OF THE TUBE



A. To ensure better thermal insulation, we recommend insulating the light tube and elbow using a mineral wool slab with a thickness of no more than 50 mm. To attach the mineral wool, just use the polyvinyl silver tape (wrapped around the tube).

If you use a thicker mineral wool, we recommend not to attach it to the tube, but instead to attach it from the inside as a "stack" (e.g. from OSB boards) built around the tube so that there is no load on the tube.



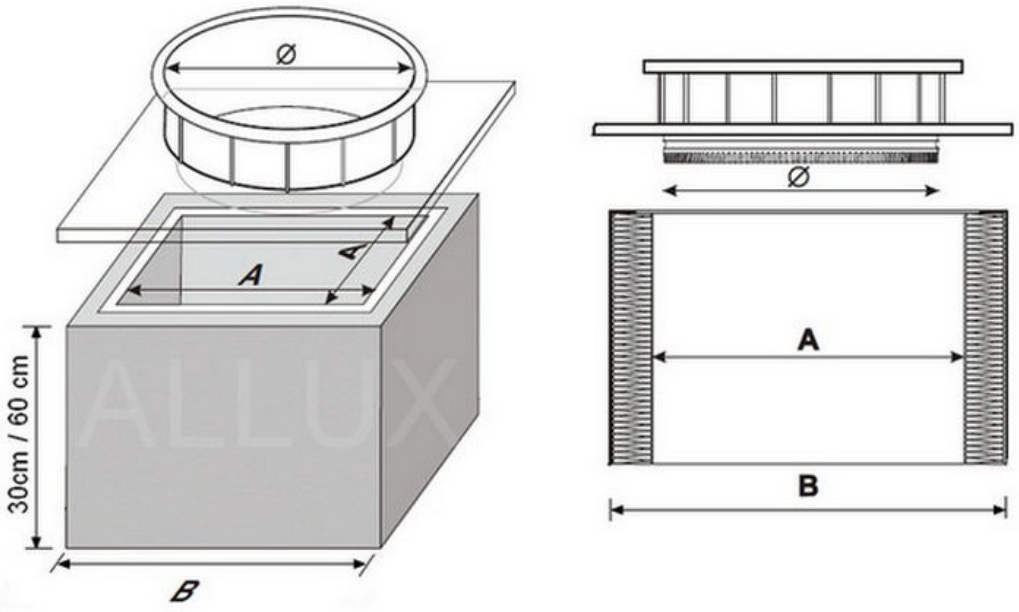
nepřehrát/nezapalovat = do not overheat / do not ignite
netlouci = do not use a hammer
nepoužívat agresivní chemikálie = do not use aggressive chemicals

In the case of non-standard installation, which is not specified in these installation instructions, contact ALLUX – STAV s.r.o., phone: +420 281 865 636 email: info@allux.cz website: http://www.svetlovod.cz/en/

Annex 1

Base - Layout Dimensions

světlovod	vnitřní rozměr "A" základny v mm	vnější rozměr "B" základny v mm
ALLUX 250	300 x 300	420 x 420
ALLUX 350	400 x 400	520 x 520
ALLUX 550	600 x 600	720 x 720
ALLUX 850	920 x 920	1040 x 1040



světlovod = light tunnel
vnitřní rozměr "A" základny v mm = inner "A" dimension of the base in mm
vnější rozměr "B" základny v mm = outer "B" dimension of the base in mm

Annex 2

Placing the base underneath the ALLUX light tunnel on a slightly sloping roof with waterproofing