

EX-CEL[®]

PVC TRIM



INSTALLATION GUIDE



Ex-cel[®] PVC Trim Installation and Usage Guidelines

Ex-cel PVC Trim is a thermoplastic with all the working characteristics of lumber but none of the drawbacks. It can be worked just like wood using standard off the shelf tools. Follow the installation and usage guidelines shown below to ensure its much sought after performance.

Storage and Handling

- Store Ex-cel PVC Trim on a flat level surface for it tends to conform to the surface on which it is stored especially for long periods of time during mid to high ambient temperatures.
- Handle Ex-cel PVC Trim as you would handle lumber to avoid damage.
- Keep Ex-cel PVC Trim free of dirt and debris.

About expansion and contraction

Ex-cel PVC Trim is an expanded cellular PVC foam product that expands and contracts with swings in temperature. This is normal with plastics. The basis for determining the limits of expansion and contraction is the temperature range in the area where the material is used. It is also important to consider the temperature of the material, relative to the ambient temperature at the time of installation. This will determine how tightly pieces can be butt-joined, or what size of gap should be used to compensate for seasonal thermal expansion and contraction.

On a warm day

Working with Ex-cel PVC Trim on a warm day (75 to 95) will cause the material to be fully expanded. Should the material come from storage at lesser temperatures, leaving it in the sun for an hour or so prior to installation should help achieve full expansion. Pieces can then be joined tight, with no gaps. But we still recommend a small 1/32" gap and the use of an acrylic or a UV resistant caulk to seal the gap.

Bevel or shiplap joint for a better looking finish.

On a moderate day

When working with Ex-cel PVC Trim on a day of moderate temperatures (55 to 75) the material will be partially expanded. You must allow for some expansion in your installation. The appropriate amount can be determined by considering the ambient temperature relative to the overall temperature range. A gap between 1/16" to 1/8" should be considered. For a better look it is recommended to bevel or shiplap the joint, to allow for the material expansion and avoid buckling or binding. Caulk can be used to fill the gap for a better appearance.

On a cool day

When working with Ex-cel PVC Trim on a cool day (25 to 55) the material will be mostly contracted. You must allow for full expansion when the temperature warms to seasonal highs. As a rule of thumb depending on exposure to the sun the material will move approximately 1/8" per 12 foot or 3/16" per 18 foot length.

For a better look it is recommended to bevel or shiplap the joint, to allow for the material expansion and avoid buckling or binding. Caulk can be used to fill the gap for a better appearance.

Got it nailed

Proper fastening is a critical element in limiting expansion and contraction. Aggressive nailing patterns, minimum 16" on center, can seriously help restrict seasonal movement of Ex-cel PVC Trim. Fasteners with sufficient tensile strength in the shaft to prevent bending are recommended. Most expansion problems are the result of inadequate fastening, and can be prevented by adhering to a strict schedule of properly spaced nailing. The rule of thumb for fastening Ex-cel PVC Trim is the more nails you use to secure it, the less it will move.

Fastening

Ex-cel® PVC Trim can be hand nailed; power nailed and screwed just like wood using most common fasteners utilized in securing wood to various substrates. It can also be glued following common practices with excellent results.

Nails should have sufficient tensile strength to resist bending during seasonal movement. For best results use smooth shank, screw, annular threaded, or spiral type nails that are stainless steel or hot-dipped galvanized, designed for wood trim and siding. Standard nails can rust and will cause staining on the material.

Avoid using staples, small brads, wire nails, fine-threaded wood screws and ring-shank fasteners. Rings on the shank of the nail can create excess frictional heat when penetrating the product creating some melting of the PVC.

Pre-drilling is not required unless large fasteners are used or the product is installed during low temperatures.

Use standard nail guns with a pressure setting between 70 psi and 100 psi. The recommended pressure depends on the type of gun, type of nail, ambient temperature, and the substrate to which Ex-cel PVC Trim is being fastened to. Do not overdrive nail into the material.

Use two fasteners for every framing member for trimboard applications.

Ex-cel PVC Trim Sheet and trimboards 12 inches and wider require additional fasteners. Install fasteners no more than 2 inches from the end of each board.

Avoid fastening Ex-cel PVC Trim over hollow or uneven areas. Fasten Ex-cel PVC Trim onto flat, solid substrates.

Three-eighths-inch-thick and half-inch-thick Ex-cel PVC Trim Sheet and Beadboard are not designed to be ripped and used for trim applications.

These products must be glued and fastened to the substrate.

Fastening Outdoors in Low Temperature

Impact properties decrease in low temperatures, making the material more susceptible to cracking or shattering.

Repetitive strikes of a hammer or nail gun in colder weather can cause the PVC to soften or melt; rapid cooling may cause material build up on the nail. If the cooling happens before the nail passes completely through the board into the substrate, the melted PVC can form into an awkward shape that cannot efficiently exit the smooth surface of the board resulting in excess material break out at the point of impact and possibly some hairline cracking. Use of annular threaded nails is not recommended in low temperatures. The friction build up on the threads can cause some material blow out on the back of the board.

Bonding and Adhesives

Ex-cel PVC Trim can be bonded to a variety of substrates, as well as itself. For best results, all surfaces to be glued must be smooth, clean, and in complete contact with each other.

When bonding Ex-cel PVC Trim to other substrates, consult the adhesive manufacturer to determine suitability.

Ex-cel PVC Trim to Ex-cel PVC Trim or other PVC

PVC pipe cement or other solvent based adhesives work very well. Use one with a moderate or slow set up time. Plumber's cements generally have a fast set up time and may bond too quickly for detail work. Cements such as Bond-and-Fill, IPS Weld-On 705 (white), and 3M's Scotch-Grip 4475 plastic adhesive are very good for this application.

Bonded butt-joints should be securely fastened on each side.

Proper ventilation and a clean environment are essential for adequate curing.

Panels can be laminated face to face but require special attention such as using a wood press and more time for solvent based adhesives to cure properly.

Ex-cel PVC Trim to various other substrates

There are a variety of adhesives that are applicable for use with specific substrate combinations. Contact cement, epoxy, rubber based and urethane adhesive systems are all generally acceptable. Specific formulations vary with each manufacturer, and performance is dependant on application. For best results, consult the manufacturer's recommendations, and test the application for finished suitability before proceeding.

Cutting

Ex-cel PVC Trim can be cut using standard woodworking saws. Conventional carbide-tipped blades designed for cutting wood are preferred. Avoid using fine tooth metal-cutting blades.

Rough-cut edges are typically caused by excessive friction, poor board support and worn out or improper tooling.

Sharp inside corner cuts, such as the base of a dovetail, and scored lines can be easily broken. For best results, a small radius should be maintained to help avoid any stress cracking. Scoring of the material should be avoided.

Drilling

Ex-cel PVC Trim can be drilled using standard woodworking drill bits. Do not use drill bits made for rigid PVC.

Avoid frictional heat build-up.

Remove shavings periodically from drill holes to prevent electrostatic build up in dry climates.

Routing, Molding and Milling

Ex-cel PVC Trim can be routed, molded and milled using standard woodworking equipment. Multi-fluted carbide bits are recommended when molding or milling Ex-cel PVC Trim. Be sure to run test pieces of Ex-cel PVC Trim to achieve the smoothest finish when using multiple speed woodworking equipment.

Ex-cel PVC Trim is widely used with CNC routers because it provides a crisp, clean edge due to its uniform cell consistency.

Soffits and Ceiling Installations

For spans of 16 inches to 24 inches use 1-inch (19mm) thick nominal products.

When installing Ex-cel PVC Trim Beadboard as soffit, orient the Beadboard perpendicular to the surface and fasten every 12 inches or less.

For ceiling and other applications fasten Beadboard or thinner Ex-cel PVC Trim Sheet every 16 inches or less.

Never span Ex-cel PVC Trim more than 24 inches.

Painting

Ex-cel PVC Trim does not require painting for protection but if painting is preferred, note the following:

- Use 100% acrylic latex or 100% acrylic latex with urethane additive paint with a light reflective value equal to or greater than 55 units.
- Solvent based (MEK, Acetone) paints adhere extremely well to Ex-cel PVC Trim but may require more coats to achieve the desire hue.
- Be sure the Ex-cel PVC Trim surface to be painted is clean, dry, and free of dirt, loose or peeling paint, mildew, chalk, grease and any other surface contaminants before paint application.
- Avoid using darker colors in areas exposed to direct sunlight. Follow the paint manufacturer's application recommendations.

Heat Forming/Bending

Ex-cel PVC Trim can be easily formed into a variety of shapes by heat forming or bending.

Cleaning

Ex-cel PVC Trim may be cleaned with a factory-approved cleaner after installation. Semi abrasive products such as Soft Scrub® may be applied with a stiff but pliant nylon brush. Denatured alcohol also works fairly well on the flat non exposed surface.

Secrets of the trade

1. If Material cannot be face nailed securely, it may require larger end gaps; in some cases double.
2. Material that receives direct sun exposure may be subject to a wider expansion and contraction.
3. Do not install Ex-cel PVC Trim in areas that can exceed 140 degrees because it may soften and change its dimension permanently.
4. Darker paint colors can increase expansion and contraction when exposed to direct sunlight.
5. Expansion and contraction affect mostly the length of the board. Fastening Ex-cel PVC Trim along its entire length will keep movement to a minimum. Width expansion is so insignificant that can't be measured.
6. The more nails used to secure Ex-cel PVC Trim, the more movement will be restricted.
7. Ex-cel PVC Trim is not designed to be used in load bearing applications, but it may be used in spanned applications such as soffits and ceilings.
8. Ex-cel PVC Trim can be installed at or below grade because of its negligible moisture absorption. It is an excellent choice for garage doorjamb, ground contact, masonry contact, hot tub surrounds, and rooflines.

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