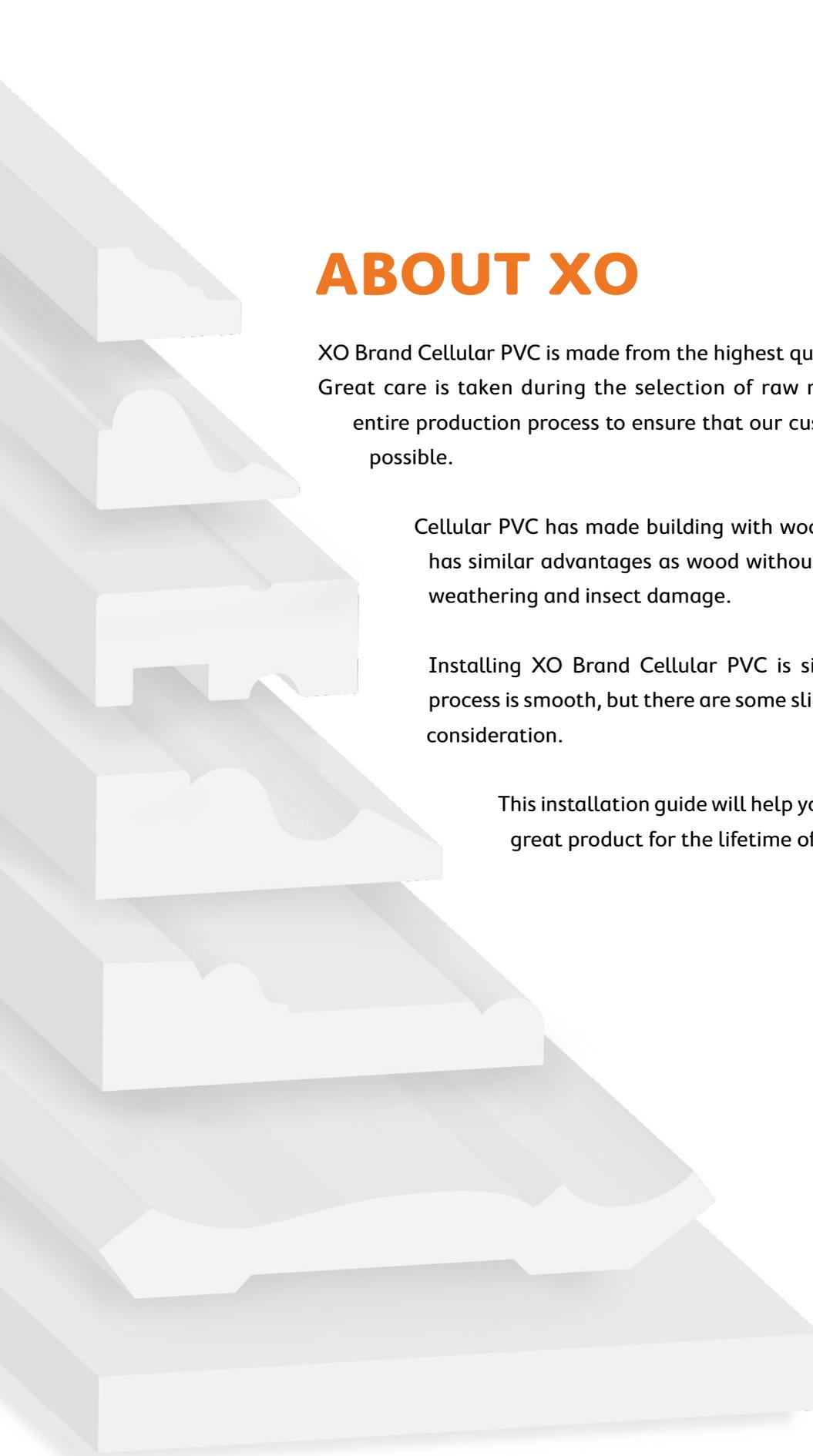




INSTALLATION GUIDELINES





ABOUT XO

XO Brand Cellular PVC is made from the highest quality materials in the industry. Great care is taken during the selection of raw materials and throughout the entire production process to ensure that our customers receive the best value possible.

Cellular PVC has made building with wood products obsolete. Why? It has similar advantages as wood without the drawbacks including rot, weathering and insect damage.

Installing XO Brand Cellular PVC is similar to installing wood; the process is smooth, but there are some slight differences to be taken into consideration.

This installation guide will help you maintain the integrity of this great product for the lifetime of your project.



Notice

Thermal Exposure / Expansion and Contraction

All PVC products, regardless of brand or specific job installation, will have a greater degree of expansion and contraction compared to natural woods. The possibility of expansion and contraction needs to be taken into account during installation and with paint selection, if painting is desired. Not following these guidelines could cause lackluster overall performance, partial or complete failure of your project, and will void the limited lifetime warranty.

Painting

Painting a color darker than a Light Reflective Value (LRV) of 55 is likely to become problematic and will void any and all warranty claims. See more specific painting recommendations and guidelines herein.

At-A-Glance



**THE GENERAL RULE IS THAT
18' RUNS WILL EXPAND AND**

**CONTRACT 1/16" TO 1/8" IF THEY ARE INSTALLED
AT ROOM TEMPERATURE AND
NOT IN DIRECT SUNLIGHT.**

For more on proper installation, see page 6-8.

Thermal Exposure / Expansion and Contraction Notice:

All PVC products, regardless of brand or specific job installation, will have a greater degree of expansion and contraction compared to natural woods. The possibility of expansion and contraction needs to be taken into account during installation and with paint selection, if painting is desired. Not following these guidelines could cause lackluster overall performance, partial or complete failure of your project, and will void the limited lifetime warranty.



To Cut, Rout or Drill

- You should cut, drill and rout XO with the same tools you would use to cut natural hardwoods.
- Always use sharp blades and toolings to achieve the best cuts.
- Pre-drill in temperatures of 40 degrees and below.
- Avoid heat build up.



Handling and Storage

- XO should be handled properly to avoid damage and as you would natural softwood boards or moulding of similar density.
- Store on a flat surface in an area not at risk for excessive heat exposure.
- Clean with mild cleaning agents, making sure to rinse all cleaning agents once complete.
- It is not recommended to use abrasive cleaners or solvent-based products.
- Always test a cleaning agent in an inconspicuous area to ensure it will not alter the product surface.
- Protective eyewear is suggested when cutting, drilling routing and milling XO.



Nailing and Fastening

- Never span more than 18' with XO.
- Fasten into substrate at no less than every 16".
- Use Durable fasteners; stainless steel and galvanized hot dipped are recommended.
 - Cortex®, Pro Plug® and similar fastening systems for PVC trim are also recommended.
- Screwing is preferred over nailing.
- Use 8-gauge or greater for trim boards and 16-gauge or greater for moulding installations.
- Fasteners must be installed no more than 2" from each board or trim end.
- Anchor all boards, moulding and sheet applications solidly to substrate.
- Never fasten to hollow surfaces without a substrate.
- Do not use on load-bearing applications.

For more information on fastening, see page 6.

At-A-Glance



Proper Joining

Joining, in combination with fastening and gluing, is important to consider with each job application.

Proper joints connect boards, whether they're runs or they've been cut to size, and they can be connected to the same base material or different materials at multiple points. The purpose is to limit movement as much as possible wherever possible; the only exception is in 16' to 18' runs.

For more detailed information on proper joints, see pages 7 and 8.

Temperature Guide



- 91° F or higher**
Tight Joints, No Spacing
- 40° F - 90° F**
Leave 1/16" Space
- 39° F and below**
Leave 1/8" Space



Adhesives and Sealants

PVC products have drawn the attention of producers of adhesives and sealants, big and small. Many have product lines dedicated specifically to PVC trim and moulding products.

- Adhesive and sealants play an integral role in installation.
- Always use a quality adhesive and sealant.
- Use the correct type for each application.
- Using the wrong adhesives and sealants could dramatically lower the overall and lasting performance of your project.

For adhesives and sealants recommendations, see page 9.



Painting

An immediate cost benefit of PVC over wood is that painting is not required. XO does not accept responsibility for any paints used or unsatisfactory results due to the use of any paint application.

- Tested with excellent bond to 100% acrylic latex paints.
- High quality paint is recommended for lasting performance.
- All paints used must have a Light Reflective Value (LRV) of 55 or higher; consult a color card or a paint professional.
- Always use paints at full strength and never cut with thinner or water.
- Follow manufacturers' guidelines for any paint products used.
- Heat-deflective paints are recommended; consult with a paint professional for further recommendations.

Notice: Painting a color darker than a Light Reflective Value (LRV) of 55 is likely to become problematic and will void any and all warranty claims.

Expansion and Contraction

Vinyl-based products are subject to expansion and contraction. The general rule is that 18' runs will expand and contract 1/16" to 1/8" if they are installed at room temperature and not in direct sunlight.

Expansion and contraction will be greater if products are installed during extreme temperatures, hot or cold.

Thermal Exposure

Thermal exposure is seen most heavily with linear expansion; the longer the run of board, moulding or sheets, i.e. fascia application, the greater degree of consideration needed. Smaller runs or shorter cut lengths will be less exposed, but it is still recommended that they be glued and nailed to the substrate at a minimum of every 16" and at each properly joined joint.

Thermal exposure can easily be thwarted through proper installation using one or more of the following in combination:



Gluing and Fastening
Locking Joints
Movable Joints

Installation Types

Gluing and Fastening

Each installation is different, but a general rule is to use enough fasteners and recommended adhesive to prevent movement.

- Stainless steel fasteners are preferred, but hot-dipped galvanized fasteners are also recommended.
- 8-gauge or heavier fasteners are recommended for trim boards.
- 16-gauge or heavier when possible is recommended for trim moulding.
- Trim screws are recommended whenever the job application permits.
- Use two fasteners every 16" (minimum), penetrating a minimum of 1 1/4" into the substrate.
- Install fasteners spaced a maximum of 1 1/2" to the end of each run.
- Use air tools and compressors at the lower pressure end of specific manufacturers' recommendations.
- Pre-drilling for screws is recommended for better performance.

Fastener Recommendations

OSI

Offers a fastener and plug system for PVC applications

"TeQ" screws & plugs

www.ositough.com/en/products/view-all-products/teq-fasteners.html

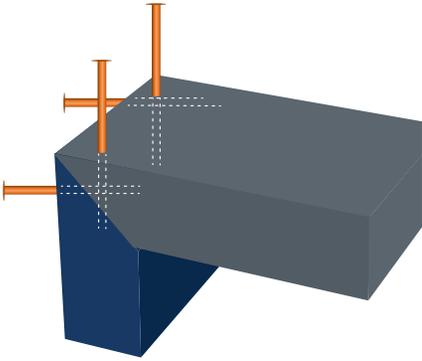
Starborn Industries

Offers a fastener and plug system

"Pro Plug" system

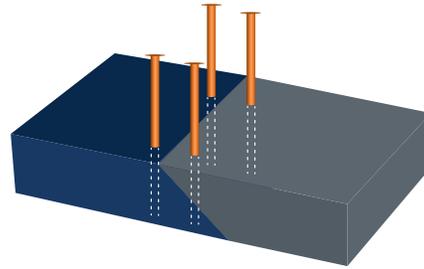
www.starbornindustries.com/pro-plug-pvc-product

Locking Joints



Miter and Coped Joints

- Cut a 45-degree angle or greater.
- Apply adhesive.
- Fasten with two fasteners in the middle of the joint.
- Fasten with two fasteners on each side of the joint, 2" away from joint end.
- Be sure the joints accompanying fasteners are solidly attached to backing substrate.



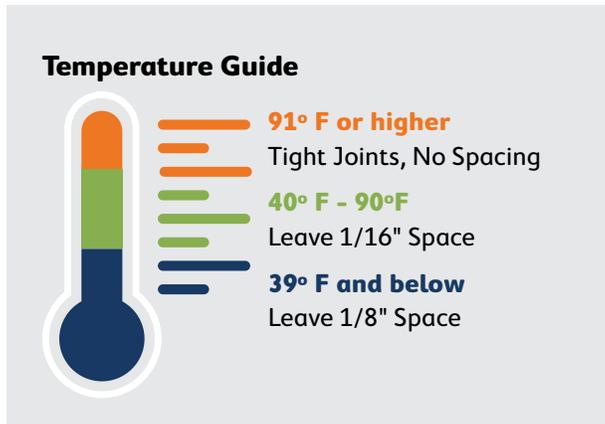
Scarf Joint

This is the most the common and highly used joint to prevent movement.

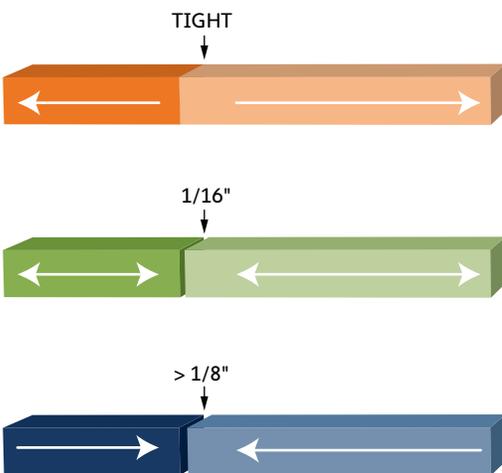
- Cut a 45-degree angle or greater; the greater the degree of cut, the more surface area for joint-holding power.
- Apply adhesive.
- Fasten with two fasteners in the middle of the joint.
- Fasten with two fasteners on each side of the joint, 2" away from joint end.
- Be sure the joints accompanying fasteners are solidly attached to the backing substrate.

Moveable Joints

Moveable joints are also commonly known as expansion and contraction joints. These are made to allow controlled movement where it's most likely to occur, between the ends of longer 16' to 18' runs. Moveable joints should be glued, but also fastened 2" from the end of each board, not at the joint itself.

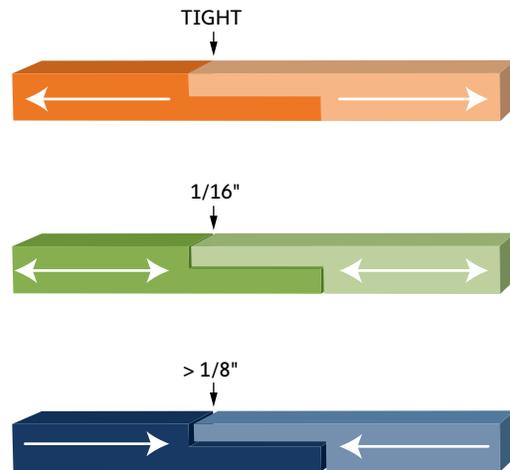


End-of-Run Joints



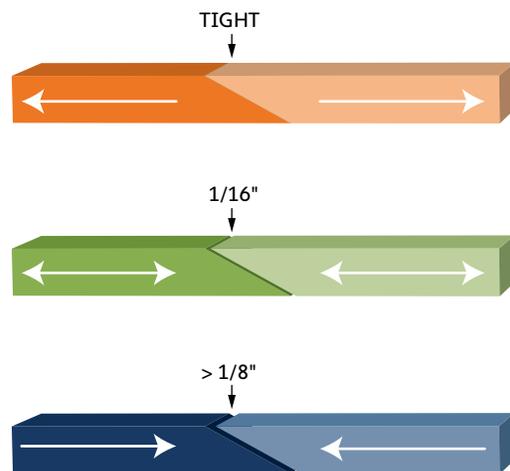
End-of-run joints, or better known as hidden expansion joints, are commonly used in longer (16' to 18') runs where two or more pieces are placed end to end. This is a floating joint between connections or in the eaves of runs, with the size of the gap determined by the installation temperature. This joint is filled with adhesive and sealant to allow for thermal expansion and contraction.

Shiplap Joint



A **shiplap joint** is the most preferred joint type for both strength and appearance on a moveable joint, but you can also use a scarf joint to achieve a proper moveable joint.

Scarf Moveable Joint



A **scarf moveable joint** connects two ends that are beveled or notched so they fit over each other. If joints are glued together, create 1/16" expansion spaces per 18' of run at each end. These spaces should also be filled using sealant.

Adhesive and Sealant and Recommendations

It is important to use a strong polyurethane-based construction adhesive; the stronger, the better, particularly with gluing at joints and adhering product to substrates. Always check the label for approved uses and refer to the manufacturer's instructions and curing times.

Silicone sealants are not recommended on PVC trim, moulding and sheet products; silicone does not adhere well to PVC products over time. Butyl-based or Elastothermic sealants are most preferred as these allow for a greater degree of expansion and contraction. If they're not available, polyurethane or acrylic-based sealants are recommended.

Bond & Fill

A full line of products dedicated to cellular PVC

Adhesives designed for most applications

Sealants and caulking for expansion-and-contraction joint applications

www.bondfill.com

OSI

A comprehensive line of adhesive products

Offers a fastener and plug system for PVC applications

Offers a training DVD for PVC installation

www.osipro.com

IPS Weld-On

Complete line of industrial adhesives

Easy-to-view selection chart

Adhesives designed for most applications

www.ipscorp.com



272 Bendix Road, Suite 550
Virginia Beach, VA 23452

PH (757) 498-0186
FX (757) 498-1075

xobypenrod.com