



INSTALLATION INSTRUCTIONS - For Installations using Natural Composite Baluster Kit

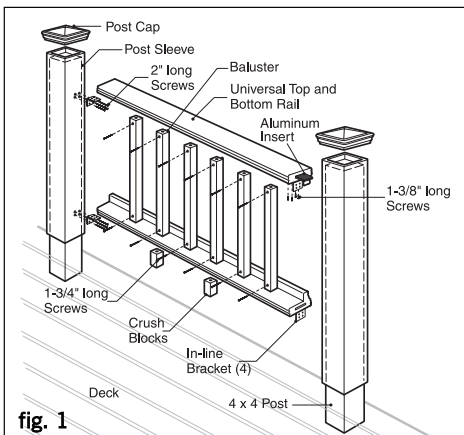
In-Line Railing Installation Instructions

For each 6' on-center railing section you will need:

- One 6' Latitudes Railing Kit which contains:
 - * 2 – top/bottom universal rails
 - * 1 – aluminum insert for top rail
 - * 1 – in-line hardware kit which contains:
 - (4) in-line brackets
 - (17) 1-3/8" long Phillips head screws
 - (42) 1-3/4" long Phillips head screws
 - (17) 2" long Phillips head screws
 - (1) Phillips head driver
- One Natural Baluster Kit which contains:
 - * 15 – 32" composite balusters
- One 42" Latitudes Post Sleeve Kit which contains:
 - * 1 – 42" composite post sleeve
- One Latitudes Post Cap for each Post Sleeve (sold separately)
- One Stair Rail Bracket Kit per section of stair railing which contains:
 - (4) hinge brackets
 - (17) 1-3/8" long Phillips head screws
 - (42) 1-3/4" long Phillips head screws
 - (17) 2" long Phillips head screws
 - (1) Phillips head driver

Items you will need:

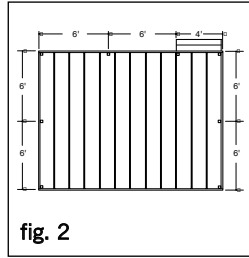
- Drill/Power screwdriver
- Miter or circular saw with carbide tip blade
- Adjustable wrench or socket wrench for bolts, etc.
- Assorted fasteners (see instructions)
- Tape measure
- Hammer
- Marked speed square
- Carpenter's level
- Carpenter's pencil
- Safety glasses/goggles
- 2 clamps
- Hack saw
- Construction adhesive



Prior to construction, check with your local regulatory agency for special code requirements in your area. Common railing height is 36". Structural support should come from either the continuation of deck support posts that extend up through the deck floor or railing posts that are bolted to the inside of the rim or outer joists. Never span more than 6' between railing posts. Install railing posts before deck boards are fastened to the joists.

Pre-drilling of all railing components is essential to successful installation. Do not over drive screws. Read instructions completely to get an understanding of how the product goes together and how each piece affects the other.

Step 1: Determine the number of railing posts needed for your deck. Post spacing of 6' on-center is recommended. Example – a 12'x16' deck attached to a building with a 4' access opening on one side will require a total of 8 posts (Figure 2).

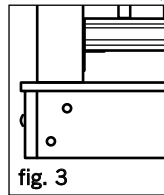


Step 2: Install rail posts prior to installing deck boards. Cedar or pressure-treated pine 4x4 railing posts provide the structural strength for the railing. The length of each post is determined by the total of the joist width (7-1/4") + decking thickness (1") + railing height (36") + spacing for post cap (1-1/4") = 45-1/2".

Important: Do not notch the 4x4 railing posts. Notching will reduce the strength of the post and could result in railing collapse or failure.



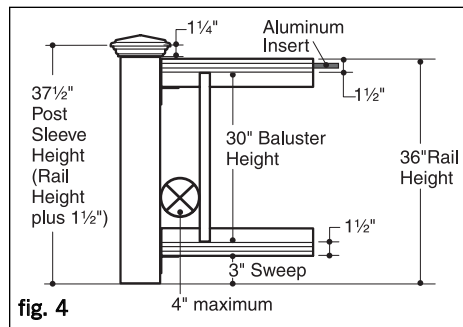
Step 3: Position, plumb with a level, and clamp the rail post on the interior face of the joist. Plumb again. The 4x4 railing post should be bolted to the inside of the joists using two 1/2"x6" galvanized carriage bolts. Corner posts use a third carriage bolt inserted through the adjacent joist (Figure 3).



Step 4: Install decking; notch deck boards to fit around the 4x4 railing posts. Allow 1/4" space between the deck boards and any permanent structure or post. Additional blocking may be necessary on the 4x4 for fastening deck boards.

Step 5: Trim 4x4 post sleeves to length. Post sleeves should be a minimum of 1-1/2" longer than the railing height (Figure 4). Example – for a 36" high railing, trim post sleeve to a minimum of 37-1/2", can be left longer if desired.

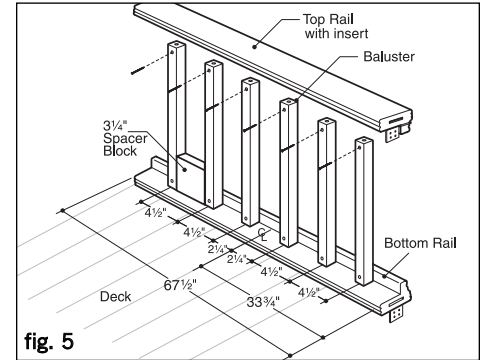
Slide a trimmed post sleeve over each 4x4 railing post.



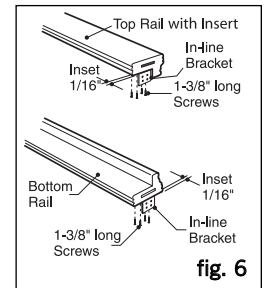
Step 6: Measure the distance between installed post sleeves to determine the length of the top and bottom rails. Trim the top and bottom rails to fit. Using a hack saw, trim the aluminum insert to the same length as the rails. The vertical legs of the rails face outside the deck (Figure 1).

Step 7: Determine the spacing of the balusters, 4-1/2" maximum on-center and equal spacing for the end spacing. Start by finding the center of the rail. Rail length ÷ 2 = center of rail.

Start the first balusters 2-1/4" on-center each side of the center line for 4-1/2" on-center spacing. Mark every 4-1/2" from these lines to each end. This will leave the end spacing 4" or less on both ends and require 14 balusters (Figure 5). **Tip:** Cut a (3-1/4) spacer block for the spacing between balusters.



Step 8: Locate in-line brackets on underside of bottom rail. Use an in-line bracket as a template, inset the bracket 1/16" from end and on-center of rail, mark the four hole locations. Pre-drill each marked location with 1/8" drill bit, 1-1/4" deep, drilling into second layer of material, and attach with 1-3/8" screws (Figure 6). Repeat for the other end of rail. Place aluminum insert into the hollow space in top rail so both ends are flush. Locate in-line brackets on the bottom of the top rail – placing the bracket on-center of the flat area and 1/16" from end – mark the four holes. Pre-drill each marked location with 11/64" drill bit, 1-1/4" deep, drilling into second layer of material, and attach with 1-3/8" screws (Figure 6). Repeat for the other end of rail. Use the 11/64" drill bit only for connections that are through the aluminum insert. Please note the screws must be attached through the aluminum insert.



Step 9: Position the bottom rail between posts. Check building code requirements for a maximum spacing between deck surface and bottom of rail (sweep). 3" is recommended but can be more or less if codes allow (Figure 4). Mark screw locations on-center of post sleeve using the bracket as a template and pre-drill using a 1/8" drill bit. Attach bracket to the post with (4) 2" long screws at one end of bottom rail. Level bottom rail and repeat marking and pre-drilling the post sleeve for the other end. Attach to post with (4) 2" long screws.

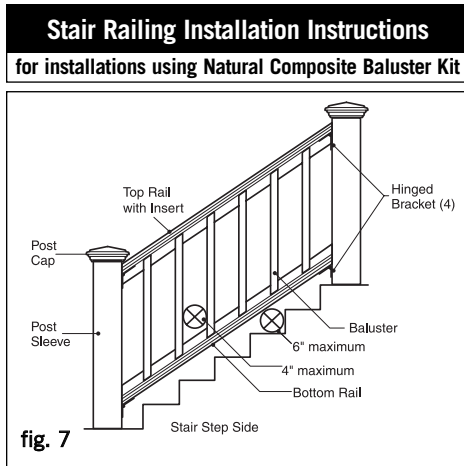
Step 10: Cut two crush blocks from baluster material to desired height and place equal distance from each post. Glue crush blocks to bottom rail with construction glue. (Refer to Figure 1.)

Step 11: Determine the length of the balusters (Figure 4). Figure 4 illustrates how a 36" high railing might be sized. Starting with a 3" sweep plus 1-1/2" for the bottom railing, 30" baluster height plus 1-1/2" for the top rail equals a 36" rail height. If these are the dimensions that you are going to use, cut the balusters to 30" length using a cut-off or table saw. If you want to have your railing at a different height, use Figure 4 as a planning tool to determine the height to cut the post sleeves and the balusters. Note: Use a fixture to ensure a consistent length (+/- 1/16").

Continued on next page.

Natural Composite Baluster In-Line Railing Installation Instructions continued.

Step 12: Drill holes in all balusters 3/4" from each end, on-center, using a 13/64" drill bit. Place balusters on the bottom rail on-center of the marked positions (4-1/2" on-center). Start at the center of the rail and work out to the ends. Using the baluster as a guide, drill 1/8" holes in the bottom rail at each baluster location 1/2" deep. Use spacer block to space next baluster. Working toward the ends, drill and attach each baluster with 1-3/4" long screws except for attaching the last two on each end (Figure 5).



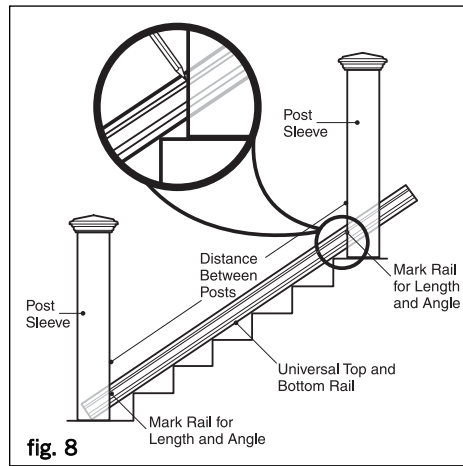
Step 1: Cedar or pressure-treated pine 4x4 railing posts provide the structural strength for the railing. The length of each post is determined by the total of the stair stringer width (7-1/4") + decking thickness (1") + railing height (36") + spacing for post cap (1-1/4") = 45-1/2".

Step 2: Position, plumb with a level, and clamp the rail post on the interior face of the stair stringer. Plumb again. The 4x4 railing post should be bolted to the inside of the stair stringer using two 1/2" x 6" galvanized carriage bolts. Corner posts use a third carriage bolt inserted through the adjacent joist. Ground level posts should be set in concrete.

Step 3: Complete stair tread installation prior to installing post sleeves. Trim 4x4 post sleeves to length. Post sleeves should be a minimum of 1-1/2" longer than the railing height. Slide a trimmed post sleeve over each 4x4 railing post.

Step 4: Measure the distance between installed post sleeves to determine the length of the top and bottom rails. Lay bottom rail on stairs. Mark the angle and length. Do the same with the top rail. Trim the top and bottom rails with the same angle. Using a hack saw, trim the aluminum insert to the same length and angle as the top rail. The vertical legs of the rails face away from the stairs (Figure 8).

Step 13: Position the top rail between the posts and onto the balusters. Check for level end-to-end and vertically. Attach the top rail to the post sleeves. Mark screw locations on post sleeve using the in-line bracket as a template and pre-drill using a 1/8" drill bit. Attach bracket to the post with (4) 2" long screws at one end. Level and repeat marking and pre-drilling the post sleeve for the other end. Attach to post with (4) 2" long screws.



Step 5: Determine the spacing of the balusters, 4-1/2" on-center between the balusters and equal spacing for the end spacing. See Step 7 of the in-line instructions for details.

Step 6: Locate the hinged brackets on underside of bottom rail. Using hinged bracket as a template, inset bracket 1/16" from end, and on-center of rail, mark the four hole locations. Pre-drill each marked location with 1/8" drill bit, 1-1/4" deep, drilling into second layer of material, and attach with 1-3/8" screws. Do not over-tighten screws. Repeat for the other end of rail.

Place aluminum insert into the hollow space in top rail so both ends are flush. Locate the hinged brackets on underside of top rail. Using hinged bracket as a template, inset bracket 1/16" from end, and on-center of rail, mark the four hole locations. Pre-drill each marked location with 11/64" drill bit, 1-1/4" deep, drilling into second layer of material, and attach with 1-3/8" screws. Do not over-tighten screws. Repeat for the other end of rail. Use the 11/64" drill bit only for connections that are through the aluminum insert. Please note the screws must be attached through the aluminum insert.

Step 7: Position the bottom rail between the posts. Check building code requirements for maximum spacing on a staircase, typically 6". A 6" ball can-

Step 14: Attach the last four balusters at each end to bottom rail with 1-3/4" long screws. Level and using the baluster as a guide, drill 1/8" holes in the top rail at each baluster location 1/2" deep. Attach each baluster to the top rail with 1-3/4" long screws.

Step 15: Apply construction adhesive to the inside edges of the post caps and place over each post sleeve.

not pass through the triangle formed by the bottom rail, tread and riser. See Figure 7. Mark screw locations on-center of post sleeve using the hinged bracket as a template and pre-drill using a 1/8" drill bit. Attach bracket to the post with (4) 2" long screws at one end of bottom rail. Align bottom rail and repeat marking and pre-drilling the post sleeve for the other end. Attach to post with (4) 2" long screws.

Step 8: Cut two crush blocks from baluster material to desired height and angle, and place equal distance from each post. Glue crush blocks to bottom rail with construction glue. (Refer to Figure 1)

Step 9: Position the top rail between the posts. Check for plumb end-to-end and vertically. Attach the top rail to the post sleeves. Mark screw locations on post sleeve using the hinged bracket as a template and pre-drill using a 1/8" drill bit. Attach bracket to the post with (4) 2" long screws at one end. Plumb and repeat marking and pre-drilling the post sleeve for the other end. Attach to post with (4) 2" long screws.

Step 10: Determine the required height of the balusters. Make sure balusters are plumb. Cut the desired length and angle to provide a snug fit both top and bottom. Note: Use a fixture to ensure a consistent length and angle (+/- 1/16").

Step 11: Drill holes in all balusters 3/4" from each end, on-center, using a 13/64" drill bit. Place balusters on the bottom rail on-center of the marked positions (4-1/2" on-center). Using the baluster as a guide, drill 1/8" holes in the bottom rail at each baluster location 1/2" deep. Use spacer block to space next baluster. Drill and attach each baluster with 1-3/4" long screws. Level and using the baluster as a guide, drill 1/8" holes in the top rail at each baluster location 1/2" deep. Attach each baluster to the top rail with 1-3/4" long screws. Using a pair of clamps to hold baluster in place while fastening will make this step easier.

Step 12: Apply construction adhesive to the inside edges of the post caps and place over each post sleeve.

Latitudes is not suitable for structural use. It should not be used for primary load-bearing members such as posts, joists, beams or stringers. The same common sense precautions should be taken when handling Latitudes as with wood or other building materials. Dust masks and eye protection devices are recommended to avoid possible irritation from sawdust and chips. Gloves will help to protect the hands. Hands should be washed after doing construction work.

The diagrams and instructions in this brochure are for illustration purposes only and are not meant to replace a licensed professional. Any construction or use of the product must be in accordance with all

local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in the written limited warranty, Universal Forest Products, Inc., does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.

Latitudes Composite Decking, manufactured by UFP Ventures II, Inc., has been evaluated by ICC-ES to be

code compliant with details listed under the ESR-1573 Evaluation report. Latitudes Decking and Natural Railing feature a 15-Year Limited Warranty. Latitudes Natural Railing has been evaluated by engineers at an independent third party test laboratory. The results demonstrate Latitudes Natural Railing, when installed according to the manufacturer's installation instructions, complies with ICC-ES AC174-06, section 5.1 for use as a guardrail system.

Manufactured by UFP Ventures II, Inc.,
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