

Polycarbonate barrel vault skylights
Polycarbonate continuous skylights
ESKADE -SYSTEM

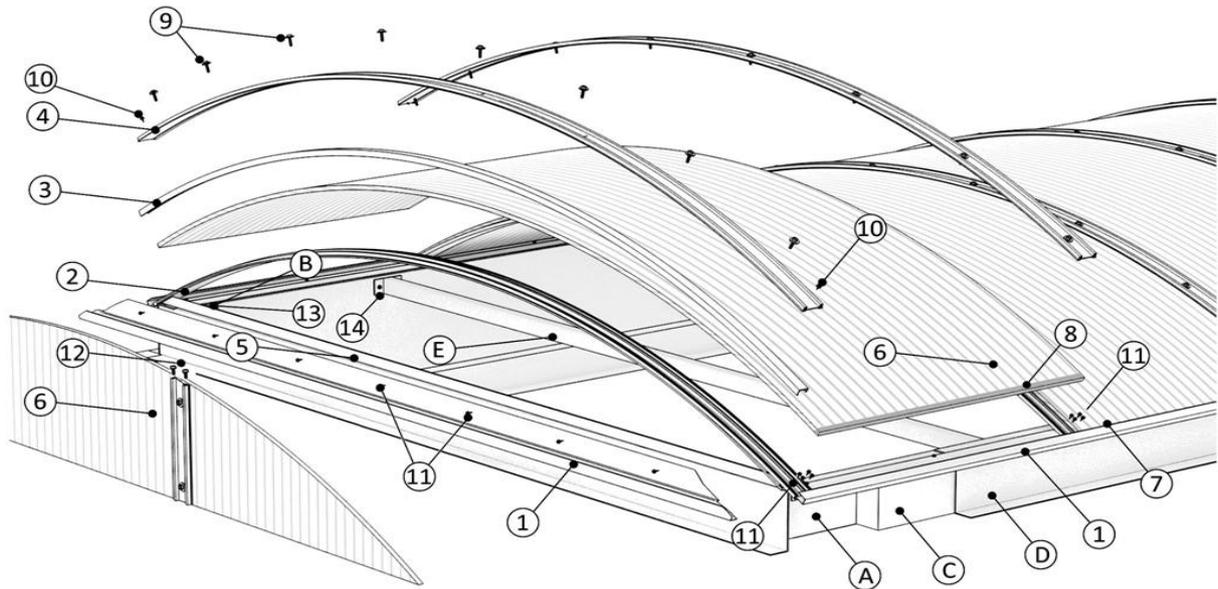
assembly instruction no. 4/2014



ESKADE-SYSTEM
Jan Duerschlag
Address:
44-203 Rybnik
ul. Boguszowicka 69a
www.eskade.pl

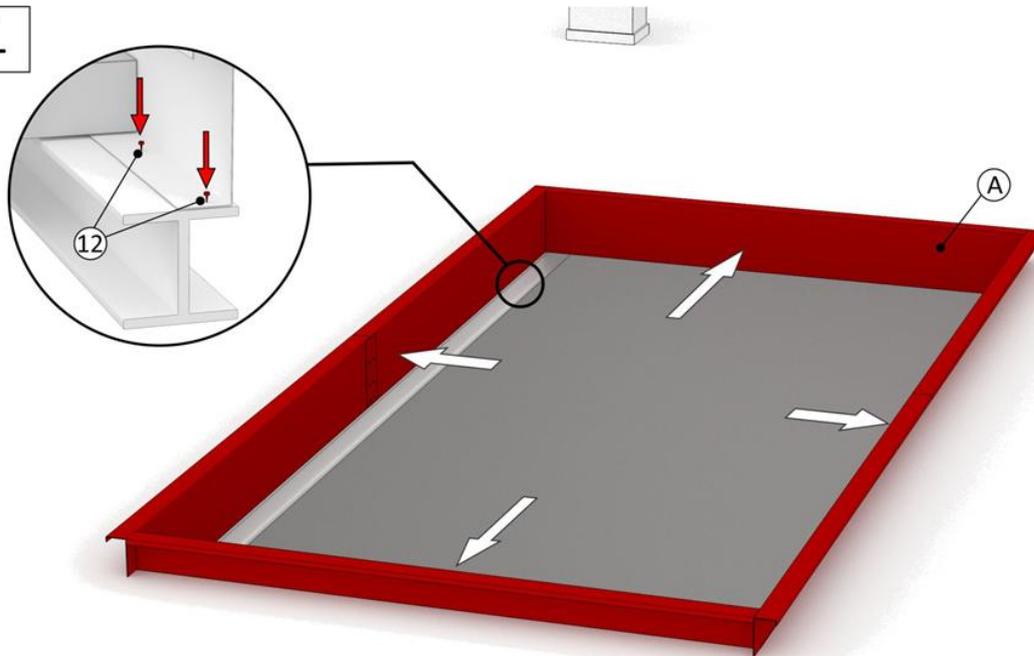
tel/fax
32 42 21 521, 32 42 26 064
32 42 34 073, 32 42 38 955
e-mail: eskade@eskade.pl

VAT ID no. **642-103-58-90**
Regon: 276979406
Bank account: PEKAO o/ Rybnik
19 1240 4357 1111 0000 5326 8176

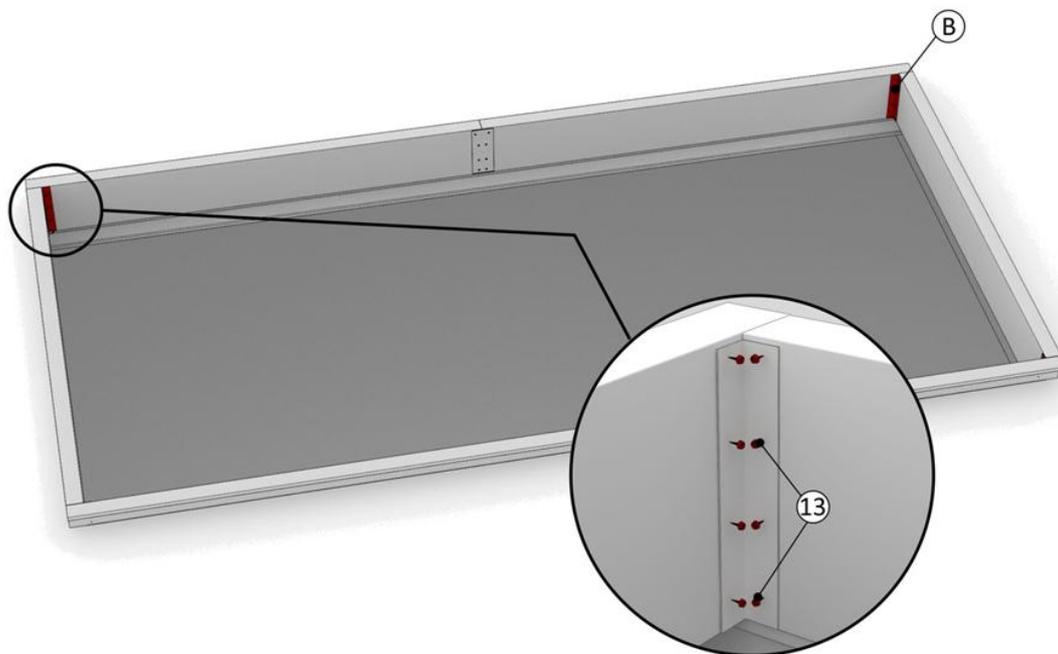


| Skylight | | | Skylight base (optional) | | |
|----------|---|--|--------------------------|---|-------------------------------------|
| 1 |  | aluminum profile E-2126 or E-1035 side profile | 13 |  | self-tapping screws with EPDM discs |
| 2 |  | aluminum profile E-2087 vault profile | 14 |  | machine screw with nut |
| 3 |  | aluminum profile E-2136 distancing clip | A |  | base - zinc coated steel sheet |
| 4 |  | aluminum profile E-2088: edge + "B" gasket | B |  | base connectors |
| 5 |  | aluminum profile angle bar | C |  | base insulation |
| 6 |  | polycarbonate sheet | D |  | sheet trim or asphalt trim |
| 7 |  | "A" gasket | E |  | inner base spacers |
| 8 |  | vapour-permeable film and vapour-proof film | | | |
| 9 |  | self-tapping bolts with EPDM discs, X or Y | | | |
| 10 |  | self-tapping screws with EPDM discs | | | |
| 11 |  | self-tapping screws | | | |
| 12 |  | self-tapping screws | | | |

List of recommended tools: drill-driver, angle grinder, jigsaw, driller (optional), ring profile key (size higher than 19)

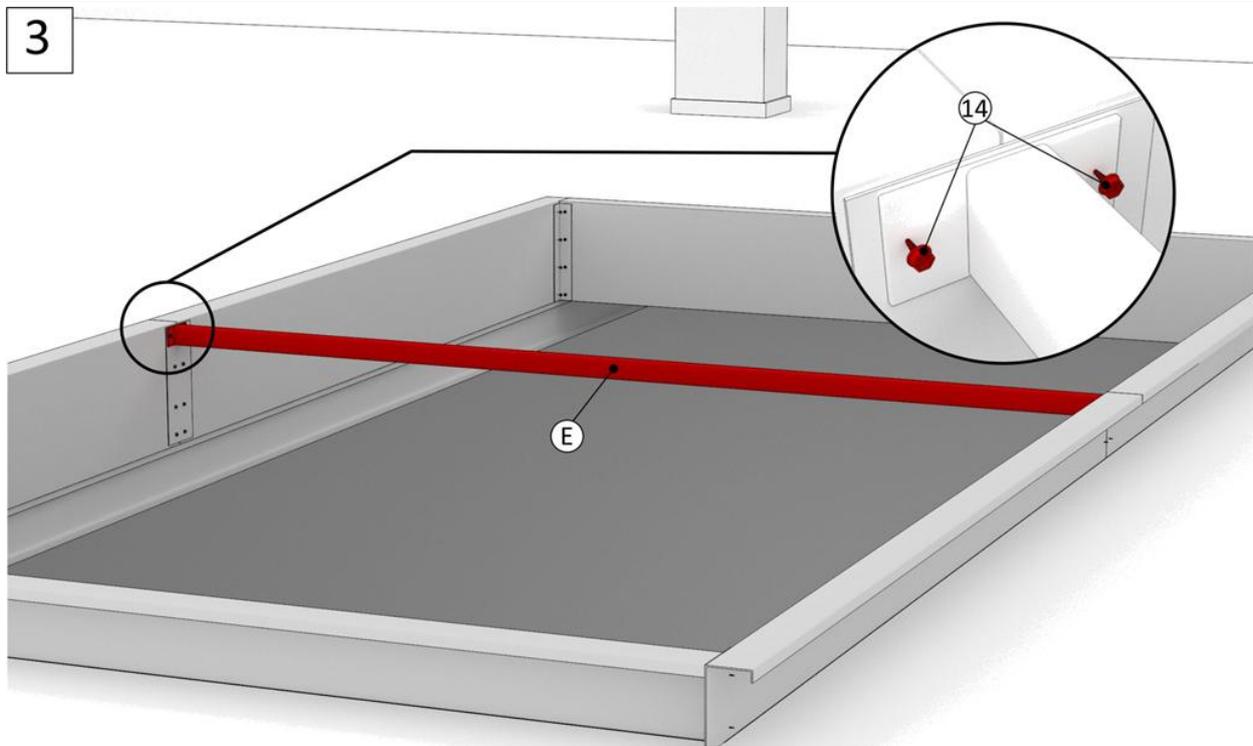
1

The installation of the skylight begins with assembling the base made of zinc coated metal sheet - it needs to be firmly attached to the roof. Please note that the base is not a self-supporting element so it must not be overladen. In the case when the base seems too limp, it should be additionally supported linearly. When assembling the base, pay attention to its diagonals - if uneven, they will hinder the correct installation of the skylight.

2

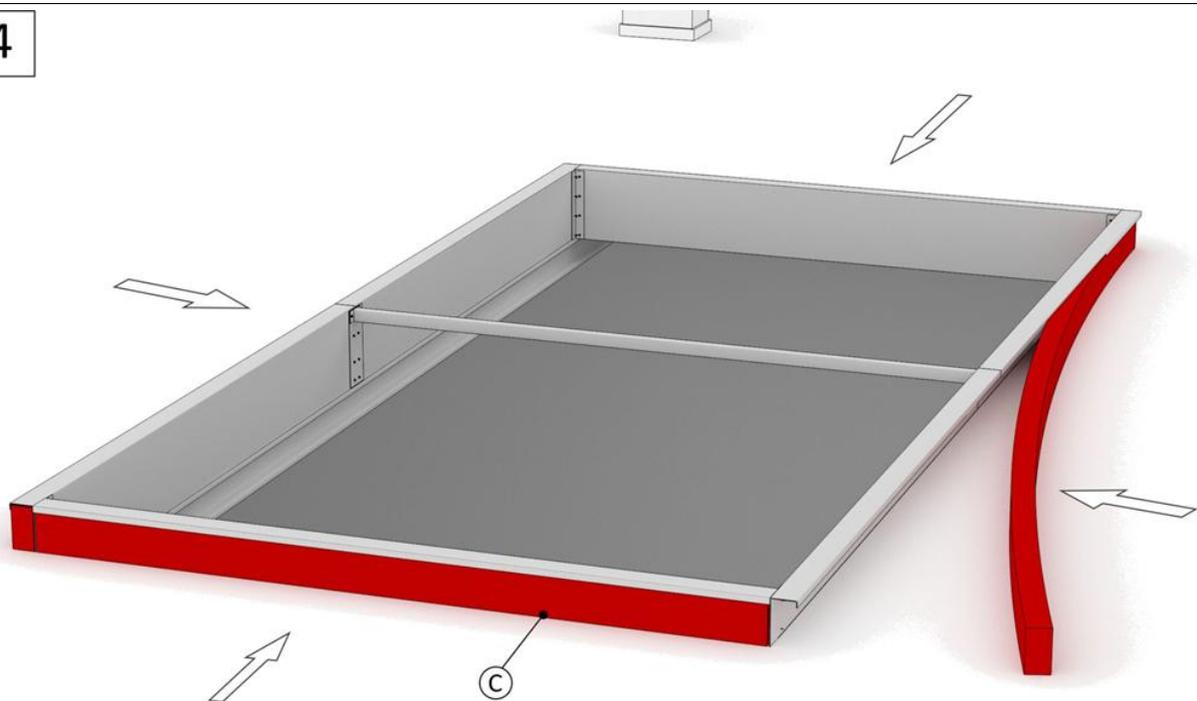
Reinforce the corners of the inner part of the base with sheet tin base connectors. It will help to assess whether the base is vertically straight and to correct its position if necessary. Screw the corners of the base with self-tapping screws. When using the drill-driver, make sure to adjust the drilling power correctly in order to avoid thread breaking or loose clamping of the elements.

3



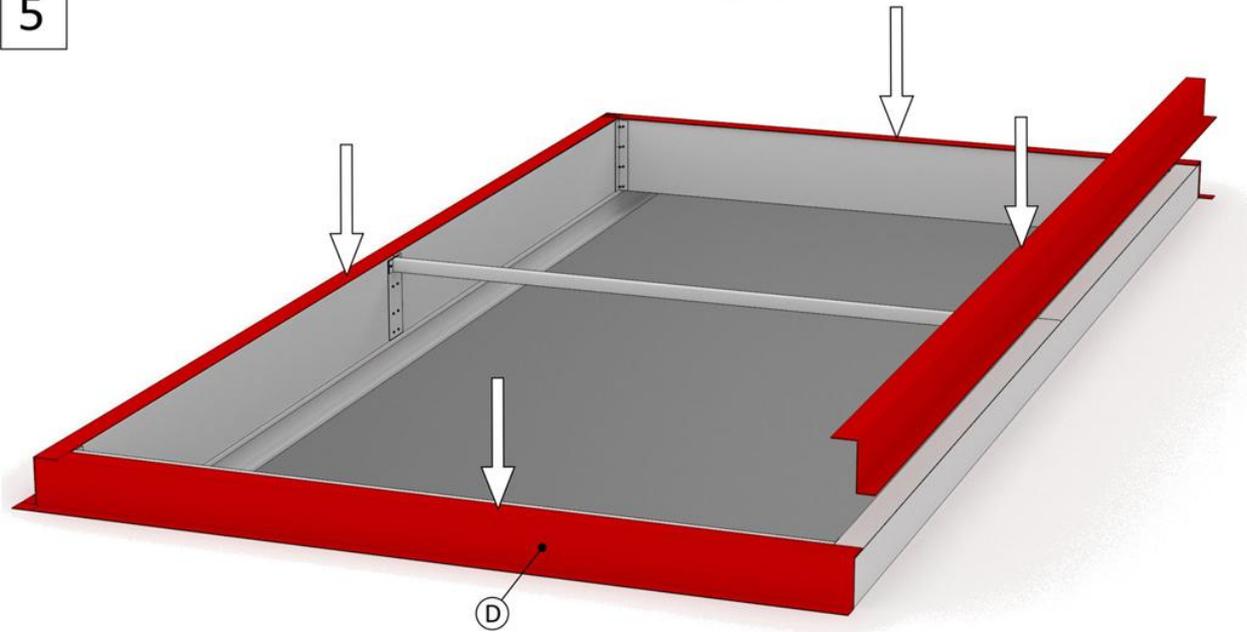
If necessary, metal spacers can be used in the inner part of the skylight base. This solution is optional and concerns mainly high bases and ones in which there is a high risk of buckling. The spacers should also be used in buildings where sudden changes of pressure occur. It is recommended that the skylight base should protrude 15 cm from the roof surface. In the case of larger skylight spans, the base should be higher because of the risk of leaks.

4



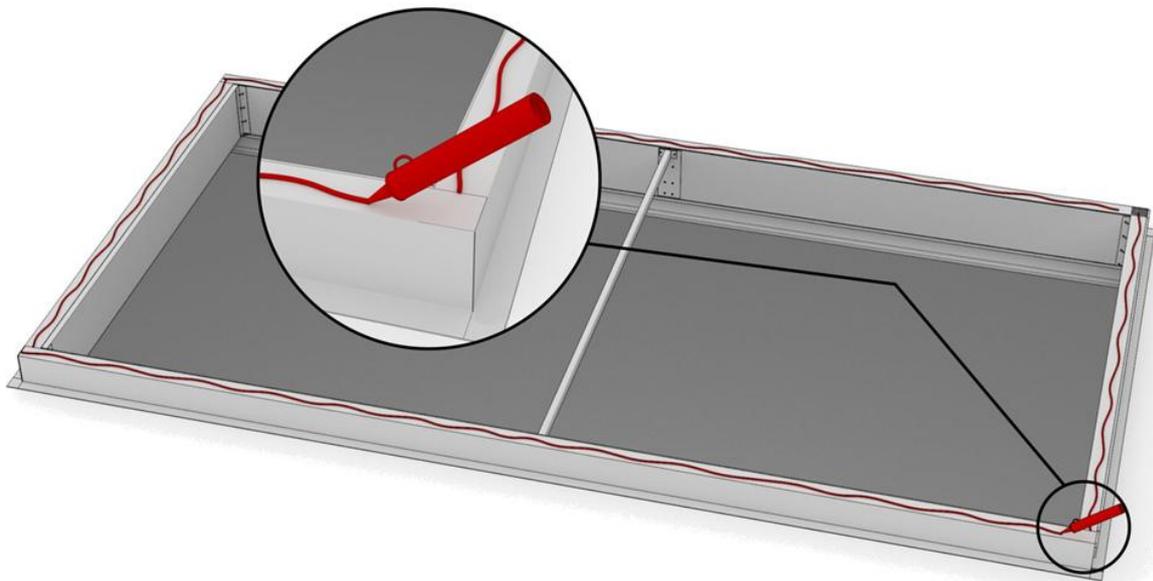
The base should be insulated with polystyrene foam or stone wool. Any resulting apertures should be filled with polyurethane foam. Skylight bases should not be insulated with slag wool because with time this material has a tendency of sliding down, which may result in the creation of thermal bridges. In such case, the dampness may distill and cause leaks. The use of hard polystyrene foam, on the other hand, firms up the skylight base.

5



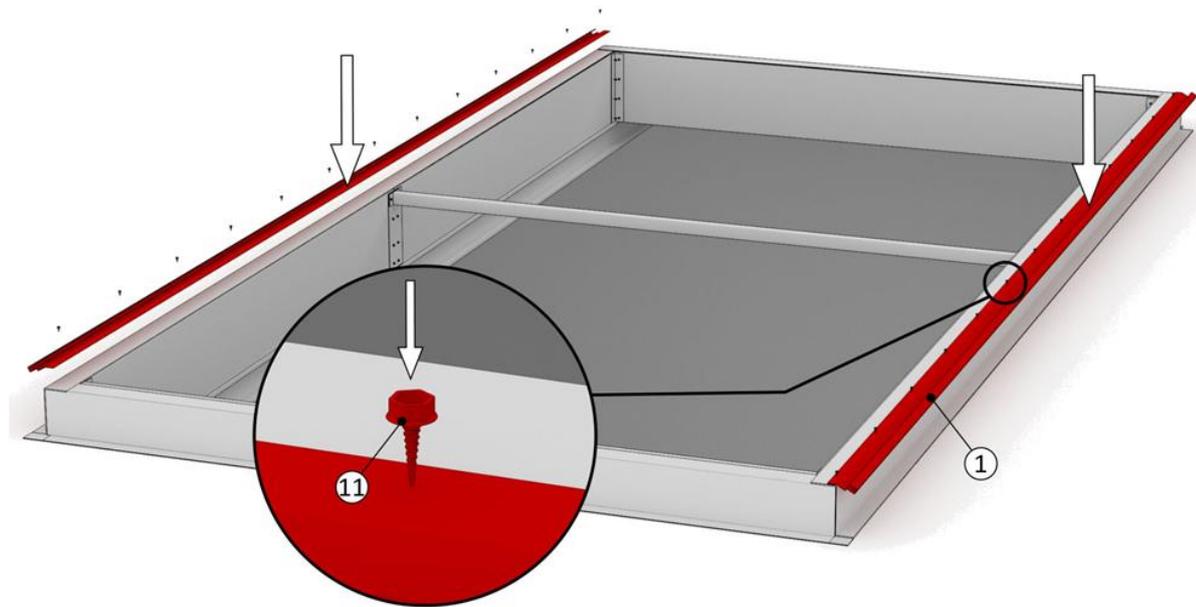
Once the base is correctly installed and insulated, it should be closed and caulked with sheet trims or trimmed with asphalt. Correct sheet overlaps should be minded during roofing, also in the case of asphalt or membrane roof covering. In order to increase the durability of the skylight base, it is worth to use trims made of coated sheet, aluminum or titanium zinc sheets.

6



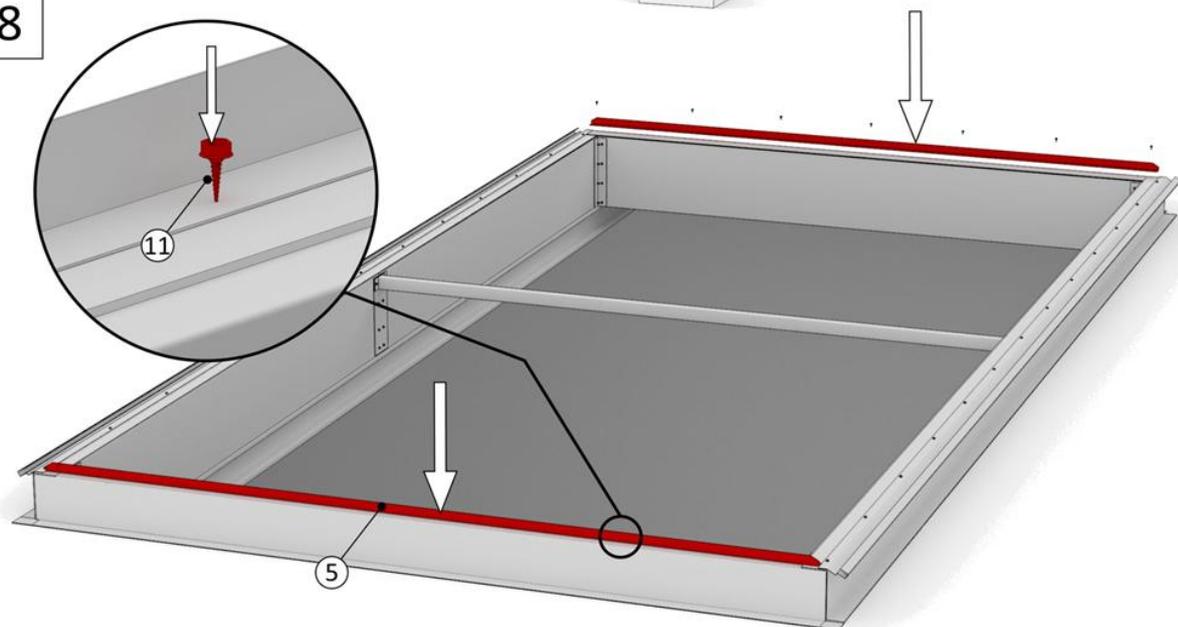
The outermost layer of the skylight base, which is usually made of zinc-coated steel sheet, should be isolated and additionally caulked before the installation of the skylight. The elastic material used for that purpose should have good insulating properties. If the base trims are made of durable materials, like aluminum or titanium zinc sheets, roofing glue can be used.

7



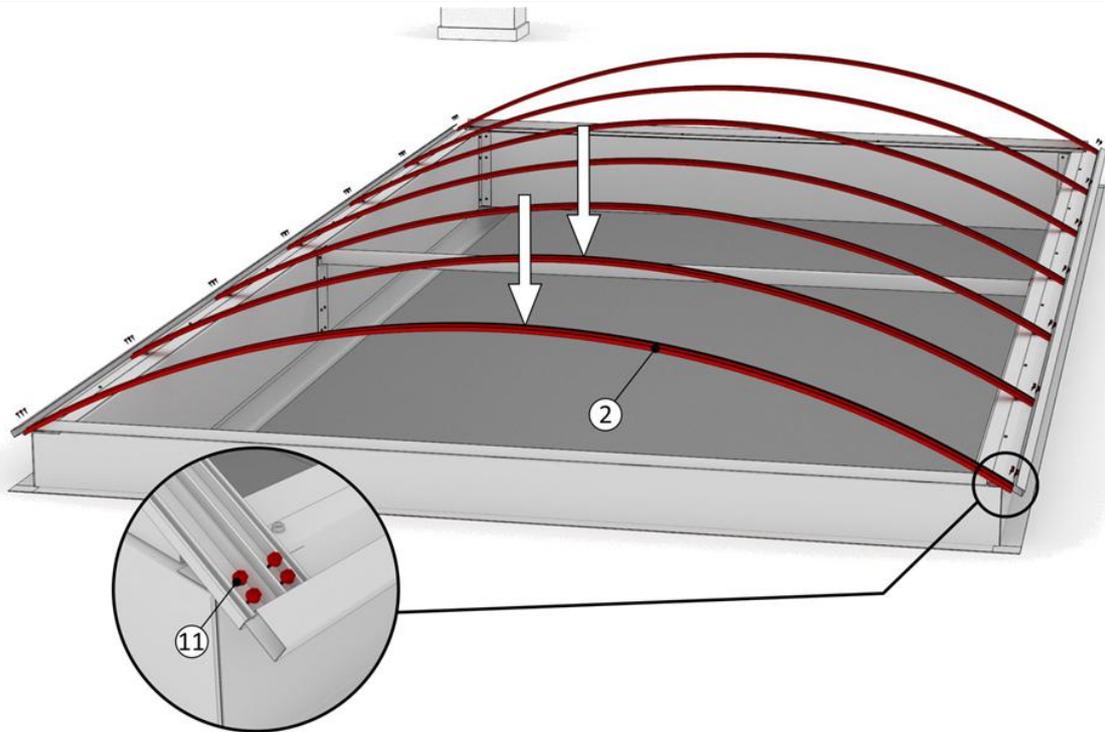
The side profiles - the envelopes - should be attached to the base by means of self-tapping screws and an "8" spanner. It is recommended to set an optimal torque of the drill-driver. The contact force on the screw should ensure firm clamping and should not cause the breaking of the thread that could loosen the connection between the elements of the base.

8



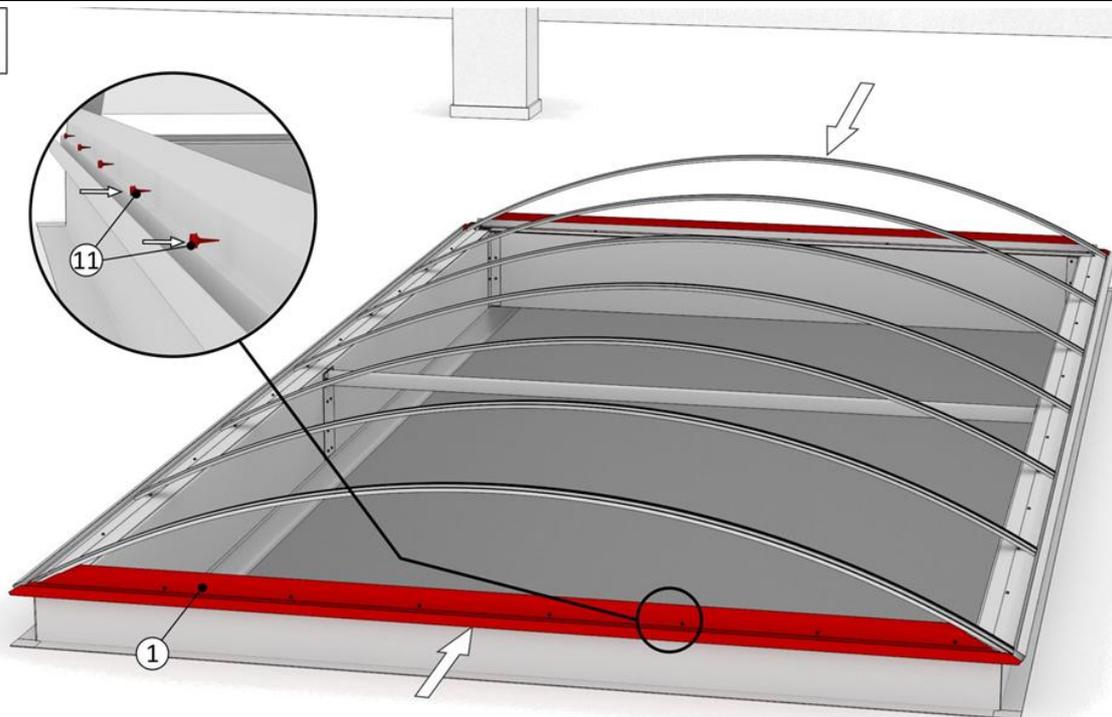
The installation of the angle bar which serves as the support for the vertical front sheet of the skylight. The angle bar can be used both as a continuous support or, in some cases, a single-spot support. It should be installed with self-tapping screws (no. 11) for which an "8" spanner is most commonly used.

9



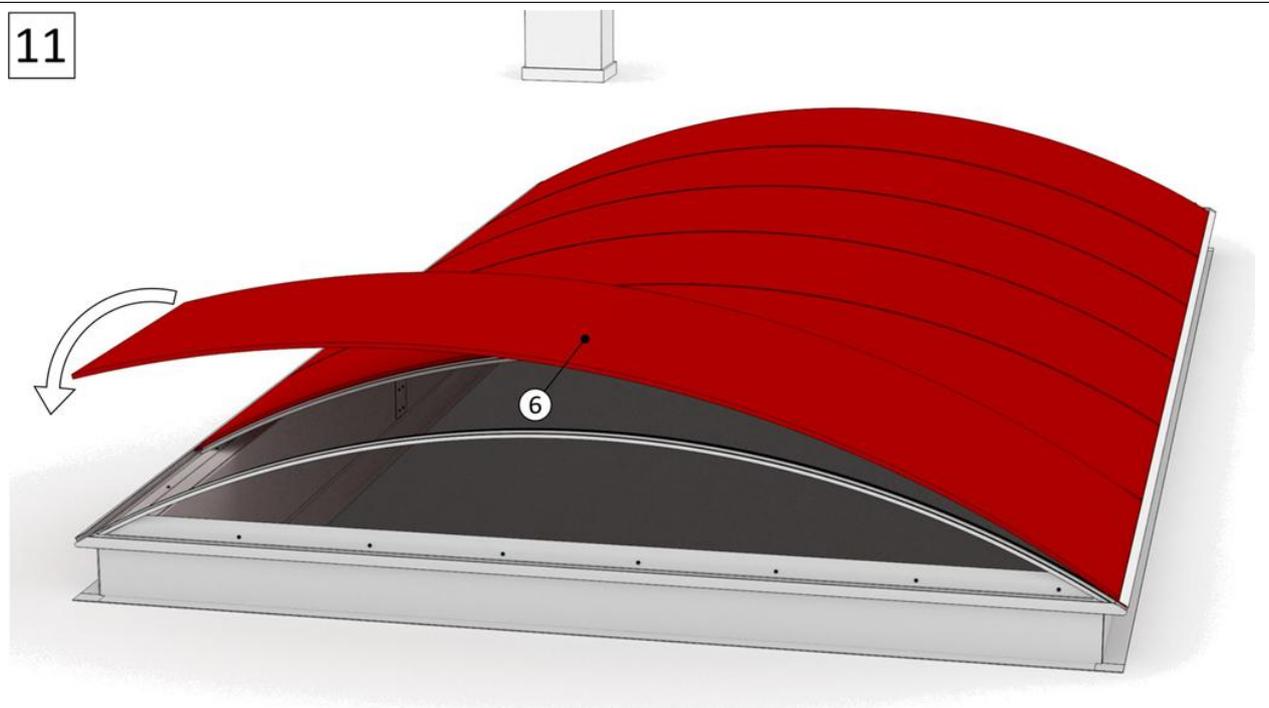
Before installing the lower vault profiles, it is necessary to mark their exact position that matches perfectly the width of the polycarbonate sheets. Otherwise it would be necessary to cut every sheet to a correct dimension, which would prolong and hinder the process of installation. It might even cause the polycarbonate sheets to run out before the installation is completed. For screwing in the screws, an "8" spanner is most commonly used.

10



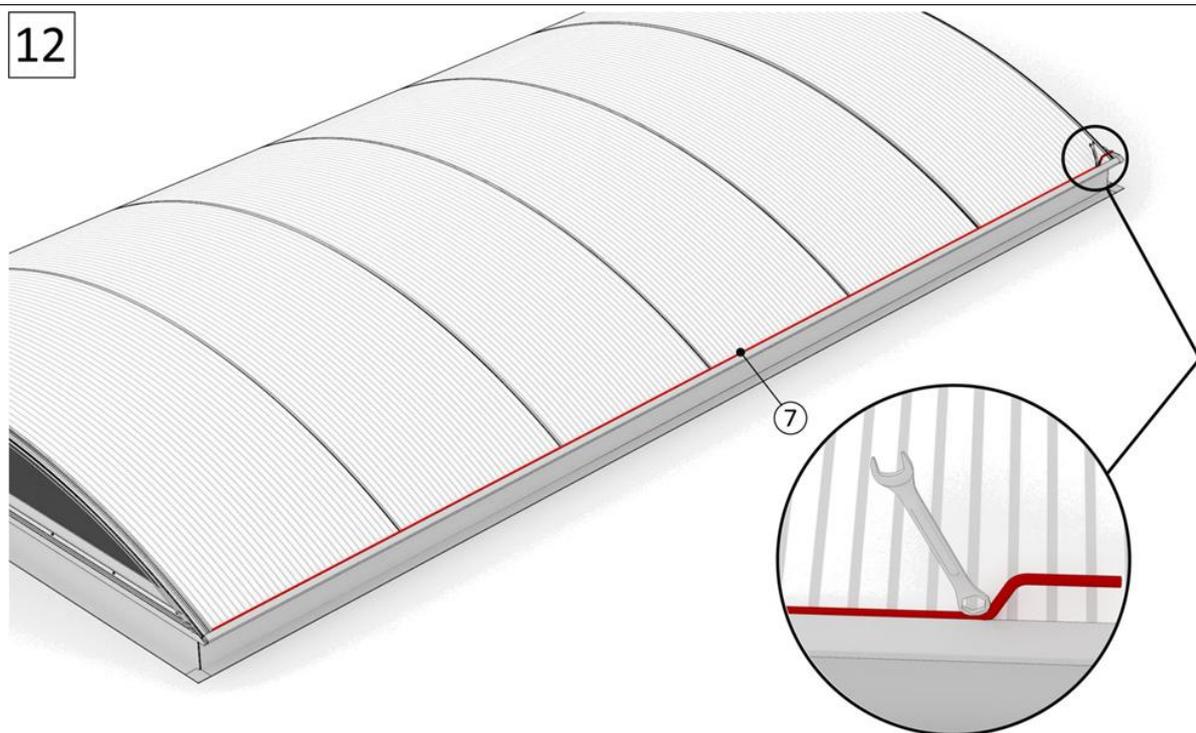
The installation of the front side profiles which create the support for the vertical front sheet of the skylight. It is necessary to drill the drainage holes in the lower part. The head and disc of the screws used should not be larger than 10 mm in diameter. In order to screw in the screws no. 11, an "8" spanner is most commonly used.

11



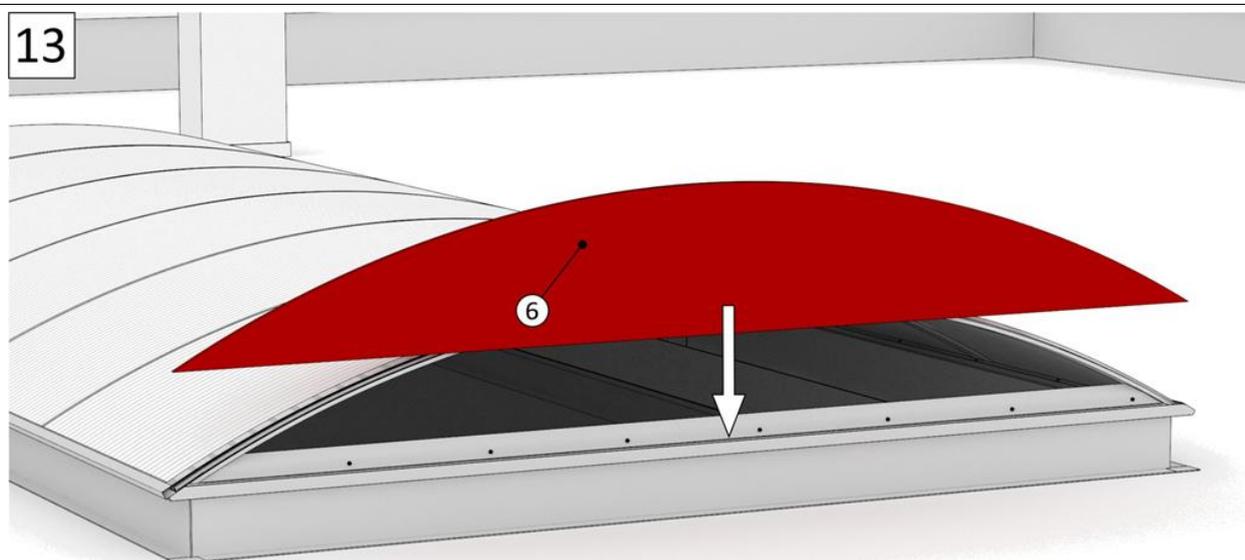
The installation of the polycarbonate sheets should begin with making sure which side should face the sunlight. The protective foil should be folded by 10 cm on each side of the sheet, which prevents it from getting in between the vault profile and the clamping profile. The protective foil should by no means be taken off completely at this point of the installation.

12



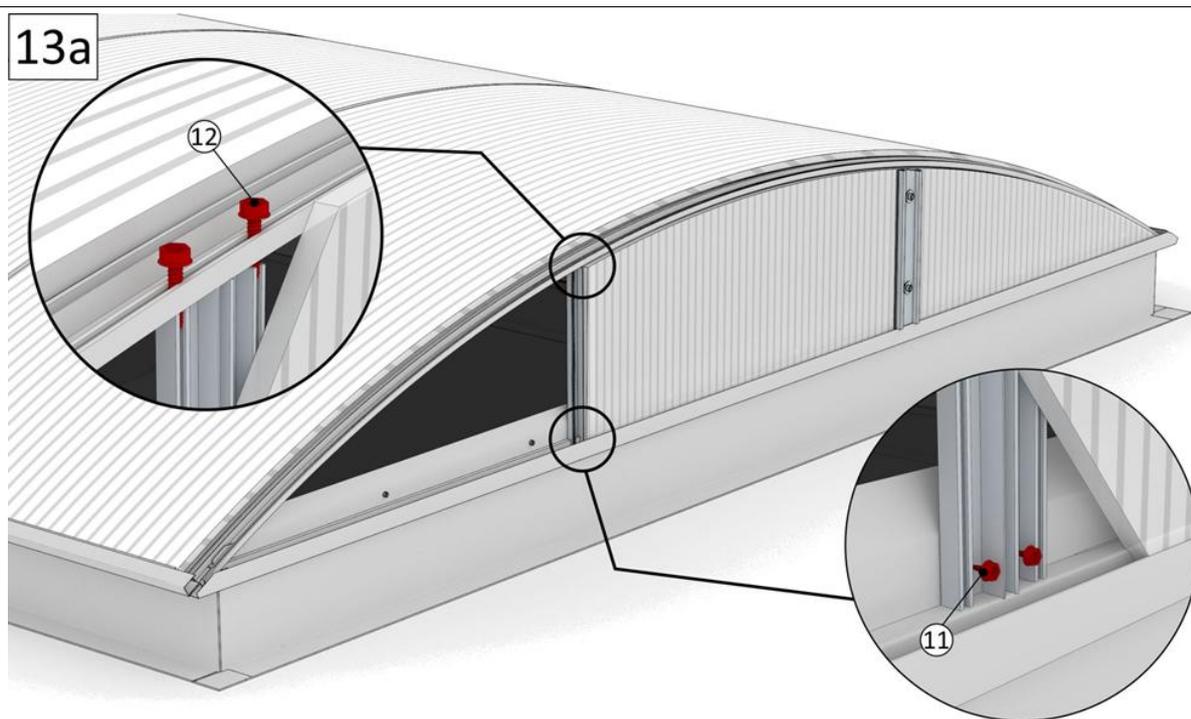
Installation of the "A" gasket around the skylight perimeter. Our gaskets are covered with a special substance, which facilitates the caulking. A common spanner is a helpful tool for this activity. The gaskets should be pressed with a force that makes their surface even with the protruding ends of the aluminum profiles. As noted above, the protective foil should by folded by 10 cm before the process of caulking begins.

13



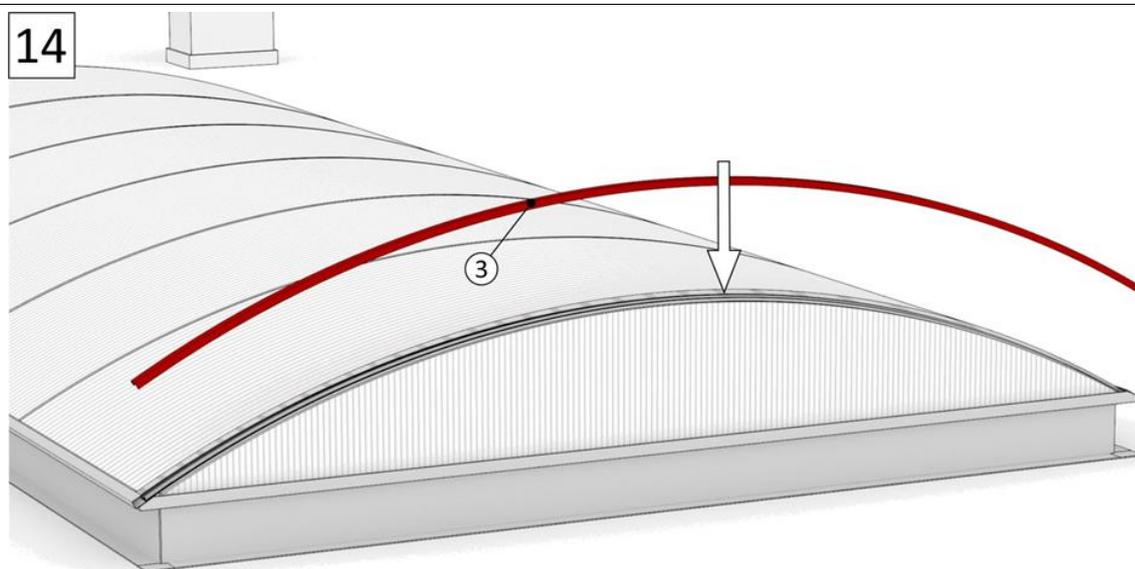
One-piece vertical front sheets of the vaulted skylight, without the vertical rafter. It is the most common solution for vaults whose span ranges up to 210 cm, although in some cases the vertical rafters might be used because of the material properties or for the purpose of greater stability.

13a



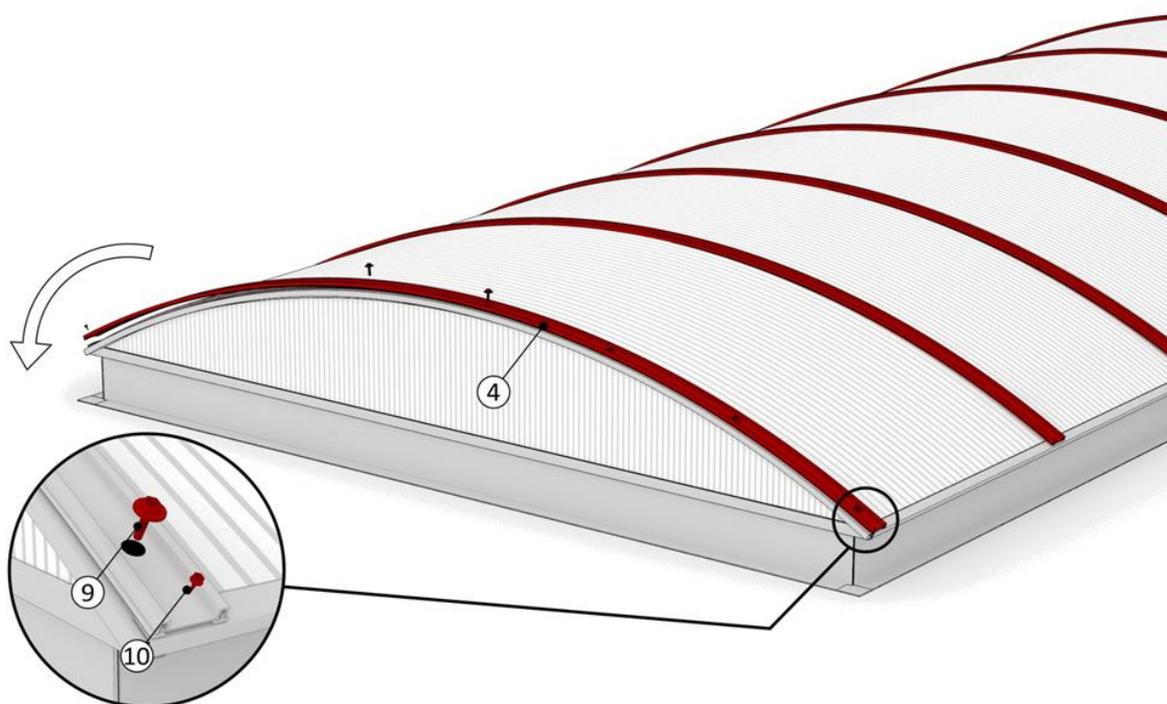
Installation of the vertical front sheets and vertical rafters. It is a common solution for skylights whose span ranges beyond 210 cm. In some cases, this solution is applied also for smaller skylight spans, when polycarbonate sheets of different intersection are used.

14



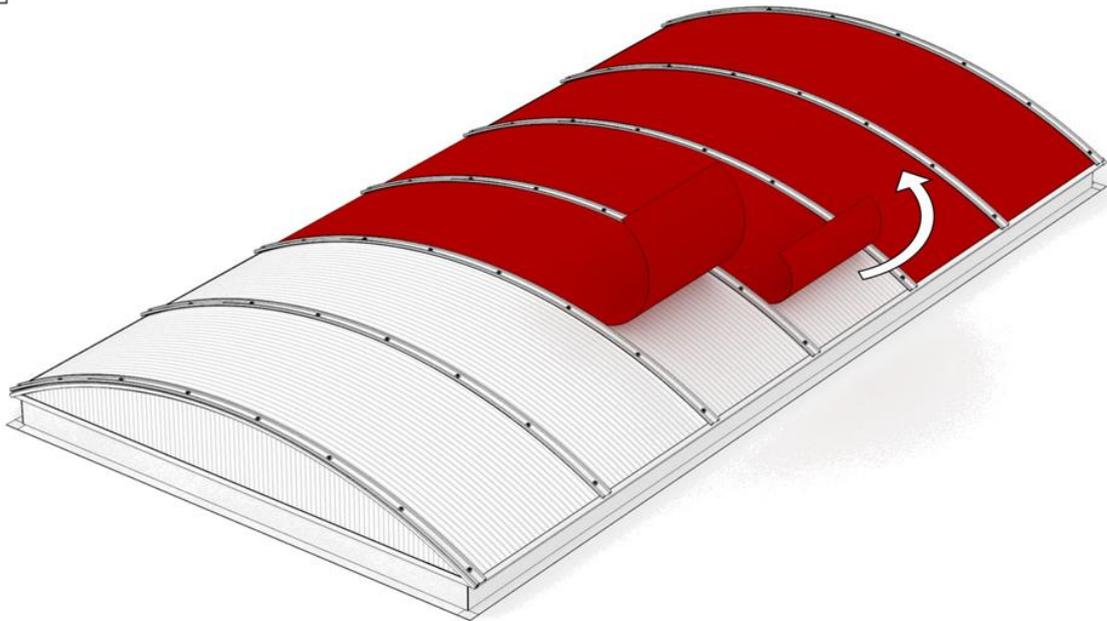
Closing the skylight front with a distancing clip E-2136. One profile connects both vertical and vaulted polycarbonate sheets, caulking and stabilizing the installation. It is a profile of our own design, which fits polycarbonate sheets of both 10 mm and 16 mm in thickness.

15



Installation of the clamping profiles with the appropriate bolts: "X" bolts should be used for 10-mm polycarbonate sheets and "Y" bolts for 16-mm polycarbonate sheets (no. 9 in the picture above).

Finally, in order to stabilize and caulk the construction, short self-tapping screws should be used (no. 10 in the picture above). The clamping profile (no. 4) is equipped with a flange which facilitates the screwing of the screws. All of our screws have been specially designed in a way which enables an optimal contact force which assures robustness, enables thermal expansion of the polycarbonate under different weather conditions and prevents the material from getting crushed.



The final step of the skylight installation is the removal of the protective foil from the polycarbonate sheets. Before doing so, it is advisable to check whether all sheets have been correctly assembled. All vaulted sheets and both vertical front sheets should be checked. In case of a faulty installation of any of the sheets, there is still a chance to correct the mistake. After the foil is removed, such correction is impossible. It is also advisable to make sure if all gaskets are installed correctly and if the screws have been screwed ideally vertically with respect to the surface of the profiles. After the skylight has been successfully installed, the roof should be cleaned from all waste and unused materials that can cause damage to the roof surface, or clog the gutters, or cause danger to people in the vicinity of the building. The installation of skylights is always a good opportunity to check the condition of the roof, namely the roof cladding, the lightning rod, the chimneys, any metal sheet trims, the gutters, the downspouts, etc.

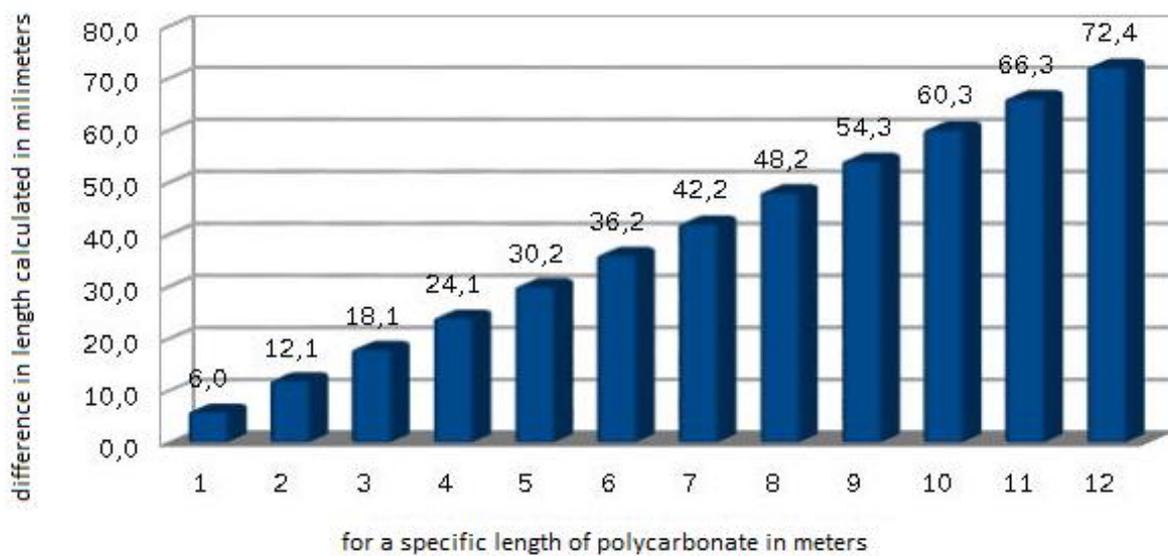
Assembly instructions for Eskade-System skylights and continuous vaults

General information

The installation instruction of Eskade-System skylights, barrel vault skylights and continuous vault skylights is a technical information presented in a graphic and video form that allows to understand the process of skylight installation. In the manufacturing of the elements, Eskade-System assumes a surplus so it might be necessary to cut the polycarbonate sheets and aluminum profiles to the desired dimension at the construction site. This necessity results from different parameters of linear thermal expansion of different materials. Depending of the time of the year in which the installation takes place, different spaces should be left between the elements - smaller during the summer, larger during the winter season.

<http://www.eskade.pl/en/polycarbonate.parameters.html>

Differences of polycarbonate size for extreme temperatures -25 +65



The instruction has been created for the installation of skylights mounted on a steel sheet base, because this is the type of skylight that is most commonly ordered.

Due to a great diversity of construction solutions applied in architecture, the skylights presented in the instruction may be installed also on the types of bases different from the ones presented - namely bases made of wood, steel, concrete and other materials. The instruction has been created for two types of polycarbonate sheets: 10 mm in thickness and ranging from 140 cm to 360 cm, and 16 mm in thickness and ranging from 180 cm to 380 cm. It has also been assumed that the skylight base is made of zinc coated steel sheets of 1,5 mm in thickness and the inner spacers shown in the pictures are placed in distances of 300 cm.

The aluminum profiles used in skylight roofing are made of raw aluminum. Optionally, the profiles can be painted for extra charge to any color of the RAL color chart.

Since every building, and therefore also every skylight, is subject to pressure and loads, it is advisable to consult an expert in architecture and construction works before the installation, who may allow or adjust a given skylight roofing solution to a particular building. The durability of skylights and awnings and their sustainability to snow load should also be adjusted to the region in which they are installed. Long snow retention should never be allowed on these types of constructions. If necessary, before the installation of skylights and other forms of roof glazing, legal permissions should be granted by appropriate institutions.

To make things even clearer concerning the installation of polycarbonate, we have prepared a lot of tutorial materials that should facilitate the assembly of skylights.

Animation showing the steps of Eskade skylight installation:

<https://www.youtube.com/watch?v=mtPwwDMr2ZQ>

video materials presenting the installation of the most common skylights

Installation of a barrel vault skylight on a steel sheet base (English subtitles)

<https://www.youtube.com/watch?v=ID82RWG08TQ>

<https://www.youtube.com/watch?v=xkhtJe-iTcU>

video materials with Polish subtitles:

Substitution of glass skylights with polycarbonate vault skylights

<https://www.youtube.com/watch?v=hvj7et8PNYI>

<https://www.youtube.com/watch?v=wkn5xH7peno>

Correct installation of polycarbonate sheets

<https://www.youtube.com/watch?v=5mV4ZjrbB6s>

Installation of Eskade barrel vault skylight on a wooden base

<https://www.youtube.com/watch?v=udYuQfbPChE>

Cutting the aluminum profiles with a saw and an angle grinder

<https://www.youtube.com/watch?v=nSv5qV15jPc>

Cutting the polycarbonate

<https://www.youtube.com/watch?v=14w7Y-NEHIM>

Protection of the polycarbonate cells

https://www.youtube.com/watch?v=RM8iapTqi_k

Cleaning instructions for polycarbonate

<https://www.youtube.com/watch?v=6KMOs7WU5UE>

Skylight conservation

All parts of the skylight should be cleaned only with running water with small doses of detergent. All types of abrasive substances, dissolvent, cleansers, or disinfectants contain chemical substances that may come into reaction with polycarbonate, aluminum profiles and EPDM gaskets. Eskade System bears no responsibility for damages caused by inappropriate use, installation or maintenance of the products.

Final provisions

This instruction is for reference only and will not be taken into account as a basis for forming any claims against the Manufacturer. Eskade System claims the right to modify and improve all elements of the products presented. Any information, materials, files, video materials, animations, visualizations, descriptions, trademarks, and photos presented in this instruction must not be published or redistributed without the written consent of Eskade System Jan Duerschlag. All rights reserved. This material is subject to copyright and patent rights (65577, 64096, 64097, 65072) and it must not be published, copied and distributed in any form. Any attempt at copying, modifying or reprinting of the text of this instruction or sharing it in electronic media or in any other form is forbidden.