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Alumashield Fence Installation Instructions

The Alumashield Fence components include posts, two types of rails and an assortment of connectors.

Each post is 96" in length and comes with a cross bolt anchor and nut that is to be inserted in the predrilled hole 21" from the bottom of the post. The post must be set in the ground 39" deep. If the post cannot be set 39" in the ground and must be shortened, it is critical the post be shortened from the bottom, not the top.

There are two types of rails. One is the standard reinforced rail that is approximately 114" in length and the other is an all aluminum rail at 91" in length. The majority of the rails are the standard type with reinforced tubing that is sealed in 12" from each end. These rails have a white plug on each end. There will also be a limited number of the all aluminum rails that are not reinforced with steel tubing but are instead heavy-walled aluminum. These rails have a black plug on each end. The black plugged rails without steel reinforced tubing are to be used only if the rail must be trimmed by more than 23". The white plugged rails with the steel reinforced tubing can be trimmed but only up to 12" from each end.

In addition to the straight line connectors, there are special connectors provided to allow any fence layout to be built. All the connectors have a 15° articulation allowance in any direction. For special needs, there are four-way cross connectors, three-way (or Tee) connectors, corner elbow connectors, terminal connectors for the end of the fence line and finally, slope connectors for steep slopes of greater than 10° and up to 30°.

This information is important for you to keep in mind as you read and follow these installation instructions.

Before you get started, make sure to check local codes and permit requirements and contact your local utility companies to check for underground services such as electrical, plumbing, or cable.

Materials required are as follows:

1. Post hole digger
2. Torque limiting device to ensure proper set screw torque on each connector (included with the fence)
3. 3/8" drive ratchet
4. Post level
5. Squaring jig (provided with fence)
6. 2 x 2 board for spacing gage cut to 17.5" for 3 rail or 9.5" for 4 rail
7. Metal cutting saw for cutting rails and trimming posts
8. Rubber mallet
9. Concrete (approximately two (2) 80 lb. bags per post hole)
10. String and stakes
11. Silicon adhesive for securing post caps (optional)

Step 1: Setting the Posts

1. Decide on all the gate placements and install the gate posts first. Gates within the fence line are installed during the fence line build. See the Alumashield Gate installation instructions for further information.
2. From the open end of the first gate, set the first fence post at a 3" gap to the gate for proper latch installation. Using a post hole digger, dig post holes 9" in diameter and 39" deep with 116 3/4" between post hole centers on flat ground. Use a standard rail as a spacing guide and set posts with a maximum of 1/8" gap between rail and post with end of each rail touching opposite post.
3. Put the fence post into the hole and use a rubber mallet to tap it into the hole until it is at a height of 57" above ground. **Note: make sure the cross bolt anchor and nut is in place on the post bottom. This prevents post movement once the concrete is set.** Pour concrete up to 2-4" below ground level. Work concrete into hole by shaking post. Use post level to insure the post is plumb. Fill the rest of the hole with dirt.
4. Set all remaining perimeter posts the same way, utilizing a spare rail abutted between the posts to gage the length between each post. Make sure to leave a 1/8" gap between the posts and the spare rail. The posts' height should smoothly follow the contour of the land. The depth of each post may vary slightly to give the best look. Use a string line and your eye to be the final judge in setting the fence line.
5. Line posts should be set approximately to the final post height. If the post hole and post must be shortened due to rocky terrain, the post must be cut shorter **from the bottom.** Cutting the post from the bottom is critical to the integrity of the post's strength. If the post is shortened by cutting it from the top instead of the bottom, the post's strength will be compromised substantially

because the internal steel reinforcing tube will not be set deep enough in the concrete footing.

6. Once the concrete is set on all the perimeter posts, the rails can be mounted. We recommend you allow a minimum of 24 hours of setting time before mounting the rails.

Step 2: Hanging the Rails

1. We recommend that all the connectors and rails be positioned initially with light torque (under 3 foot pounds) on the set screws to just hold the rails in place without biting into the posts with the stainless bite rings at the base of the set screws.
2. Slide the appropriate number of connectors (3 for 3 rail, etc) on the first post (post #1) roughly to the desired, but temporary, heights and lightly tighten the set screws just enough to hold them in place.
3. Insert the appropriate rail (see 7.a. and 7.b. below regarding trimming of rails) into lowest connector on post #1.
4. Slide one connector on second post (post #2) and simultaneously slide downward allowing other end of rail in post #1 to slide into connector on post #2.
5. Continue sliding downward until reaching the approximate desired connector height on post #2 and lightly tighten the set screw just enough to hold the connector in place.
6. Repeat procedure until all rails in the first fence section are in place. Assemble all the remaining fence sections until all the rails are temporarily hung in place. No need to be perfectly aligned yet.
7. When coming to a fence line obstacle such as a corner, building or gate, it may be necessary to cut the required rails to a shorter length if the standard 114" rail with white plugs is too long.
 - a. **If the rail must be shortened by 23" or more (down to less than 91" in length),** use the heavy-walled aluminum rail with black plugs. The rails with black plastic plugs do not have the steel tube reinforcements. They can be cut to any length. Reinsert the black plastic plugs into each end after cutting until they are flush with the tube ends.
 - b. **If the rail must be shortened by less than 23",** use the standard reinforced rail with white plugs. Make sure you do not cut more than 12" off of either end to avoid cutting the interior steel tubing. **Caution:**

cutting into the steel reinforced tubing will promote corrosion.

Replace the white plastic plugs after cutting to ensure the interior steel tube is fully sealed in place.

- c. Measure and cut the rails to the required length making sure to keep the same 1/8" gap between rails and posts.

Step 4: Aligning the Rails

1. Set a string line on the fence run at the desired top rail height (normally 54"). Loosen the first connector and align it to the string line and square it up to the fence line using the squaring jig provided. Using the supplied snap torque wrench, tighten the first connector's set screw to the snap at 30 foot pounds. Repeat this step for every top first connector down the string line. Stand back and view the fence line. Make any connector adjustments to achieve a smoothly flowing top fence line.
2. Next, using the squaring jig provided and the 2 x 2 board cut to the appropriate length (17.5" for 3 rail or 9.5" for 4 rail) to gage connector spacing (wood spacer), loosen the second connector and slide it up until the wood spacer is tight between the top connector and the second connector. Square the second connector to the rail using the squaring jig while keeping the wood spacer tight. Using the snap torque wrench, tighten the second connector's set screw to the snap at 30 foot pounds, making sure the connector does not move while tightening.
3. Repeat the same procedure with the third and/or fourth connectors and on down the fence line until all of the rails are aligned.
4. Step back to view the alignment. Make any necessary adjustments to ensure alignment is perfect.

Step 5: Trimming the Posts

1. Once the rails and connectors are in perfect alignment, it may be necessary to trim the posts slightly so they are the same height from the top of the top connectors (usually 2.5"). A metal cutting saw is ideal for trimming posts. **Caution:** do not trim more than 2" off the top of any post to ensure the inside seal remains intact. (Trimming the posts will not be necessary if the posts are set to the exact height.)
2. After the posts requiring trimming are at the proper height, place the post caps on top of all posts. Use a silicon adhesive to protect the raw cut ends and to prevent horses from pulling off the caps. Apply the adhesive around the inside lip of the post cap to prevent caulk from running down the post.

We recommend waiting three (3) days before letting the horse back into the fenced area to ensure the concrete footings are beyond at least half of their rated strength, even with a fast setting concrete. The horse will likely test the fence and could cause unnecessary damage when concrete footings are not adequately set. Installed correctly, the Alumashield Fence will last generations!

Good luck! If you have any questions regarding these instructions or need help during installation, feel free to call us at Buckley Fence, LLC. Our contact information is below.