ROYAL®

Trim & Mouldings

Contractor Handbook

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This guide outlines basic installation practices for the installation of Royal PVC trims and mouldings. These products should be installed in accordance with local building codes.

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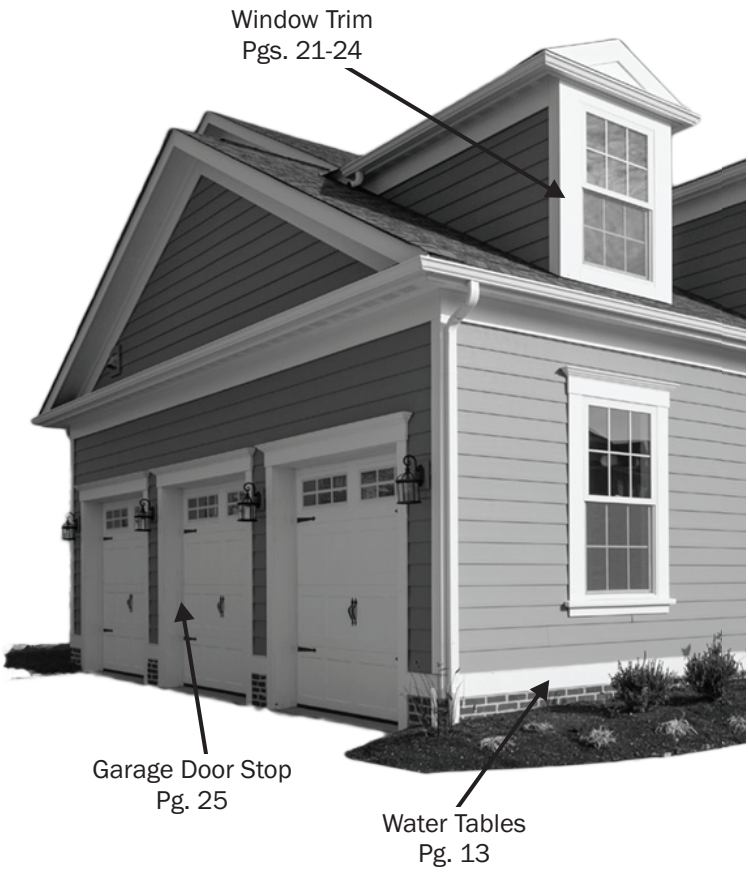
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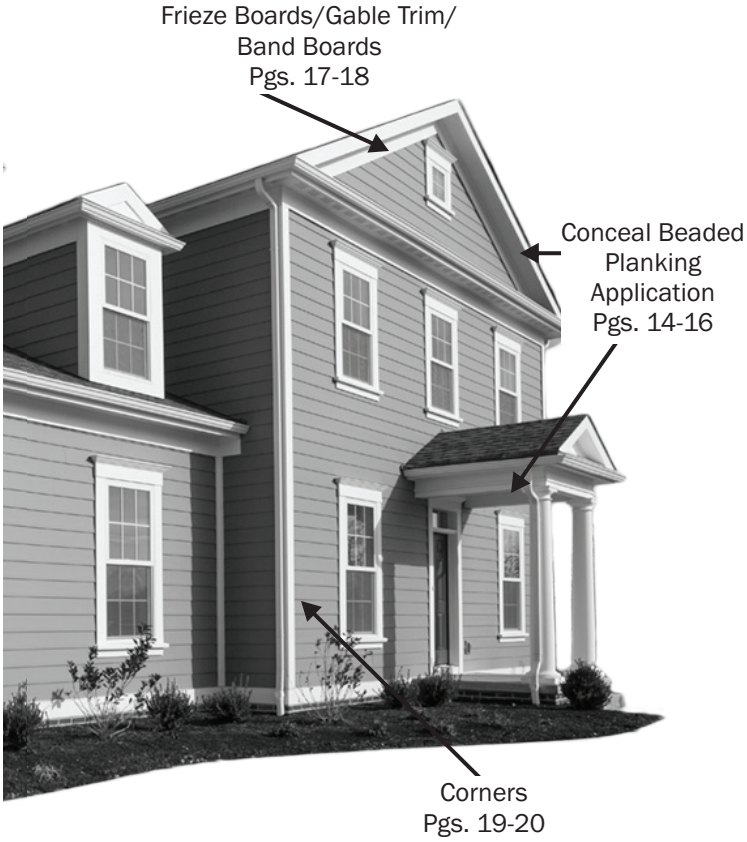
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Storage and Handling

- Royal trim and moulding should be stored off the ground, fully supported on a flat surface.
- Never place Royal trim and mouldings directly on blacktop or other surface that can develop excessive heat.
- Store in a well ventilated area.
- Handle the product with care to avoid damage.

Safety

- Wear safety glasses for all cutting and nailing operations.
- Follow standard safety practices for using power tools, ladders, etc.
- Cut and mill in a well-ventilated area.

Structural Integrity

- Royal trim and mouldings are not to be used as structural products in load bearing applications. PVC boards must always be supported by wood or other structural materials.

Cutting

- Carbide edge blades give the best results.
- The use of improper tooling or poor board support may result in rough cut edges.
- Fine tooth jig saw blades may cause the fusing of boards together at the cut line.

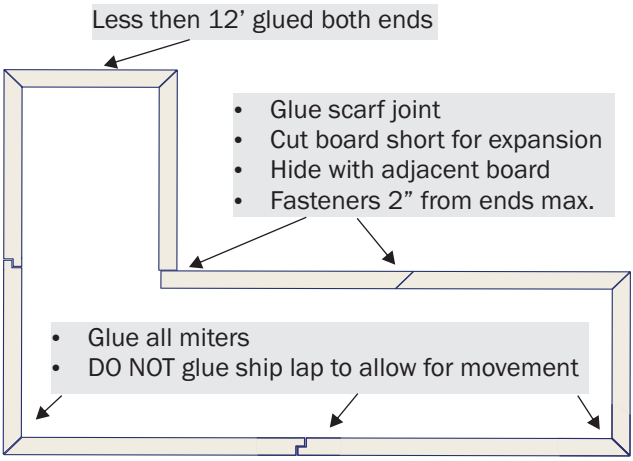
Routing

- Use standard wood working carbide-tipped router bits.
- Secure the trim to a bench or table when routing to minimize “chatter”.
- Once the routing is complete, the cut can be smoothed using 220-320 grit sand paper. This will seal the cut edge and make it more resistant to dirt.

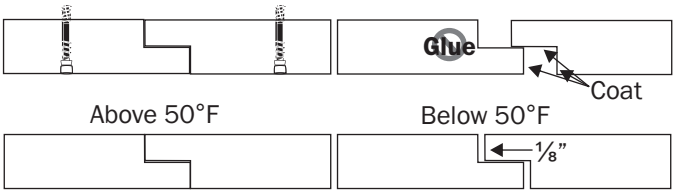
Managing the expansion and contraction

- PVC products expand and contract through temperature changes. This movement must be taken in consideration when working with the products.
- The amount of movement of a board is in relation to it's length. Therefore, the longer the board, the more movement is likely.
- Window trim is typically assembled prior to installation on the wall and are small enough not to need additional expansion joints, etc.
- See drawing below for guidance on longer pieces.

Managing expansion on longer runs



Place a fastener 2" from the seam on both sides.



Fastening

- Use fasteners designed for wood trim. They should have thin shanks, blunt points and full round heads.
- Fasteners should penetrate 1½" into substrate.
- Fasteners should be positioned no less than ¾" or more than 2" from end of board.
- Fasteners must be weather resistant, such as stainless steel or hot dipped galvanized.
- Pneumatic guns can be used. Air pressure should be adjusted based upon gun, temperature, substrate, etc. (80-100psi typical).
- Trim should be fastened to a flat solid surface.
- In cold weather below 40º, pre-drilling may be necessary.
- Do not use brads or wire nails. Staples can only be used to fasten beaded planking.

Recommended Screws

- Fasten Master Cortex Hidden Fastening System (screw and PVC plug system)
- Starborn Pro Plug System (screw and PVC plug system)
- Simpson Strong-Tie Trim-Head Stainless Steel Screw
- GRK Fasteners FIN/Trim Finishing Trim Head Screws (ClimatekCoated or Pheinox Stainless Steel)
- Kreg Blue-Kote Pocket-Hole Screws (for assembling trim with pocket-holes).
- Weather resistant deck screws (for hidden fastening of crown mouldings, etc.)

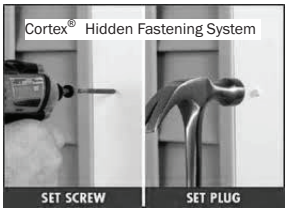
Recommended Nails

- 8d nails with annular or spiral thread shanks (hot dipped galvanized or stainless steel)
- 15 ga. galvanized or stainless steel trim nails (decorative trim only e.g. crown moulding)

Trim Board Fastening Schedule	
Board Width	**Fasteners/width 16" O.C. Max.**
4"-6"	**2**
8"-10"	**3**
12"	**4**

Finishing

Screw and Plug Systems



When using this method for fastening trim, there is no need for additional filling of nail or screw holes. Once the plugs are set as (shown at right), the trim is ready for painting if desired.

Filling Nail Holes

- Dap® All Purpose Painters Putty®
- Sherwin Williams Shrink Free Spackling®
- Two-part Epoxy Putty

Painting

Trim does not require painting. However, to maintain color consistency for many years it may be recommended. If painting is desired, we recommend using 100% acrylic paint with a light reflective value of 55 units or higher. If a darker color is desired (LRV 54 or lower), use only vinyl safe paints containing reflective pigments designed to reduce excessive heat gain (e.g. Sherwin Williams VinylSafe™). Caution should be used with these darker colors as they may negatively affect the performance of the trim. For best results, use a high quality paint that incorporates a primer. Warranty does not cover painted/coated finishes applied to product. Always follow paint manufacturers instructions.

Recommended Adhesives

G: Good Bond

ADHESIVE	PVC	WOOD	MASONRY	STEEL
Extreme Adhesives PVC Trim Welder	G			G*
Quality Transparent PVC Cement	G			
Liquid Nails Subfloor Adhesive		G*		
Liquid Nails Heavy Duty Adhesive		G*	G*	
NPC Solar Seal 900		G*	G*	G*
Loctite PL Premium		G	G	G

*** Mechanical fasteners are always required.**

Helpful tip for gluing two pieces of PVC trim

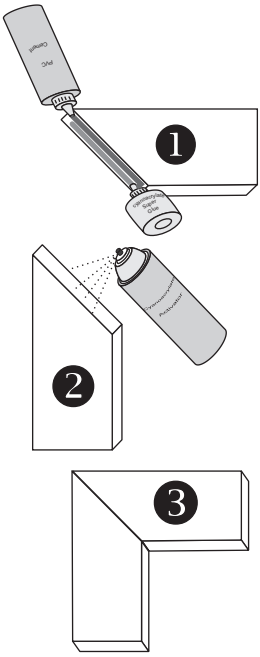
- **Two Part Gluing Method:** PVC adhesive along with Cyanoacrylate (super glue) and activator as a "clamp" **can be** used. However, these glues are **not sufficient to use alone**. They must be used in conjunction with PVC cement. (2P10 is an only an example of a Cyanoacrylate/Activator system. There are others.)

Cyanoacrylate Glue & Activator

PVC Cement

Using the two-part gluing system

- First, place a bead of PVC cement along one edge of one of the pieces to be glued.
- Next, place a similar bead of Cyanoacrylate glue.
- Spray the activator along the other piece to be glued. **Do not spray the coated face of the piece**.
- Carefully join the two pieces together making sure that they are aligned properly. Hold the pieces in place for 5-10 seconds or until the Cyanoacrylate glue adheres. This will allow for installation of the piece and give sufficient time for the PVC cement to create a permanent bond.



Heat Bending Trim

Cellular PVC is a thermoplastic polymer which means it becomes pliable or bendable when exposed to certain temperatures and returns to a solid state upon cooling. As such, some cellular PVC profiles can be reheated and re-formed, or bent into new shapes. Variations in batches, profile geometry and density or weight of the profile, will likely require some trialing and or experimentation to perfect this art and skill. For best results, do not bend any cellular PVC trim that is more than 6" wide. Some profiles are produced in a special formulation that facilitates bending, however the capability to bend cellular PVC trim is limited—not all pieces can be successfully bent 100% of the time. Royal S4S Trim Boards are not recommended for bending. Precision Cut or Sure Edge boards are preferred.

Methods for Bending Cellular PVC Profiles

There are several different methods that can be used to heat PVC profiles:

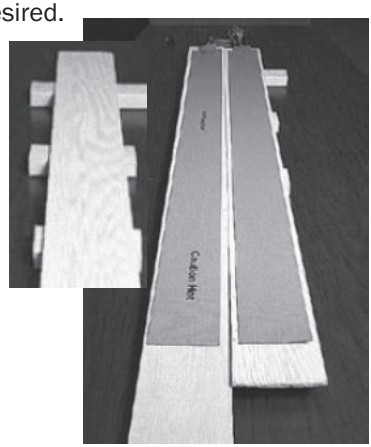
- ·Heat Blankets – great for job site fabrications.
- Convection air circulating ovens.
- Radiant ovens or heaters.
- Heat Guns – great for small jobs and profiles.

Whatever method is used, Royal Building Products assumes no liability, for any harm or damage to persons, product or property related to heat bending. Any and all safety precautions to prevent any harm or hazard should be followed by the end-user.

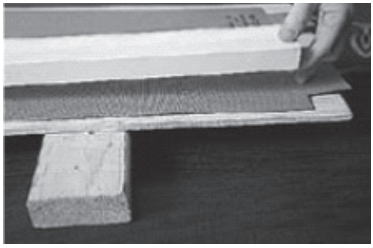
Heat Bending using a Heat Blanket

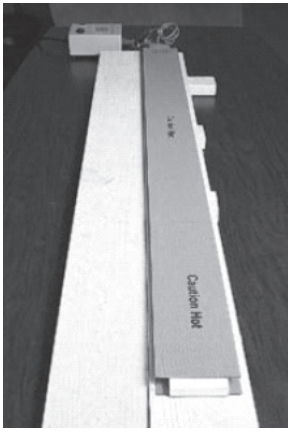
Tool and Material Needs

- Heatcon HC99-300 Heat Forming Kit or Equivalent
- Two 10' Pieces of fiber cement siding.
- Heat resistant gloves.
- Enough blocks of wood to raise the cement boards off the work table.
- Template of radius desired.



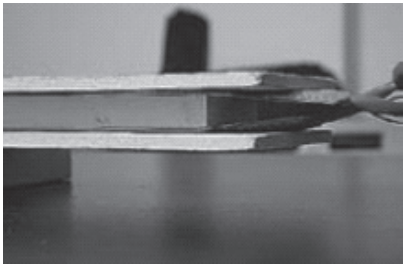
- Place the two cement boards side by side on wooden blocks to protect the worktable from heat damage.
- Lay one heat blanket on each of the cement boards.
- Place the material to be heated on one of the heat blankets. **Make sure the "X" is facing toward the material to be shaped.**
- Lay the second heat blanket over the material.

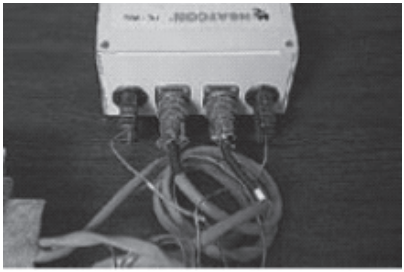


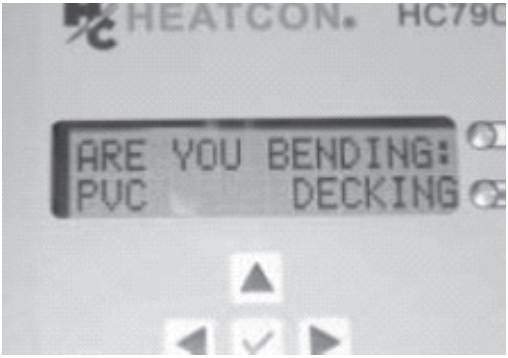


NOTE: The heating blankets <u>must not</u> touch each other. Place scrap pieces of trim between blankets if necessary.

- Lay the second piece of cement board on top of the blanket making sure the material doesn't shift.
- Making sure that the controller is not plugged into the wall, connect the heater power cords and thermocouples plugs on top of the HC7900 controller.







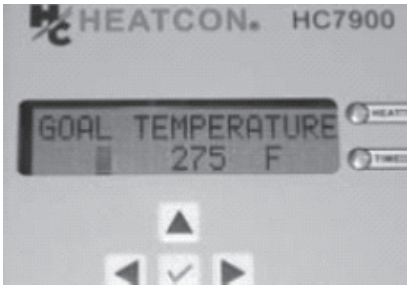
Set to PVC

- Plug the controller into the wall and push the on/off button. The display will flash the controller information and ask if you wish to bend PVC or decking.
- Use the left arrow to move the curser to PVC and push the ✓ key.

NOTE: Heating Temperatures and times may vary depending upon material and profile.

Set Goal Temperature

- Using the up/down arrows, set the temperature at 275ºF and push ✓.



Set the time at temperature

- Using the up/down arrows set the time for 8 minutes and push ✓.

Now in "SET" mode

- You can change or edit the settings if desired by using the arrows.

Begin heating

- Push the ✓ to begin the heat process.
- The controller will show [RUN].
- The timer LED will begin to blink.

End of the heating cycle

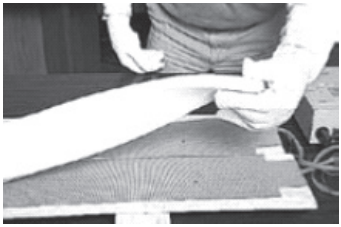
- The timer will sound an audible alarm when the heating cycle is complete.
- Push the ✓ to silence the alarm.

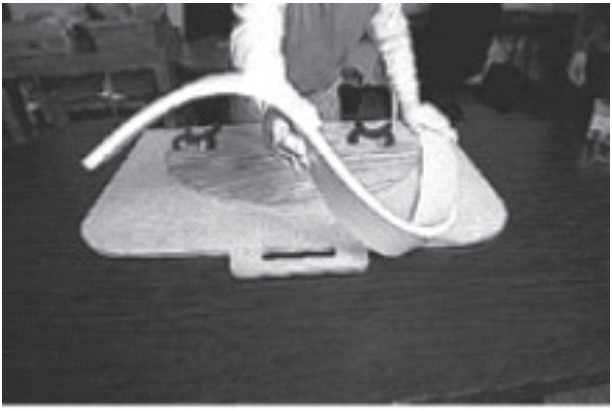
WARNING!

- **The heaters will remain on.**
- **The material will be hot and should only be handled using heat resistant gloves.**

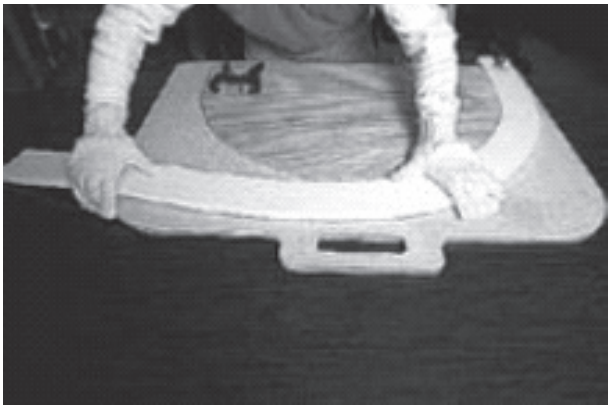
Check consistancy

- The material should feel like cooked spaghetti. If not, return to heating and continue checking every 2 minutes.





- Place one end of the softened material along the form.
- Clamp end to hold in place.

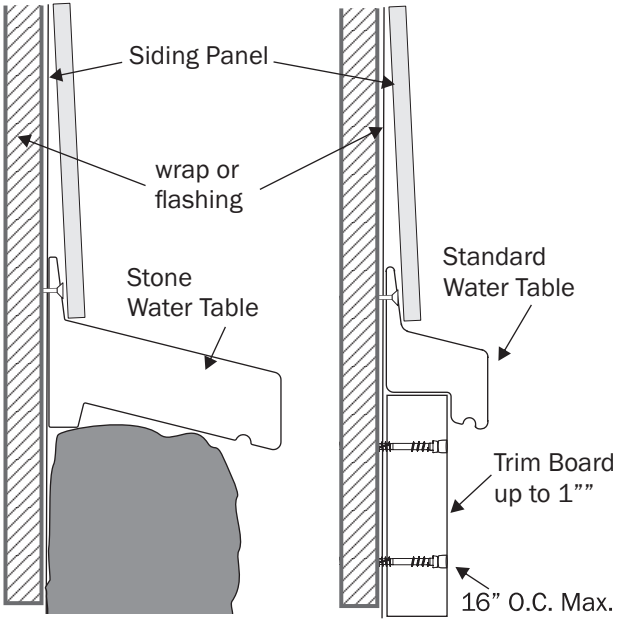


- Continue pulling the material gently along the form.
- If the material wrinkles or is too rigid to form, Quickly re-straighten the material and return to heating.

- After completing the forming, place a clamp at the opposite end.
- Apply even pressure by running hands along material as it cools. DO NOT APPLY TOO MUCH PRESSURE.
- After material cools, remove it from clamps.

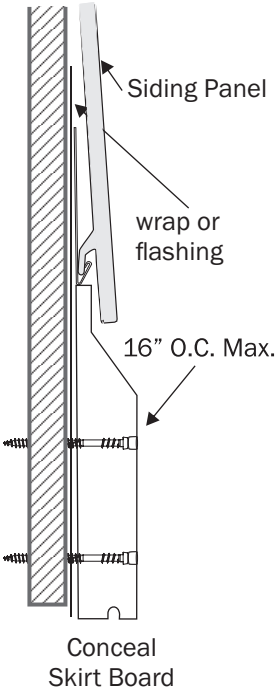
Water Tables

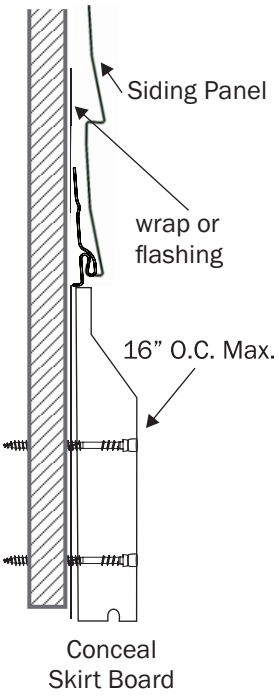
- Make sure that the wall is made weather resistant consistent with building codes. If no wrap is used, flash a minimum of 10” up from the bottom, hanging the flashing at least 1/4” over the bottom of the sill plate.
- Install the water table as shown below using weather resistant screws at 8-12” intervals.



Skirtboard

- Make sure that the wall is made weather resistant consistent with building codes. If no wrap is used, flash a minimum of 10” up from the bottom, hanging the flashing at least 1/4” over the bottom of the sill plate.
- Install the skirt board as shown below securing it the same as a trim board (page 8).
- If a drip cap is used, glue the cap onto the board.





Conceal Beaded Planking Soffit/Ceilings

- Conceal Beaded Planking can not be used in load bearing applications.
- Venting must be added to soffits where applicable. Check with local building codes for requirements.
- Conceal Beaded Planking can span up to 16" un-supported. For spans greater than 16", a minimum of ½" substrate such as plywood or 2X nailing strips must be installed to help support the planking. The planking should then be glued as well as otherwise fastened to the substrate and framing (Figures 2-4).
- **High Heat** planking must be used in applications where there is potential for excessive heat build, such as porch ceilings that cannot be vented. In these applications, bead board must also be installed over a minimum of ½" substrate such as plywood or OSB.
- For porch ceilings or long runs, nailing must be moved to 12" OC.
- Royal beaded planking should be run perpendicular to the structure whenever possible to result in the shortest pieces of material (Figure 1).
- If a seam is necessary within a 12' run, a shiplap is preferred to help conceal any shrinkage.
- Do not seam two panels directly to each other over 12'. Runs longer than 12' must either be full pieces (up to 16') or an expansion joint be used to allow for the expansion and contraction of the planking through temperature changes (Figure 6-7).

Fastening

- Fasteners should penetrate 1½" into substrate.
- Fasteners must be weather resistant such as stainless steel or hot dipped galvanized.
- Pneumatic guns can be used. Air pressure should be adjusted based upon gun, temperature, substrate, etc. (80-100psi typical).
- In cold weather below 40°, pre-drilling may be necessary.
- Staples can used •16 gauge T-nail •15 gauge trim nail

Conceal Beaded Planking Ceiling Layout

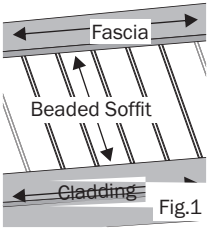


Fig.1

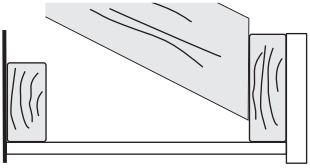


Fig. 2

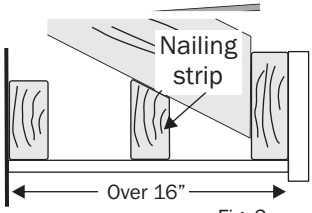


Fig. 3

OR

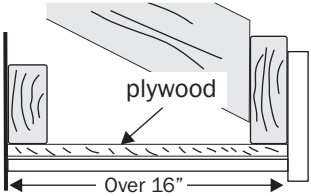


Fig. 4

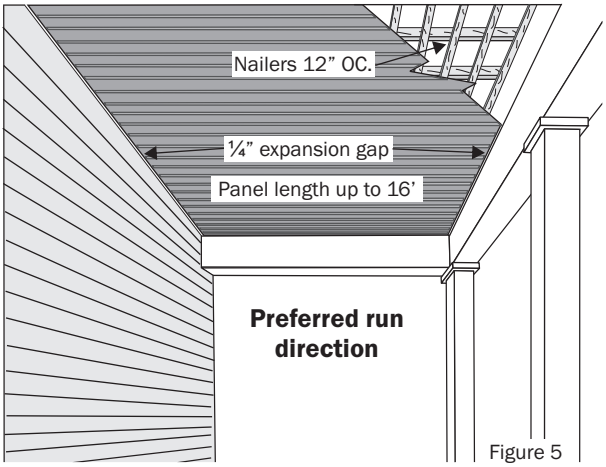


Figure 5

Conceal Beaded Planking Ceiling Layout

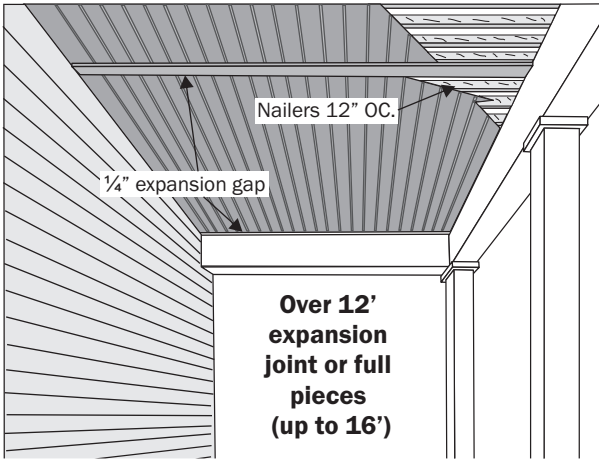


Figure 6

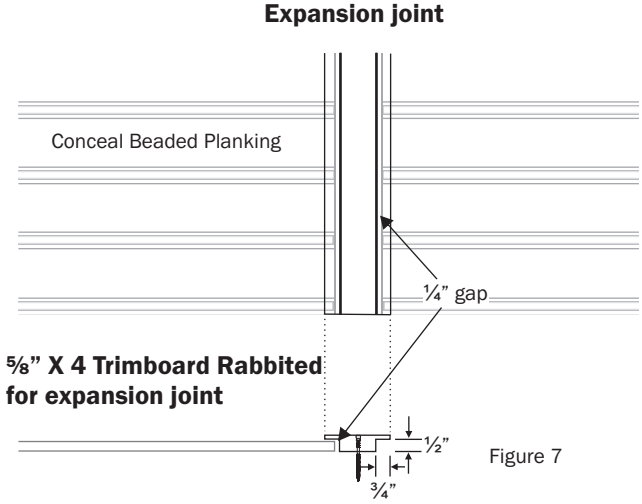
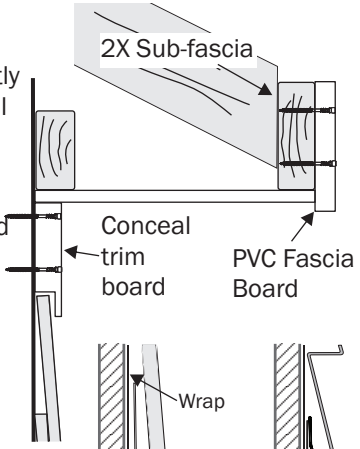


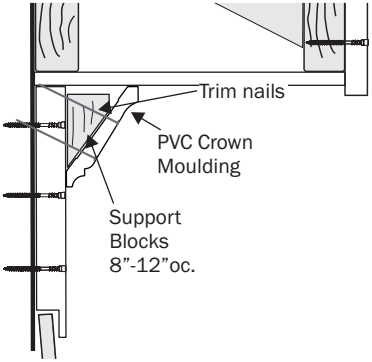
Figure 7

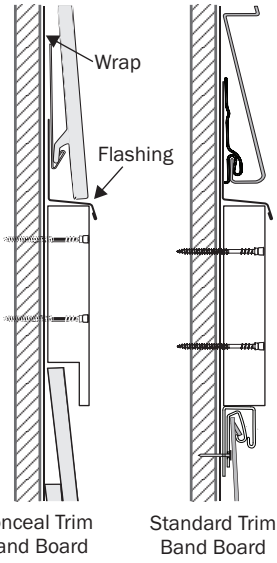
Frieze Boards, Band Boards and Fascia

- **Royal trim boards are not designed for structural use. Therefore, they must be supported. This includes fascia which must be fully supported by a sub-fascia.**
- **It is important to manage the expansion and contraction of longer runs using the methods described on page 17.**

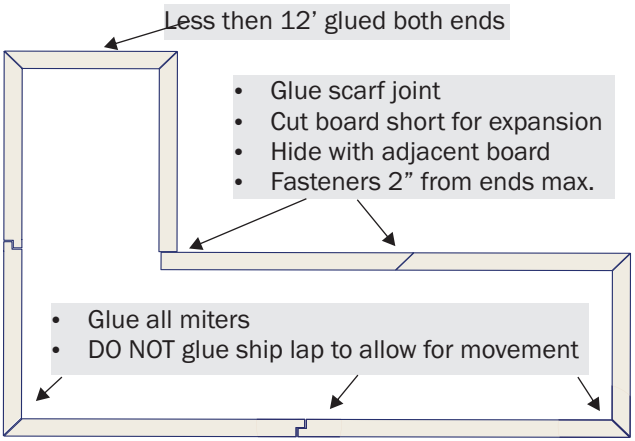
- Conceal trim can be used as frieze board by placing the board directly under the soffit material and securing it with fasteners as described on page 8.
- Install siding as directed by the manufacturer.
- Always install head flashing above band boards to help manage any excessive water.
- Decorative crown mouldings, etc. should be fastened using 15 ga. galvanized or stainless steel trim nails.



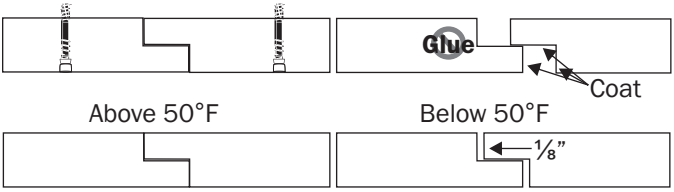




Managing expansion on longer runs



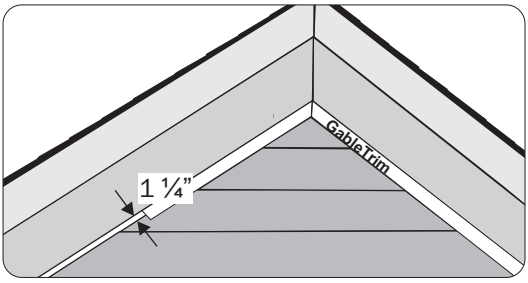
Place a fastener 2” from the seam on both sides.



GABLE TRIM

The gable trim is a suitable alternative to a standard trim board if a small profile is desired.

- Measure from the soffit 1 1/4” and strike a chalk line.
- Install the panels aligning the ends with the line.
- Install the gable trim using Cortex or Pro Plug screws and matching plugs. Place fasteners approximately every 12”-16”.



CUTTING MITERS ON GABLE TRIM

The multiple angles designed into the finish trim and the gable trim allow for the adjustment of the pocket width desired depending upon the application. However, if the installation includes mitering two adjacent pieces of trim together such as at the peak of a gable, it is important that the trim be placed correctly when cutting as shown in figure 9. A scrap piece of 3/4” thick material can be used as a guide to making placement easier.

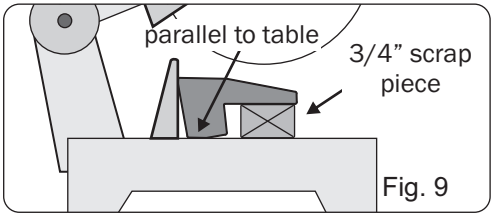
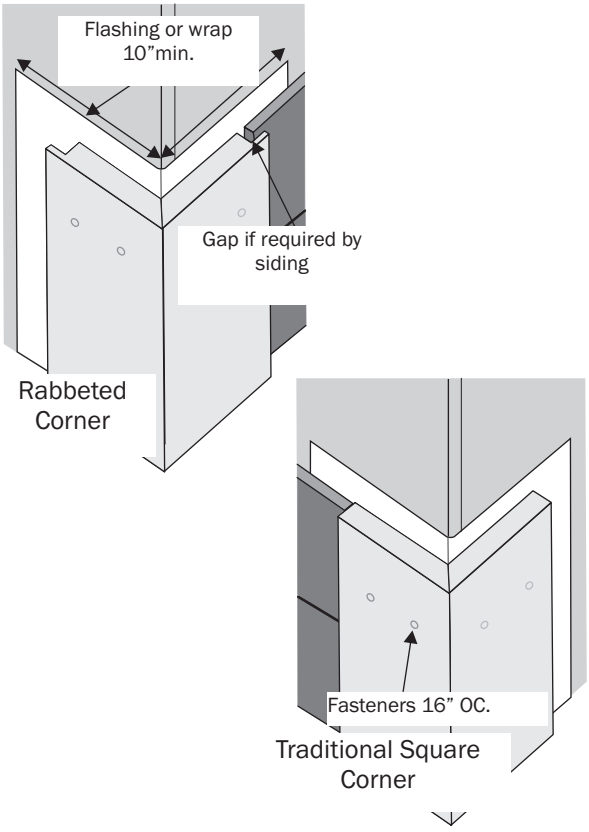


Fig. 9

Corners

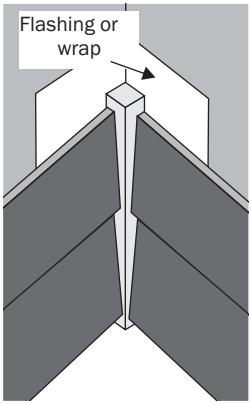
Conceal Corner Board

- Outside corner areas should be made weather resistant in accordance with building codes, typically using flashing material or house wrap.
- Install the corner board leaving 1/8” gap between the corner and any eve.
- Extend corner 1/4”minimum below sheathing.
- Fasten as described on page 8.
- Install siding in accordance with manufacturers instructions.



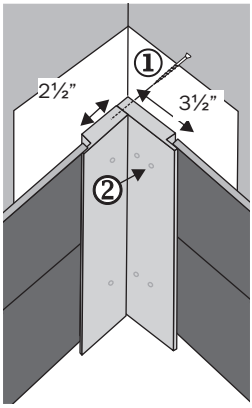
inside corners

- Inside corner areas should be made weather resistant in accordance with building codes, typically using flashing material or house wrap.
- Install the corner board leaving 1/8” gap between the corner and any eve.
- Extend corner 1/4”minimum below sheathing.
- Fasten as described on page 8.
- Install siding in accordance with manufacturers instructions.



Inside corners made with Conceal boards

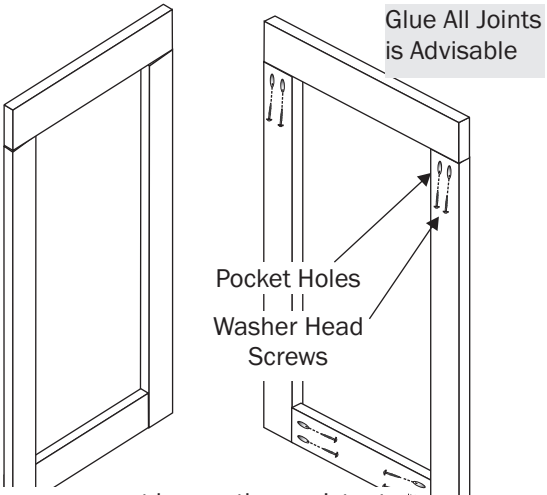
- Rip one side down by 1” in width.
- Run a bead of PVC cement to glue to two pieces together.
- Assemble the corner before installing on the wall using screws to attach the two boards together (1). Place fasteners every 12”-16” staying 2” from the ends of the boards
- Install and fasten to the wall as outlined on page 8 (2).



Basic Rules to Assembling Window Frames

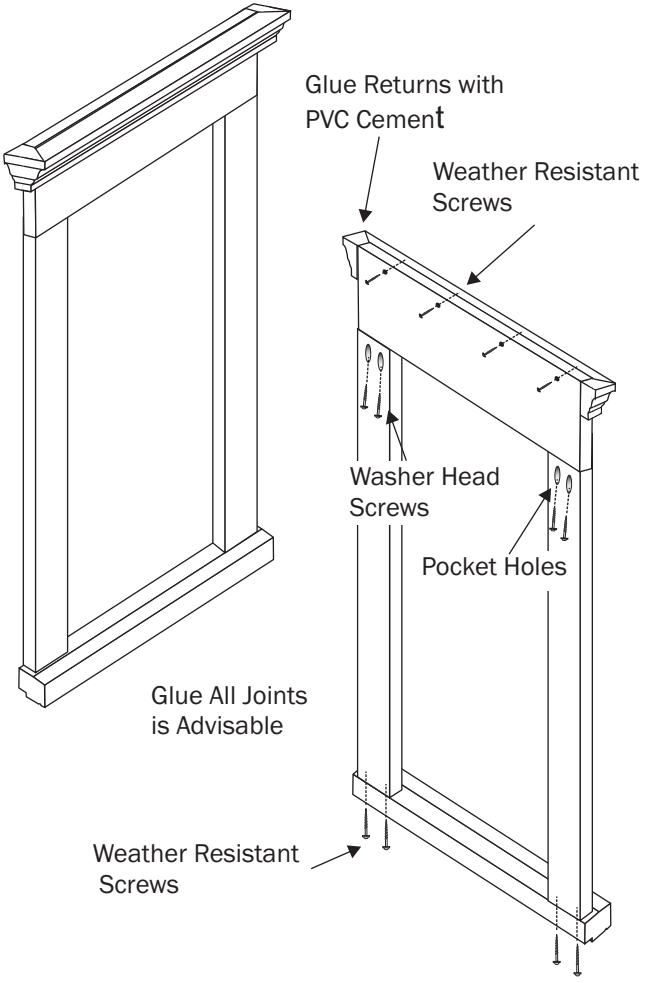
- Make certain that the window is properly flashed in accordance with local building code requirements. PVC trim is intended to be aesthetic and not part of the water resistant system.
- It is recommended that the window frame be assembled prior to the installation around the window. Joints should be glued and screwed together. Pocket screws should be used where possible.
- Measure the width and height of the window. Add 1/8" to both measurements. This will leave 1/16" spacing around the perimeter of the window to allow for expansion and contraction of the frame.
- Fasten the frame to the wall using fasteners outlined on page 8 .

Picture Faming



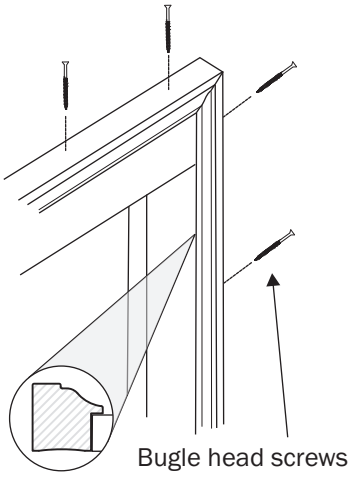
NOTE: All screws must be weather resistant

Adding Crown and Sill Nose



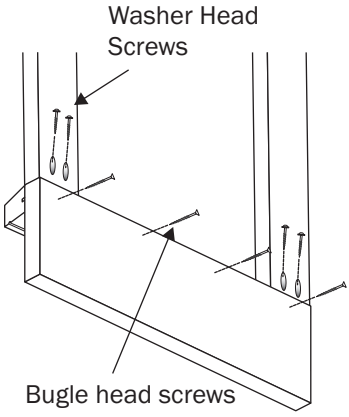
Installing Backband

- Run a bead of PVC cement along side edge of window trim.
- Install backband and fasten using the fasteners outlined on page 8.



Installing an Apron

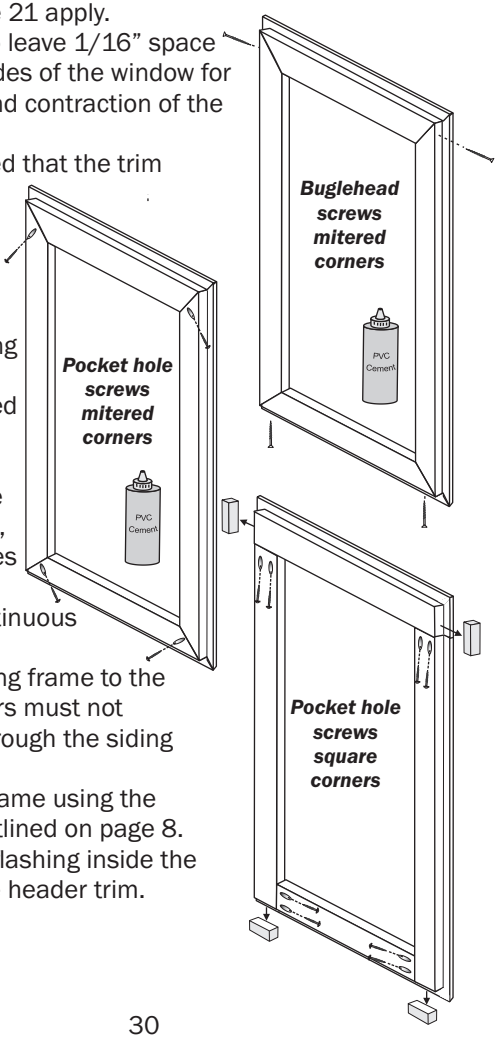
- Begin by fastening the apron to the jamb trim. (It is typical to use a wider board for the apron to result in a similar apron reveal below the sill nose.)
- Run a bead of PVC cement on apron where sill will be placed.
- Next, install the sill nose with screws as shown.



Conceal Window Trim Assembly

Shown are three methods for assembling Conceal trim around windows. The same basic rules outlines on page 21 apply.

- Make sure to leave 1/16” space on all four sides of the window for expansion and contraction of the trim.
- It is suggested that the trim frames be assembled prior to the installing on the wall.
- When mitering corners, it is recommended that cement be used.
- When square cutting joints, remove pieces as shown to create a continuous channel.
- When securing frame to the wall, fasteners must not penetrate through the siding pocket.
- Fasten the frame using the fasteners outlined on page 8.
- Install head flashing inside the pocket of the header trim.



New Construction Window Surround

New Construction Window Surround can be used in many areas for trim but is particularly useful around windows with a nailing flange (Figure 1.). ***It is recommended that the window surround be assembled prior to its application around the window. When measuring for the surround, measure to leave a 1/16" space between the surround and the window on all sides to allow for expansion and contraction of the trim thru temperature changes.***

- Window trim should be fasten to the wall using the fasteners outlined on page 8.
- Install head flashing inside the pocket of the header trim.

Squared off corners

- Remove any material necessary to allow the Channel to continue completely around the window (Figure 2.).
- Use the integrated pocket on the back of the trim to secure the corners using weather resistant screws (Figure 2.).

Mitered Corners

- Miter and assemble as shown in Figure 3 using weather resistant screws.

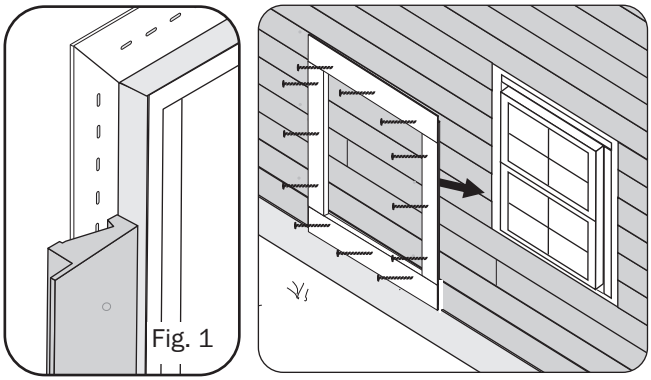


Fig. 1

Squared off Corners

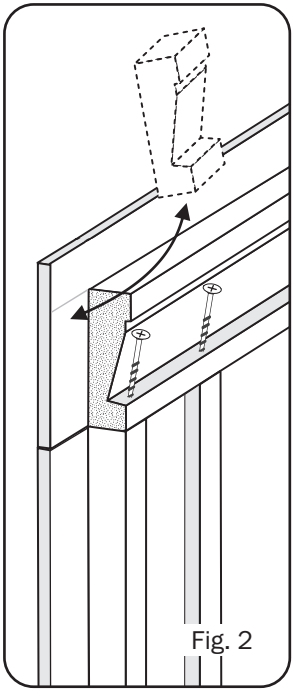


Fig. 2

Mitered Corners

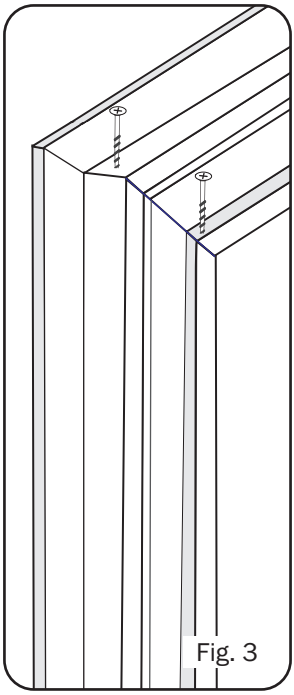
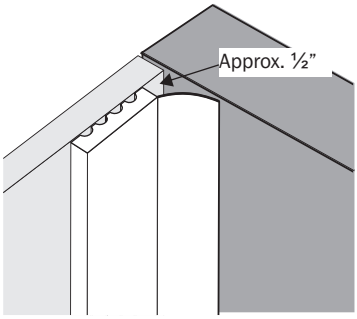
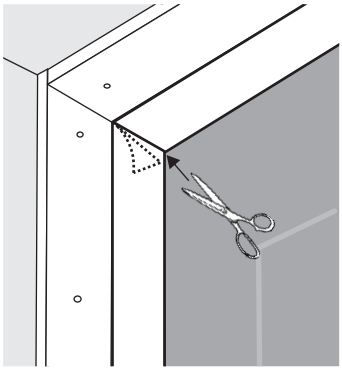


Fig. 3

Garage Door Stop

- Install the jamb pieces first, then the header.
- Position the stop so the weather strip is in contact with the garage door. The inside of the stop's base will be approximately ½" from the garage door.
- Fasten the stop in place with color coordinated galvanized or stainless steel trim nails in the pre-punched holes or at approximately 8" intervals.
- Trim the weather stripping on the header piece to create a mitered look and help keep a continuous seal.





Cleaning

Cleaning Royal Building Products is easy and fast with most major household cleaners. There are many cleaners on the market and the glass cleaners seem to be the best candidate for keeping the finish intact. The cleaning solution should be applied and immediately wiped dry. With any cleaning material, the cleaning solution should not be left to stand on the components for an extended period of time. Royal Building Products recommends the following cleaners:

Windex®	409 Glass and Surface Cleaner®
Spic & Span Cinch®	Fantastik All-Purpose®
Fantastik Orange Action®	Regency® (Glass and Surface)
Clorox Clean-Up®	Glass Plus®
Fantastik Oxy Power Multi-Purpose Cleaner®	

What to Avoid

Harsh cleaners with glycol ethers or ethanol type solvents and/or isopropyl alcohol soften the coating if left on for several minutes and are not recommended. Examples of these harmful cleaners are Goof Off®, Wal-Mart “Great Value All Purpose Cleaner®” (glycol ether), 409 General Purpose® (2-Butoxyethanol) and Greased Lightning® (glycol ether), citrus cleaners, abrasive cleaners, and solvents such as acetone, paint remover and lacquer.

Frequently Asked Questions

How do I clean and remove scratches?
If the scratches are not too deep, you can use Windex and Mr. Clean MAGIC
ERASER, (or Scotch-Brite¢ç Non-Scratch Scrub Sponge). Apply the cleaner. Use
the eraser or sponge, and rub in circular and up and down motions, until
scratches are buffed out. This takes some time, depending on the severity of the
scratches. You can also use Turtle Wax¢ç Rubbing Compound to remove surface
scratches. Clean the product after buffing the out the scratches.
There are many cleaners on the market that will work for cleaning PVC:

- Windex® 409 Glass and Surface Cleaner® Spic & Span Cinch®
- Fantastik All-Purpose®
- Fantastik Orange Action® Regency®(Glass and Surface)
- Clorox Clean-Up®
- Glass Plus®
- Fantastik Oxy Power Multi-Purpose Cleaner®
- DeckMAX®
- M1 House Wash®
- LA's Totally Awesome®All-Purpose Cleaner

Does cellular PVC trim and/or cellular PVC require painting?

No. Cellular PVC trim does not require painting but, like any cellular PVC product, it will weather over time and painting will enhance these beautiful products to maintain color consistency for many years. Our cellular trim products are ready for painting and require very little preparation. Painting with a good quality, vinyl safe 100% Acrylic Latex paint will enhance these beautiful products to maintain color consistency for many years. There are several paint manufacturers that will warranty their coating products on cellular PVC trim for 20 years or more. Our Warranty does not cover painted finishes or coating applied to the Product by the original purchaser or any third party.

If I do paint, what type of paint should I use?

For white or light colors, we recommend a high quality 100% acrylic latex paint developed for TRIM. There are paint manufacturers that sell coatings specifically designed for PVC trim and mouldings. These pants are typically referred to as "vinyl safe" paints, or heat reflective coatings for vinyl. If you are going to paint the product a darker color, consult the paint manufacturer for the LRV (light reflective value). Painting our cellular PVC product with paints darker than 56 to 0 (zero being Black) on the LRV scale voids any warranty.

No priming is necessary, however the finish quality is greatly enhanced if you use a premium 100% acrylic latex paint for trim with a built in primer. In addition, a primer may be required under the paint manufacturer's warranty.

Always follow the paint manufacturer's instructions. In preparation for painting, we recommend product should be clean, dry and free of dirt, grease and or any other surface contaminants before painting. Adhesion can be improved, and product should be cleaned with a mild detergent or denatured alcohol and soft clean rag or bristle brush.

Failure to adhere to manufacturer's recommended guidelines for application of painted surfaces may void any paint manufacturer's warranty.

Can you stain PVC mouldings?
Yes, but staining PVC mouldings takes a specialized base coat AWP SPQT Stainable Primer Wood Base Coat for Hard Surfaces. Follow the manufacturer's recommendations. Note that specialty applications such as this are not covered by our warranty.

Can PVC be used as a structural component such as framing?
PVC cannot be used as a structural product in load bearing applications. PVC
boards must always be supported by wood or other structural materials.

ROYAL®
Trim & Mouldings

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