INSTALLATION GUIDE

Multiwall polycarbonate

PC sheets

Storage · handling · cutting · installation
Substructure · fixing · sealing the ends · care

6–32 mm | Canopies | Greenhouses | Conservatories



interbauen

www.interbauen.ee
info@interbauen.ee

1

Multiwall polycarbonate and its uses

UV-protected, light-transmitting PC multiwall sheet (polycarbonate) is suitable for canopies, thermally insulating glazing and applications exposed to impact loads.

Applications: sports halls, greenhouses, canopies, conservatories and skylights.



NOTE! The weather resistance of the material is ensured by the UV-protective layer on its surface.

The UV-protected side of the sheet is evenly coated with a UV-resistant layer fused to the material and is installed facing the weather (the sun). It gives the multiwall sheet very good weather resistance and a 10-year warranty on light transmission. The UV-protected side is covered with a printed protective film.

2

Substructure

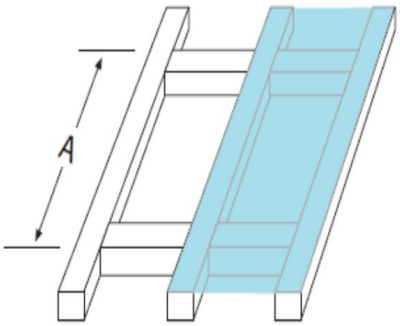
The substructure must withstand the snow and wind loads required by building regulations. Ask the frame supplier about its load-bearing capacity.

The substructure under the multiwall sheets should be in one plane. In the drawing, A is the length of the slope.

The substructure should support the sheets around the entire perimeter – this ensures proper fixing.

Side joints between sheets should be placed on a rafter.

The sheets can also be installed on battens. In that case, use a click profile or a two-part aluminium fixing profile as the connecting profile.



A – length of the slope

3

Curved surfaces and bending

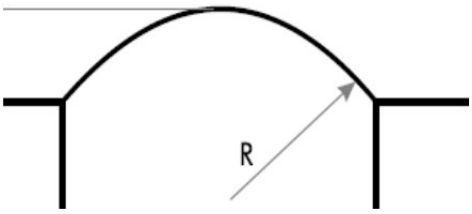
Multiwall polycarbonate can be used to build curved and arched surfaces.

The sheets can be cold-bent **along the channels** (along the length of the sheet, 6000 mm).

Cold-bending radius R = 150 × sheet thickness (mm)

Sheet thickness	Calculation	Min. radius R
6 mm	150 × 6	900 mm
10 mm	150 × 10	1500 mm
16 mm	150 × 16	2400 mm

For special projects, please contact: info@interbauen.ee



Radius R



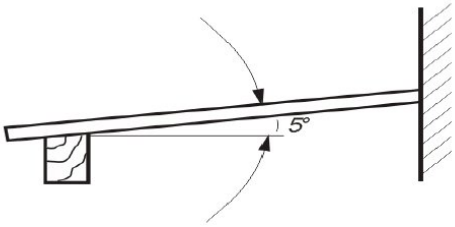
4

Roof pitch

For pitched roofs, a slope of at least **5°** (87 mm per metre of slope length) is recommended to allow rainwater to run off.

A flat roof is permitted, but rainwater, dirt and snow will then collect on it and the roof must be cleaned more often.

> Use a walking board or a ladder when moving on the sheets.
> Do not step directly on the polycarbonate!



Slope at least 5°





5

Loads on roofs and walls

The actual load on multiwall panels is determined by wind and snow loads.

The snow load on a roof can be treated as a vertical, evenly distributed load per square metre of horizontal surface.

Thanks to its good thermal insulation, snow does not melt immediately on a polycarbonate roof, so the snow load must be taken into account carefully.

Snow load values are given in the applicable building codes. The loads in the table are for information only.

Wind load

Wind speed, m/s	Wind load, N/m²	Wind speed, m/s	Wind load, N/m²
10	61	40	981
15	138	45	1240
20	245	50	1530
25	383	55	1850
30	552	60	2210
35	751	65	2590

For projects with unusual conditions, please contact your dealer.

Weight of snow

- freshly fallen snow – 100 kg/m³
- settled snow (hours or days after falling) – 200 kg/m³
- old snow (weeks or months) – 250–350 kg/m³
- wet snow – 400 kg/m³

6

Choosing sheet thickness for the substructure

Multiwall polycarbonate is impact- and weather-resistant regardless of its thickness.

The sheet thickness is chosen according to the density of the substructure – and vice versa. The table helps you choose the thickness.

If one dimension (rafter spacing or support spacing) increases, reduce the other accordingly so that their ratio stays the same.

For loads in special projects, please contact: info@interbauen.ee

Design load 1.5 kN/m²

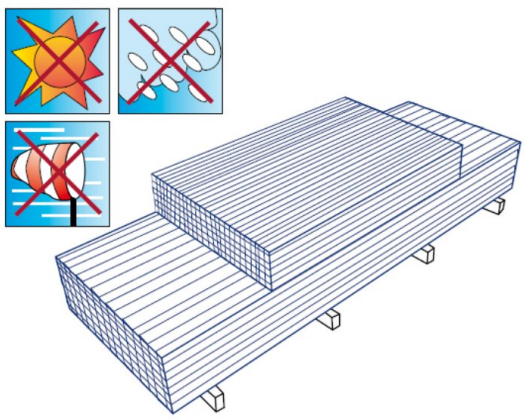
Sheet thickness	Rafter spacing, mm	Support spacing, mm
6 mm	700 / 1050 / 2100	800 / 500 / 250
8 mm	700 / 1050 / 2100	1300 / 1000 / 600
10 mm	700 / 1050 / 2100	1500 / 1200 / 800
16 mm	700 / 1050 / 2100	6000 / 3000 / 2000
25 mm	700 / 1050 / 2100	3300 / 3000 / 2800
32 mm	1200	3000

7

Storage

Multiwall sheets must be protected from the weather, such as sun, rain and wind. Cover stored sheets with an opaque, weatherproof cover.

Sheets of the same length are stacked horizontally. If the sheets are of different lengths, the longer sheets go at the bottom of the stack.



8

Cutting and cleaning

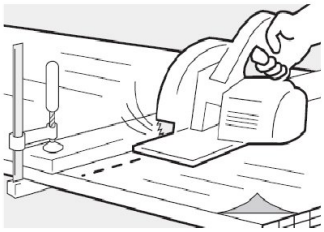
The material can be cut with most power and hand tools (circular saw, jigsaw, knife). The circular saw should have a fine-toothed blade.

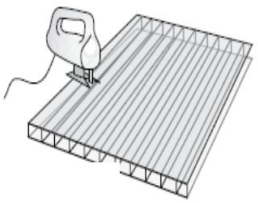
Clamp the sheet to a support when sawing to avoid vibration.

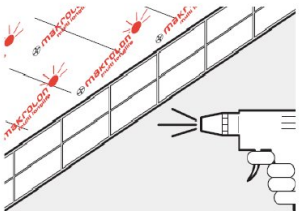
Lengthwise cuts can also be made with a sharp knife.

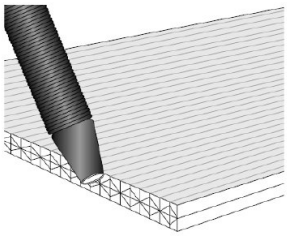
Blow cutting debris out of the channels with compressed air or remove it with a vacuum cleaner.

> To avoid scratching the surface, remove the protective film only after final installation.





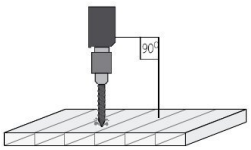


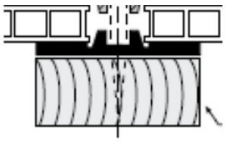


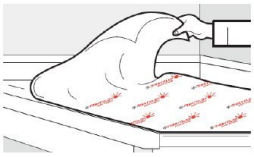
9

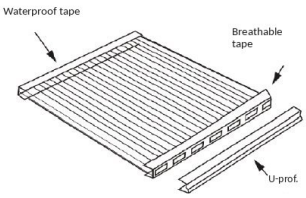
Basic installation rules

- Holes can be drilled in the sheet with a sharp metal drill.
- If the substructure is dark-coloured, an EPDM rubber gasket is recommended between the frame and the sheet.
- Always install the sheet with the UV-protected side facing outwards (towards the sun).
- The sheet must not overhang the edge of the substructure by more than 50 mm.
- The ends of the sheet must be sealed with end tape and end profiles.
- Allow for the thermal expansion of the material when fixing the sheets.
- Remove the protective film as soon as possible after fixing the sheet.









10

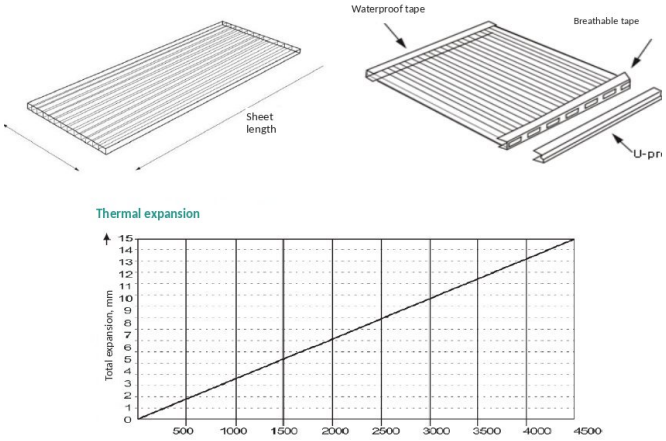
Installing multiwall sheets

As a general rule, install the sheets with the channels running vertically (top to bottom) so that condensation can drain out.

Horizontal installation of the channels is not prohibited. In that case, in dry conditions both ends of the sheet must be sealed with waterproof tape and an end profile.

The material has a higher coefficient of linear thermal expansion than glass. Make sure the sheet has room to expand – this prevents bowing and internal thermal stresses.

> The thermal expansion of a multiwall sheet over a 50 °C temperature range is **3 mm per linear metre**.



Sheet length, waterproof and breathable tape; amount of thermal expansion

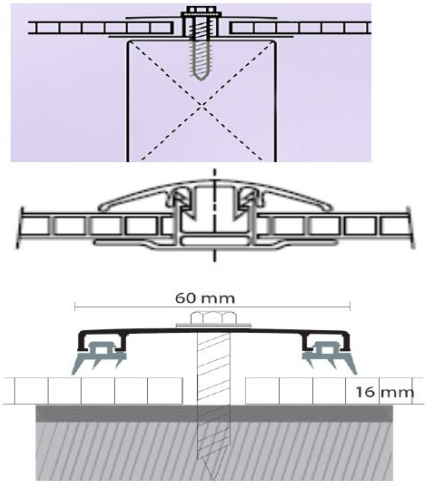
11

Joining sheets along the slope

The joint between sheets must be on a rafter so that the connecting profile is supported by the substructure along its entire length. This improves the watertightness of the roof.

When using an H-profile, click profile or aluminium cover profile, the sheet does not need to be fixed separately next to the profile – fixing the profile is sufficient.

> Leave room for lateral thermal expansion inside the profile too. This is especially important when installing at low temperatures.



12

Screw fixing through the sheet

Screw fixing through the sheet is permitted if fixing screws with a sealing washer of **at least 16 mm diameter** are used. EPDM seals are suitable.

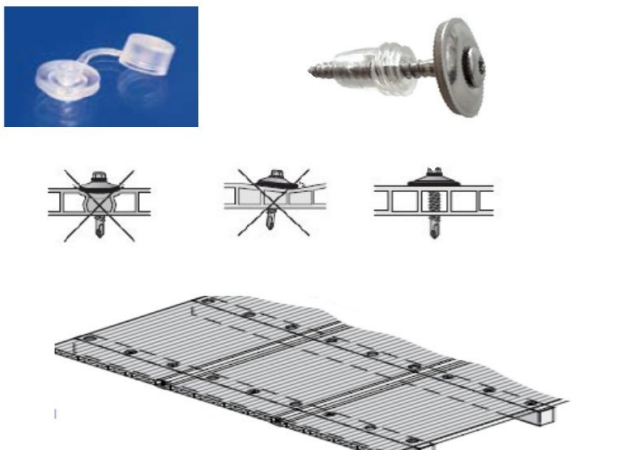
Screw caps can be used instead of sealing washers.

The recommended screw spacing is 300–500 mm, depending on the wind load.

Drill a hole in the sheet with a sharp metal drill **3–4 mm larger than the screw diameter** – this allows for thermal expansion.

Tighten the screw with moderate force so that the sheet surface is not crushed.

Do not use PVC-based rubber seals!



Screw cap, sealed screw; over-tightened, crooked and correctly fixed screw

13

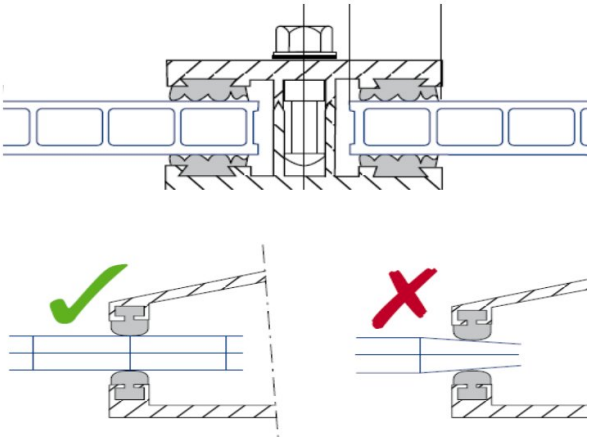
Installation with a two-part aluminium profile

To avoid screw fixing through the sheet, use a two-part aluminium fixing profile.

The two-part profile (base profile + cover profile) allows the sheet to move freely as it expands and contracts.

When cutting the sheet to width, position the cut so that a sheet rib lies under the fixing.

For load values, please contact: info@interbauen.ee



Correct and incorrect cutting line

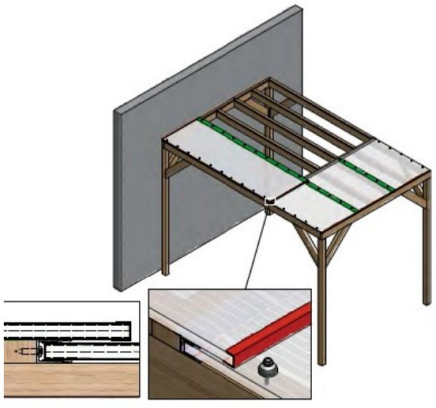
14

Joining sheets across the slope

When joining sheets across the roof slope, compensation profiles must be used. A standard connecting profile (H-profile, cover profile) does not ensure a watertight roof when used across the slope.

The recommended overlap of sheets across the slope is **100–200 mm**.

The fixing point of the overlap must coincide with a support so that the sheet is securely fixed.

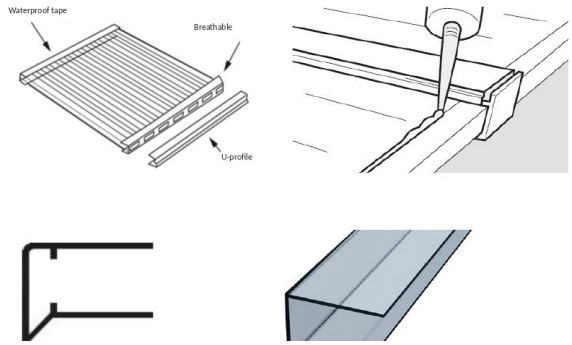


15

Sealing the sheet ends

The ends of the sheet must be sealed with end tape and, without fail, with end profiles. Smooth the cut edges with sandpaper before taping so that the tape does not tear.

- Install waterproof PE/aluminium end tape at the **top** end of the sheet and breathable end tape (VENT) at the **bottom** end.
- Fit aluminium U- or F-end profiles over the tape with moderate force or using a wooden block.
- Fix plastic U-end profiles with silicone: apply a thin bead of silicone to the top and bottom surfaces of the sheet and push the U-profile on – this prevents snow from dislodging it.
- The tape must not protrude from under the edge of the end profile.
- Seal the joint between the sheet and the end profile with UV-resistant silicone.



Waterproof tape at the top, breathable tape and U-profile at the bottom

16

Care instructions

Clean water is sufficient for cleaning multiwall polycarbonate.

For heavier dirt, use warm water and mild household cleaning agents (liquid soap, washing-up liquid, etc.).

Clean with a wet, clean (free of dust, sand and dirt) soft microfibre cloth.

Avoid dry rubbing. After intensive dry rubbing, the sheet becomes statically charged and may attract more dust.

It is recommended to clean and maintain the roof at least once a year.

Do not use for cleaning:

- paper towels (they act like sandpaper);
- window cleaners or other alcohol- or ammonia-based cleaners;
- acetone, benzene, petrol, carbon tetrachloride;
- cleaners based on ammonia or organic solvents – they penetrate the material and cause cracking;
- razor blades or other sharp tools, abrasive or strongly alkaline detergents or solvents.

17

Warranty

The manufacturer gives a **10-year warranty** on multiwall polycarbonate covering:

- weathering;
- light transmission;
- hail resistance (hailstone weight 4.5 g, speed 21 m/s).

The warranty is valid provided that all installation instructions have been followed.

This guide is based on the installation guides of the material manufacturers (Exolon, SABIC, Palram).

Contact

Interbauen · www.interbauen.ee · info@interbauen.ee