

RAISED BEDS USING CORRUGATED, GALVANIZED STEEL PANELS

If you are interested in making raised garden beds using corrugated, galvanized steel panels, the following information is intended to provide you with hints for step-by-step planning and construction of these durable beds.

Two versions of raised garden beds using steel panels are offered here: **1) a built-in-place unit using treated 4" x 4" posts as primary structural support** and **2) a free-standing unit using all treated 2" x 4" boards as structural support.** Please note that the free-standing unit is only recommended when you have a very level site.

The Corrugated Galvanized steel panel

The standard steel panel is available at most hardware or home improvement box stores and comes 26.5" wide and either 8' or 12' lengths. The panels are usually 30 gauge steel, but thicker gauges are available at additional cost. As long as you have vertical side wall supports at least every four feet, 30 gauge steel is strong enough to last many years.

Determine raised bed height -

Full height beds will be 26.5" tall and form a generous height for your raised bed. If you prefer a shorter bed, you can simply cut the steel panels to your desired height, usually 16-18".

Determining bed length and width -

I use 8' long panels because they're easier to transport and handle. Depending on your site you may want to create a series of raised beds: 4' x 4', 4' x 8' or even 4' x 16' beds.

I recommend making your raised beds at a 4' width. It's easy to reach across from either side to tend plants, but the decision on width is just a matter of your site conditions and your personal preference. Most dimensional lumber is available in even foot lengths - 4', 6', 8' 10' - thus even foot measurements are easier and cheaper to design and build.

Building your Raised Bed

1. Built-in-place units

End and Mid-span Supports

I recommend using treated 4" x 4" posts for all end- and mid-span vertical supports. 4x4's should be placed in the ground (without concrete) to a depth of at least 18". The recommended depth really follows the age-old rule for building retaining walls: for every foot of vertical height there is a foot of depth for the support post. A post-hole digger is perfect for digging the holes. If the bed is on a bit of a slope you might want to increase the depth a bit.

One caution using treated posts: all wood rots, even treated wood. Whenever wood is in contact with soil, a gradual deterioration process begins. The goal is to minimize wood/soil contact. Once your hole is dug to the appropriate depth, I recommend backfilling your hole

with gravel (5/8 minus is ideal). Place at least 2" of gravel in the hole first, then compact the gravel around each post using the blunt end of a 2" x 4". The gravel will drain away water and allow air to circulate to the wood, ensuring many years of use.

Vertical support posts should be placed at least every 4'. So an 8' bed would have three posts, 2 end posts and a center support post. You can measure and then eyeball the alignment of the three posts of an 8' wall. If necessary, you can run a level across the 3 posts then mark each post to create a level top to the wall. A Skilsaw can quickly cut the 4" x 4" tops to create a level pad for later installation of a seat rail.

Attaching the panels to the 4x4's -

You attach the corrugated galvanized steel panels to the treated 4" x 4" posts using 2.5" galvanized lag screws, affixed with a 1/4" galvanized flat washer. The washer provides additional surface area to keep the 30 gauge steel panels securely attached to the posts. At each post use a minimum of four lag screws per panel, spaced equally along the panel. **Hint:** use a small nail to fasten the top end of a panel to the first post, then attach the other top end of the panel to the other end post with a lag screw. Then go back and put in a lag screw in the second fastening position. When the panel is properly positioned, go back and remove the nail, put in a lag screw in place of the nail then complete installation of all remaining lag screws.

The seat rail -

I use 2x6 treated boards for the seat rail. Place one end flush with the inside edge of the 4x4 post which gives the 2" x 6" roughly a 2" overhang over the post. Attach the seat rail using 3" deck screws, 2 screws per post. You can either mitre the corners or simply place the long length of the seat rail to the outer side of each post, then place the shorter length of seat post between the two longer lengths. You'll need to nail or screw a 1' length of treated 2x4 on the inside face of the end posts to which you can screw in the smaller length of seat rail.

Optional trim -

I use either 5/4 x 4 treated boards or 1" x 4" cedar for trim. I use the 5/4 material because its color is more consistent with the other treated seat rails. Attach the vertical corner pieces, flush to each other and screwed right into the 4x4 posts, using 3" deck screws.

2. Free-Standing Raised Beds

Please refer to the diagram of a 4' x 8' raised bed for the free-standing unit. Built entirely from 2" x 4" treated lumber, these units should only be used if you have a very level building site.

Build a 4' x 8' rectangular form for the bottom rail using 2" x 4" treated lumber. Secure using 3" deck screws; two screws per board. Then cut 14 individual equal length 2" x 4" pieces of treated wood for side wall members. Full height members would be 26.5" tall. Cut shorter equal pieces for smaller height walls. Four pieces make up each side wall and three pieces make each end wall.

Using 3" deck screws, secure each side wall member on the inside face of the bottom rail 2" x 4", per the diagram. Note that there are four individual side wall members and three end wall members. The two end side wall member and the two end wall members are joined in an L shape, and screwed together, again using 3" deck screws.

Build a 4' x 8' rectangular top rail, identical to the bottom rail. Place the top rail over the side wall members and secure in place using 3" deck screws. Your raised bed structure is now complete, ready for installation of corrugated, galvanized steel panels.

Install steel panels -

The full length 8' steel panels that form the side walls should be installed first. Use 2" lag screws with 1/4" flat washers to install the panels, with four screws/washers for each vertical support.

Once the two side walls are complete, you can then cut the panels for the end walls. The end walls will be a few inches shy of 4' to fit properly. Complete the installation of the end walls with lag screws and washers just as with the side walls. Your free-standing raised bed is now ready for seat rail installation.

Seat Rail Installation -

Use 2" x 6" treated wood for seat rails. Install using same procedure as described with the built-in-place raised bed. Your free standing raised bed is now complete.

Protecting your raised bed -

A few final hints for both built-in-place and free-standing raised beds:

Protect your raised beds - We talked earlier about wood beginning to deteriorate when exposed to soil. Therefore you'll protect your investment when you keep wood and soil separated. On the built-in-place beds, all exposed 4" x 4"s should be wrapped or stapled with plastic sheeting or weed cloth to minimize soil/wood contact. Free-standing beds will have exposed vertical corners where wood is visible. Again, protecting this wood with plastic sheeting or weed cloth will minimize long term damage.

Protect your vegetables - Placing weed cloth to cover the entire bottom surface of your new raised bed will prevent weed growth that can harm your plants.

Discourage critters - If you have moles, squirrels or other critters in your yard, protect your vegetables by placing a 1/2 inch galvanized steel mesh hardware cloth over the entire bottom surface of your raised bed. Again you're protecting your investment for years with this simple protective measure.