

Before You Begin

IMPORTANT

Always wear safety glasses when cutting and drilling railing or decking products.

HELPFUL HINTS

- Use carbide-tipped, multi-purpose blade for cutting.
- Do not lay components on abrasive surfaces.
- Do not use excessive force while assembling components.
- If any components are missing or defective, please call us at 800-233-8990.

TIPS

- Make sure you have all the pieces you need to complete the job.
- Separate your flat and stair pieces to avoid using the wrong ones.

IMPORTANT FIRE INFORMATION

Rigid vinyl decking and railing are made from organic materials that will not burn on their own but melt or burn when exposed to a significant source of flame or heat. Consequently, owners and installers should take a few simple steps to protect vinyl building materials from fire. Building owners, occupants and outside maintenance personnel should always take normal precautions to keep sources of fire, such as barbecues, and combustible materials like dry leaves, mulch and trash, away from vinyl decking and railing.

TOOLS REQUIRED FOR ALL INSTALLATIONS

- Chop/mitre saw (with carbide-tipped, multi-purpose blade or non-ferrous blade)
- Power drill and bits
- Tape measure
- Pencil
- Level
- Safety glasses and equipment (as identified by tool manufacturers)
- #2 square drive
- Phillips screwdriver or bit

ADDITIONAL TOOLS REQUIRED FOR SPECIFIC JOBS

- **Certa-Snap® Post Wrap**
 - Hammer
 - Siding snips
- **Gates**
 - 1/8" drill bit
 - 3/16" drill bit
 - 1/4" drill bit
 - 5/32" drill bit
 - 11/64" drill bit
 - 7/16" wrench
 - #3 square drive bit
- **Handrail Component System**
 - 3/8" masonry drill bit (for concrete installation)
 - 3/4" drill bit
 - Angle finder
 - Quick-clamps
 - Adhesive
 - Recommended adhesives:
 - Aluminum bonding-
 - Loctite® Metal/Concrete Epoxy™
 - Gorilla™ Epoxy-Impact Tough®
 - J-B Weld®-2-Part Epoxy
 - Loctite® Extra Time Epoxy
- **Mount Post Support Wood Surface**
 - 2" x 6" or 2" x 8" blocking
 - Wood screws to attach blocking to deck
 - 3/8" drill bit
 - 1/8" drill bit
 - 1/2" wrench or socket
- **Panorama®**
 - 1/4" drive socket, extension and 7/16" socket
 - Jigsaw/coping saw (optional)
 - Utility knife (optional)
 - File (optional)
 - Box-end wrenches (optional)
 - Chalk line (optional)
 - Silicone caulk and caulk gun (optional)
 - Angle finder (optional)
 - Extension bit for crush block (optional)
- **Porch Columns**
 - Saber saw with a fine-tooth blade
 - Hammer drill with 1/4" and 1/2" drill bits
 - T-square
- **UnderShield® Water Diversion**
 - Gloves
 - Step ladder
 - Snips
 - Utility knife
 - Chalk line
 - 12" speed square
 - Vinyl snap lock punch
 - Cordless drill/driver
 - 1-inch "J" channel
 - Flashing
 - Gutter and Downspout
 - Fascia boards
- **Vinyl Decking and Oxford T-Rail**
 - 2" hole saw
 - Circular saw
 - Drop cloth
 - Screwdrivers
 - Phillips and flat-bladed
 - Wood clamps
 - Wrenches (sockets)
 - 3/4" (post support)
 - 7/16" (EZ Set bracket)
 - 3/8" (rail plate)
 - Bevel guide (optional)
 - Chalk line (optional)
 - File (optional)
 - Jigsaw/hacksaw (optional)
 - Rotary hammer drill (optional)
 - Utility knife (optional)

TIP: Stainless steel fasteners are recommended to prevent future rust streaking.

STEP-BY-STEP INSTALLATION INSTRUCTIONS FOR HANDRAIL COMPONENT SYSTEM

		Run in Inches														
		8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15
Rise in Inches	8.5	47	45	43	42	40	39	38	36	35	34	33	32	31	30	30
	8	45	43	42	40	39	37	36	35	34	33	32	31	30	29	28
	7.5	43	41	40	38	37	36	34	33	32	31	30	29	28	27	27
	7	41	39	38	36	35	34	32	31	30	29	28	27	27	26	25
	6.5	39	37	36	34	33	32	31	29	28	27	27	26	25	24	23
	6	37	35	34	32	31	30	29	28	27	26	25	24	23	22	22
		Calculated Angle in Degrees														

HANDRAIL APPLICATIONS

Stringer Layout for Handrail Transition Bends

It is recommended that each of the handrail components be dry fit before final installation to eliminate cutting and gluing errors.

When cutting handrail lineals, always cut the aluminum using a miter saw with a carbide-tipped blade with at least 60 teeth.

Step 1: Determine layout of handrail and the requirements at termination points, transitional bends and/or returns to walls or posts. Spacing of brackets should be a maximum of 6' on center.

Step 2: Determine desired handrail height. Finished handrail height should be 34" to 38" for commercial and residential applications measured from the leading edge of the stair tread or landing to the top of the handrail.

The following instructions will position the handrail at approximately 35" above the landing or stair tread. You may need to make adjustments for your specific application or to meet local building codes.

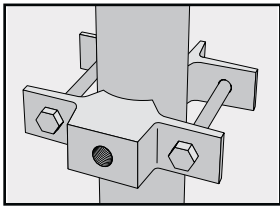
Refer to the "Suggested Layout" on page 70 for helpful information to get organized.



STANDARD INSTALLATION

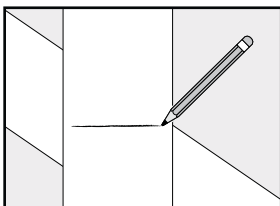
ATTACHMENT TO CERTAINTEED VINYL POST SUPPORT SYSTEM

For ramp applications, we recommend using CertainTeed FLAT post support kits and FLAT routed posts.



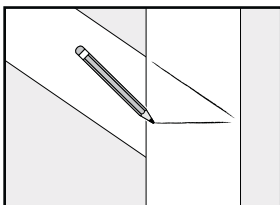
Once post supports are in place, replace one of the standard EZ Set brackets from the

upper location with a special handrail EZ Set bracket and attach at approximate height position. Install as a minimum the posts and top rail(s) guardrail system.



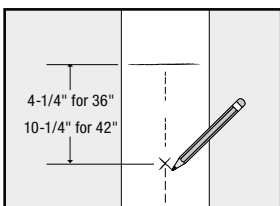
For each post, draw a horizontal pencil line across the post at the point on the downward

side where the (lower) rail meets the post.



For the bottom end post at the base of the stairs or ramp, you'll need to transfer the angle of the

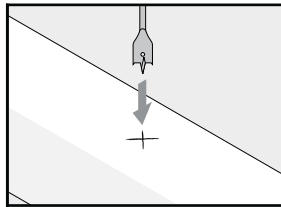
guardrail diagonally across the post and then connect with a horizontal line.



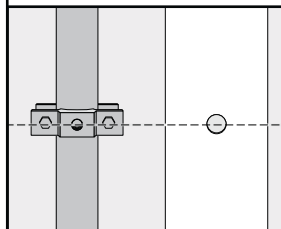
Mark bracket attachment point in center of each post downward from line. Location of handrail

bracket when used with 36" guardrailing is 4-1/4" below line; for 42" guardrailing, it is 10-1/4" below line.

NOTE: Vinyl posts alone do not provide adequate fastener retention. If not using a special EZ Set bracket, you must provide a wood or composite block inside post at bracket locations for proper fastening retention.

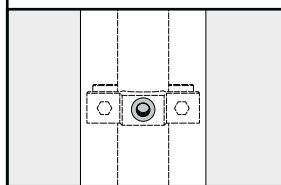


Remove post from assembly. Drill 3/4" hole through side of vinyl post at mark.

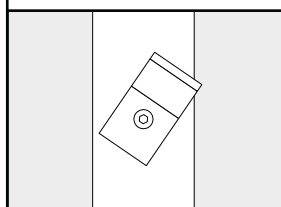


Place vinyl post next to steel pipe to transfer this height and position upper EZ Set bracket.

Repeat the above process for all remaining posts.

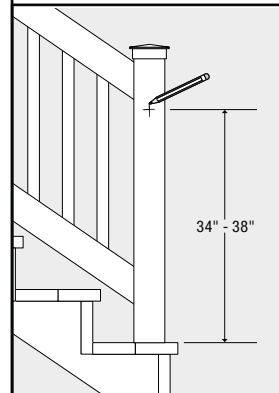


Replace post and guardrail section. (Ensure that 3/4" hole aligns with hole in center of handrail EZ Set bracket for each post.)

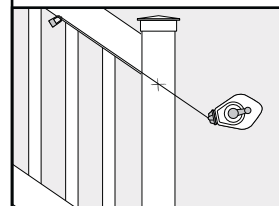


Attach handrail brackets with 3/8"-16 x 1-1/2" bolts. Do not tighten completely at this time to allow for adjustment.

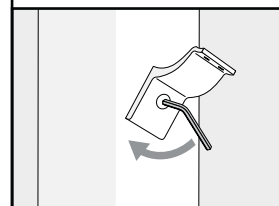
ATTACHMENT TO CERTAINTEED VINYL SLEEVE-OVER SYSTEM



Using a level and a tape measure, lightly mark the location of the top of the handrail onto the wall or post, at the mounting position and snap a chalk line from top to bottom.



Note: For most applications, the top of the handrail would be 34"-38" above the nose of the stair tread or standing surface.



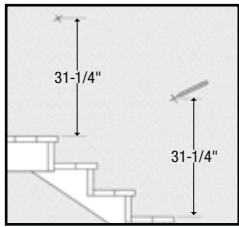
Mark the mounting locations for the brackets on the post at the appropriate height using

a scrap sample of handrail as a guide. Make the top of the handrail consistent at all locations marked above.

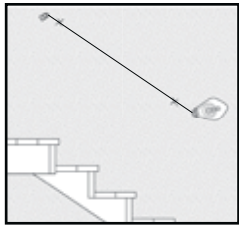
Install the mounting bracket to the post with fasteners best suited for your application.

ATTACHING HANDRAIL TO BRACKETS

ATTACHMENT TO CONCRETE WALL



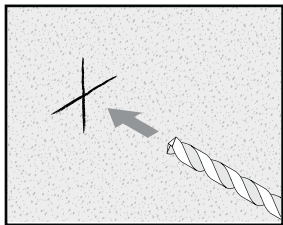
Mark a point 31-1/4" upward vertically from the leading edge of top and bottom stair tread.



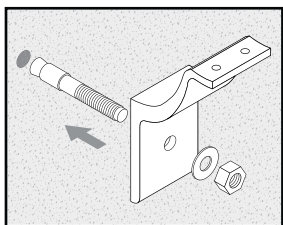
Snap a chalk line between marks.

Mark locations for brackets along line (6' maximum

spacing and 1' maximum overhang beyond last bracket).



Using a 3/8" masonry drill bit, drill holes 2-3/4" deep at each location.



Insert concrete wall anchors (not included) and attach handrail brackets (do not tighten

completely at this time to allow for adjustment).

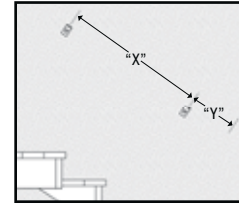
ATTACHMENT TO WOOD WALL

Ensure that wall is structurally sound.

Follow instructions for concrete wall except bracket attachment point(s) must be on a stud where the string line crosses. Mark bracket attachment locations (6' maximum spacing).

Substitute 3/8" x 2-1/2" long lag screw (not included) in place of the concrete anchor to attach handrail brackets.

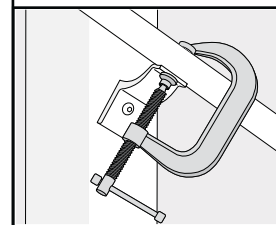
ATTACHING HANDRAIL TO BRACKETS



Measure the distance from center of top bracket to center of bottom bracket along angle (distance "X").

Add any needed additional length to this measurement for handrail extension beyond brackets or posts at both the top and bottom of the section (1 ft. maximum overhang per end; distance "Y").

Note: All splices of handrail must occur within 6" of brackets (no splices beyond the last bracket in a run).



Cut and fit the 1-1/2" handrail to follow your layout. Starting at the top of the handrail installation

and working towards the bottom, dry assemble the various handrail components according to your diagram. Components can be temporarily clamped in place to the mounting brackets installed to the post or wall, until all final adjustments are made. Mark and trim all handrail components to proper length and test for tight fit.

When cutting handrail lineals, always cut the aluminum using a miter saw with a carbide-tipped blade with at least 60 teeth.

COMPONENT INSTALLATION

POST RETURN

1. Align the post return according to the handrail layout line and mark attachment hole positions (Fig. 1).
2. Pre-drill and attach post return with three fasteners appropriate for the material to which it is being mounted.
3. Insert the provided joiner in the post return and dry fit the lineal in place.
4. After railing installation has been dry fit, disassemble and apply aluminum adhesive and permanently mount the handrail lineal (Fig. 2).

TIP: If your handrail is being mounted with a post return at each end, cut lineal to length and assemble before attaching post returns to mounting surface.

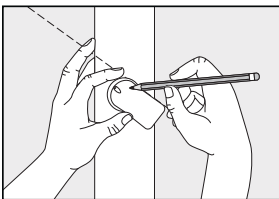


Fig. 1

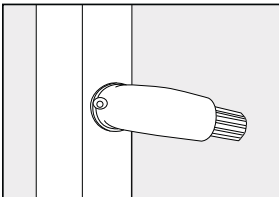


Fig. 2

STRAIGHT RETURN

1. Insert the straight return into the lineal, dry fit to determine the finished length and cut to fit.
2. Dry fit and check length.
3. Attach the assembly to the mounting surface using the appropriate fastener through middle of straight return.
4. Apply aluminum adhesive and insert the straight return into the handrail lineal (Fig. 3).

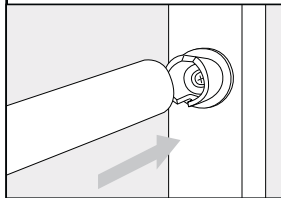


Fig. 3

STRAIGHT JOINER

NOTE: For maximum strength, all handrail joints should be supported by a handrail bracket at the joint or at the nearest possible location.

1. Cut handrail lineals to length.
2. Apply aluminum adhesive and slide the internal joiner half way into the aluminum lineal (Fig. 4).
3. Permanently attach the first handrail lineal to the nearest handrail bracket.

TIP: If the joint is not supported with a bracket, allow enough time for the aluminum adhesive to cure prior to installing the second lineal.

4. Apply aluminum adhesive to the second handrail lineal. Slide handrail lineal onto joiner. Mount in place. Clamp and allow to dry.

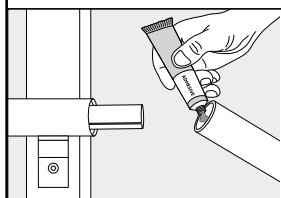


Fig. 4

INTERNAL ADJUSTABLE JOINER

NOTE: All adjustable joiners should be supported by a handrail bracket as closely as possible to each side of the joint.

1. Measure the angle of the joint and cut lineals accordingly. Dry fit both handrail lineals, making sure that the miter cuts match up properly.

TIP: While lineals are in place, reference marks can be made on the lineals and mounting hardware to ensure proper alignment during final installation.

2. Assemble and position the adjustable joiner on the outside of the handrail and tighten the bolt at the appropriate angle (Fig. 5).

3. Dry fit the assembly and adjust if necessary.

TIP: Use the joiner bolt as a reference to keep the lineals in proper alignment by aligning both mitered ends with the center of the bolt.

4. Apply aluminum adhesive and assemble the joint.
5. Permanently attach the handrail lineals to the mounting support.

NOTE: Joint should be clamped in place until adhesive has had time to cure.

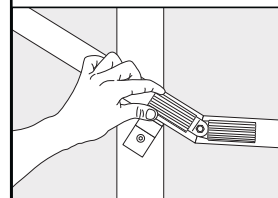


Fig. 5

COMPONENT INSTALLATION (CONTINUED)

EXTERNAL ADJUSTABLE JOINER

1. Measure the angle of the joint and cut lineals accordingly. Dry fit both handrail lineals, making sure that the lineals match up properly.

2. Assemble and position the adjustable joiner on the outside of the handrail and tighten the bolt at the appropriate angle (Fig. 6).

3. Dry fit the assembly and adjust if necessary.

4. Apply aluminum adhesive and assemble the joint.

5. Permanently attach the handrail lineals to the mounting support.

NOTE: Brackets are required on both sides of the adjustable joiner.

Joint should be clamped in place until adhesive has had time to cure.

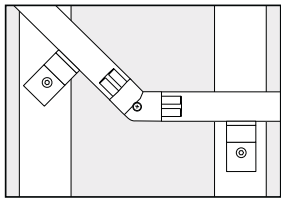


Fig. 6

90° CORNER

1. Dry fit the two handrail lineals. The handrail lineals to be joined should extend far enough to allow for scribing and final cutting (Fig. 7).

2. Place the corner in line with each lineal. Scribe and cut the lineals (Fig. 8).

3. Insert the joiners into the corner. Dry fit the assembled corner with the lineals. If all components are aligned properly, make reference marks (Fig. 9).

4. Disassemble the corner. Apply aluminum adhesive to the inside of the corner and the inside of the lineals. Reassemble the components using the reference marks from Step 3 as a guide. Clamp in place and allow to cure.

5. Permanently attach the lineals to the mounting brackets with the screws provided.

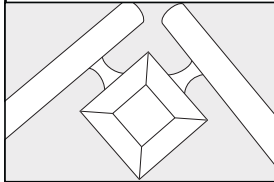


Fig. 7

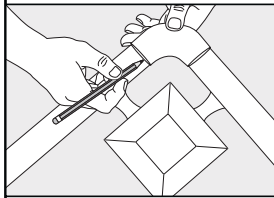


Fig. 8

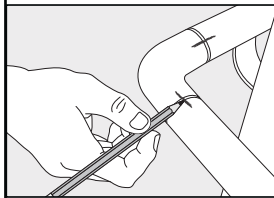


Fig. 9

180° RETURN LOOP

1. Position handrail loop in desired location. Dry fit the loop in place to make any necessary marks for cutting.

2. Once cuts have been completed and loop is ready to install, attach to handrail system using a straight or adjustable joiner following the instructions outlined in this guide.

3. Attach handrail loop to the mounting surface using two handrail brackets following the instructions in this guide (Fig. 10).

4. To complete the installation, mount a handrail end cap to the end of the handrail loop following the instructions in this guide for the handrail end cap.

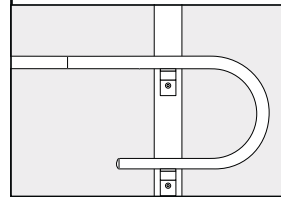


Fig. 10

INSIDE CORNER BRACKET

1. Place a mark 2-3/4" below the handrail layout line to establish placement of the inside corner bracket (Fig. 11).

2. Align the top surface of the bracket with the mark made in Step 1 and attach to the mounting surface using appropriate fasteners (Fig. 12).

3. Clamp the handrail corner assembly to the inside corner bracket. Using a 13/64" bit, pre-drill and attach the bracket using the provided screws.

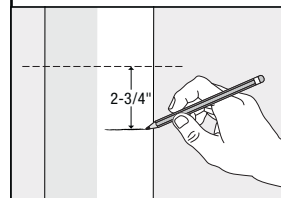


Fig. 11

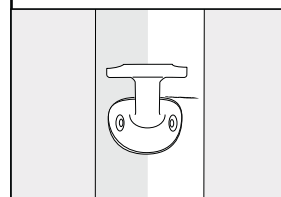
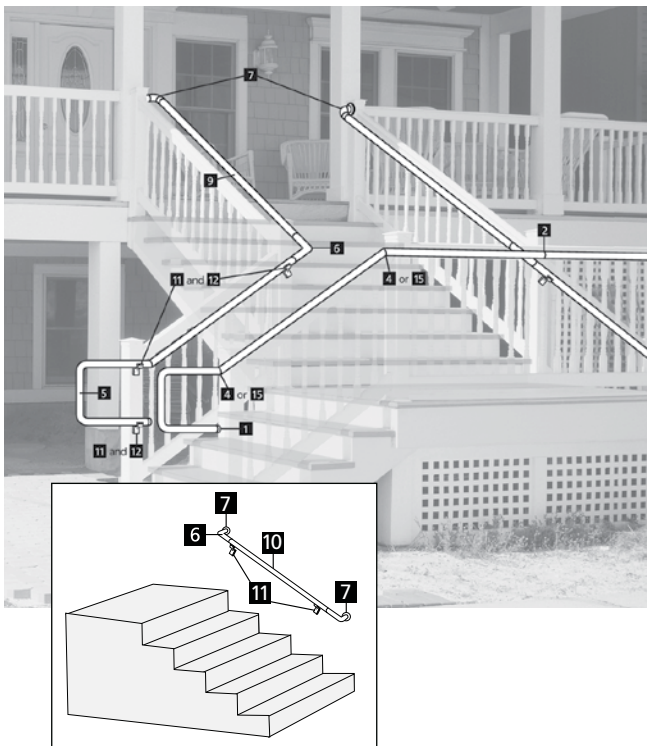
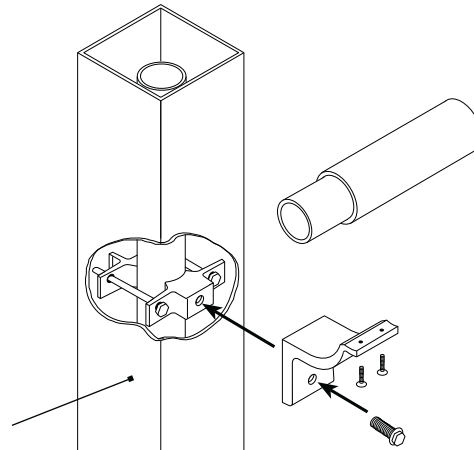


Fig. 12

SUGGESTED LAYOUT

HANDRAIL COMPONENT SYSTEM

- Complies with ADA (Americans with Disabilities Act) requirements for grippable handrails
- Aluminum construction reduces bowing and provides enduring strength
- 1-1/2" diameter gripping area
- Continuous handrail runs
- Safe for stair and ramp applications
- Functional finishing touches: post and wall returns, end caps, return loops and a convenient straight joiner
- Unique adjustable joiners accommodate any transition – 0° to 90° bends
- Installs easily on site with no preformed fittings
- Ideal for use with EverNew® railing systems
- Virtually maintenance free
- Lifetime limited warranty
- EZ Set bracket kit available for attachment to routed system



Note: Handrail depicted is not free standing and must be anchored to walls or guardrail using handrail bracket assembly. Space a maximum of 6' on center and as close as possible to both sides of any joint.

1. 1-1/2" Diameter End Cap
Finishes open end of handrail
2. Handrail Straight Joiner
Connects straight runs of handrail
3. Handrail Straight Wall Return (not shown in illustration)
Terminates handrail straight into a wall or post
4. Handrail Adjustable Aluminum Joiner
Used for angles
5. 1-1/2" OD ADA 180° Return Loop
Finishes steps or handicap ramps
6. 1-1/2" OD - 90° Corner (includes two 3" aluminum joiners)
For inside or outside 90° corners
7. 1-1/2" OD - 90° Post/Wall Return (includes 3" aluminum joiner)
Terminates handrail into wall or post at 90°
8. 1-1/2" OD x 80" Aluminum Handrail - Straight run
9. 1-1/2" OD x 104" Aluminum Handrail - Straight run
10. 1-1/2" OD x 120" Aluminum Handrail - Straight run
11. Handrail Bracket Assembly
Connects handrail to wall or post
12. Handrail EZ Set Post Attachment
Connects handrail bracket to post when using EverNew post support kit
13. Handrail Joint Ring (not shown in illustration)
Used to finish the connection between pieces (optional)
14. Handrail Inside Corner Bracket (not shown in illustration)
Connects inside corners to post
15. Aluminum External Adjustable Joiner

CARE AND MAINTENANCE

CARE AND MAINTENANCE

Vinyl and composite building materials require very little maintenance. Nevertheless, common sense dictates that builders and suppliers of these products store, handle, and install materials in a manner that avoids damage to the product or structure.

CertainTeed decking and railing is not difficult to work with, but there are a few precautions you should take before you begin to unload and install the product. Always place planks, posts, rails and accessories on a non-abrasive surface, such as a drop cloth or cardboard, to avoid scratches. Protect all components during transport. Finally, when assembling the deck and railing, avoid over-tightening the screws.

CLEANING VINYL DECKING AND RAILING

CertainTeed vinyl decking and railing resists most common household stains, including oil and grease. But, like any other product, it will get dirty when it is exposed to the atmosphere. Chalk may also accumulate on the surface. This is a normal condition for all pigmented materials that are constantly exposed to sunlight and the elements. Soil, grime and chalk can be removed with a garden hose and a bucket of soapy water.

Mildew

Mildew may be a problem in some areas, especially warmer climates with consistently high humidity. Mildew appears as black spots on surface dirt and is usually first detected in areas not subjected to rainfall, such as eaves and porch enclosures. You can remove mildew from vinyl decking and railing with the following solution.

Mix together:

- 1/3 cup detergent (Tide, for example)
- 2/3 cup trisodium phosphate (e.g., Soilex)
- 1 qt. 5% sodium hypochlorite (e.g., Clorox)
- 3 qt. water

CAUTION: Cleaning solution mixed at greater concentrations may harm the vinyl.

If the above solution does not readily remove the mildew spots, purchase mildew cleaner from your local hardware store. Before you use any commercial cleaner, test it on an inconspicuous area.

The chemical agents mentioned above may be hazardous to the user or to the environment. Be sure to follow all precautions and warnings on the product label, particularly those that may be necessary to prevent personal injury. Please DISCARD these chemical agents in the manner

prescribed by the manufacturer. If you are unsure how to use or dispose of these chemical agents, contact the manufacturer.

CLEANING PANORAMA® COMPOSITE RAILING

Panorama® Composite Railing resists most common household stains, but it will become dirty like any product exposed to atmospheric conditions. Periodic washing with a soft bristle brush and clean water from a garden hose may be necessary to remove surface dirt which may accumulate on the surface. For best appearance, clean your Panorama Composite Railing at least once a year, unless local conditions require additional cleaning.

CLEANING UNDERSHIELD® WATER DIVERSION SYSTEM

UnderShield® resists most common household stains, but it will become dirty like any product exposed to atmospheric conditions. Periodic washing with a soft bristle brush and clean water from a garden hose may be necessary to remove surface dirt. Chalk may also accumulate on the surface. This is a normal condition for pigmented materials exposed to the elements. For the best appearance, clean UnderShield at least once a year. To remove soil, grime and chalk from UnderShield, use a garden hose, a soft bristle brush, and a bucket of soapy water. (You can also use the solution described in the section dealing with mildew.) Thoroughly rinse UnderShield with clean water from a garden hose. Avoid prolonged or high pressure rinsing of open ventilated areas. Keep cleaning solution off surrounding fixtures and surfaces not scheduled for washing.

If debris such as leaves gets in the system, you will need to periodically flush out the system with a garden hose. This can be done from above or possibly from access to the sides by removing the fascia panel.

NOTE: We do not recommend power washing UnderShield as it can cause moisture intrusion, damage, and/or discoloration.

Stubborn Stains

If you can't remove especially stubborn stains using normal household detergents, request a cleaner from your contractor or your local building materials retailer. Always test any cleaner on an inconspicuous area before full use.

CAUTION: Greater concentration may cause damage to UnderShield.

If the above solution does not readily remove mildew spots, ask your contractor or your local building materials retailer for a mildew cleaner.