

## Multiwall Install Guide

### Working with Multiwall Polycarbonate

1. Safety first: eye protection, safe ladder placement, know and understand your tools.
2. Read full installation instructions and selection guides before starting.
3. When attaching polycarbonate pre-drill holes to allow for thermal movement of panels.
4. Keep polycarbonate out of contact with PVC. Check with manufacturers chemical compatibility list. If needed, use only 100% silicone sealant.
5. Install multiwall sheets with ribs in the vertical orientation with a minimum pitch of 2:12. This ensures moisture can drip out.
6. If only one side UV protected, double-check that the UV side is facing up/out.
7. Roof access notes: Access for installing panels should be done from empty bays to the left or right of the panel being installed. Start at one side of the structure and move across, doing all steps at each location before moving. **If access to roof is required, the multiwall polycarbonate should not be used to support a person's weight directly.** Use a temporary support (i.e. 2x6) supported by the roof structure. Note: Non-slip rug padding can be glued to back of supports to help protect sheets.
8. Check with local building inspector or governing agency for compliance with codes and zoning.

### Install Steps

1. **Material Preparation:** Prior to installation, polycarbonate panels should be stored in a dry place, properly ventilated, and out of direct sunlight. This will help prevent excessive heat build-up that can damage the panels and make removing the protective film difficult.

Below is a list common material needed (actual material list may vary by project). *See sheet selection guide or contact customer service for assistance selecting materials.*

### Materials Needed

- Multiwall polycarbonate sheet
- Aluminum Base and Cap connection profiles - Used to connect two sheets on a roof and/ or wall.
- U-profile - Used at edge conditions and end of panels. Needed to prevent moisture and dust from getting in panel.
- Corners - Used at wall corners and side edges of roofs.
- Aluminum tape - Used at top of roof sheets where U-Profile is not used.
- Screws - See fastener chart for screw selection.

- Foam tape - Reduces noise from thermal expansion, required for bronze sheets, or sheets longer than 12'.
- 100% silicone sealant
- Ridge cap and other flashing - Where the roof meets the wall conditions or other roof penetrations, specialty flashing may be necessary.

**2. Assembly Preparation:** Before starting installation collect all necessary tools.

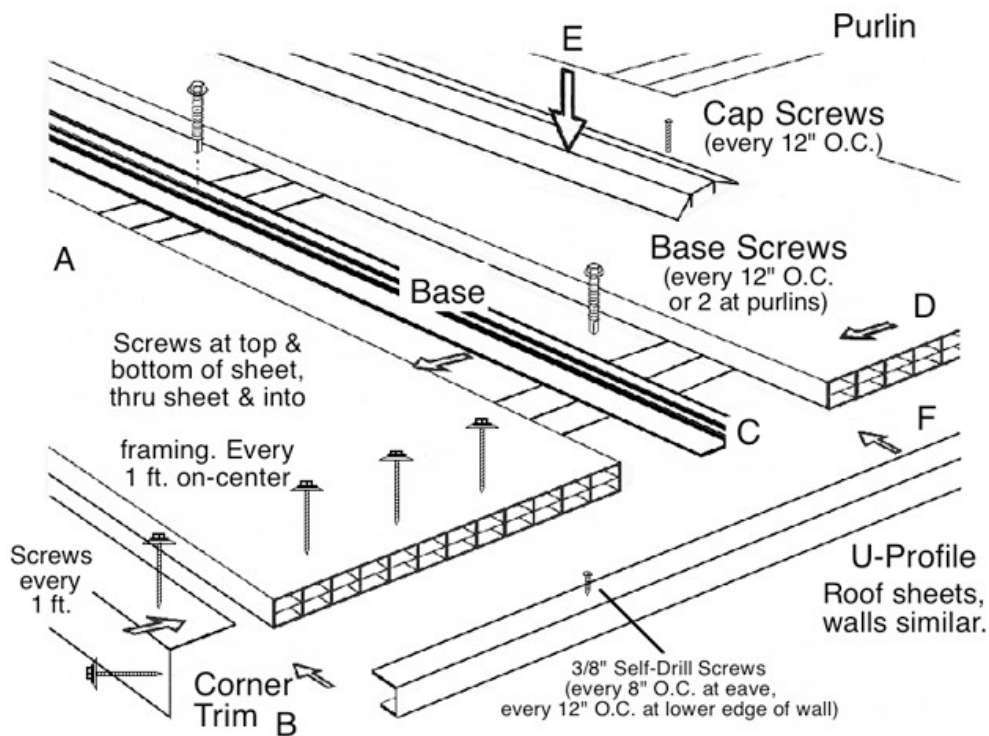
**Tools Needed**

- Eye protection, gloves, and other safety equipment.
- Power drill(s)- Having a drill with a drill bit and a drill with a drive bit will minimize time spent switching out bits.
- Jig saw and/or circular saw - Use a fine tooth blade for cutting polycarbonate.
- Chop saw with metal blade or hack saw for cutting aluminum extrusions.
- Sawhorses or cutting surface - For safe and accurate cutting and handling of material.
- Clamps
- Tape measure
- Ladder
- Marker or pencil
- Straight edge
- Drive bits (Philips, Square, ¼" Hex, 5/16" Hex)
- Drill bits, steel cutting standard twist (1/16", 3/16", ¼")
- Caulking gun

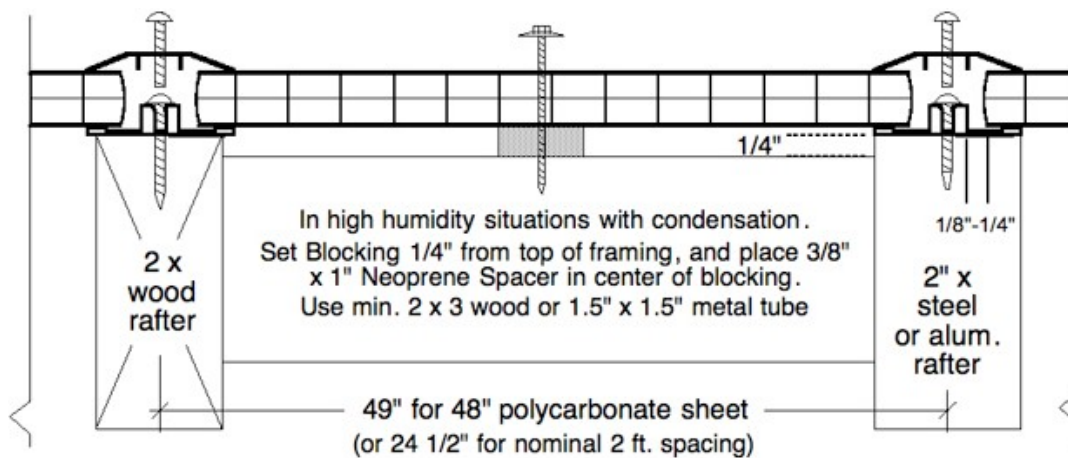
**3. Double Check Structure:** Before starting installation of the polycarbonate system, ensure the structure is complete. This includes checking for local codes and possibly a review by a local building inspector. Polycarbonate loading documents are available to ensure the structure is appropriate for the polycarbonate sheet and system selected. Double check that screws and materials are appropriate for the material of the structure, i.e., wood, treated wood, aluminum or steel). The polycarbonate skin is only as good as the structure it is attached to. Check that structure is square and has the proper pitch (min 2:12 for roofs).

*NOTE:* The structural stability of the project is not the responsibility of multiwall polycarbonate supplier, all structural information is given for reference only.

4. **Layout:** Double check widths and lengths of polycarbonate sheet to ensure proper coverage of structure. Sheets must be supported on all four sides with a minimum of  $\frac{1}{2}$ " bearing on structure. For a full sheet, distance from outside edge to first Base and Cap is 48  $\frac{1}{2}$ ". With proper clearance, Base and Cap will be 49" O.C. for a 48" wide sheet. If sheets need to be cut, use a jig saw or a circular saw with a fine-tooth blade (plastic laminate blades work well). Clean shavings from sheets with a vacuum or compressed air.



5. **Begin Installation:** Confirm all prep work has been completed. Start installation on one end of the structure. Install aluminum tape on top edge of roof sheets. It is easier to do this on the ground than after sheets are on the roof. Place first sheet on roof or against wall, set sheet with desired overhang at bottom edge (1-3" at roof). Use clamps to hold sheets in place. Once in place, install corner trim or other flashing at the side end of the panel. Remove a few inches of protective film where panel is covered by trim, corner, or top profile. Attach trim or corner to structure with screws, pre-drill trim. When attaching trim and sheets with screws start at one end and work towards the opposite end. Attaching at both ends may cause bowing or oil canning as remainder of the panel is attached. See step 6 for more information on attaching sheets.



6. **Attaching Sheets:** Remove protective film. Use screws with minimum  $\frac{3}{4}$ " rubber gasket to attach sheets in the field (middle of sheet). Screws should be tight, but do not over compress gasket or crush sheets. Holes must be predrilled in polycarbonate sheet  $\frac{1}{32}$ " greater than the screw. This helps provide space for thermal expansion and contraction. For standard applications, screw panels 24" O.C. on purlins or rafters. For high winds (90 -115mph), attach sheets every 12". At the top and bottom, sheets must be attached 12" O.C.

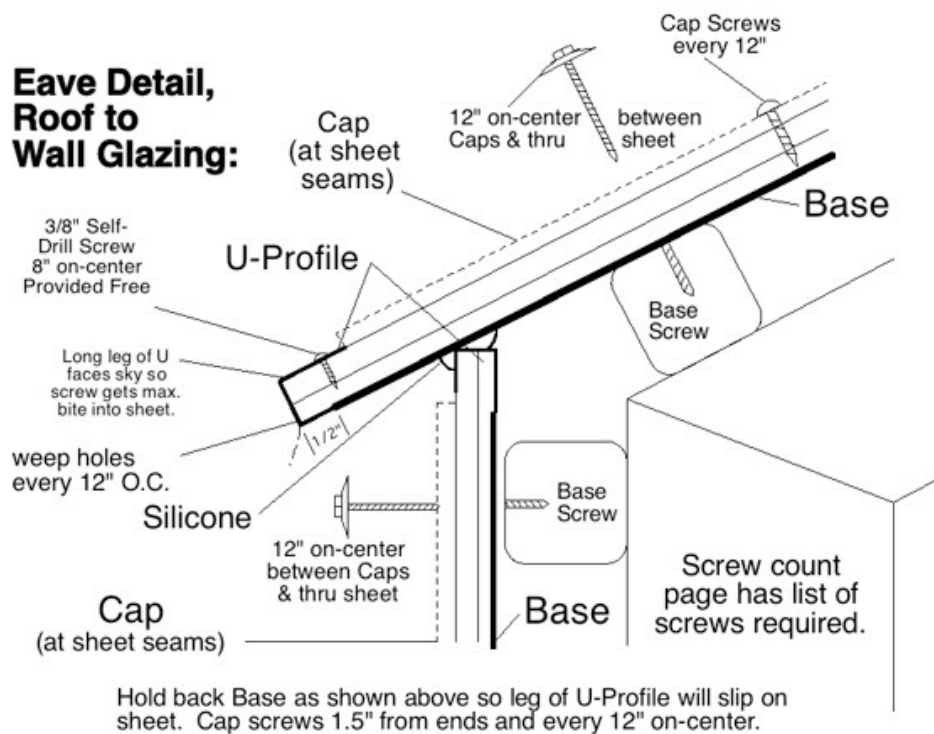
*HIGH HUMIDITY NOTE:* In situations of high humidity blocking between rafters should be set  $\frac{1}{4}$ " below top of rafter. Where sheets are attached in middle of the sheet, neoprene spacers are available, and should be placed between the sheet and the blocking. If purlins are being used, 16mm or 25mm sheets are recommended to reduce condensation. See sheet selection guide

7. **Installing Connection Profile:** Place bottom profile next to first panel. See reference drawing B for proper placement. The bottom of the sheet should extend  $\frac{1}{2}$ " past the profile to allow room for the U-profile trim (See step 11). At least  $\frac{1}{2}$ " of sheet, and rib if sheet has been cut, shall be captured in base and cap profiles. With screws attach bottom profile to structure. Pre-drill the base profile and adjust the drill speed and torque to prevent over tightening or snapping of screws. Attach with (2) screws at purlins, or 12" O.C. at rafters.
8. **Second Sheet:** Place second sheet similarly to first. Use clamps to hold sheet in place while fastening.
9. **Install Cap Profile:** Once the second sheet is in its proper location, attach the top profile to the bottom profile. Use colored self-tapping screws and pre-drill top profile with  $\frac{3}{16}$ " bit. Attach top profile 1" from ends and 12" O.C. Screws should be snug, do not over tighten or strip the threads, adjust drill clutch as needed.

**10. Next Sheets:** Repeat process until roof or wall is covered.

**11. U-Profile and Trim:** The bottom edge of sheet is closed off with aluminum U-profile. In wall applications top and bottom of sheet are closed off with U-profile. Starting at one end of profile length, work profile onto sheet edges. Sheets should extend past top and bottom profile allowing room for U-profile. Once full length of U-profile is in place, attach with small self-tapping screws every 8 to 12" (do not pre-drill). Drill 3/16" weep holes in the bottom of trim every 8" to 10" to allow moisture to weep out of profile. Uses 100% silicone sealant between the U-profile and the bottom end of the Base and Cap. Use corner trim and other flashing at corners and roof edges as necessary.

*NOTE:* Because the aluminum U-profile fits tightly, taping the ends of a polycarbonate sheet is not necessary when using the aluminum Base and Cap System.

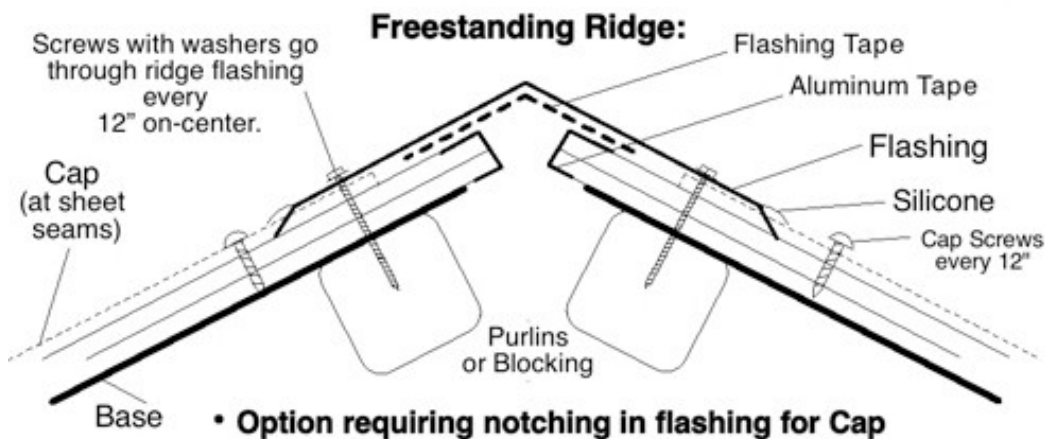


**12. Install Ridge Cap and Other Flashing:** Attach ridge cap per ridge cap manufacturer's instructions. Typical installation: overlap ridge cap 4" and apply sealant at each joint. Fasten to structure at ends, joints, and 18" O.C. For tight fit, notch ridge cap at Base and Cap Profiles. If necessary, install additional flashing to create a watertight transition at roof or wall. See details for alternative ridge options.

**13. Top U-Profile:** For single sloped roofs with no ridge cap, use aluminum U-profile at top of sheets (not aluminum tape). Use sealant where base and cap meet U-profile. *See additional details and instructions document for other conditions.*

**14. Sealant:** In roof applications the primary locations for sealant will be at the ridge and the end of the Base and Cap. No sealants are needed with the aluminum U-profiles or tapes. A 100% silicone sealant compatible with polycarbonate is recommended. Depending on your design, you may need to use sealant at other trim locations or joints. Where sealant is used, clean area first with rubbing alcohol and let dry.

**Note:** We do not provide flashing. Visit a local sheet metal shop. Below are two options.



**15. Final check:** Once all components are installed, check installation for any missing attachment points, profiles, or trim pieces. Check that all protective films are removed.

**For additional installation information see the Alternate Details and Installation Methods Guide.**

- General Multiwall Handling and Cleaning Guides.
- Thermal Expansion and Contraction
- Bending Radius
- Screw Attachment Guide
- Warranties and UV Protection
- Solid Sheet Greca
- Screw and Accessories Specifications
- THERMOCLICK™ – 40mm Vertical Wall system
- Additional Details