Hypertufa

A Complete, Easy-To-Use Guide

For creating troughs, pots, stepping-stones & birdbaths

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Why a book on Hypertufa? I spent hours searching through books in the library, surfing the net, and talking to garden centers. No one really had any easy, simple directions for creating Hypertufa planters. It was very frustrating. Eventually, I compiled the information I had gathered into this E-book.

Hypertufa: A Complete Easy-To-Use Guide contains pages of instructions that are easy to follow. The directions are written without all that scientific jargon! 7 Hypertufa recipes are provided! Step-by-step project directions! Everything you need to know for creating stunning, functional, Hypertufa planters, troughs, stepping-stones and birdbaths. Print out the pages you need. Carry them with you! No guessing on the correct ingredients the next time you are at the garden center. You won't find a more complete, simple, easy-to-use guide, any where else!

I hope you will get a lot of use out of the information contained here.

Enjoy!

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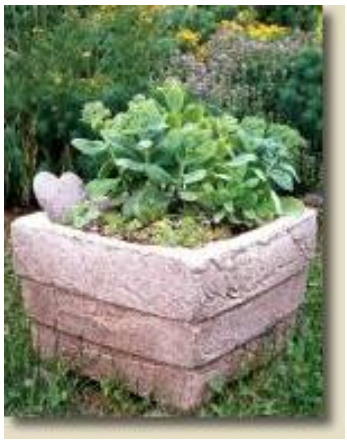
Sophisticated gardeners have discovered a different way of potting up plants: Gardening In Troughs.

History: Trough gardening originated in the Orient and was very popular in England during the 1920's and 1930's. The English used old stone watering troughs as containers for their alpine plants. These vessels were carved out of stone, and used as feeding and watering containers for livestock. When farmers replaced these containers with modern ones, gardeners, seeing the porous rock tubs as ideal planting media, began to collect and covet these large pieces. This concept quickly spread to the United States but, as the availability of natural troughs declined, gardeners looked for substitutes.

Gardeners turned to a soft, lightweight, porous rock, called tufa. A natural limestone, tufa comes from the British Columbia and California coastlines. It is formed naturally when water action over thousands of years dissolves certain minerals in composite rocks to create a rough textured, porous rock. This material is an ideal natural solution to the historic trough material because it breathes and holds a suitable amount of moisture is easy to carve and is lightweight. Tufa is also capable of withstanding northern climates. It is, however, very expensive and often hard to get. When the supply of tufa rock became scarce, gardeners looked for other materials to use. Today gardeners make or buy stone-like troughs made of light-weight ingredients called Hypertufa.

Hypertufa is a synthetic rocklike version of tufa. It is usually made of peat moss, perlite and Portland cement. This combination makes the troughs light-weight and porous. Hypertufa troughs are made in all shapes and sizes, from small, shallow bowl-shaped containers to large, deep, square containers, not unlike the watering troughs of olde England. These troughs look old, attract lichens and mosses, and resemble stone. This type of container garden offers many advantages. They're easy to care for and will tolerate considerable neglect. They look wonderful inside as well as out. They may be left outside year round. The thick walls of these planters act as an insulator against the harsh elements, thus nurturing the plants.



These planters can be made in a few hours, require inexpensive materials found in hardware stores and weigh a fraction of the stone originals. The project requires little artistic talent and no special masonry skills. Hypertufa troughs are perfect for pots, planters, decorative stepping stones, bird baths, water courses, and lawn ornaments. The first troughs imitated the look of the original English stone sinks and were fashioned by applying a mixture of Portland cement, peat moss, and vermiculite or perlite over chicken-wire reinforcement. Modern trough makers have eliminated the cumbersome chicken wire, adding strands of a concrete reinforcement called Fibermesh to the recipe to provide the same sort of strength.

Mixing Hypertufa

SAFETY: Rubber or Work gloves, Goggles and a Breathing Mask are critical. The dust from the cement contains lime which is harmful to eyes, skin, and should not be inhaled.

The two most important things to remember when mixing are: When mixing concrete or Hypertufa, first, thoroughly mix your dry parts. Keep mixing for several minutes until EVERYTHING is very thoroughly mixed. Get into the corners and all over the bottom of your mixing container because the unmixed parts are hiding. When the dry stuff is thoroughly mixed, measure your liquid and add 1/2 of it to the dry. Begin mixing. It will be very lumpy and difficult to mix, but keep at it. Squish and squeeze. After everything evenly moistened, add 1/4 of the remaining liquid. Work it in until the mix is evenly moistened. Check those corners and hiding places again, feeling for lumps and smash them into the mixture. Continue adding liquid in small amounts, mixing thoroughly after each addition, until the mix is the consistency desired for your project. When in doubt, err on the dry side.

Always sift the peat moss to remove any large lumps. These lumps will NOT dissolve and during the curing process will fall out leaving large voids in your trough.

Recipes

There are numerous recipes! The heavier your ingredients are, the heavier your final project will be. When reading a recipe for concrete or Hypertufa, cement should be the first ingredient listed, e.g.; 1:1:1:1 for a Hypertufa mix would look something like this 1 part (cement) 1 part (peat) 1 part (perlite) 1 part (sand). In general, most recipes have a 1:3 ratio. They can be as diluted as a 1:7 ratio, although we would not recommend this, and can be as rich as a 1:1 ratio, depending upon the application.

To clarify and to prevent purchase of an unwanted ingredient because the name was misunderstood, remember the following: Portland cement is NOT concrete – it is an ingredient of concrete. Concrete, loosely defined, is mortar with gravel aggregate added. When in doubt, read the ingredients listed on the label.

Recipe #1 (1:1½:1½)

This first recipe is the most common.

- 1 part Portland cement
- 1½ part peat
- 1½ part perlite

This recipe allows you to carve fairly soon while the form is still "green" (not dry and certainly not cured). It is recommended that you use grey Portland cement, however, you can use white if you wish. The grey will turn out looking like granite provided the perlite used is small to medium grade.

Recipe #2 (1:1½:1½)

- 1 part Portland cement
- 1½ part peat
- 1½ part vermiculite

Nice fawn coloring without adding any colorant. Vermiculite adds a sparkle. Still very easy to carve, this mix is heavier, as vermiculite is denser, so a part will weigh more.

Recipe #3 (1:1:1:1)

- 1 part Portland cement
- 1 part peat
- 1 part perlite or vermiculite
- 1 part sand

Much more durable; heavier, yet still lighter than concrete. This will be lighter in color than any of the above, dependent on what type sand is used.

Recipe #4

- 2 containers Portland cement
- 2 containers perlite
- 1½ containers peat moss
- ½ container coarse sand
- 1 large handful fiber mesh
- 1½ – 2 containers water

Recipe #5

- 1 part pre-mixed sand mix
- 1 part peat moss
- 1 part perlite or vermiculite

Mix the dry ingredients first, slowly add water so that you can gently squish the mush with little water coming out. Now add a little bit more water and walk away for about 10 minutes. Check your mold set up or think about your next project. Then, back to the mix. Check it with your hands (of course they are gloved!) and add a bit more water, if needed.

Recipe #6 Using pre-mixed sand mix

- The use of a pre-mix allows the beginner an opportunity to try Hypertufa without a large investment in materials. Portland cement comes in 94 lb bags. Quikrete, a concrete product manufacturer, does sell a smaller bag of Portland cement, but few stores carry it. Some home improvement stores do, however, carry small bags of pre-mixed concrete mixes, such as sand mix, mortar mix, high-strength concrete mix, etc.
- Once home with the bag put the mix (still inside the bag) into a heavy hefty bag and push it around a bit. Mixes do tend to settle and you want the ingredients evenly distributed. Then take the pre-mix bag out of the hefty, and follow the directions below.

Easy-To-Do Projects

Make Troughs and Pots:

This recipe makes enough Hypertufa for a 12" x 14" x 6" rectangular trough, or 2 – 12" x 12" pots.

Using a 2 quart measuring container:

- 2 containers PERLITE
- 1½ containers PEAT MOSS
- 2 containers (dry) PORTLAND CEMENT
- ½ container Coarse SAND
- 1 large handful FIBREMESH
- 1½ – 2 containers WATER

Mix the Perlite and sifted peat moss together in a large container or wheelbarrow. Add the other dry ingredients and mix together thoroughly before adding any water.

Gradually add up to 2 containers of water, mixing thoroughly from the bottom of the mixing container. The mixture should adhere to itself, but should not "ooze" water. Add the last half container water very gradually until the mix is just workable. Do not use more than 2 containers of water.

Create A Trough:

Cover the bottom of a plastic bin or bowl with a large trash bag. Secure with a large rubber band. Place upside down on a 36" x 36" piece of plywood. OR - place a large plastic flower pot in the bottom of a plastic bag - roll the top of the bag down below the top edge of the pot. Have a smaller pot ready to place inside the larger one, leaving about an inch or more of clearance between them.

Build the mix around the base of the container and gradually build up the sides and over the top. Keep the depth even all over (about 1½ inches) Use a thin "test" dowel to check the thickness (experience has shown that particular attention needs to be paid to the corners - use the measuring stick!!). Keep the base as flat and smooth as you can. Smooth the surface with wet fingers but do not overdo with the water. Once covered with the mix, place dowels upright in base to form drainage holes. Cover the entire construction with another trash bag to keep moist as it cures.

After three to four days, remove the container from the mold and the dowels from the drainage holes. Make sure the drainage holes are clear. Use a wire brush to smooth the surface and the rim, and tools (sharp knife/chisel/saw) to carve away obvious blemishes.

Treat with respect at this stage! Re-cover with plastic - allowing the Hypertufa to "cure" slowly creates the strongest troughs. Keep wrapped in plastic for a month at room temperature. Allow to dry completely while exposed to the elements (hose it

down if it doesn't rain for a few days) then use a blow torch gently to remove any Fibermesh "whiskers."

Note – After your trough has cured: The slower and longer your trough is allowed to dry, the stronger it will be. Allow the trough to "weather" outdoors (hose it off if it doesn't rain fairly frequently) for several months, if possible, to leach out free lime; or temporarily block up the drainage holes and fill the trough with a wine-colored solution of Potassium Permanganate for 24 hrs to neutralize the lime (½ oz. of crystals to 3 gallons water). Afterwards lightly scrub the inside with a wire brush. Use the waiting time to assemble suitable plants.

Create A Pot:

After placing the large pot in a large plastic bag, press a 1 1/2" layer of the mix firmly into the bottom of the pot. Place the smaller pot inside and gradually add mix between the pots, pressing it firmly into place as you fill and working it into the space equally as you go. Fill to the brim and smooth with wet fingers. Place a large dowel in the base for drainage. Draw the plastic bag up over the pot(s) and tuck it down inside to enclose the pot(s) completely while the mix cures.

Allow to cure for three days. Carefully remove the Hypertufa pot from the molds. Brush with a wire brush to smooth the surface and the rim. Use tools (sharp knife/chisel/saw) to carve away obvious blemishes. Remember, treat it with respect - it can easily break at this stage! Continue to cure slowly under plastic for a month. Allow to air dry completely then use a blowtorch gently to remove any Fibermesh "whiskers."

Create Stepping Stones & Birdbaths:

If you've had your eye on that hundred dollar rock at the garden center and just can't budget for it, consider making your own. Hypertufa stone is made from a mixture of Portland cement, sand and peat moss, and can be fashioned into stepping stones, birdbaths or practically any shape or form. If you're considering a huge rock, perlite can be substituted for the sand and will lighten the load a bit. The beauty of hypertufa is that you control the shape and texture. Plain or fancy, you can fill your garden with stone containers, birdbaths and stepping stones for less than twenty bucks.

MATERIALS:

- Equal parts of Portland cement, Sphagnum peat moss, Mason's sand
- 1/4 " screen (for milling peat moss)
- A bucket large enough to hold the mixture
- A large garbage bag
- Thick rubber gloves
- A wire brush
- The mold of your choice (note: you can use a pizza box for stepping stones)

Step 1: Mill your moss. Sift it through quarter-inch screen to catch larger sticks and stems. Toss the larger pieces into your compost.

Step 2: Wear gloves. Combine equal parts of milled moss and sand until they are mixed well, add the cement. Mix thoroughly. Add water as you would for mixing cement, but a little at a time until all the materials hold together.

Step 3: Place a large garbage bag over your mold and add the mixture. Still wearing the gloves use your hands to pat it down. If making a birdbath be sure to shape it so there is a gradual slop from the edge no more than 2 inches deep.

Step 4: Allow it to cure in a dry, covered space for 8 to 24 hours -- when it's hardened to the point where you can't make an impression by pressing your finger into it, but a fingernail does make an impression, it's ready for step 5.

Step 5: Wearing your rubber gloves, remove it from the mold and the garbage bag. Soak it well with water, and use the wire brush to weather the surface. Don't be afraid to really scrub it --this is the process that makes it look like natural stone.

Note: If you're making a birdbath, place it on a level surface; fill it with water and check to see if it's level. If not, use the wire brush to correct the level by removing some of the mixture on the offending side

Step 6: When you're satisfied with look and feel of the piece, allow it to cure for 6 to 8 weeks in the garden. If it's a stepping stone, don't step on it until it's completely cured.

If you'd like to get real fancy, mix some Portland cement and make some appliqués from leaves or flowers in your garden. Here's how:

Step 1: Mix cement according to instructions on the bag. (You can even add cement color-- available in beige, red, black, and green.)

Step 2: Place a garbage bag on a flat work surface. Pour the mixture onto the surface and smooth it out.

Step 3: Spray the backsides of your chosen leaves with olive oil or cooking spray, then press them into the cement.

Note: Make MORE of these than you anticipate needing, just in case you happen to crack one while checking its readiness.

Step 4: Before the cement hardens (between 2 and 4 hours after mixing), use a sharp knife to cut around the leaves. Cut away the extra cement, and dispose of it.

Step 5: Before the appliqué dries, it must be placed on the rock. This part is very tricky and may take several tries. Lift the edge of the garbage bag and slightly tug it from the bottom of the leaf appliqué. Carefully remove the appliqué and place it on the rock. Lift away the leaf and admire your work!

Helpful Tips:

Ways to "age" the trough prematurely:

- Use boiled rice water brushed and poured over the trough
- Brush yogurt or buttermilk on it
- Use a mixture of manure and water poured over the trough
- Apply liquid fertilizer with a watering can. Moss and lichen will adhere to the surface more easily.
- Blend moss or lichen from the garden with some buttermilk in your blender and brush over the surface
- Spray the outside with milk

Variations on a theme:

- The formula for making troughs is inexact. If the ingredients are used in a ratio of 1 part cement to 6 parts non-cement, the troughs will be durable. A small amount of coarse sand and a handful of Fibermesh are essential ingredients to bond and reinforce the cement.
- Vermiculite or Diatomaceous Earth may also be included or substituted.
- Concrete dye may be added to color the mixture.
- The exterior of the trough can be covered with Peat moss, Sand or Diatomaceous Earth before curing to modify the surface texture.
- "Feet" for the troughs can be made from any left over mix in small 2"-4" flower pots. Rocks can also be used to raise the troughs for display and to ensure good drainage.

Forms/Molds:

- Try using a Styrofoam cooler as a form

- You can buy Styrofoam at in 2 inch thick sheets 2 feet by 6 feet. Cement together to get what ever thickness you need (use liquid nails construction adhesive). A surform rasp can be used to sculpture the Styrofoam to the shape you want.

- If you cover the form with plastic wrap it is easy to remove and can be used over again.

- When molding cement around the outside or inside of a form, first plaster the form with a couple of layers of wet newspaper. The concrete mix will come off cleanly leaving your form ready to use again. Any newspaper sticking to your new trough can be taken off with a wire brush.

Waterproofing HYPERTUFA:

- An easy but smelly method to waterproof Hypertufa is to use Fiberglas resin coat, (that is liquid fiberglass resin), from an auto parts store. It can be purchased in metal gallon cans. Add the hardener and mix about a quart at a time. Brush on each inside face of your container and allow to cure for 12 hours. Add second coat and dry for 3 days.

- Another method to waterproof Hypertufa is by using Quikrete Cure and Seal. You will find it in the concrete supply section of hardware stores such as Home Despot and Lowes. 2 or 3 healthy coatings will be needed as Hypertufa absorbs a lot of it. If you plan to make a small pond or basin coat the inside with Thoroseal, or UGLI, to give it a watertight finish. Thoroseal comes in black, white or gray, but you can get the white and paint it with latex paint when finished.

Waterproof a Birdbath:

When making a birdbath the Hypertufa should be about 3" thick. It is porous, so to make it hold water have one person pour hot liquid paraffin around the basin. The 2nd person smears the wax around wearing heavy rubber gloves.

Additional Information:

- Fiber mesh can be purchased at a concrete company for about $6 for a small bag. It doesn't take too much.

- Concrete bonding additive, it looks like thin white Elmers glue, (you can use Elmers glue if you can't find the additive) can be added as part of the water used in the hypertufa recipe to make stronger mix. If you need to repair or reinforce use it to bond the repair mixture to the trough.