



# **Embankment Climbing Wall**

## **Installation Instructions**

NOTES: Before accepting shipment, please check for any damage caused by the shipping company and take appropriate steps, including several photographs of the damage, to file a claim, if needed. If you already accepted the shipment, take photos of the damage before unpacking, then lay out the damaged parts, and take as many photos as possible to attach to the claim.

\*Please call **Digsafe** and check for any underground utilities before digging anywhere.

### **Materials needed**

Level, shovel, carpenters square, post hole digger, screw gun with proper screw tip, hardware/screws (included), 6 or 8, 2" long sheetrock screws if you are using temporary supports for the posts, 2 1x3x8' strapping for temporary braces (not included), 2 stakes with points made from 12" cut from each strapping, four (4) 12" dia x 48" long sonotubes, bags of premixed concrete (not included). Concrete amounts can be easily calculated at <http://www.quikrete.com/Calculator/Main.asp>. For 50 pound bags, allow 1.5 bags per foot of tube. This allows for the 6" x 6" post occupying some of the volume. Amount required depends on how deep you want/can get the hole. You will need water to mix with the concrete, and if you are mixing the concrete outside the hole, you'll need a wheelbarrow or a concrete mixing trough and a hoe to do the mixing. If you are mixing the concrete in the hole, scratch the wheelbarrow and the hoe, and replace it with a 4 foot length of rebar or a 6 foot length of strapping to be used for mixing concrete in the hole.

### **Instructions**

1. Remove items from shipping pallet.
2. Because of shipping regulations, some climbing walls cannot be shipped in fully assembled panels. If the wall was not shipped preassembled, then assemble/install as follows.
3. All climbing structures, including this climbing wall, need a fall zone surrounding them. Fall zones are typically 6 feet out from the perimeter of the climbing structure. In this case, the fall zone would be 6 feet to the left and right of the wall. The wall is also 6 feet wide, so the width of this fall zone is going to be 18 feet. Then the fall zone needs to be 6 feet out from the front and back of the wall for a total depth of 12 feet plus the depth of the wall itself, which is 7 inches. The Climbing Wall would be centered in this fall zone area which needs to be a minimum of 9 inches deep (some people go to 12"). Typically, playground woodchips are used. Keep in mind that this is a hole in the ground, so it needs to be drained to a drainage system, to daylight, or to a dry well beneath.
4. The 4" x 6" posts have a slanted top, so make sure they are installed with that top facing the sky. The boards that make the face of the wall will be a total of 6 feet tall when assembled, although sometimes we extend those boards into the fall zone. Just make sure that the fall zone material begins at that 6 foot mark, or the posts won't be long enough.
5. The fall zone would be below that 6' mark, so measure from the top of the peak of the posts down 6 feet, then add the depth of your fall zone (9" - 12"), and draw a line on each post. This is your ground line at the bottom of the fall zone material. Your hole for the two posts should be at least 3'6" deep starting at this ground line.
6. The post holes will be 69 inches on center. Find the center of your fall zone, and locate the centers of the post holes, then use your post hole digger to dig the two holes large enough for each sonotube. They should be slightly larger than 12" in diameter..
7. If the holes less than 4' deep, it would be a lot easier to cut the sonotubes to the the length matching the depth of the hole. Being careful not to disturb the walls of the holes, drop the tubes in to the desired depth.

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Clean out as necessary to make sure the tops of the tubes are at ground level. THIS IS THE TIME TO MAKE SURE THAT THE TOPS OF THE SONOTUBES ARE LEVEL WITH EACH OTHER. You can use one of the climbing wall boards on edge on top of both tubes together with your level to check this out. Adjust the tubes as necessary.

8. Pack fill/dirt around the outside of the tubes so they don't move when the posts are inserted.
9. Some people put 6 inches of drainage stone at the very bottom of the hole.
10. The next parts get a little tricky as there are a number of ways to approach the erection of the Climbing Wall while trying to accomplish several things. The posts need to be plumb in two adjacent directions (south and east sides, or north and west sides), they need to be 67 inches on center, and each of them needs to be at the exact same depth.
11. If you have help, probably the easiest way to make all this work is to lay the two posts on a flat surface such as a parking lot, so that the outside faces are exactly 6 feet apart. Then attach the top board and the bottom board. Use the carpenter's square to make sure the posts are perpendicular to the boards.
12. Then find the ground line marked on the posts, and temporarily attach the bottom board so that the bottom of the board is lined up on those ground lines. This board is temporarily attached at this point so that when you drop the posts into the holes, they will stop at exactly the right point.
13. Carry the heavy assembly over to the post holes, raise the "wall" vertical, then drop the posts into the holes. Adjust the assembly so that the posts are in the centers of the holes.
14. If you decided to use the temporary bracing (the 1x3 strapping) and stakes, attach one to the outside of each post about 18 inches down from the top using a single sheet rock screw, stretch each brace out to the back, and pound in a stake near the end of the each brace (don't screw them together yet).
15. Even though you leveled the tops of the tubes, this would be a good point to recheck that the boards of the wall are still level. If not, level them up by detaching one end of the bottom climbing wall board, raise a lowest post until the top board is level, then reattach the bottom board.
16. Assign one person to each post to move the post back or forth until it's plumb, while the third person uses the level to give direction. Once both posts are perfectly plumb in the center of each hole, the third person can attach the braces to the stakes with a single sheet rock screw in each.
17. Now you are ready to mix the concrete in the wheelbarrow following the instructions on the bag. Some people pour the dry concrete into the holes, alternating with the right amount of water, and after each bag, use the rebar or strapping in an up and down movement to mix the concrete and water around the posts. Continue alternating dry concrete and water until the hole is filled.
18. Let the concrete set several hours or overnight, then remove the bracing, remove the bottom board, and attach the other boards under the top board as numbered.
19. If a center cleat has been provided, find the center of the back of the climbing wall, and center the 2x4 or 2x6 cleat, slanted end up and flush with the top. Use two of the sheet rock screws to temporarily hold this cleat in place from the back, then screw each of the climbing wall boards through the front of the wall into the cleat using at least two screws per board.
20. Make sure you check on the backside to make sure none of the screw tips protrudes out the back. If it does, file it off so it is not dangerous.
21. Attach the climbing wall handholds to the front of the climbing wall using the recommended pattern of one for every 1.5-2 ft.<sup>2</sup>. (Put holds 12 to 14 inches apart (measured on the center of the hold), and 10" apart vertically. Add some in the middle of the route every so often to give more flexibility in the route being climbed.) No holds should be placed in the bottom 12" of the wall.
22. Fill the fall zone with the fall zone material.
23. Enjoy your Climbing Wall!

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