

Desert Tortoise Shelter Designs Phoenix, Prescott, and Tucson

Note: You can use any of the below shelter designs to create multiple, adjacent shelters so your tortoise has a choice of shelters with differing entrance aspects. The arrangement of multiple shelters is only limited by your own creativity. See the bottom of this document for photos of multiple shelter arrangements.

Cinder block shelter

(Information used with permission from the Arizona-Sonora Desert Museum)

Supplies

- ¾ ton topsoil or topsoil/sand mixture for shelter insulation
- 6 8" x 8" x 16" concrete cinder blocks (whole blocks)
- 6 4" x 8" x 16" concrete cinder blocks (half blocks)
- 1 slab 1½" x 32" x 48" sandstone or plywood for the shelter roof

Directions

1. Choose a spot that is high, dry, and shaded, and free of rocks and gravel (the bottom of the shelter should be soil substrate). The shelter location must be at least 8" high to avoid being flood during heavy rains, or at least 2' if your yard experiences flood irrigation. Create a flattened mound of soil for the shelter spot to achieve the desired height if necessary.
2. Build a level pile of dirt about 40" wide x 55" long, and elevated 8" above ground level.
3. Place the 6 whole cinder blocks on top of the level soil pile to create the rectangular footprint of the shelter that is 32" wide x 48" long.



After completion of step 3

4. Place the remaining 6 half cinder blocks on top of the first course of blocks (making sure you overlap the joints) to form the shelter walls.



Starting step 4

5. Fill the holes in the cinder blocks with soil to provide insulation and rigidity to the shelter walls.

6. Lay the slab of sandstone or piece of plywood on top of the blocks to provide the roof.



After completion of step 6

7. Cover the shelter with remaining soil to provide insulation (on the top, sides, and back). After each layer of soil, sprinkle lightly with water to help it solidify. While you are covering the shelter top, dirt will spill down the sides and back of the shelter, which will form a large, insulating mound. When finished, you should have ≥ 8 inches of soil on top of the shelter. Do not make the sides too steep, because the top will be a good site for your tortoise to bask in the sun.



After completion of step 7

8. Press rocks into the dirt to keep the dirt stable, and prevent your tortoise from digging more shelters in the mound.



Finished cinder block shelter

Half trash can shelter

(Information used with permission from the Arizona-Sonora Desert Museum)

Supplies

- 1 15-20 gallon METAL trash can (plastic trash cans are not strong enough to support weight of the dirt)
- $\frac{3}{4}$ ton topsoil or topsoil/sand mixture for shelter insulation
- 15-20 rocks, about 12-15" in length
- Sawsall or grinder to cut the trash can in half

Directions

1. Cut the trash can in half using the Sawsall or grinder. The back (also cut in half) can be left in tact to form the back of the den, or removed completely.



After completion of step 1, with back of trash can removed completely

2. Set the half trash can on the ground, convex side up, dug slightly into the surface of the ground. Choose a spot that is high, dry, and shaded, and free of rocks and gravel. The shelter location must be at least 8" high to avoid being flood during heavy rains, or at least 2' if your yard experiences flood irrigation. Create a flattened mound of soil for the shelter spot to achieve the desired height if necessary.



3. Place a few rocks around the outside of the can to reduce erosion and create insulation. Then pile 8" of dirt over the top, sides, and back of the can. This will provide insulation against extreme hot and cold temperatures throughout the year.



Half trash can shelter after completion of step 3

4. Place the remaining rocks on the outside of the shelter.

Bucket Shelter

Supplies

- 3 5-gallon plastic buckets (available at a hardware store for about \$4 each). If you are using old buckets they must be CLEAN. Any caustic residue will be harmful to the tortoise.
- 4 10-32 x 1" or ¼-20 x 1" screws and nuts
- 1 hand saw or table saw
- 1 jig saw

Directions

1. Remove the wire handles (bales) from all the buckets.
2. Cut the buckets in half, length-wise, using hand or table saw.
3. Remove the ends of 5 of the 6 bucket halves using a jig saw.
4. Each shelter will require 6 bucket halves. Nest 5 of the bucket halves (with ends removed) inside the 6th bucket half (with end intact as shown below). Six bucket halves will give you a 31" long shelter. The buckets must overlap to provide the necessary structural support.



5. With the nested buckets lying on the ground, open side down, drill a hole the appropriate size for your screws through the bucket fourth from the open end. The screw hole should be 1 inch from the cut side and through any one of the flat spaces between the ridges on the top of the bucket. You will be drilling through 3 bucket layers, so go slow and make sure the buckets stay aligned.
6. 6. Install the first screw in the hole (nut side out), then drill a corresponding hole on the other side of the bucket and install the second screw (also nut side out).
7. 7. Drill a third hole through the last bucket in the nest. The screw hole should be 1 inch from the cut side and through any one of the 3 flat spaces between the ridges on the top of the bucket. Make sure your screw location allows you to drill through 3 bucket layers.
8. 8. After installing the third screw in the hole with the nut side out, drill a corresponding hole on the other side of the bucket and install the fourth screw, nut side out.



Screw and nut detail on outside of layered buckets

9. Place the layered bucket halves level with the ground, open side down. Rocks should be put around the edge for stability, to reduce erosion, and to prevent UV light from penetrating the plastic and causing it to deteriorate. Choose a spot that is high, dry, and shaded. The shelter location must be at least 8" high to avoid being flood during heavy rains, or at least 2' if your yard experiences flood irrigation. Create a flattened mound of soil for the shelter spot to achieve the desired height if necessary.



Bucket shelter placed on the ground, ready for rocks to be placed around edge

10. Cover the top, sides, and back of the shelter with soil, one layer at a time to form a large, insulating mound around the buckets. After each layer of soil, sprinkle lightly with water to help it solidify. When finished, you should have at least 8" of soil on top of the shelter. Do not make the sides too steep, because the top will be a good site for your tortoise to bask in the sun. Rocks should be put around the edge for stability, to reduce erosion, and to prevent UV light from penetrating the plastic and causing it to deteriorate.

You can use any of the above shelter instructions to create multiple, adjacent shelters so your tortoise has a choice of shelters with differing entrance aspects. The arrangement of multiple shelters is only limited by your own creativity. The photos below illustrate some ways to arrange multiple shelters.

