VALOR
SPECIALTY PRODUCTS INC.

PVC Sheets & Trimboards
General Installation Guide

Cutting

- Carbide-tipped blades with fewer teeth are preferred (32 tooth blade optimal).
- Rough-cut edges are typically caused by excessive friction, poor board support, or worn or improper tooling.

Drilling

- PVC can be drilled using standard woodworking drill bits. Do not use drill bits made for rigid PVC.
- Point angle - 90º-110º, spiral angle - 30º, Relief angle - 10º
- Remove shavings periodically from a drill hole as necessary to avoid heat build-up.

Routing

- Standard wood working carbide-tipped bits with multiple flutes are recommended.
- Always start a run with new or resharpened tooling.

Finishing

- Sand cut edges with 320 grit sand paper and wipe down cuts with solvent to clean and "reseal" cells to reduce dust and dirt build-up.

Moulding

- Standard wood working machinery is acceptable with speeds of 8,000 RPM's or greater (the higher the RPM's, the smoother the surface). Feed rates are profile dependent. For basic cuts, feet rates of 30-50 feet per minute yields best results.

Fastening

- Use 8d nails designed for wood trim and siding that have thin shanks, blunt-points and full round heads. Annular threads are a plus, especially during cold weather installations.
- Fasteners must penetrate a full 11/4" into substrate. (stud or joist)
- Fasten 2" maximum from ends of board.
- Avoid fastening PVC over hollow or uneven areas. Fasten PVC onto flat, solid substrates.
- Stainless fasteners are preferred over galvanized – Less chance of corrosion. (galv. stripping off fasteners)
- Nail guns can be used – PSI between 80-100 dependent upon gun, nail, outside temperature and substrate. Care should be taken not to overdrive the nail into the material.
- Use 7d trim screws to better control expansion/contraction.
- In temps under 40°F pre-drilling may be required, depending on the fastener used.
- 3/8" and 1/2" PVC Sheet and Trimboard are not designed to be ripped and used for trim applications
- These products must be glued and fastened to the substrate.

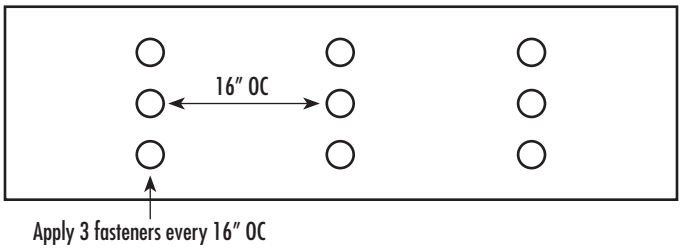
Fastening Schedule

To best control movement of boards.

Board Width	Fasteners per width a maximum of every 16" on center
4" & 6"	2
8" & 10"	3
12"	3-4
16"	4-5

Fastening Pattern

Example: 12" board below.



Recommended Fastener Screws

- Fasten Master Cortex Screw/Plug System with Plugs.
- Simpson Strong-Tie 21/4" Trim Screw or Equal (for 1X and 5/4X boards).

Recommended Fastener Nails

- 8D Nails with Annular threads (ex. Simpson Strong-Tie Trifecta Nail). The Trifecta Nail is available collated for use with a variety of nailing guns.

Sealants and Adhesives

- PVC Cements: Weld-On #705, Christy's Red Hot, or Cellular PVC cement by Ze-VO Products Group.
- Methacylates with UV Inhibitors (2 components) – PVC TrimWelder by Extreme Lepage Quad or Quad Max; Various urethane Sealants.
  *Preferred sealant should be polymer-based containing solvents.
- Do not use silicone.

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*Bonding PVC to Itself

- Weld-On 705 PVC adhesive, Cellular PVC Cement by Ze-VO Products Group, or Christy's Red Hot
- PVC TrimWelder by Extreme Adhesives

*Bonding PVC to Wood

- Liquid Nails Subfloor or Heavy Duty Construction adhesive
- Lepage Quad or Quad Max
- Polyurethane based adhesives (PL's or equivalent)

*Bonding PVC to Metal

- PVC TrimWelder two component methacrylate by Extreme Adhesives

Bonding PVC to Concrete or Block

- PVC TrimWelder by Extreme Adhesives
- Lepage Quad or Quad Max

**Must be used in conjunction with mechanical fasteners.*
**Most PVC cements cure in 3–5 minutes and have a limited working time.*
**Always test sealants and adhesives for compatibility before applying.*

Filling Nail Holes

- Best Method: Cortex Concealed Fastening/Plug System for PVC Trim.

Expansion and Contraction

Movement occurs due to temperature fluctuations. This movement is restricted to the length of the product. The product will not swell or shrink like wood experiencing a moisture cycle. PVC trim will expand (lengthen) when it warms and contract (shrink) when it cools.

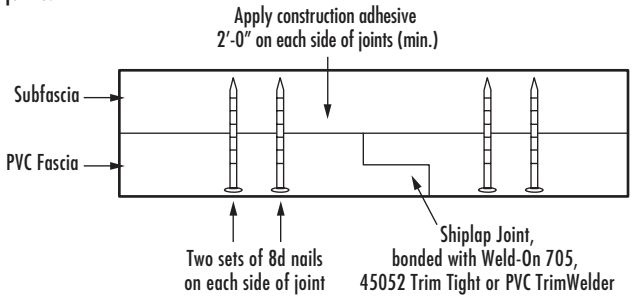
Tips on Expansion and Contraction

- Expansion and contraction is ONLY an issue on longer "runs" (rake, fascia, frieze) comprised of three or more 18' boards (short lengths, around windows for example, can and should be built with tight joints).
- The more the product is mechanically fastened or bonded on longer runs, the less likely it will move.
- Screws restrict movement more than nails.
- As a rule, if you can bend the fastener in your fingers it is too thin (no wire or brad nails). 18 galv. and 16 galv. trim nails are not recommended.
- You can further restrict movement on longer runs by reducing on center fastening to 12".
- Board movement is typically seen on walls with southern exposure, or areas where product is in direct sunlight.
- All joints in high traffic or visible areas should be glued tight. Expansion/Contraction joints should be placed in inconspicuous areas along the run of trim.
- Allow PVC to acclimate to outside temperature before installing – if possible install long runs when boards and outside temperature are approximately 60-70°F.
- Shiplap joints offer a superior joint, especially on long runs.

Best Practice to Control Expansion and Contraction at Board Joints

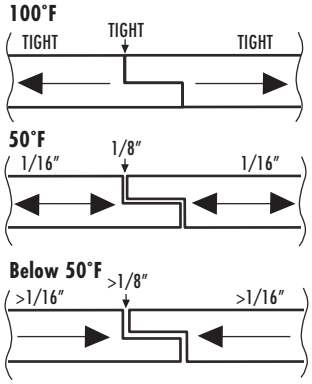
Method #1: Glue the Joints Secure (High Traffic Areas)

1. Shiplap the boards at the joint, and glue the boards together with Weld-On #705 or another acceptable PVC cement.
2. When possible, apply construction adhesive to back side of boards. Liquid Nail Sub Floor Adhesives or Heavy Duty Construction adhesive works well when attaching a PVC fascia board to a subfascia.
3. Double fasten on both sides of joint (remember screws work best). Use proper amount of fasteners based on width of boards.
4. If necessary, allow for movement at the ends of the boards or at inconspicuous joints.



Method #2: Leaving an Expansion Joint

1. Based on temperature at time of installation (see chart below) create a gap between boards.
2. Follow proper fastening methods previously outlined.
3. Place UV resistant acrylic based or polymer based sealant in joint between boards (Lepage Quad, Quad Max or equal is recommended).
4. Never completely fill joint with sealant. Leave room to compensate for joint closure.



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Painting

- VALOR's PVC does not require painting for protection. Use paints that are 100% acrylic latex or acrylic latex with urethane additive.
  **CAUTION: PAINTING ANY CELLULAR PVC TRIM, DARK COLORS, CAN RESULT IN POOR PERFORMANCE AND WILL VOID THE WARRANTY. USE PAINTS WITH A LIGHT REFLECTIVE VALUE (LRV) OF 55 UNITS OR GREATER

Options for Dark Colors Consult AquaSur Tech OEM on "heat reflective" paints in applications where the paint color has an LRV value less than 55 units. When using paints, the liability of performance rests with the paint manufacturer. "Heat reflective" paints with an LRV between 45 and 55 have proven successful in the field.

Tips on Painting

- To obtain adequate paint adhesion, be sure the surface of the PVC Trimboard is clean, dry and free of dirt, loose or peeling paint, mildew, chalk, grease and any other surface contaminants before applying paint. Use a mild detergent and water or denatured alcohol for cleaning.
- Paint can take up to 30 days to fully cure depending on outside temperatures and humidity conditions.
- Follow the paint manufacturer's surface preparation and application recommendations.
- Before painting, remove any mold or mildew using a mixture of three parts water and two parts bleach.
- If you paint PVC a dark color, you must first remove it before applying a lighter color paint with an LRV of 55 units or greater.
- Paint life is longer when applied to PVC versus wood due to the absence of moisture in our trim.

Cleaning

- PVC will not support mold and mildew growth. (ASTM G-21-96)
- If products get dirty, clean with products like Soft Scrub® with Bleach, Spic 'n Span®, Clorox® Regular Bleach, Clorox® Clean-Up®, Clorox® Outdoor Bleach Cleaner, OxiClean™, or Corte Clean. Use a nylon brush for stubborn stains. Use 320 grit sand paper to reduce cell size on cut edges of boards.
- Test any cleaner on an inconspicuous area before use.

Storage and Handling

- Store PVC on a flat level surface as it has a tendency to conform to the surface on which it is stored.
- Handle PVC as you would a premium lumber to avoid damage.
- Keep PVC free of dirt and debris and clean after installation as described above.
- Do not store or place on asphalt or in areas prone to excessive heat build-up.

Moisture

PVC can be installed at or below grade, as it does not absorb moisture. PVC is perfect for use in moisture-prone applications such as garage door jambs, column wraps, ground contact, masonry contact, hot tub surrounds, and at rooflines.

Safety

- All machining should be done in a well ventilated area.
- Safety glasses should be worn whenever you are working with PVC.
- When cutting with a powersaw, a dust mask is recommended.

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