EX-CEL® PVC SHEETS

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JAIN® Jain Americas, Inc.

Installation Guidelines

EX-Cel PVC Foam Sheet

INTRODUCTION

- Retail Signs
- POP Display
- Advertising Signage
- Screen Printing
- Marine Applications
- Cabinets
- Store Fixtures
- Transportation
- Digital Flat Bed Printing

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HANDLING & STORAGE

- Care should be taken when handling material. Do not drag material, it could cause damage.
- Material should be stored on a flat, level surface.
- Ideally the material should be stored in a shaded area. Avoid storing on pavement or under a dark tarp, where ambient temperatures may exceed 120°F.
- Keeping material covered will help keep dirt and debris off of the product.
- Material may be bulk ordered and stored in a cool environment that is clean and dust free.
- It is recommended that the installer wear clean cotton gloves when handling the material. The oils in human hands will alter the surface and could etch into the surface over time. If handled with human hands, it is recommended that the surface be cleaned as indicated below.
- If cleaning is needed, use either isopropyl or denatured alcohol, wiping in one direction.

EXPANSION & CONTRACTION

EX-Cel material will expand and contract with the changes of temperature. When the material returns to its original temperature, so will its size and shape. This "linear thermal expansion and contraction" property needs to be taken into account when installing the product.

Important variables are:

- The temperature the material is being machined and/or converted.
- The temperature range of the environment in which the material will be installed.

If the material will be installed in an indoor envionment with a relatively constant temperature and out of direct sunlight, there will be little or no thermal expansion or contraction.

Therefore, it is very important to take into consideration the temperature variables between the original cutting environment and the installed invironment where the material will exist.

> Do not use in areas over 140° F. It is recommended to not use dark colored material oudoors because the material can absorb heat and can exceed the maximum temperature of 140° F.

IMPORTANT: White material can show a surface temperature of 10° F to 20° F higher than the actual air temperature when in direct sunlight.

Below are some guidelines to follow to determine how to size up your gap to compensate for seasonal thermal expansion and contraction.

If the outside temperature is:

75° to 95°F, material is fully expanded, a small 1/32" gap between surfaces is recommended.

55° to 75°F, material will be partially expanded. A gap of 1/16" to 1/8" between surfaces is recommended.

25° to 55°F, material will be contracted. PVC material could expand up to an 1/8" between surfaces.

IMPORTANT: The maximum amount of expansion for the 96" length will be approximately 1/8". The minimum amount of contraction will be approximately 1/4". When attaching this material to concrete, U-channel tracking or slots for fasteners should be cut to allow for this expansion/contraction.

- Fill gaps with an acrylic or UV resistant caulk for sealing. (See BONDING & ADHESIVES section)

When installing EX-Cel material when the temperature is consistently below 40°F, pre-drilling is suggested.

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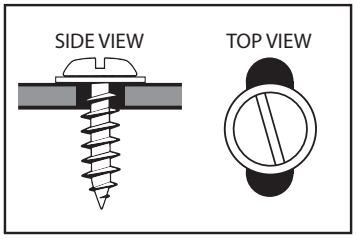
CUTTING, DRILLING & ROUTING

There are no special tools that are required to work with EX-Cel sheets or materials.

- The same tools that are used for wood can be used for EX-Cel sheets.
- Traditional Carbide-tipped saw blades, carbide-tipped router bits, and woodworking drill bits will work best.

FASTENING

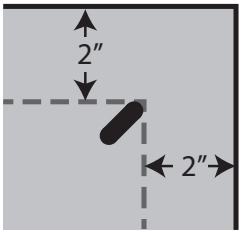
- Fasteners that are meant for wood will work best. They will have a thin shank, blunt points, and full round heads.
- Stainless Steel Fasteners are preferred over galvanized fasteners.
- #7, #8 and #10 screws work the best with PVC material.
- Pre-drilling is typically unnecessary.
- Power nailers or power screwing is suggested.
- It is recommended to create an oversize hole or slot in the material where the fastener will be located to compensate for expansion/contraction.



- Use oversized grommets or washers with screws. Tighten, then retighten the screw slightly to allow for the expansion/contraction of the material.

When attaching panels 18” wide or less in a temperature-controlled area, there is no need to allow for the expansion contraction. However, it is important to note that if the heating/cooling system were to malfuntion, then the temperature extreme could adversely affect the material.

- When installing thin small panels of material, nailing instead of screws is suggested.
- When using large screws or nails, pre-drill slotted holes at least 2 inches from any edges.



Pre-drilling is not necessary, unless you are installing in temperatures that are consistently below 40°F.

When installing material in cold temperatures outdoors, be careful not to fracture the material. The material becomes more brittle in colder temperatures, especially below 40˚ F.

INSTALLING AT JOINTS

Using a Butt Joint is acceptable for our EX-Cel material.

- Butt the ends of the boards next to each other, taking into consideration the expansion and contraction guidelines.
- Use an Acrylic or UV Resistant Caulk for the joint.
- Use our expansion and contraction guidelines listed in our install guide to determine the gap.
- Use an Acrylic or UV Resistant Caulk for the Butted joint. (See Bonding and Adhesives section for suggestions.)
- Fasteners no more than 2” from the ends of the board should be in place on both sides of the joints.

If installing joints when temperatures are below 50° F, leave an 1/8” gap to accommodate for the expansion in warmer weather.

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BONDING & ADHESIVES

EX-Cel material can be bonded to a variety of substrates, as well as to itself. For best results:

- All surfaces to be glued must be smooth, clean, and in complete contact with each other.
- Always consult the adhesive manufacturer for suitability.
- Proper ventilation and a clean environment are essential for adequate curing.

Temperature will always play a role in the adhesive's workability. See adhesive manufacturer guidelines before using.

- PVC Cement, such as Oatey PVC Cement, or other solvent-based adhesives work very well.
- Use one with a moderate or slow set-up time. Plumbers PVC Cement generally will have a fast set-up time and may bond too quickly for any detailed work.

Below are examples of adhesives to use when bonding to different substrates.

When Bonding PVC to:	PVC	Wood	Concrete/ Block	Metal
PVC Trimwelder	•			•
PVC Fill & Flex	•			
PVC White Hot	•			
Bond & Fill®	•			
IPS Weld on 705	•			
Liquid Nails Subfloor		•		
Liquid Nails Heavy Duty		•	•	
NPC Solar Seal 900		•	•	•

- Adhering your EX-Cel material to other substrates, besides itself, may require mechanical fasteners to be used as well as the adhesive or sealant.
- Always test the adhesive for compatibility before applying.

Follow the manufacturer's storage and handling recommendations. Disposal of solvents or spent adhesives may be subject to local regulations.

PAINTING & FINISHING

Although it is not necessary to paint your EX-Cel PVC material, it will accept and hold paint very well.

- Use a high-grade exterior 100% acrylic latex paint with urethane additive.
- The LRV (Light Reflective Value) needs to be 55 units or greater.
- Painting PVC dark colors (under LRV of 55 units) could result in poor results of your PVC material and will void your warranty. Although, darker colors have been proven to work, Jain will not be liable.
- If your color is below the LRV of 55 units, use paints specifically for PVC products, that are vinyl safe and contain heat reflective pigments. Some examples may be Sherman Williams, PPG/Matthews Paint or AquasurTech. Consult with the paint manufacturers for further information.
- Be sure that your surface is properly cleaned.
- Some paints can take upwards of 30 days to fully cure. This can depend on many variables; temperature and humidity being the major factors. Follow paint manufacturers' instructions to ensure proper installation and preparation.