

## C. Moulding and Millwork

### Technical Bulletin C-2

#### Fastening Cellular PVC Trim

All cellular PVC trim, no matter what brand label it carries, will expand and contract on average about  $\frac{3}{16}$ " in an 18' length. If installed correctly, VERSATEX trim can give you a very aesthetically pleasing, finished look on your home. Expansion and contraction is associated with longer "runs" (rake, fascia, frieze), comprised of 3 or more 18' boards. To help minimize board movement, certain steps should be taken to mechanically constrain the board. The following is a list of recommended steps you should consider adopting when installing long runs of VERSATEX PVC trim.

- 1) Fasteners with thin shanks, blunt points, and full round heads are preferred. The fastener must be long enough to penetrate the substrate a minimum of  $1\frac{1}{4}$ ". The substrate must be the frame of the house, not the sheathing. In addition, the shank of the fastener must be strong enough to resist the movement in the trim. If you can bend the shank of the nail with your hands it is more than likely too thin. 8d, 12 gage annular threaded or spiral type 316 stainless steel fasteners are recommended. Galvanized fasteners have a tendency to lose their coating during nailing and may lead to rust stains appearing on the VERSATEX Trimboards. Simpson Strong-Tie produces an 8d, 316 Stainless Steel Nail that is ideal for coastal areas. Its screw shank creates a pilot hole for smooth entry into and through the board. The ring shank at the bottom will help secure the VERSATEX trim to the house. The nail is available in collated or loose (hand driven). For more information on this fastener call (800) 999-5099 or visit their website, [www.strongtie.com](http://www.strongtie.com).
- 2) Fasteners should be placed no closer than  $\frac{1}{2}$ " from the outside edges of the board. An aggressive nailing schedule (maximum 16" on center or less) is recommended. If framing members are greater than 16" on center, provide additional wood blocking for fastening. Bonding the trimboard to the substrate, such as subfacia, using Liquid Nails Sub Floor or Heavy Duty Construction Adhesive is preferred.
- 3) The recommended number of fasteners across the width of the board is shown in the schedule below. Typically fasteners should be spaced approximately 3" on center.

Nominal Board Width	Fasteners per Width Board Width
3	1
4 and 6	2
8 and 10	3
12	4
16	4 or 5

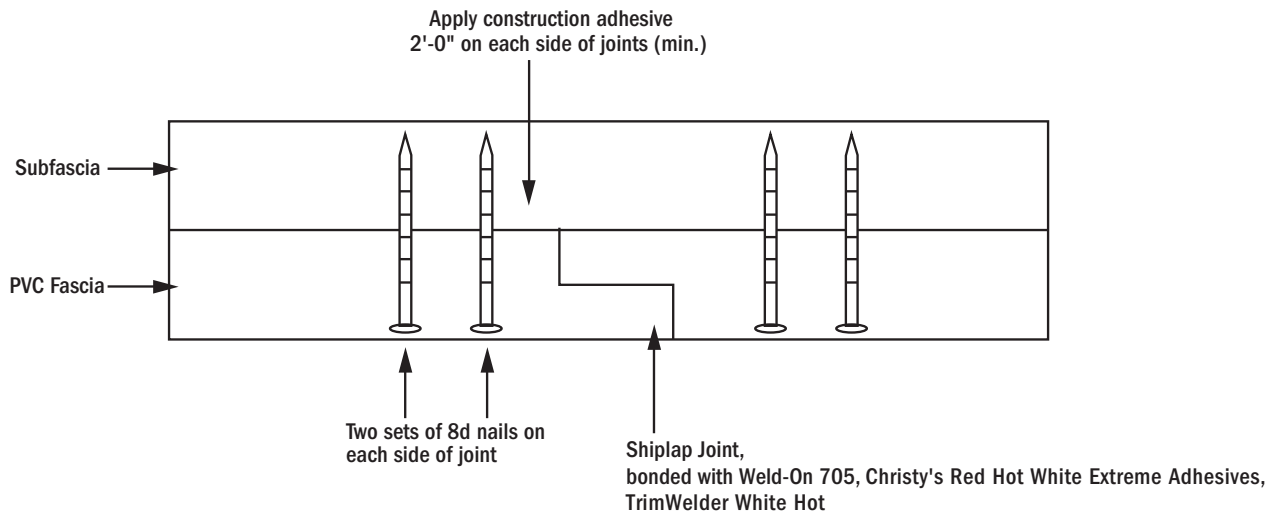
- 4) Install fasteners no more than two inches from the end of each board ( $\frac{3}{4}$ " preferred).
- 5) In highly visible areas, bond joints between VERSATEX boards to eliminate separation. Use expansion joints in less conspicuous areas on long run of VERSATEX trim.

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- 6) Bonded joints should be secured with a double row of fasteners on each side of the joint. Use a shiplap joint. Butt joints are not recommended. Construction adhesive should be applied on the back side of the board about 2' - 0" on each side of a joint where practical (example: sub fascia).



- 7) Use a UV resistant polymer based, or polyurethane caulk to fill any gaps between boards for appearance. Sealants containing solvent bond well to VERSATEX. Recommended sealants include Solar Seal #900 by NPC sealants (Trimboard White #111), Quad OSI or Geocel 2300.
- 8) Pre-drilling is typically not required unless large shank fasteners are used or the product is installed when the outside temperature and the temperature of the board is below 40°F. The impact properties of VERSATEX diminish with low temperatures.
- 9) If you prefer to use a sealant rather than a bonded joint between boards, utilize a shiplap joint, leave a full 1/4" gap when installing on a day where temperatures range from approximately 50°F to 60°F.

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- 10) Utilize a shiplap joint and no gap when installing on a day when temperatures range from approximately 80°F to 100°F.
- 11) If picture framing VERSATEX to form a window surround, cut the boards bonding them with a PVC adhesive such as Weld-On 705 or PVC TrimWelder White Hot, and then pocket screw the jambs to the head and sill to strengthen the surround. Secure the surround with fasteners to the frame of the structure, as you would any wood trim.
- 12) If gun nailing, set the pressure to between 70 and 100 psi. The pressure will be dependent upon the type of gun, the type and thickness of nail, ambient temperature, and the thickness of the substrate the nail must penetrate. In line pressure gauges will help maintain even pressure to the nail gun. Be careful not to over drive the nail through the trim. Excessive driving force can cause micro-cracks to develop on the backside of the VERSATEX Trimboard.
- 13) To avoid a build up of stress in the board which could cause them to become wavy, it is recommended that fastening begin on one end and proceed towards the other or from the middle working towards each end.
- 14) Ring shank fasteners are not required for a secure hold into the substrate. These nails are designed to withstand the pressure of wood swelling and shrinking with fluctuating moisture content. The seasonal movement of wood is primarily in thickness. The shanks create additional holding power into the substrate against this outward force. Movement of VERSATEX PVC is almost entirely in length. Any variation in thickness is insignificant and measured in thousandths of an inch. There is no outward pressure away from the substrate to be considered when selecting a fastener. The holding power of a smooth shank nail is more than adequate for all VERSATEX products. The reason ring shank fasteners are not approved for use with VERSATEX is because the rings on the shank of the nail create excess frictional heat when penetrating the product which can lead to melting of the PVC. Repetitive strikes of a hammer especially in colder weather can cause the PVC to soften followed by rapid cooling which allows material to build up on the nail since the rings are of a greater diameter than the point. If the cooling happens before the nail passes completely through the board into the substrate, the result can be excess material break out at the point of impact and possible cracking or fracturing of the boards.
- 15) When securing VERSATEX with screws it is recommended that wood or deck screws with coarse threads be used a 316 stainless steel #7d screw painted white is a good choice. Stainless steel screws are preferred. Galvanized steel can corrode, leading to discoloration on the face of the trimboard. Screws should be tightened until a snug fit is obtained. Stainless steel screws with a white painted head are available through Simpson Strong-Tie Fasteners ([strongtie.com](http://strongtie.com)), and Starborn Industries, Inc. ([headcote.com](http://headcote.com)).
- 16) In the cases where you don't intend to paint your VERSATEX trim, use Fasten Master's Cortex Fastening Screw & Plug system or Starborn's Pro Plug system. Both are available with VERSATEX plugs.

Please see our Contractor Handbook or our installation instructions available at [versatex.com](http://versatex.com) for additional fastening recommendations.