



INSTALLATION

KLEER™ LUMBER LLC
INSTALLATION GUIDELINES

GENERAL

- Klear is a highly versatile product for many exterior and interior trim and decorative applications.
- Klear should never be used for structural or load-bearing applications.

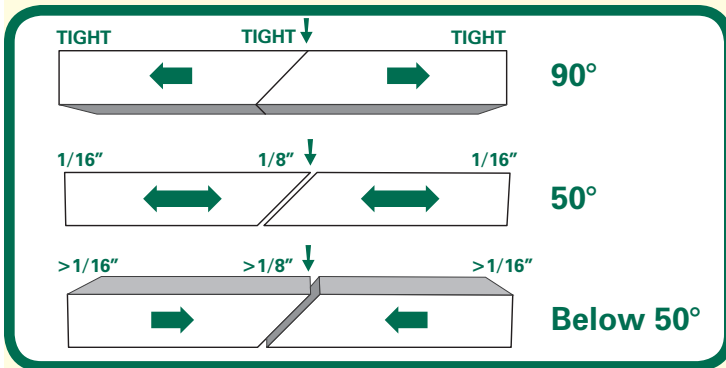
STORAGE & HANDLING

- Klear is more flexible than wood. When possible, Klear should be stored on a flat, level surface and handled with extra care to avoid damage.
- Klear is shipped from the manufacturing plant in either KlearPak plastic wrap or woven covers to protect it from dirt and debris until installed. If dirty, clean with a soft brush and mild household cleaner. Stubborn stains may be removed with denatured alcohol.

CUTTING & DRILLING & MILLING

- Klear can be cut, drilled and milled using the same tools used with wood.
- When cutting or milling, use carbide-tipped bits or blades for best results. Avoid fine-tooth blades, including those used in jig/band saws as they may create excessive heat and melt the PVC along the edge. Failure to support Klear across the entire cut length or the use of dull blades to cut Klear can result in a rough edge. If this happens, sand with 150-220 grit sandpaper to create a smooth edge.
- When drilling, frequently remove excess shavings to avoid heat buildup.

EXPANSION & CONTRACTION

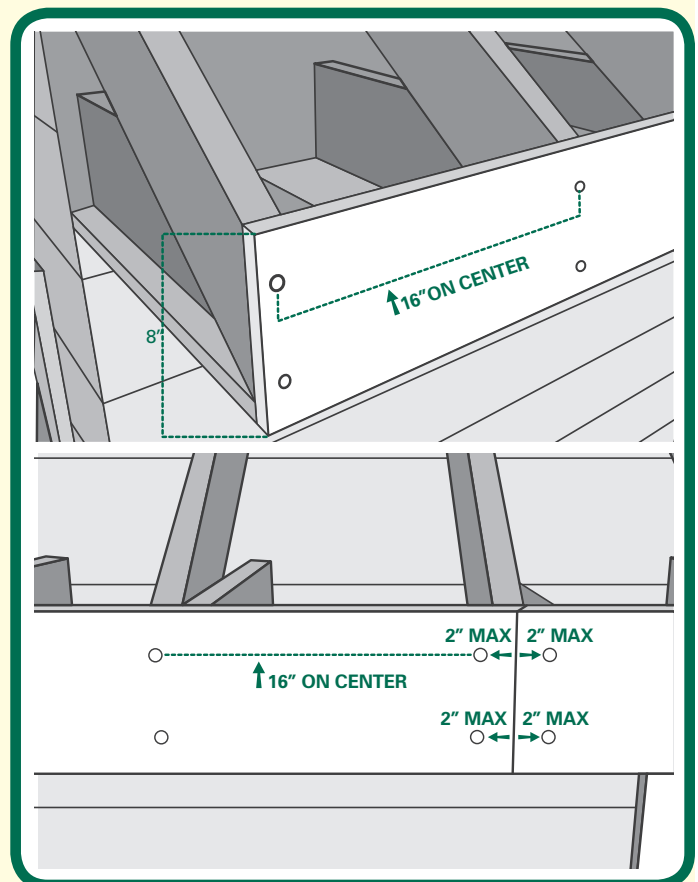


- Like many building materials, Klear will expand and contract with changes in temperature. This is normal and is not covered by the Klear Limited Lifetime Warranty. Under normal conditions and when properly fastened, Klear will expand/contract approximately 1/8" per 18' length of Klear. Failure to use the proper type and quantity of fasteners may result in expansion and contraction greater than 1/8" per 18'.
- Klear trim boards should be acclimated to the temperature conditions at the time of installation.
- Fastening Klear along its entire length will help minimize expansion and contraction.
- When joining Klear end-to-end (as in long-run applications) pieces may be joined together using butt-joints and #20

plastic biscuits with adhesives specifically manufactured for PVC products, like *Bond & Fill™ STRUCTURAL™* or *Gorilla PVC Cement* to avoid joint separation. If joints are glued together, create 1/16" expansion spaces per 18' of run at each end. These spaces may be filled using any high quality flexible caulk/joint sealing products like *Bond & Fill™ FLEX™*.

- Alternatively, rather than gluing pieces together for long runs, leave expansion spaces of approximately 1/8" between the pieces and fill with a high quality flexible caulk/joint sealing product like *Bond & Fill™ FLEX™*. Use scarf joints for all expansion spaces between the pieces in long runs and leave a 1/16" space at each end of the run.
- ♦ On cold days (temperatures at low end of the normal annual temperature range), increase expansion space between boards to slightly more than 1/8" per 18' length.
- ♦ On hot days (temperatures at high end of the annual temperature range), decrease expansion space to slightly less than 1/8" per 18' length.

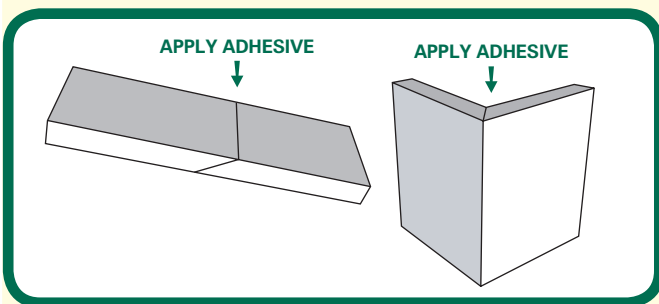
FASTENING



- Fasten with stainless steel or hot-dipped galvanized nails with smooth shanks, blunt tips and round heads (wood siding nails, box nails, etc.). Exterior coated or stainless steel trim-head screws (nothing smaller than a #6 screw) may also be used.
- Do not use staples, wire nails or brads to fasten Klear. Fasteners that can be bent with bare hands will not provide appropriate strength.

- The use of ring shank nails is not recommended because the rings on the shank of the nail may heat up when driven causing the back of the board to “blow out”, potentially reducing the fasteners’ effectiveness.
- Standard pneumatic nailers, set at 70-80 psi, may be used to fasten Klear. Air pressure may be adjusted as necessary.
- Pre-drilling is not typically required unless using large nails or installing in temperatures below 40°.
- Fasten Klear to a flat, solid wood substrate at least 1-1/2” thick using nails or screws that penetrate into the substrate a minimum of 1-1/2”.
- Klear must have fasteners no more than 2” from each edge.
- Klear trim boards 8” or narrower require two fasteners evenly spaced across the face of the board and fastened to 1-1/2” thick framing no more than 16” on-center. 10” and 12” Klear trim boards require three fasteners evenly spaced across the face of the board and fastened to 1-1/2” thick framing no more than 16” on-center. When spanning framing greater than 16” on-center, use Klear that is a minimum 5/4” (nominal) thickness. Never install Klear on framing that spans greater than 24” on-center.
- Klear sheets 3/4” thick or greater require fastening every four inches along no more than 16” on-center framing. Thinner sheets require fastening every four inches on framing no more than 12” on-center.
- Use of construction adhesive (along with mechanical fastening) may help to minimize expansion and contraction, particularly when Klear is painted dark colors (LRV less than 55% – see PAINTING section).

GLUING



- Klear can be both edge and face glued. Before gluing, make sure surfaces are clean, dry and smooth enough to make full contact.
- To prevent separation, joints may be glued using #20 plastic biscuits and adhesives specifically manufactured for PVC products, like *Bond & Fill™ STRUCTURAL™* or *Gorilla PVC Cement*. These adhesives typically have limited working time. The use of plastic biscuits and clamping, nailing or screwing both sides of the joint will allow time for the adhesive to fully cure.
- When face gluing Klear to Klear (lamination), lightly sand each face to ensure proper adhesion.
- Klear can also be laminated to a variety of substrates using glues appropriate for both PVC and the substrate.

Consult with the adhesive manufacturer and always test the bond prior to installation. Never use adhesives alone to attach Klear to a substrate.

PAINTING

- Klear does not need paint to retain its Limited Lifetime Warranty, but may be painted with 100% acrylic latex paint or other paints specifically formulated for vinyl products. Always follow the paint manufacturer’s instructions.
- Light Reflective Value (LRV) is a measurement of how much light a color reflects and absorbs and is usually listed on the paint manufacturer’s color chart. If Klear is painted a darker color with an LRV less than 55%, it will absorb more light, generating more heat and may cause expansion and contraction greater than the typical 1/8” over 18’. When using 100% acrylic latex paints only use colors with an LRV greater than 55%. When using a color with an LRV below 55%, use only paints specifically designed for vinyl products like *Sherwin Williams SuperPaint® with VinylSafe™ Technology*.
- Klear must be clean, dry and free from debris or any surface contaminants to maximize paint adhesion. Use a soft brush and standard household cleaner if necessary to clean the surface before painting. Stubborn stains may be removed with denatured alcohol.
- For small surface imperfections including nail or screw holes, exterior spackle or painter’s caulk may be used as filler.
- Since Klear does not absorb moisture like wood, it may take longer for paint to fully cure. Once fully cured paint lasts longer on Klear than wood.

HEAT BENDING

- Gradually heating Klear to approximately 270° for 7 minutes with convection ovens, heat blankets and box heaters will make it pliable enough to be formed into various shapes. Gradual heating prevents damage such as discoloration or scorching of the surface.
- To avoid skin burns, always wear protective gloves thick enough to protect hands from the heated material.

KLEERLOK & KLEERBEED

- When installing Klear beaded products in soffits, fasten every 12” or less, perpendicular to structural framing.
- KlearBeed should be face-fastened every 4” along a maximum of 12” on-center, 1-1/2” thick framing.
- Construction adhesive may be used with mechanical fasteners to minimize expansion and contraction.
- KlearLok products feature a flange for easier blind-fastening. Fastening KlearLok using this flange is sufficient for a 16’ maximum run. For longer runs, additional face-fastening and/or the use of construction adhesive will help restrict expansion and contraction.
- Always leave a 1/4” – 1/2” expansion space at each end of the run and cover the space with Klear Mouldings.

KLEER ONE-PIECE CORNERBOARDS

- Klear one-piece cornerboards and Klear Konceal one-piece cornerboards offer reduced installation time and improved finished appearance opportunities.
- All corner sheathing must be properly flashed prior to installing all Klear cornerboards.
- Make sure the cornerboard is properly positioned prior to fastening. Take special care to leave appropriate expansion and contraction spacing at both the top and bottom of the cornerboard.
- Standard 3 1/2" and 5 1/2" wide (per side) cornerboards require two fasteners evenly spaced across each side spaced no more than 16" apart along its length. Custom sizes larger than 8" wide (per side) require three fasteners across each side spaced no more than 16" apart along its length.

MOULDINGS

- Mouldings may be cut using standard woodworking equipment. For power miter saws, carbide tooth blades are recommended.
- Joints may be glued using products like *Bond & Fill™ STRUCTURAL™* or *Gorilla PVC Cement*. When bonded correctly, the joint becomes an integral part of the system being applied.
- Use adhesive caulk with mechanical fastening to improve holding power and make the installed moulding more secure.
- Install Klear mouldings using 6d and 8d galvanized or stainless steel nails 12" on-center and approximately 3/4" from each edge.
- Pre punch moulding for easier hand nailing and use a nail set to counter sink nail heads. If nailing Klear mouldings at 40° F or below, pre-drilling is required.

These installation guidelines are only suggested techniques to be used when installing Klear PVC products under typical conditions. Klear does not represent or warrant that these techniques will work in all applications. Klear Lumber, LLC assumes no liability for any damages, including but not limited to, damages to the person, property, incidental, special and/or consequential damages, whether or not foreseeable, resulting from, and/or relating to the installation of our products. Please refer to Klear's Limited Lifetime Warranty for more details concerning our exclusive and sole warranty.

KEY REMINDERS

To help maximize the beauty and performance of Klear trimboards, please consider the following installation reminders:

- ◆ Install Klear over a continuous substrate that is at least 1-1/2" thick.
- ◆ Use the proper quantity and size of fasteners that will penetrate the substrate at least 1-1/2".
- ◆ Leave the appropriate expansion spaces between pieces of Klear based on the temperature at the time of installation.
- ◆ Use adhesives made for PVC products, like *Bond & Fill™ STRUCTURAL™* or *Gorilla PVC Cement* to join Klear.
- ◆ Use 100% acrylic latex house paint to finish Klear if you choose a color with an LRV greater than or equal to 55%.
- ◆ Use a coating that is formulated specifically for exterior vinyl products if you choose a color with an LRV less than 55%.



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