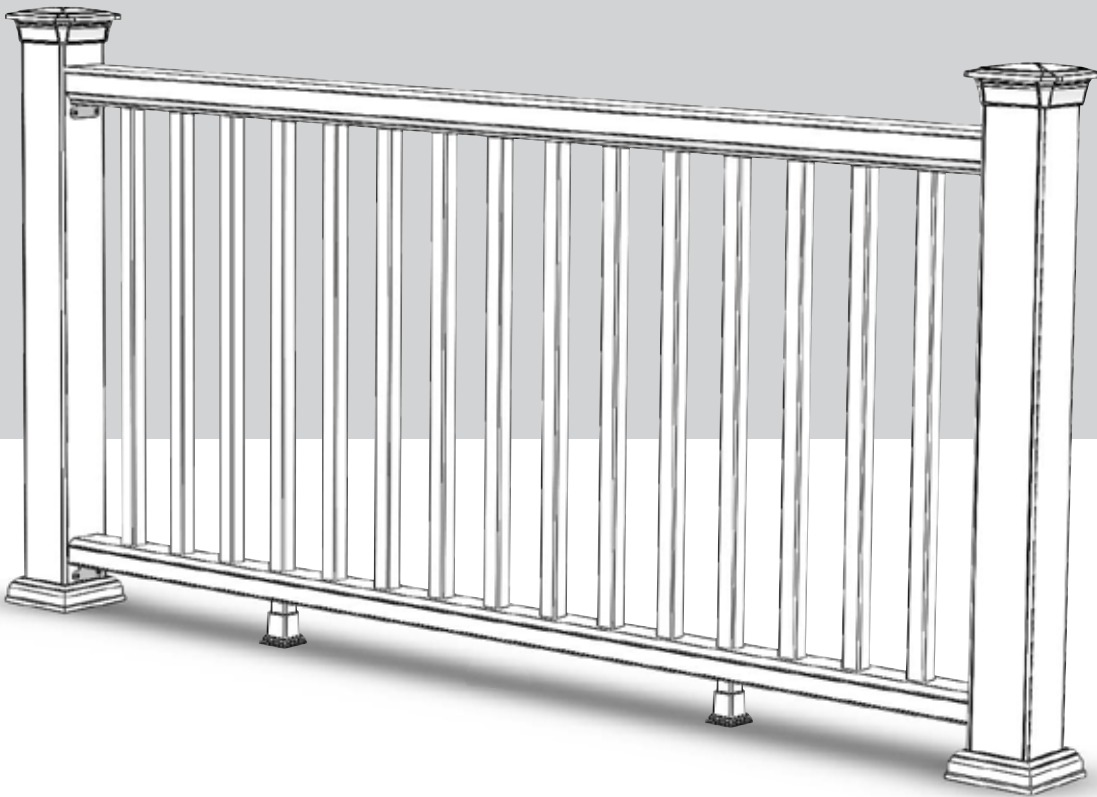


fiberon[®]

Horizon[®] Rail

Low Maintenance Composite Railing

INSTALLATION INSTRUCTIONS



Manufactured by

fiberon[®]

fiberondecking.com
800.573.8841





Top Rail Profile



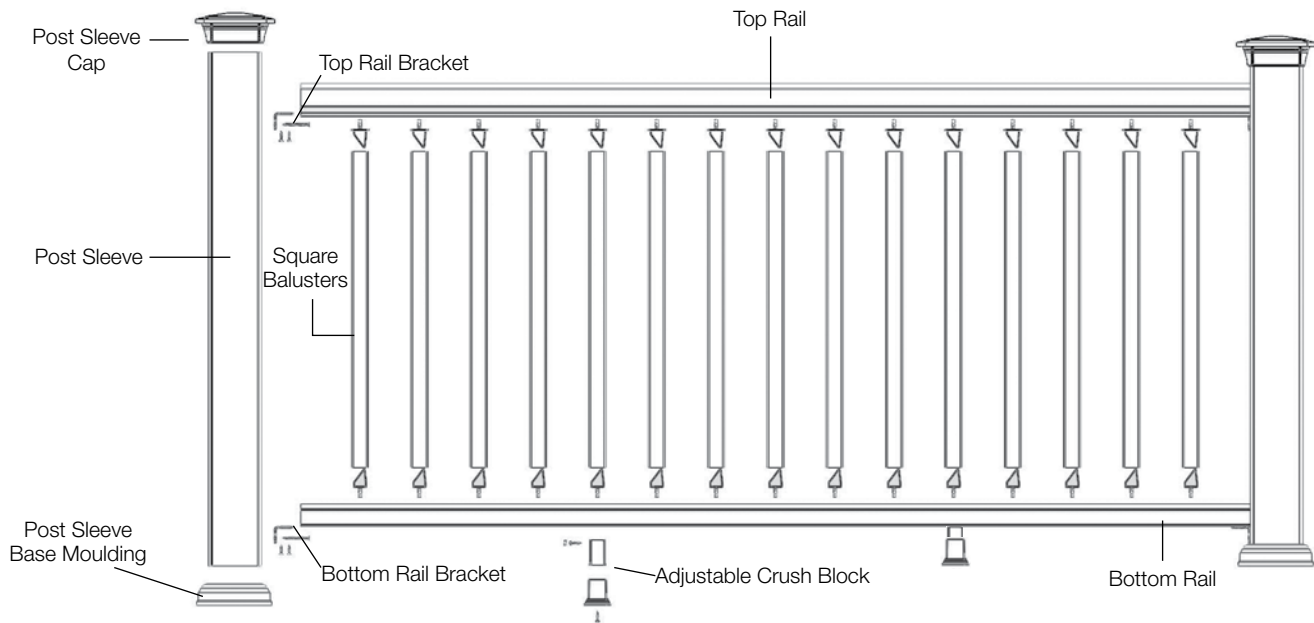
Bottom Rail Profile

Required Tools and Supplies:

- Power Drill
- 1/8 in. Drill Bit
- #2 Square Head Bit
- Protective Eye Wear
- Tape Measure
- Level
- Screw Driver, Phillips #2
- Speed Square
- Miter Saw
- Pencil
- Adjustable Square

Railing component list for each section:

Maximum length between post sleeves is 72 inches for a 6 ft. rail or 96 in. for an 8 ft. rail.



Note: Rail lengths will vary slightly due to manufacturing processes. Make sure rails are cut properly to correct length, and with hole pattern centered between posts before securing.

Prior to installing railing: Please consult local zoning laws in regard to load requirements and bottom space requirements for rails. All supporting structures must be in accordance with applicable building codes. Neighborhood associations and/or historic districts may regulate size, placement and type of railing. Apply for permits if required by local authorities and codes. Ensure compliance prior to installation. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation. The following installation instructions are intended as a general guideline based on common building practices used in railing installation.

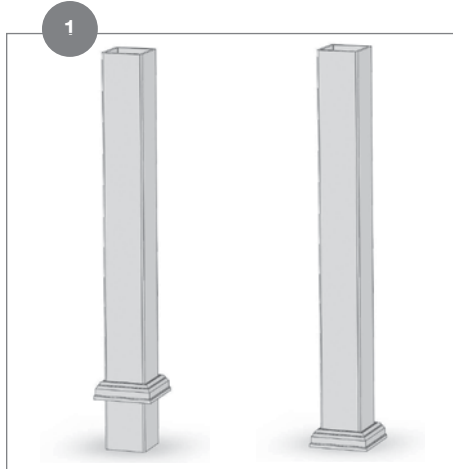
When top and bottom rail length is greater than the distance between posts, trim both top and bottom rail ends to maintain uniform baluster spacing. Slide post sleeve base moulding over each post prior to installing bottom rails and press securely into place.



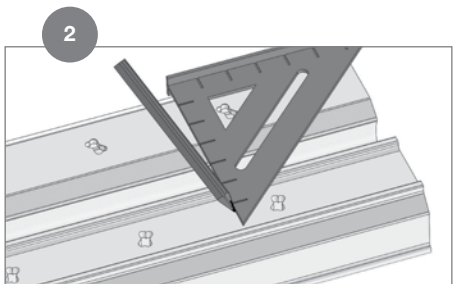
Rail Installation: Trim both ends of rail to maintain uniform baluster spacing. It is critical to ensure the trim mark does not create an open baluster insert hole at the end of the rail where the bracket is attached. Adjust trim lines to maintain uniform baluster spacing.

Fiberon® Horizon® Railing 6 and 8 ft. Installation Instructions

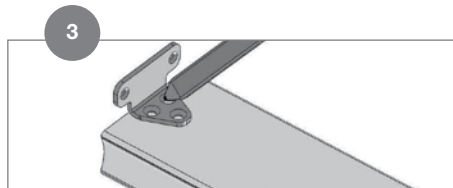
Note: Make sure posts are plumb and level prior to installing the railing.



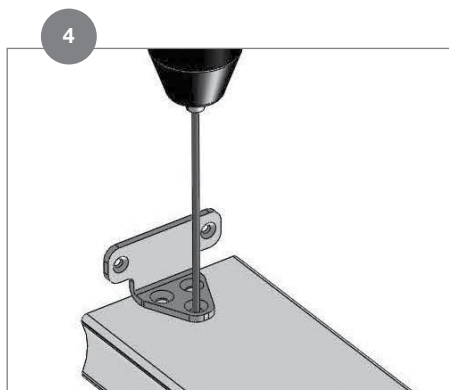
Cover 4x4 posts or Fiberon surface mount bracket with post sleeve and verify spacing. Posts should be plumb in both directions. Place post sleeve base moulding over post sleeve and slide it down to the deck surface.



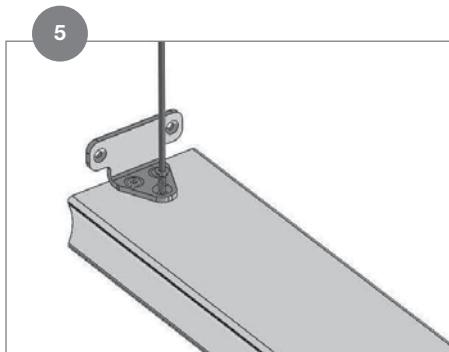
Measure the distance between posts. Center the bottom rail hole pattern within this dimension and cut to length. Place between posts checking for snug fit. Align top and bottom rail holes and mark the cut length on the top rail.



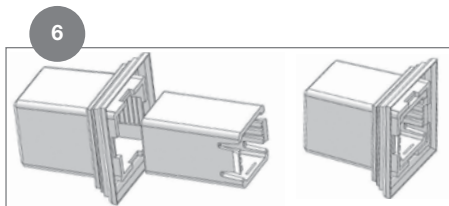
Flip the bottom rail so that the pre-routed holes are facing downward. Center the bracket at each end of the bottom rail. To help ensure a snug installation, allow 1/32 in. to 1/16 in. clearance between the bracket "wing" and end of rail. Mark hole locations.



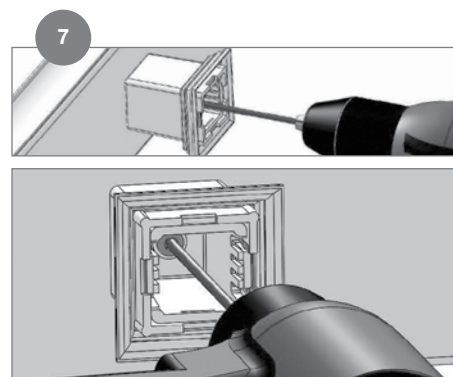
Pre-drill holes using a 5/32 in. bit (bracket shown for clarity).



Secure the bracket with supplied 1 in. screws. Do not over tighten.



To assemble the adjustable crush block, push the center up through the base, making sure that the compression wings align with the ridges inside the core. Insert until the first "click" is heard. If the center is inserted too far, it can be pushed through completely.



Remove the rail from between the posts. Find the center point (or 1/3 and 2/3 point if 2 adjustable crush blocks are provided) on the bottom underside of the bottom rail. Pre-drill a hole with a 5/32 in. bit. Secure the adjustable crush block with the supplied 3/4 in. screws. Do not over tighten.



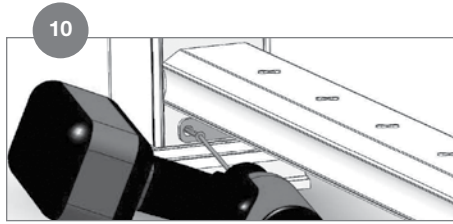
Support the bottom rail level and at the desired height using the adjustable crush block. Using a level, center the rail on the posts, then mark the bracket hole locations.



Pre-drill holes using a 5/32 in. bit (bracket and rail shown for clarity).

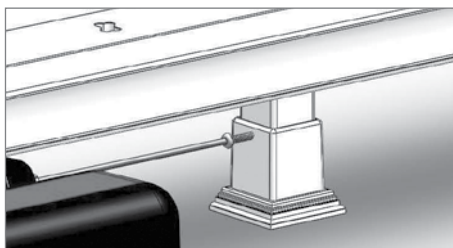
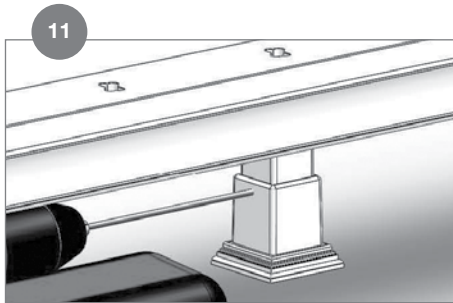
Note: Using an extended drill bit is recommended to prevent damage to the rail, and allow a more perpendicular driving angle.

Note: When using surface mount brackets, use titanium or cobalt bits only. Pre-drill the post sleeve and steel bracket with a 1/4 in. bit until the steel is penetrated. This will allow the bracket screws to engage the wood 4x4 and pull the rail snugly to the post. Do not over tighten.

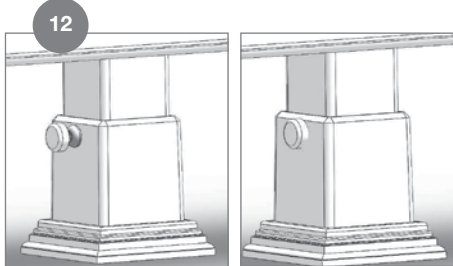


Secure the bottom bracket and rail to the post using the supplied 2 in. screws. Do not over tighten.

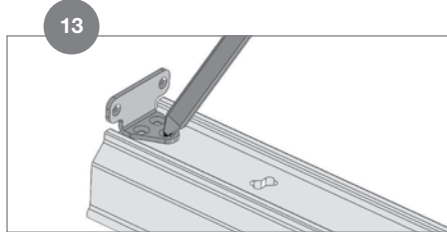
Tip: The use of a long bit extension, or a flexible extension, will help with accessing the screw heads.



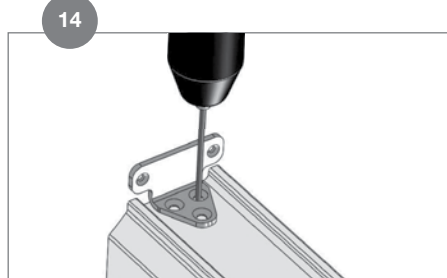
Extend the adjustable crush block to the final height making sure the rail is level. Lock the block in place by drilling a 5/32 in. hole into one face, and securing with the supplied 3/4 in. screws. Do not over tighten.



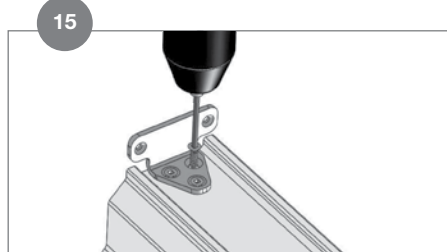
Cover the exposed head of the screw with the supplied screw cap.



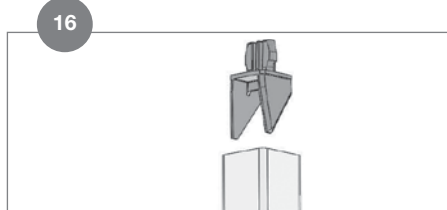
Flip the top rail so that the pre-routed holes are facing upward. Center the bracket on the rail. To ensure a snug installation, allow 1/32 in. to 1/16 in. clearance between the bracket "wing" and the end of rail. Mark hole locations.



Pre-drill holes using a 5/32 in. bit (bracket shown for clarity).

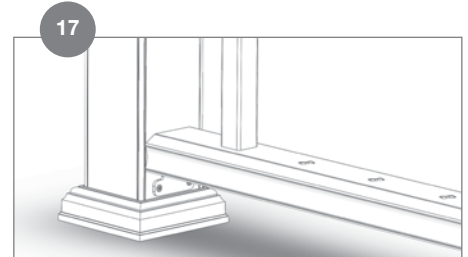


Secure the bracket with supplied 1 in. screws. Do not over tighten.

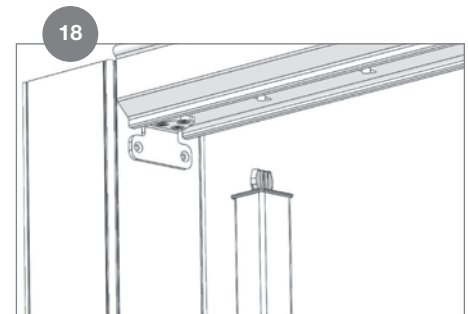


Trim balusters to desired length and press the top baluster inserts into one end of all balusters and bottom baluster inserts into the other end of all balusters.

Note: Top baluster inserts have collars and bottom baluster inserts do not.



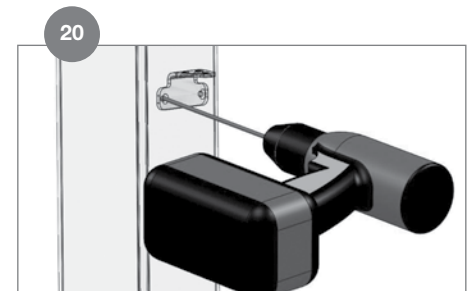
Place two balusters onto the bottom rail, one baluster on each end.



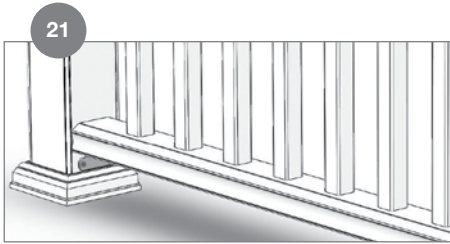
Lower the top rail onto the two balusters, making sure to line up the baluster inserts with the top rail routed holes, until top rail is fully seated on balusters.



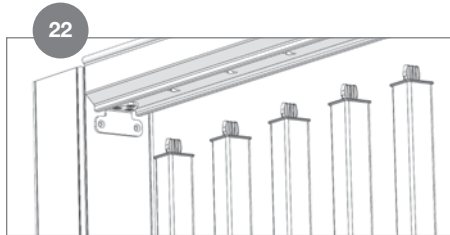
Ensure the top rail is level and mark the top rail bracket hole locations.



Remove top rail and balusters. Pre-drill holes using a 5/32 in. bit (bracket shown for clarity).



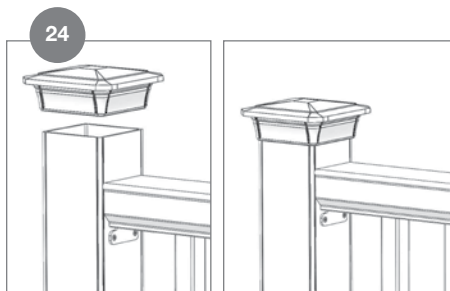
Fit all balusters onto the bottom rail.
Note: Balusters can be inserted straight or sideways to allow for a diamond pattern.



Working from one side to the other, slowly lower top rail in place aligning baluster inserts with the top rail routed holes. Fully engage all baluster inserts into balusters and rails.

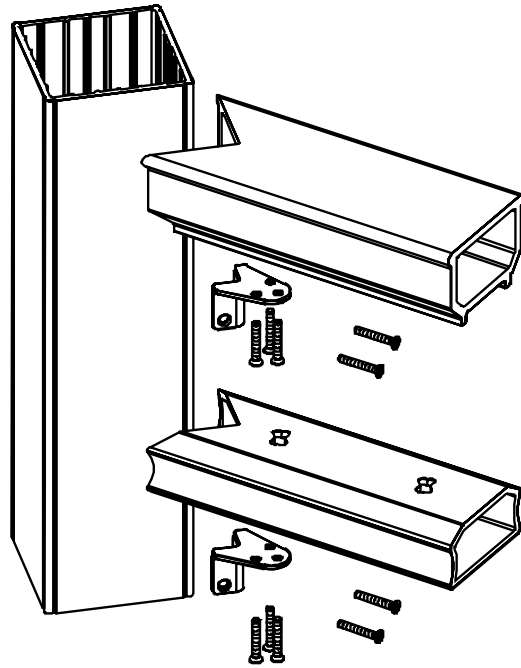


Secure the top bracket and rail to the post using the supplied 2 in. screws. Do not over tighten.



Complete the assembly by positioning and gluing post sleeve caps in place.

Fiberon® Horizon® Rail Angle Bracket Installation and Cutting Template:



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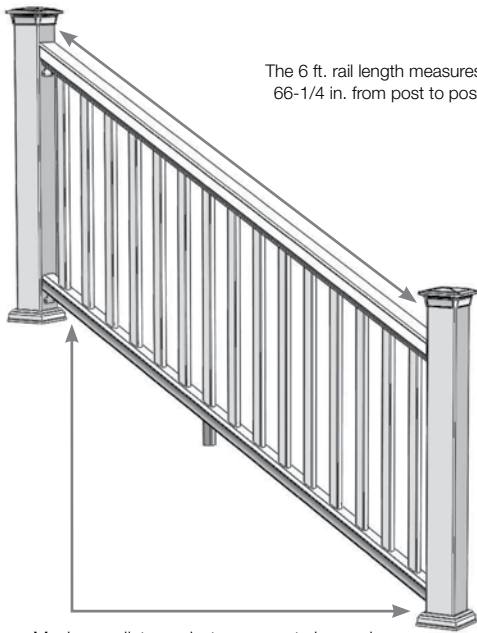
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(Angle bracket Kit Available by Special Order)

Rails up to 20° may be mounted to the post face by using the In Line "L" bracket. Cut rails at the appropriate angle to fit tight against post. Cutting rails greater than 20° will result in a rail that does not fully fit on the post. Angles greater than 20° require the use of the angle bracket.

Note: The Minimum distance from post corner to the first baluster hole is 2-1/4 in.

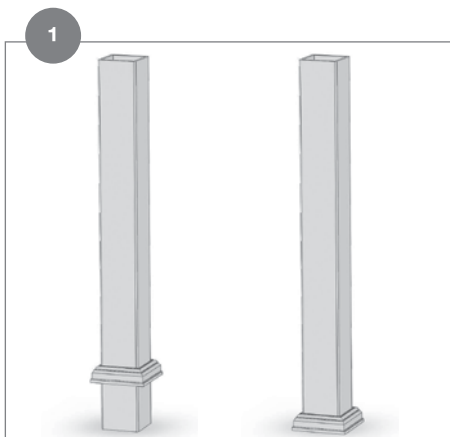
1. Determine the angle of your installation by using the supplied template.
2. Cut the template out along the appropriate marked lines. (You may want to photocopy the template as a backup prior to cutting).
3. Position the template on the non-routed flat side of the top rail. Mark the proper cutting angle.
4. Position the template on the non-routed, underside surface of the bottom rail. Mark the proper cutting angle. Template will be reversed from top rail.
5. Ensure baluster holes are equidistant from the end of rail to ensure proper vertical alignment.
6. Make angle cuts in top and bottom rails.
7. Align the angle brackets with the cut in the railing. Inset the bracket 1/16 in. (2 mm) from rails end. Mark the three screw hole locations on both rails. Repeat at opposite end. Pre-drill 5/32 in. (3 mm) holes at desired locations.
8. After fitting angles to posts, follow the line rail instructions (Steps 5 through 23) to complete the rail section installation.



The 6 ft. rail length measures 66-1/4 in. from post to post

Maximum distance between post sleeves is 56-3/16 inches for a 6 ft. rail

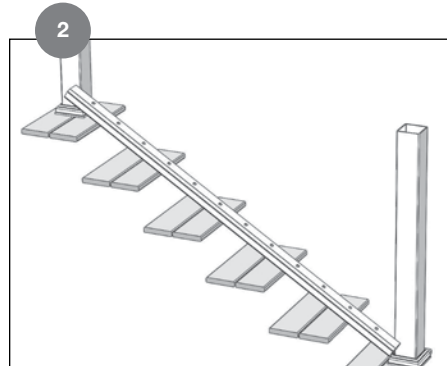
Building codes are very specific on allowable angles and widths. It is very important to consult with your local building code officials and plan your stair layout accordingly. Ensure that you leave adequate space for graspable hand rail if applicable. "Dry fitting" intermediate post placement will result in easier and better looking installations, and may avoid placement of post mounting brackets in areas where screws cannot attach to the guardrail.



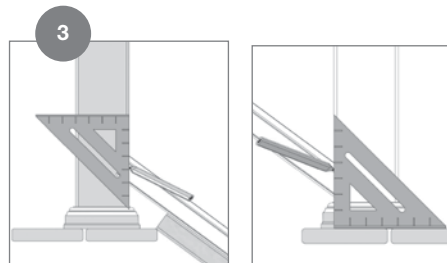
Install 4x4 posts in the pre-determined locations, cover with post sleeve and verify spacing. Posts should be plumb in both directions. Place post sleeve base moulding over post sleeve and slide it down to the deck surface.

Note: The slope of the stairs can be 27 to 37 degrees.

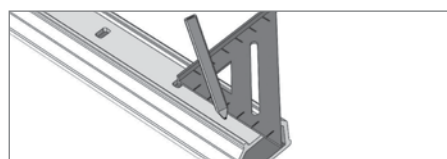
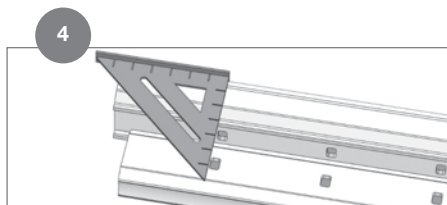
Note: Rail lengths will vary slightly due to manufacturing processes. Make sure rails are cut properly to correct length.



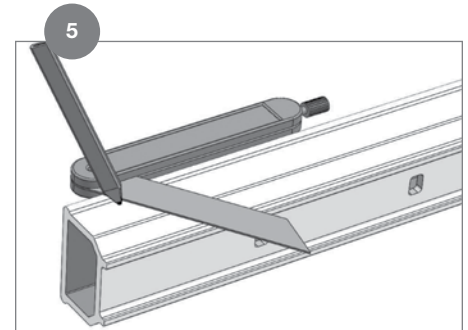
Center the hole pattern between the posts allowing a minimum 2-3/4 in. from rail end to routed baluster insert holes.



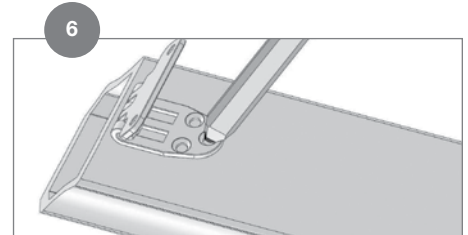
Mark the angle on the bottom rail using the inside of each post. Cut the bottom rail to required length, and check for a snug fit.



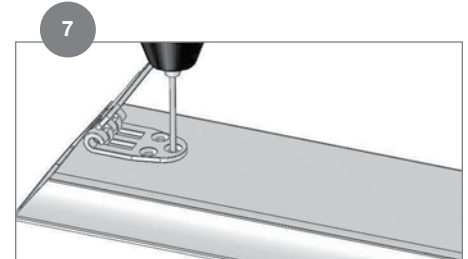
Measure the distance from the cut bottom rail end to the first hole. Transfer the dimension to the top rail, then align both rails together.



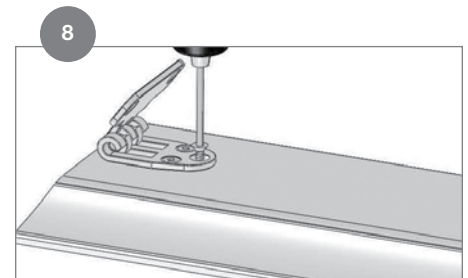
Transfer the cut angle and cut top rail to length.



Place the brackets on the flat side of the bottom rail (no holes), and inside the channel of the top rail (with holes), making sure to leave 1/32 in. to 1/16 in. space from the cut edge of the rail. Using the bracket as a template, mark the hole locations.

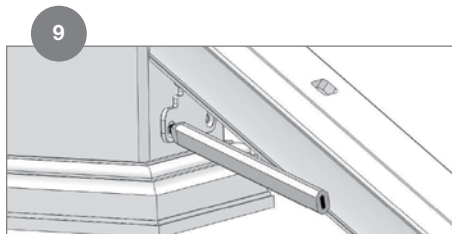


Pre-drill holes with a 5/32 in. drill bit (bracket shown for clarity).

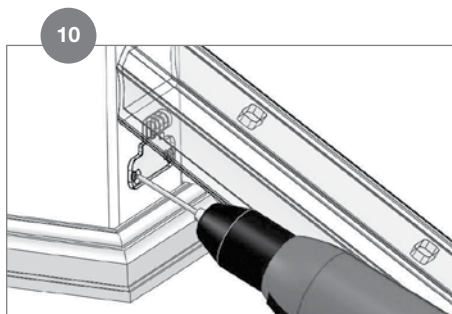


Secure all brackets with supplied 1 in. screws. Do not over tighten.

Fiberon® Horizon® Stair Railing 6 ft. Installation Instructions



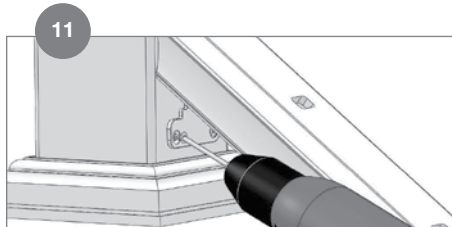
Place the bottom rail between the posts. Using the bracket as a guide, mark the location of the holes.



Pre-drill the holes with a 5/32 in. bit, angling slightly upward and inward to allow for clearance from the rail when it is repositioned for securing (bracket and rail outline shown for clarity).

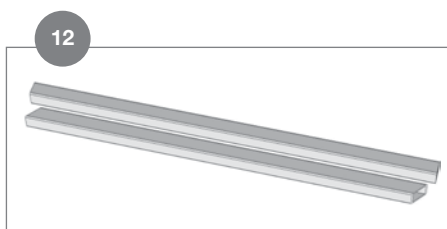
Note: Using an extended drill bit is recommended to prevent damage to the rail, and allow a more perpendicular driving angle.

Note: When using surface mount brackets: use titanium or cobalt bits only. Pre-drill the post sleeve and steel bracket with a 1/4 in. bit until the steel is penetrated. This will allow the bracket screws to engage the wood 4x4 and pull the rail snugly to the post. Do not over tighten.

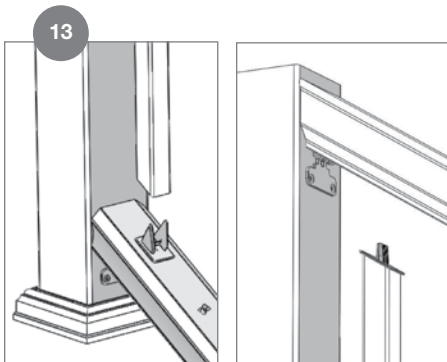


Secure the bottom rail to the post at both ends using the supplied 2 in. screws. Do not over tighten.

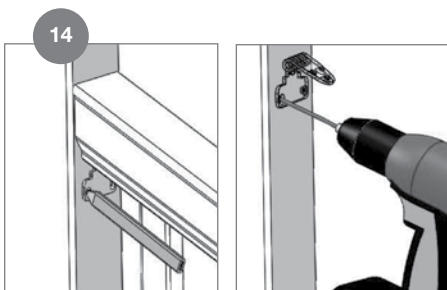
Tip: The use of a long bit extension, or a flexible extension will help with accessing the screw heads.



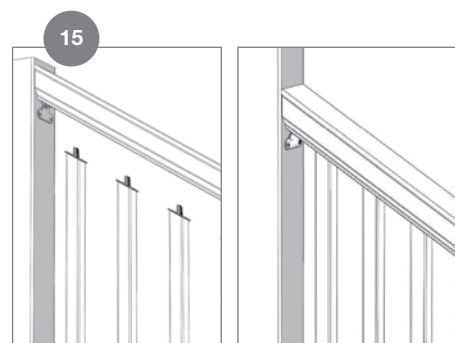
Mark the stair angle on the ends of each baluster to be used and cut at an angle on the top and bottom of each baluster. Ensure that all of the balusters are of equal length.



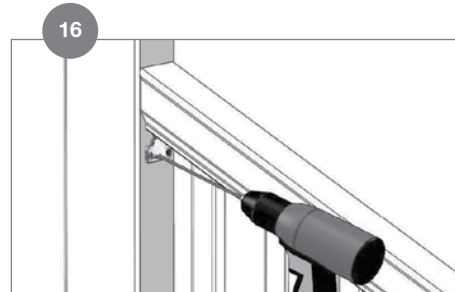
Press the top baluster inserts into the top end of the balusters and press bottom baluster inserts into the bottom end of the balusters. Place two balusters onto the bottom rail, one baluster on each end. Lower the top rail onto the two balusters, making sure to line up the baluster inserts with the top rail routed holes, until top rail is fully seated on balusters.



Once fully seated, mark the location of the bracket holes. Remove the top rail and pre-drill the holes with a 5/32 in. bit, angling slightly upward and inward to allow for clearance from the rail when it is repositioned for securing (bracket outline shown for clarity).

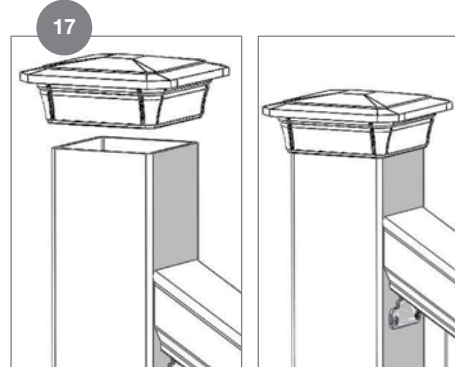


Place all balusters on bottom stair rail. Working from one side to the other, slowly lower the top rail in place aligning baluster inserts with the top rail routed holes. Fully engage all baluster inserts into balusters and rails.



Secure the top rail to the post at both ends using the supplied 2 in. screws. Do not over tighten.

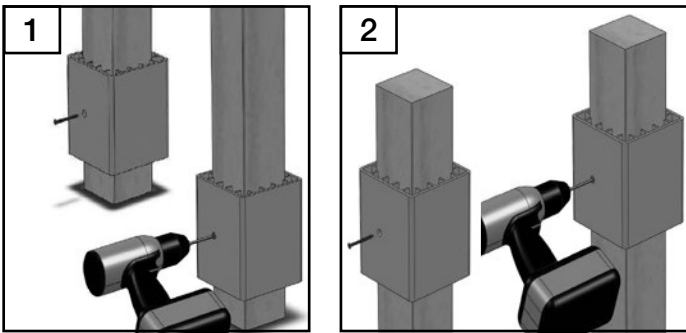
Tip: The use of a long bit extension, or a flexible extension will help access the top screws.



Complete the assembly by positioning and gluing the post sleeve cap in place and a crush block at the approximate mid-point of the bottom rail using a quality exterior adhesive.

Composite Railing systems are designed to work with a number of different decking materials and surfaces. Before initiating any project, obtain a copy of your local building codes and understand them thoroughly. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation guidelines.

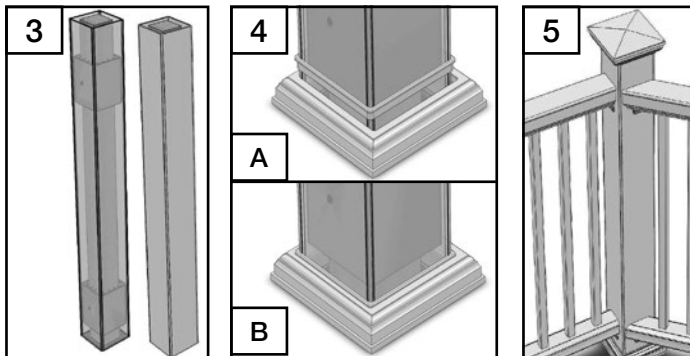
1. Shown is a 5³/₄ in. (175 cm) Post Sleeve over a wooden 4 in. x 4 in. (10 cm x 10 cm) using the new wood 4 in. x 4 in. (10 cm x 10 cm) adapters. Begin installation by drilling and securing the lower 4 in. x 4 in. (10 cm x 10 cm) Adapter roughly 1 in.-1¹/₂ in. (3 cm - 4 cm) off the deck surface. Make sure to use at least a 1³/₄ in. (53 cm) long flathead corrosion-resistant screw (Figure 1).
2. Secure the upper 4x4 Adapter positioned appropriately for the required finished guardrail height (typically either 36 in. (91 cm) or 42 in. (107 cm) from deck surface to top of top guardrail). Placing the top of the 4 in. x 4 in. (10 cm x 10 cm) Adapter at the desired final guardrail height should align the center of the Adapter with the Horizon Rail top bracket (Figure 2).



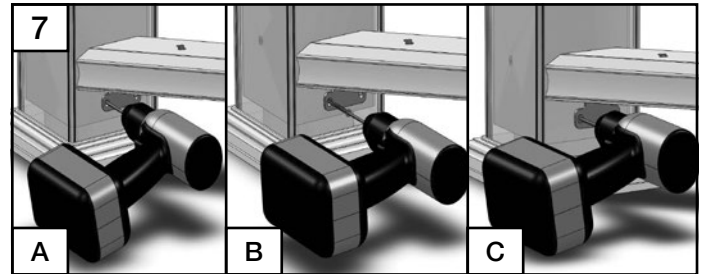
3. After cutting to the desired length, slide the 5³/₄ in. (175 cm) Post Sleeve over the wood 4 in. x 4 in. (10 cm x 10 cm) (Figure 3).
4. With the 5³/₄ in. (175 cm) Post Sleeve in place, position a 6 in. (183 cm) Post Skirt followed by the 5-3/4 in. (175 cm) Cap/Skirt Adapter. Glue the Cap/Skirt adapter in place with an approved PVC or construction adhesive (Figure 4A). Post, Skirt and Cap/Skirt Adapter in final position (Figure 4B).

Note: The 5³/₄ in. (175 cm) Post Sleeve allows for a Horizon Rail to be cut at a 45-degree angle and attached with the standard brackets (Figure 5).

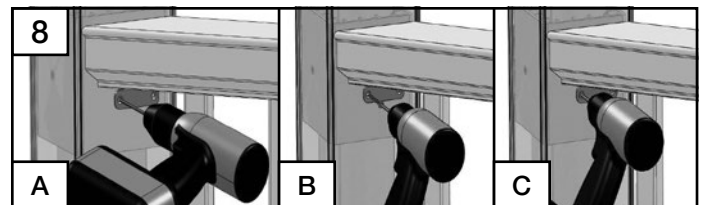
TIP: use two crush blocks or scrap lumber cut to the required height to hold the bottom rail flat and level.



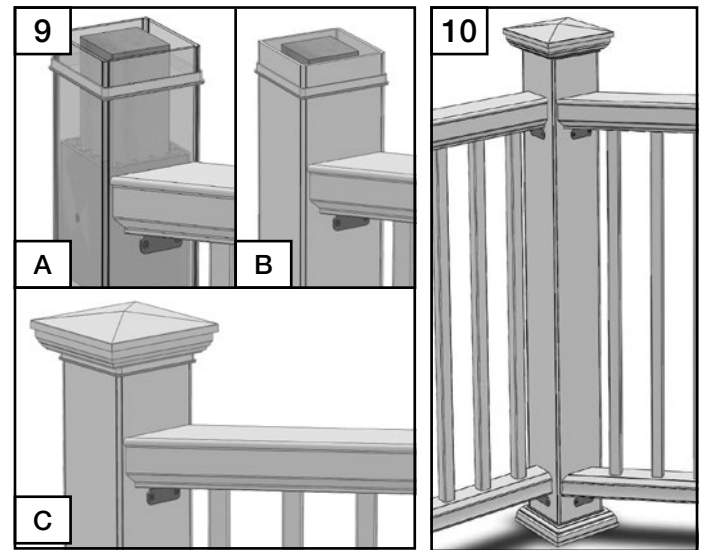
5. Position the bottom rail against the 5³/₄ in. (175 cm) Post with the bottom bracket pre-assembled. Pre-drill holes through the Sleeve, Adapter, and into the wood 4 in. x 4 in. (10 cm x 10 cm) post for the bracket fasteners (Figure 7A).
6. Secure bottom rail with supplied screws (Figure 7B-C).



7. Insert the outermost balusters and baluster daggers at each end of the bottom rail. Position the top rail with the preassembled bracket over the balusters and pre-drill for the upper bracket fasteners through the Sleeve, Adapter, and into the wood 4 in. x 4 in. (10 cm x 10 cm) post (Figure 8A).
8. Insert the remaining baluster daggers and balusters and reposition the top rail. Secure with the supplied top bracket screws (Figure 8B-C).



9. Finish the application by placing a second Cap/Skirt Adapter over the Post Sleeve (9A-B). Using an approved PVC or construction adhesive, glue the cap in place and lift the Cap/Skirt Adapter up to it for final positioning (Figure 9C-10).



Clear Vision System Instructions

Cutting ClearVisionSystem Panels

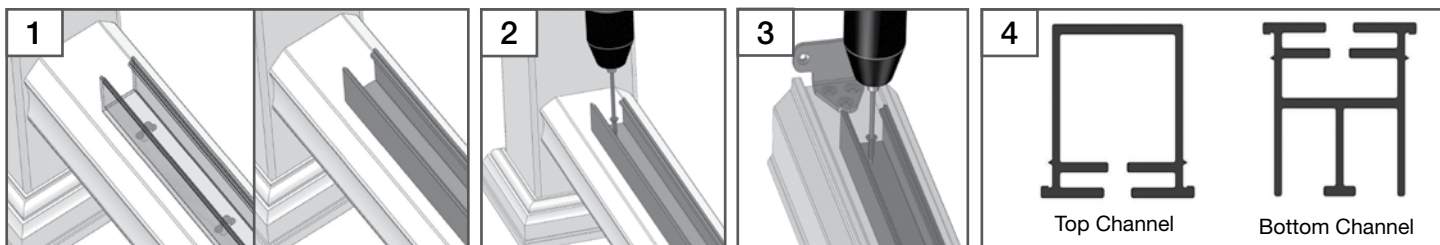
Note: Leave polyethylene masking in place until after cutting to size (polyethylene masking acts as a lubricant). Sharp saw blade teeth are essential for achieving good results. Carbide tipped saw blades are recommended for superior cuts. A 10 in. (25 cm) diameter, 80-tooth blade is recommended for all purpose cutting. (For more detailed cutting information, see www.cyro.com.)

1. Mask off area to be cut using 1 in. (3 cm) masking tape.
2. For best results, cut slowly and smoothly.
3. Cut the panel 7 in. (18 cm) shorter than the distance between the posts.

Installing ClearVisionSystem (CVS) Panels Inside Horizon Railing

(Code approved for decks no more than 30 in. above grade)

1. Cut top and bottom guardrails to proper length, making sure to center the existing routed hole pattern evenly. Allow 1/32 in.-1/16 in. (1-2 mm) between vertical flat leg of bracket and end of rail to ensure the rail will snug tightly when secured. Use the bracket as a template and predrill all holes.
2. Secure bracket with three supplied #10 x 1 in. (3 cm) screws.
3. Locate the Crush Block Brackets on the underside of the bottom rail at 1/3 points. Secure using the supplied self-drilling #8 x 1 in. (3 cm) screw. Slide Crush Block over bracket. *NOTE: It may be necessary to spread the bracket wider to properly hold the Crush Block.* TIP: Install Post Sleeve Molding at this time. Level bottom rail and pre-drill holes by using the bracket as a template, or mark with pencil.
4. Secure bottom rail to posts using supplied #10 x 2 in. (5 cm) screws.
5. Center aluminum CVS rail on bottom rail across the face and end-to-end. Allow a minimum of 3 in. (8 cm) from end of CVS rail to post, but not more than 4 in. (10 cm), to allow for air/wind flow-through (Figure 1).
6. Secure aluminum CVS rail using six of the supplied self drilling screws #10 x 1 in. (3 cm) (Figure 2).
7. Allow 1/32 in.-1/16 in. (1-2 mm) from vertical leg of bracket to end of top rail, and predrill hole locations using the bracket as a template.
8. Secure top bracket to top rail.
9. Center the top aluminum CVS rail, and secure using six of the supplied self drilling screws #10 x 1 in. (3 cm) (Figure 3).
10. Measure 30 in. (76 cm) up from the top of the bottom rail and mark a light line. Align the bottom of the top rail with the line, and pre-drill the holes.
11. Secure top rail to post using supplied #10 x 2 in. (5 cm) screws.



Top and Bottom Channel (Figure 4)

12. Insert the bottom CVS receiving channel into the bottom aluminum CVS rail. An audible “click” should be heard when properly inserted (Figure 5).
13. Insert the top CVS receiving channel into the top aluminum CVS rail. An audible “click” should be heard when properly inserted (Figure 6).
14. Install the acrylic panel by starting at one end and fully inserting the panel into the pocket of the top receiving channel. Work towards the other end inserting the panel fully end-to-end.
15. When properly inserted, the acrylic panel should hover just slightly above the bottom CVS receiving channel.
16. Starting from one end, pull the acrylic panel downward to fully insert into the bottom CVS receiving channel (Figure 7).
17. When properly seated in the bottom rail there should be roughly 3/8 in. (10 mm) space above the top of the acrylic panel (Figure 8).
18. Complete the installation by gluing on the Post Caps (Figure 9).



Fibron Composite Railing systems are designed to work with a number of different decking materials and surfaces. Before initiating any project, obtain a copy of your local building codes and understand them thoroughly. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation guideline.

Kit Includes: (1) Surface Mount Bracket; (1) 4-in x4-in Wood Post; (4) 1/4-in x 3-in Wedge-Bolt™ Anchors; and (4) 5/16-in Fender Washers

For wood composite applications; consumers must purchase: (4) Galvanized 5/16-in x 5-in Hex bolts; (3-6) #8 x 1-in Flat-head screws and (4) 5/16-in Galvanized Nuts

Note: To ensure proper fastening, it is recommended that the wood thickness be a minimum of 4-in underneath the mount unless otherwise specified by local building codes. For more detailed instructions visit us online at www.compositedeck.com.

For Wood Surface Installation:

1. Determine the desired location(s) and finished height of the post sleeve from the deck surface.
2. The thickness of the wood/composite deck and reinforcement boards underneath the deck should be a minimum of 4-in. (Two treated and structurally sound 2-in x 8-in lumber under the deck board, Fig 4). Fasten the reinforcement boards with 3-in stainless steel fasteners as shown (Fig 1).
3. Trim the post sleeve to desired length.
4. Trim the length of the 4-in x 4-in wood post insert if required. The wood post is typically 1-in to 2-in shorter than the post sleeve length.
5. Use the base of the mount as a template and mark the four corner holes on the deck surface. Mark inside square of bracket on the deck surface.
6. Drill four 3/8-in holes at the marked locations, drilling through the deck board and the reinforcement boards. Drill a 3/8-in drainage hole in square through deck board and reinforcement boards for drainage.
7. Locate the mount by aligning the mount corner holes over the drilled holes.
8. Insert the trimmed end of the 4-in x 4-in wood post (included) into the mount. If necessary, place a shim under the mount to make the post plumb and true (Fig 2). If the wood post is loose within the mounting bracket, secure the wood post on two opposing sides with at least (3) #8 x 1-in flat-head screws (Not included) (Fig 3).
9. Insert a 5/16-in x 5-in galvanized hex bolt into the mount holes and the drilled holes (galvanized bolts & nuts, Not included).
10. Secure the four bolts underneath the reinforcement boards with the 5/16-in Fender washer (Included In Kit) and 5/16-in galvanized hex nuts (Not included) (Fig 3).
11. Slide the post sleeve (Not included) over the 4-in x 4-in treated wood post until it contacts the base of the mount.

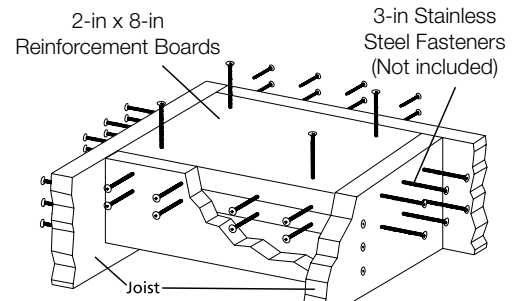


Figure 1

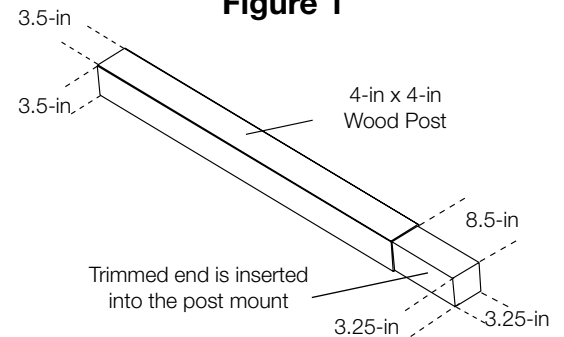


Figure 2

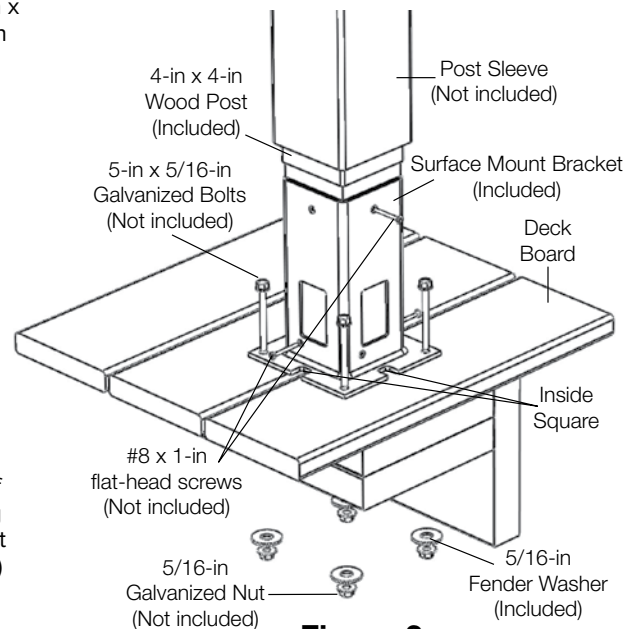


Figure 3

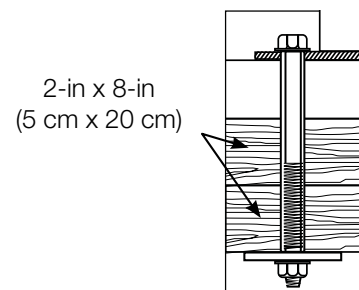


Figure 4

Post Sleeve Surface Mount - Concrete Surface Installation

Fiberon Composite Railing systems are designed to work with a number of different decking materials and surfaces. Before initiating any project, obtain a copy of your local building codes and understand them thoroughly. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation guideline.

Kit Includes: (1) Surface Mount Bracket; (1) 4-in x 4-in Wood Post; (4) 1/4-in x 3-in Wedge-Bolt™ Anchors; and (4) 5/16-in Fender Washers

For concrete composite applications; consumers must purchase: (3-6) #8 x 1-in Flat-head screws

Note: To ensure proper fastening, it is recommended that the concrete thickness be a minimum of 4-in unless otherwise specified by local building codes. For more detailed instructions visit us online at www.compositedeck.com.

For Concrete Surface Installation:

1. Determine the desired location(s) and finished height of the post sleeve from the deck surface.
2. Trim the post sleeve to the desired length.
3. Trim the length of the 4-in x 4-in wood post insert if required. The wood post length is typically 1-in to 2-in shorter than the post sleeve length.
4. Use the base of the mount as a template and mark the four corner holes for the concrete fasteners Wedge-Bolt Anchors (Included in kit).
5. Drill the marked holes per the local building code requirements. Using a 1/4-in masonry drill bit, drill the holes into the concrete base to a depth of at least 1/2-in deeper than the length of the 1/4-in x 3-in Wedge-Bolt Anchors. Blow the hole clean of dust and debris (Fig 3).
6. Locate the mount by aligning the mount corner holes over the drilled holes.
7. Insert the trimmed end of the 4-in x 4-in wood post (included) into the mount. If necessary, place a shim under the mount to make the post plumb and true. If the wood post is loose within the mounting bracket, secure the wood post on two opposing sides with at least (3) #8 x 1-in flat-head screws (Not included).
8. Fasten mount to concrete per local building code requirements (Fig 4). Insert the four concrete Wedge-Bolt Anchors into the corner holes of the mount. Begin tightening the Wedge-Bolt Anchor by rotating clock wise and applying pressure in toward the base. This will engage the first few threads as the Wedge-Bolt Anchor begins to advance. Continue tightening until the head of the Wedge-Bolt™ Anchor is firmly seated against the post mount. Repeat for the remaining fasteners.
9. Slide the post sleeve (Not included) over the 4-in x 4-in treated wood post until it contacts the base of the mount.

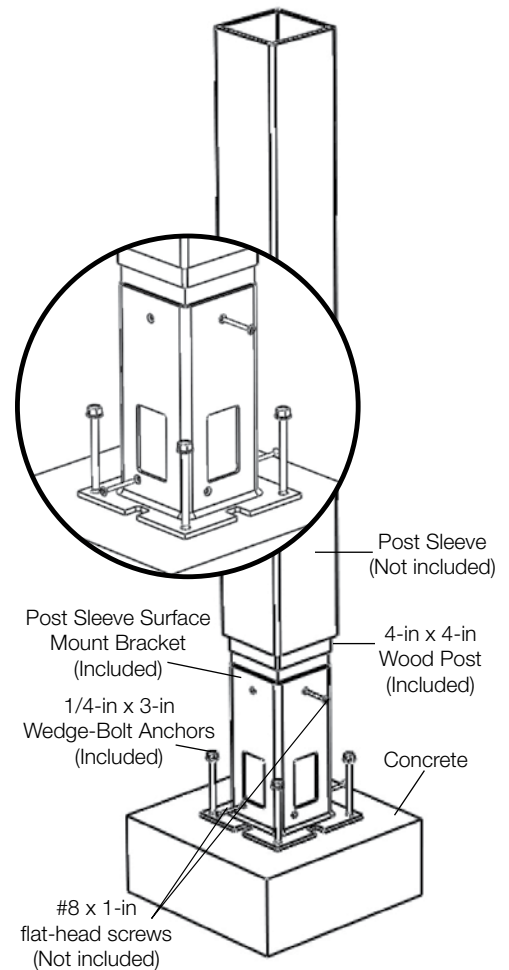


Figure 1

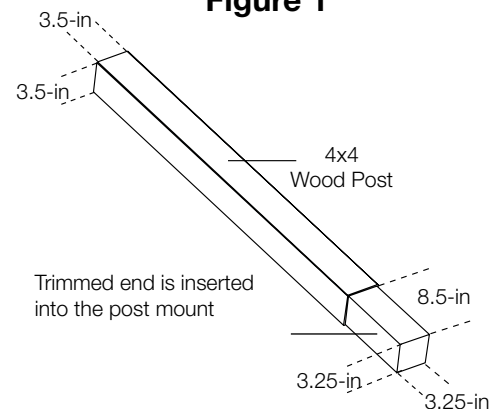


Figure 2

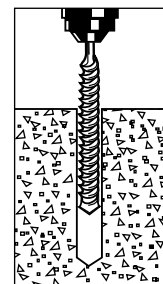


Figure 3

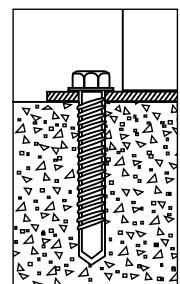


Figure 4

Design Grid



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