

Polycarbonate Panels

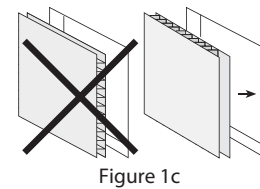
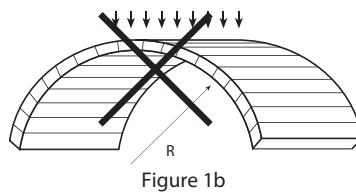
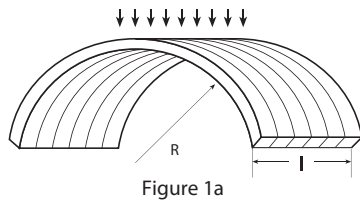
This manual provides the basic information for working with and installing PolyCarb sheets. Due to their hollow core, prior preparation is needed before the actual installation, with additional care during it. Please read the installation instructions carefully before starting, and follow them meticulously.

Chemical Resistance, Compatible Sealants and Adhesives:

PolyCarb has good resistance to many chemicals. Some chemicals may harm the PolyCarb sheets. Contact us when in doubt about any chemical.

Preparation of Sheets:

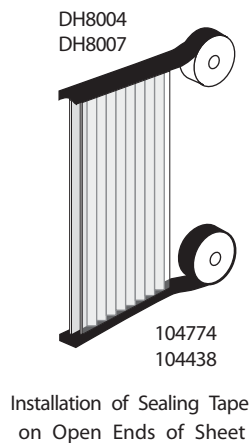
A. PolyCarb sheets should be installed with the rib channels in the direction of the slope (Fig 2)(flat, sloped glazing), vertical (windows, wall glazing) (1c), or following the direction of the arched rafters (Fig 1a)(vaulted glazing, domes). This position reduces accumulation of dirt inside the sheet and ease gravity drainage of condensation moisture.



- B. Peel off the masking along the edges of length sides, both sides of the sheet, for about 80-100 mm (3.5-4 in.) from the edges, preparing the sheet for the insertion into the connecting profiles or the glazing frame.
- C. Remove the underside masking just prior to the actual installation on the roof. Premature removal of protective film may result in damage to the sheet during handling.
- D. Remove the upside, exterior protective film as soon as the installation of the whole glazed area is completed, or very short time afterwards. Failing to do so, exposing the protective film to direct sunlight, may fuse it to the sheet's face and cause difficulties in removal, due to deterioration of the film, and void the warranty.



Partial or Complete Removal of Protective Film Prior and after Installation



Installation of Sealing Tape on Open Ends of Sheet

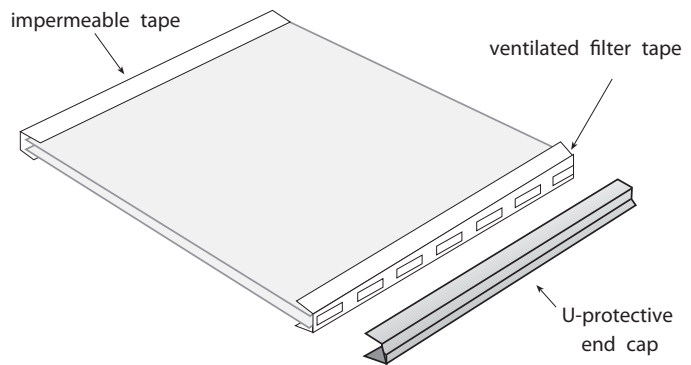


Figure 17c. Installation of Impermeable Tape at Top of the Sheet and Installation of Ventilating Tape at the Bottom of the Sheet

- E. Ensure the use of the proper type of sealing tape according to the glazing form used, verifying that the prepared sheets are mounted correctly. Please note: In case of curved installation, where both open ends are situated at the bottom - apply the ventilated tape on both ends. Take care to protect the sealing tapes at both ends from mechanical damage by inserting the edges into aluminium profiles, or cover them with polycarbonate U-shaped end-caps.

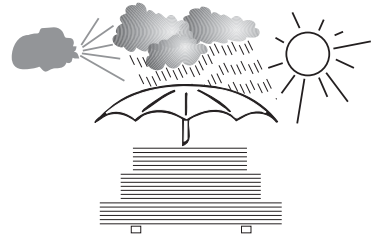
Glazing Profiles and Fastening Screws:

Type of glazing/clamping profile used in the installation of PolyCarb sheets, differs according to the glazing system chosen:

- A. Framing profiles are similar in concept and detail to those used in fixed glass windows, curtain walls and skylights, made of wood, steel or aluminum, but wider, allowing for the larger Edge Engagement depth required for PolyCarb. The frames are prepared in advance, and glazing is done after they are all in place, along with completion of the other finishing jobs.
- B. Two and four-sided clamped glazing employ practically the same profiles used for framing, as used in curtain walls and skylights. Almost all are prepared prior to the glazing work, and just the clamps, the rubber packing profiles (and silicone sealant in "wet" glazing) are installed along with or after the glazing is in place.
- C. The roofing and cladding glazing installation method installs PolyCarb over the supporting skeleton, rafters and purlins. The glazing profiles, which are usually flatter by design, consist of top and bottom parts, made of polycarbonate, rigid PVC or a combination (a bottom aluminum profile and top profile made of polycarbonate, or rigid PVC). PolyCarb sheets and their connecting profiles (also acting as glazing profiles) are installed together, advancing step by step. Most profiles are flexible enough to be easily shaped into curves by hand, when installed over curved structures, enabling inexpensive implementation of curved glazing.

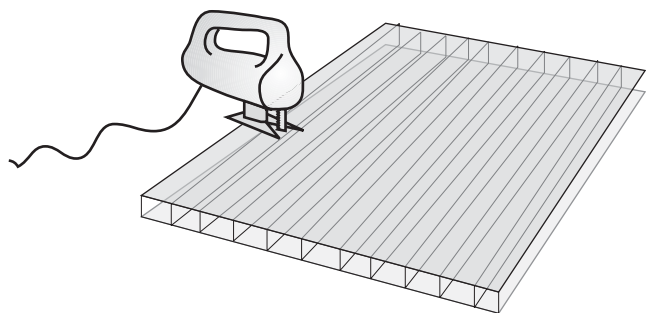
Handling and Storage:

- A. PolyCarb sheets should be transported and stored horizontally, on a flat, sturdy pallet whose dimensions are equal to or larger than the sheets themselves. The sheets must be secured and fastened to the pallet during transportation and handling on site. It is possible to stack the sheets with the longer sheets at the bottom and the shorter on top, leaving no unsupported overhang.
- B. While moving a pallet with a forklift, always use forks as long as the sheets' width. Shorter forks on a wider pallet may cause damage to the sheets.
- C. PolyCarb sheets leave the factory in packages, wrapped in white, watertight polyethylene. The wrapping should be taken off as close to the actual time of installation as possible. Storage of the sheets should be in a covered, dry, ventilated place, away from direct sunlight and rain.
- D. Avoid leaving the sheet pallet in the rain, even if still wrapped, for extended periods, as water may condense inside the hollow core. Extended exposure to direct sunlight may cause heat buildup, softening the protective film, fusing it to the sheet face, making removal difficult or impossible.
- E. Avoid leaving the sheets stored unwrapped, with their ends open, for more than a few days, as dust may collect inside the hollows.
- F. Important! Never cover the pallet with, or place on the pallet, materials that collect heat or are good heat conductors (e.g. dark objects, metal profiles or pipes, steel sheets etc.) They may collect and deliver excess heat, and damage the sheets.
- G. When necessary to store the pallet in the open, cover it with a white opaque polyethylene sheet, cardboard, or any other insulating material, taking care to cover the pallet completely.



Cutting:

- A. PolyCarb sheets can be cut with standard wood or metal workshop equipment. Saw blades designed especially for plastic yield best results. A circular saw (fixed or portable, with small teeth suited for hardwood), rotating at high speed, band saw or a jigsaw (best for short, complex cuts) can all be used, taking care to advance the blade slowly. A hand and hacksaw may also be used for local cutting.
- B. Always support the sheet in the vicinity of the cut and clean (with compressed air and/or by a vacuum cleaner) the dust and debris generated by the cutting. Running clean compressed air through the hollow channels, blowing away sawdust and shavings inside is a good practice.
- C. Sheets of low and intermediate thickness, with modest dimensions, can be cut (taking the appropriate precautions) with a short, thin, sharp blade. A special cutting-wire hand tool may also be used, to make lengthwise cuts.



Drilling:

A. Drilling can be carried out with drill bits intended for metal. When pre-drilling for a fastening screw, the hole's diameter should be 2 mm larger than that of the screw used. As when cutting, always support the sheet in the vicinity of the place being drilled, and clean away the sawdust and shavings, both on and inside the sheet.

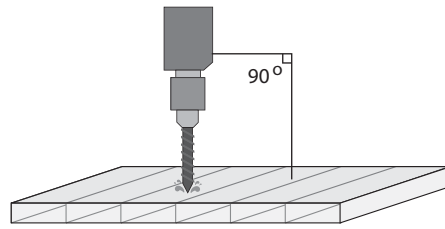


Figure 20

B. Special attention must be given to drill all the required holes perpendicular to the face of the sheet.

C. Though drilling the sheet for fastening is a common way of installation, it is recommended to be used mostly in plain, economy-oriented projects, and used sparingly elsewhere.

Sealing and Bonding:

A. Silicone Sealant: We recommend the Clear Boss 399 Silicone Glazing Sealant (DE4010).

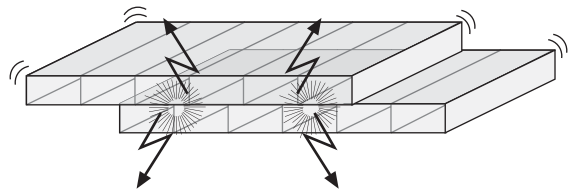
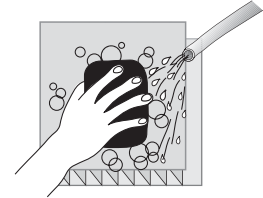
B. Sealing the Sheets is done by aluminum impermeable, or ventilated filter sticky tapes, as described in the paragraph "Pre-preparation of the sheet" above. Such specialty tapes can be obtained from us.

For other materials, please contact us.

General Recommendations for Working with PolyCarb Sheets:

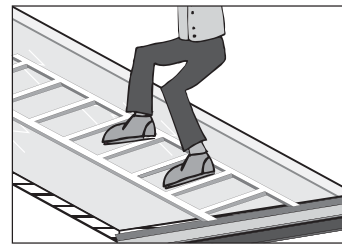
A. Cleaning

1. Keeping PolyCarb clean will yield the best long-term results. Self-cleaning by rain is usually sufficient. Local small areas may be washed using diluted mild household detergents. Make sure the detergent contains no abrasives or solvents. Pre-wash with warm water, then wash the stained area with a soft sponge or brush, preferably with hot water, until the stain disappears. Rinse with water and dry with a soft cloth.
2. Heavy oil or tar stains can be removed with an isopropyl alcohol watery solution. Rub the area gently with a soft rag. Follow with the treatment depicted above, rinsing with a lot of water.
3. Avoid dry cleaning, as the sand and dust particles clinging to the exterior of the glazing may scratch the surface.
4. Large areas may be professionally washed by high-pressure water jet, possibly adding a mild compatible detergent, and/or a steam jet.
5. Avoid the repeated sliding of sheets over each other, even when still protected by the masking film. This action generates electrostatic charge in the sheet, attracting dirt and dust and hindering cleaning.



B. Safety Measures During Installation and Maintenance:

1. When installing PolyCarb or doing maintenance work, always consider the sheet to be unfit to support a person's weight. Always use stepping ladders or crawling boards, supported by the roof structural elements, when working on a glazed roof of any kind.
2. Never step on PolyCarb sheet between the purlins or in the middle of a framed glazing!!! In emergency, step only on the lines of purlins or of structural framing.
3. Never leave the glazing sheets unattended on the roof or at the glazing area, until all the required fastening clamps or screws are secured properly. Throughout the installation process, always ensure that the sheets ready for installation are temporarily secured against sudden wind gusts.



Warning! Do not step on the sheets between the purlins!