INSTALLING THE COMPOSITE POST SLEEVE

Prior to installation consult building code requirements for proper post installation. Local building codes supersede any and all recommendations in the following guide. Before installing the Composite Post Sleeve, review the installation instructions of the railing system planned for the project.

THE COMPOSITE POST SLEEVE IS A NON-LOAD BEARING POST AND SHOULD NOT BE USED AS A STRUCTURAL SUPPORT OF ANY KIND.

The Composite Post Sleeve is designed to slide over a structurally sound 4" x 4" (3.5" x 3.5" actual) wood post. The wood post should be plumb and true prior to installing the Composite Post Sleeve. When fully installed the Composite Post Sleeve should sit flush on the walking surface and should not extend more than 1" above the top of the wood support post (figure 1). Trim wood post as appropriate. Before attaching the guard rail to the Composite Post Sleeve, be sure to install the Base Cove Moulding as shown in figure 2. The Guard Rail System should only be secured to code compliant posts. Securing the Guard Rail System to another structure (i.e. building) is not recommended.

BASE COVE MOULDING CANNOT BE INSTALLED AFTER RAILING IS ATTACHED!

CODE CONSIDERATIONS

The Base Cove Moulding requires a minimum spacing of 3" between the walking surface and the lower subrail. Some building codes may require a spacing of less than 3". In these instances, the lower subrail mounting brackets will interfere with the Base Cove Moulding. The installer has two ways to overcome this situation: (1) Notch the Base Cove Moulding to allow the lower leg of the bracket to sit against the post, or (2) Do not use the Base Cove Moulding.

Figure 1

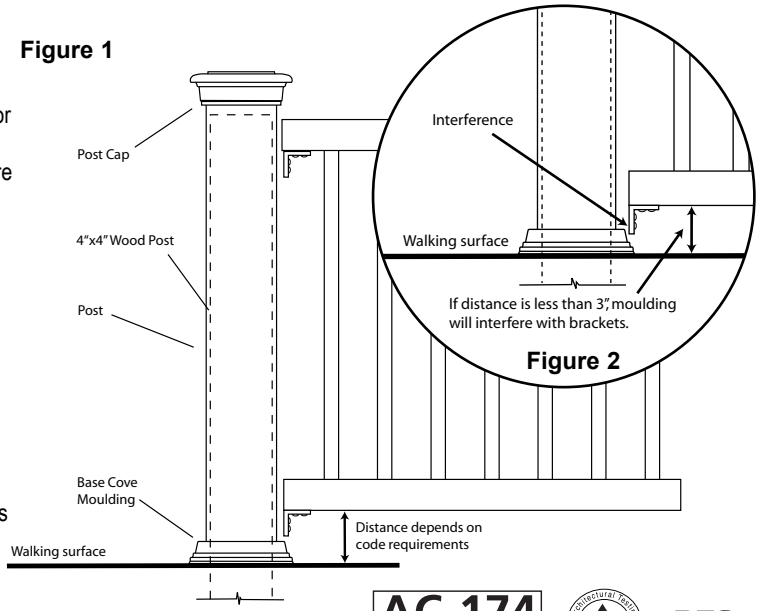


Figure 2

AC-174 COMPLIANT
This Guard Rail Product meets or exceeds all AC-174 requirements.

Architectural Testing Approved CCRR - 0112

PFS AA 652

ASSEMBLE AND INSTALL THE COMPOSITE RAILING SYSTEM

1. Identify all hardware components:
   a. (4) In-Line Brackets (post to rail connections)
   b. (8) #10 - 3/4 inch long Phillip's head screws (bracket to lower subrail only)
   c. (8) # 10 - 1 3/8 inch long Phillip's head screws (bracket to top rail & upper subrail assembly only)
   d. (8) # 10 - 1 3/8 inch long Phillip's head screws (upper subrail to top rail)
   e. (17) # 10 - 2 inch long Phillip's head screws (bracket to post only)
   f. (42) # 10 - 1 3/4 inch long Phillip's head screws (rails to balusters only)
   g. (1) Phillip's head driver
2. Measure the distance between installed posts at various heights. Check to determine the distance does not vary more than 1/16 of an inch (figure 3).
3. Trim the three rail components to fit between the posts, i.e., top rail, upper subrail and lower subrail. Cut should be square to insure a good fit with the post.
4. Determine the spacing for balusters. For a full 8 feet guardrail length, the baluster spacing is 4.5" on center and equal spacing at both ends of the guardrail (3 inches). Typically, building codes requires spacing between balusters less than 4 inches.
   NOTE: Don't position screws near the end of the rails which is reserved for rail/post bracket installation (minium distance = 2-1/4").
5. Mark the center location for each baluster on the upper subrail. Transfer these locations to the lower subrail by laying the lower subrail beside the upper subrail as shown in figure 4.
6. Drill clearance holes using a 7/32 inch diameter drill bit for all pre-marked locations.
7. Drill 3/8 inch counter-bored holes from bottom side of lower subrail approximately 1/2 inch deep for all hole locations in the lower subrail (figure 5). This step is optional if attempting to hide the screw heads.
8. Trim all 32 inch balusters to the desired length.
9. Using a 1/8" bit, drill holes that are 2 inches long, centered in each end of the baluster
10. Place#10 -1 ¾ inch long Phillip's screw into each of the counter-bored holes in the lower subrail.
11. Secure a baluster in each location of the lower subrail. In the two part system, ensure balusters are against the baluster stop.
    Do Not Over Tighten Screws

Figure 3

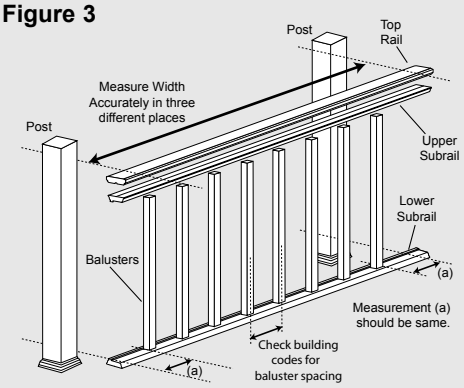
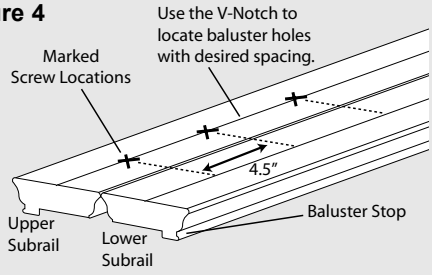


Figure 4



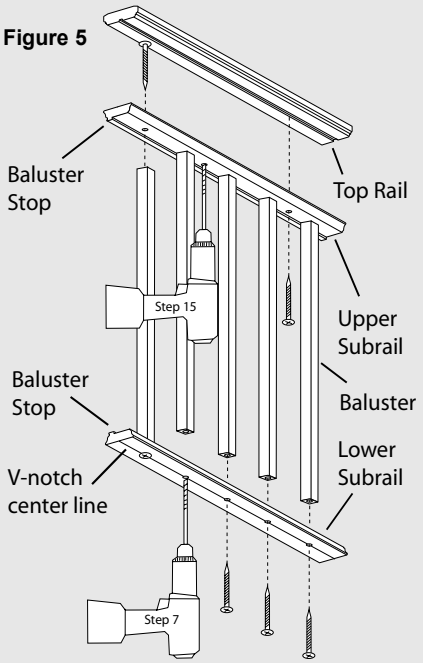
Be sure to transfer measurements from Upper to Lower Subrail with rails oriented as shown.

REV 12/09

Assemble and Install Composite Railing System Continued

12. Secure the balusters in each corresponding location of the subrail using #10 - 1 ¾ inch long Phillip's screws. In the two part system, ensure balusters are against the baluster stop.
    Do Not Over Tighten Screws
13. Mark 8 hole locations equally spaced on the top surface of the subrail. Choose locations mid-point between the balusters.
14. Drill using a 7/32 inch diameter drill bit through the subrail.
15. Drill 3/8 inch counter-bored holes from the baluster side of the upper subrail, approximately 1/2 inch deep for the eight hole locations in the upper subrail. This step is optional if attempting to hide the screw heads (figure 5).
16. Center the top rail on the upper subrail. The baluster screw heads will help you with proper alignment.
17. Using the holes created in step 14, mark hole positions on the top rail.
18. Using a 1/8" bit, drill holes that are 3/4 inch deep into the top rail.
19. Secure the top rail to the assembly using 8 # 10 -1 3/8 inch long Phillip's screws.
    Do NOT Over Tighten Screws
    ** NOTE: If you are using the Composite Post Sleeve Moulding, it must be installed on the post before continuing the rail installation. It cannot be installed after the railing is attached to the post! Refer to "Installing Composite Post Sleeve" on other side of this page.
20. Using mounting bracket as a template, center the bracket on the bottom surface of the lower subrail and 1/16 inch from the end of the lower subrail (figure 6). This promotes a tight fit when securing the rail section to the post.
21. Mark the four hole locations on the lower subrail and pre-drill using a 1/8" drill bit, approximately ½ inch deep.
22. Attach the bracket to the lower subrail using 4 -#10 - ¾ inch long screws,
    Do Not Over Tighten Screws
    **NOTE: If longer screws are used, the screws may be exposed on the top surface of the lower subrail. **
23. Repeat steps 20 - 22 for the other end of the bottom guardrail.
24. Repeat steps 20- 23 for top rail & upper subrail assembly by centering the bracket on the bottom surface of the top rail & upper subrail assembly. Use 4 - #10 - 1 3/8 inch long screws to secure the bracket to the top rail & upper subrail assembly.
25. Cut two crush blocks from excess baluster materials. Check building code requirements for maximum spacing between the walking surface and the lower subrail; typically the maximum heights range between 2 - 4 inches.
26. Space the crush blocks equidistant between the posts (figure 7).
27. Center the assembled section between the posts while laying the assembled section onto the crush blocks.
28. Ensure the top rail & lower subrail are level.
29. Mark the screw locations on the posts for both ends of the lower subrail using the mounting brackets as templates.
30. Drill holes using a 1/8" drill bit at marked screw locations approximately 2 inches deep. If needed, remove assembled section for ease of drilling.
31. Attach brackets to the post with 4 - 2" long screws at each end of the lower subrail.
    Do Not Over Tighten Screws
32. Center the top rail and upper subrail on the post. Mark hole locations on the posts using the brackets as a template.
33. Drill holes using a 1/8"drill bit at marked screw locations approximately 2 inches deep. If needed, slightly pull the assembled section inward toward the deck to accommodate drilling into the post.
34. Attach the rail bracket to the post with 4 - 2" long screws at each end of the upper subrail.
    Do Not Over Tighten Screws
35. Repeat 33 & 34 steps for the other upper subrail bracket.
36. Apply adhesive to the crush blocks and secure to the lower subrail.
37. Secure post caps using adhesive on the inside corners of the post cap.
38. Push caps firmly onto the post. Wipe excess adhesive off the post sleeve.

Figure 5



Drill 3/8" counter bore holes 1/2" deep prior to fastening in steps 12 & 19 (this step is not required, but if you want to install the crush block directly under the balluster, you must counter bore those holes).

Figure 6

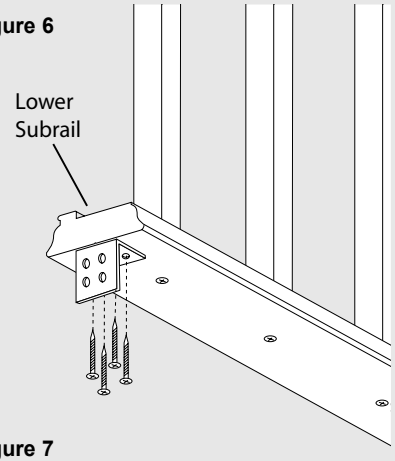
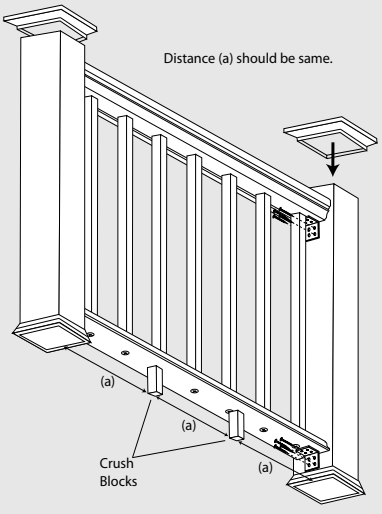


Figure 7



ASSEMBLE AND INSTALL THE COMPOSITE STAIR SYSTEM

1. Identify all hardware components:
   a. (4) Hinged Brackets (post to rail connections)
   b. (8) #10 - 3/4 inch long Phillip's head screws (bracket to lower subrail only)
   c. (8) #10 - 1 3/8 inch long Phillip's head screws (bracket to upper subrail only)
   d. (8) #10 - 1 3/8 inch long Phillip's head screws (upper subrail to top rail)
   e. (17) #10 - 2 inch long Phillip's head screws (bracket to post only)
   f. (42) #10 - 1 3/4 inch long Phillip's head screws (rails to balusters only)
   g. (1) Phillip's head driver
2. Measure the distance between installed posts at various heights. Check to determine the distance does not vary more than 1/16 of an inch.
3. Lay lower subrail on stairs. Mark angle on rail (figure 3).
4. Cut the lower subrail to the marked angle and to proper length. Check fit at both ends.
5. Using the same angle, cut the upper subrail and top rail to length and check fit.
6. Determine the spacing for balusters. The baluster spacing is 4.5" on center and equal spacing at the guardrail ends. Typically, building codes requires spacing between balusters less than 4 inches.
7. Mark the location for each baluster on the top surface of the upper subrail. Use the V-notch on the two part system. Transfer the baluster locations from the upper subrail to the top surface of the lower subrail. Make sure the distance from the baluster stop can accommodate the location of the baluster on the two part system.
   NOTE: Don't position screws near the end of the rails which is reserved for rail/post bracket installation (minium distance = 2-1/4").
   NOTE: The hole locations should be the same on the top surface of the upper and lower subrails with respect to the end of the rail and baluster stop (figure 4).
8. Drill clearance holes at the appropriate angle through the upper subrail using a 7/32 inch diameter drill bit for all hole locations.
9. Drill clearance holes at the appropriate angle through the lower subrail using a 7/32 inch diameter drill bit for all hole locations.
10. Drill 3/8 inch counter-bored holes on the bottom surface of the lower subrail 1/2 inch deep for all hole locations. This step is optional if attempting to hide the head of the screws (figure 5).
11. Trim all 32 inch balusters to the desired length at the appropriate angle.
12. Drill 1/8" holes that are 2 inches long, centered in each end of the baluster. The drilled holes should follow the centerline of the baluster.
13. Place #10 -1 ¾ inch long Phillip's screws into each counter-bored hole in the lower subrail.
14. Secure a baluster in each location of the lower subrail. On the two part system, be sure the baluster rests firmly against the raised baluster stop on the lower subrail.
15. Secure the balusters in each corresponding location on the upper subrail. On the two part system, be sure the baluster rests firmly against the raised baluster stop on the upper subrail.
16. Mark 8 hole locations equally spaced along the top surface of the upper subrail. Use the v-notch of the two part system for a center line. The marked locations should be near mid-point between balusters. After drilling, the hole should be at the midpoint between balusters on the bottom surface of the upper subrail.
17. Drill clearance holes using a 7/32 inch diameter drill bit in the upper subrail at the appropriate angle for the staircase.
18. Drill 3/8 inch counter-bored holes on the bottom surface of the upper subrail 1/2 inch deep for all hole locations. This step is optional if attempting to hide the head of the screws (figure 5).
19. Place the top rail on the subrail/baluster assembly (figure 5).

Figure 3

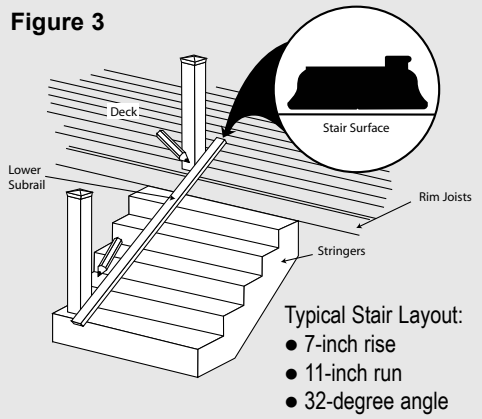
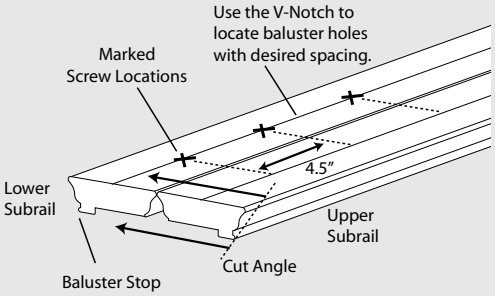
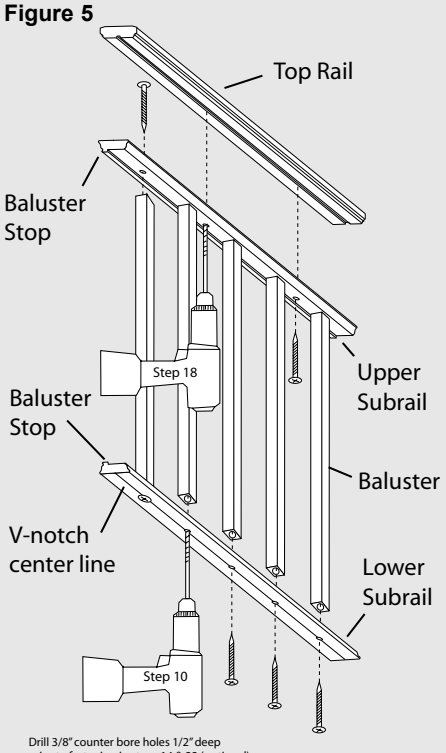


Figure 4



Be sure to transfer measurements from Sub-Rail to Bottom Rail with rails oriented as shown.

Figure 5



Drill 3/8" counter bore holes 1/2" deep prior to fastening in steps 14 & 22 (optional)

Assemble and Install Composite Stair System Continued

20. Mark hole positions on the bottom of the top rail.
21. Using a 1/8" bit, drill holes at the appropriate angle that are 1 inch deep into the top rail.
22. Secure the top rail to the assembly using 8 #10 - 1 3/8 inch long Phillip's screws.
    Do Not Over Tighten Screws
    ** NOTE: If you are using the Composite Post Sleeve Moulding, it must be installed on the post before continuing the rail installation. It cannot be installed after the railing is attached to the post! Refer to "Installing Composite Post Sleeve" on other side of this page.
23. Using hinged bracket as a template, place the bracket on the bottom surface of the lower subrail 1/16 inch from the rail edge. The 1/16 inch spacing promotes a tight fit when securing the rail to the post (figure 6).
24. Mark the four hole locations on the lower subrail and pre-drill a ¾ inch deep hole using a 1/8" drill bit.
25. Attach the bracket to the lower subrail using 4 -#10 - ¾ inch long screws.
    Do Not Over Tighten Screws
26. Repeat steps 23 -25 for the other end of the lower subrail.
27. Repeat steps 23 -26 for upper subrail/top rail assembly by placing the bracket on the bottom surface of the upper subrail.
28. Lay the assembled section on a ½ inch thick wood spacer to facilitate the installation (figure 7).
29. Center the assembled section between the posts. Check building code requirements for maximum spacing for staircase between the stairs and guardrail; typically it is limited to a 6 inch sphere.
30. Mark the screw locations of the lower subrail on the posts using the brackets as templates.
31. Drill holes using a 1/8" drill bit at marked screw locations. If needed, remove assembled section for ease of drilling.
32. Attach lower subrail/post brackets to the posts with 4 #10- 2" long screws on each end of the guardrail.
    Do Not Over Tighten Screws
33. Center the top rail on the post. Mark hole locations on the posts using the brackets as templates.
34. Drill holes using a 1/8"drill bit at marked screw locations. If needed, pull the assembled section towards the stairs for ease of drilling.
35. Attach top rail/post brackets to the posts with 4 #10- 2" long screws on each end of guardrail.
    Do Not Over Tighten Screws
36. Secure post caps using adhesive on the inside corners of the post cap and position the cap onto the post.
37. Push the caps firmly onto the post. Wipe excess adhesive off the post.

Figure 6

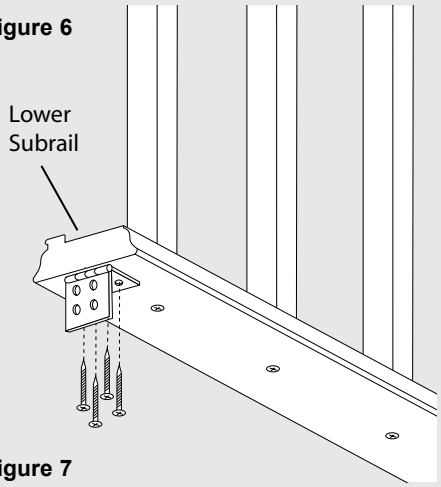


Figure 7