

Big ideas for small plants!

Easy ways with Hypertufa

Tufa is a very porous natural limestone rock. It was discovered over 80 years ago that alpine plants grew very well on it. Hypertufa is a substitute which you can make for yourself from a few readily available materials. You can use it to make simulated stone sinks, to cover white-glazed sinks or to custom-make your own rocks!



Why make hypertufa?

- Pieces of natural tufa can be difficult to find, and expensive to buy.
- Pieces of tufa large enough for the construction of a sink are even more scarce and very expensive.
- The raw materials needed to make hypertufa are readily-available, and cheap too!
- Using hypertufa, you can construct a sink of any chosen size for your alpiners.



Raw materials

Coarse sand.

Suitable grades of sand are widely available from builders' merchants and Do-it-Yourself stores under the names 'Concreting Sand', 'Coarse Sand' or 'Grit Sand'. Pass through a garden sieve (about 7 mm or ¼ inch) to remove any larger particles.



Peat.

A popular raw material which has been used since the 1930's, with good results. Moss peat is preferred, as its fibrous nature gives a good texture to the product. Anyone not wishing to use peat may choose to use composted bark.



Composted Bark.

An increasingly popular replacement for peat. As yet its long term performance in hypertufa cannot be fully assessed. Choose a fine grade, and pass through a sieve, as for sand.



Cement.

Buy fresh Portland cement just before you intend to use it. Do not be tempted to use up that old bag which has been lying about in the back of the garage, and has become lumpy. It may give a weaker product which will not stand up to the test of time. Some manufacturers include additives which improve workability and frost resistance.



Polystyrene fish box, plastic plant crate, cardboard boxes



Fine Bark, Irish Moss peat, sharp sand & cement

Recipes

The proportions of the ingredients can be varied, so that the hypertufa takes on the appearance of various kinds of stone. Three popular ones are listed here (all quantities are measured by volume).

Limestone:	Sand:	1 part
	Cement:	1 part
	Peat or bark:	1 part
Sandstone:	Sand:	5 parts
	Cement:	2 parts
	Peat or bark	3 parts
Tufa:	Sand:	1 part
	Cement:	1 part
	Peat or bark:	2 parts

The 'Tufa' recipe gives a very porous product very similar to natural tufa, which may be vulnerable to frost damage. If you live in a very cold area, it can be toughened up by slightly reducing the volume of peat or bark.

Mixing and handling.

It is usually possible to mix the materials for your chosen recipe 'straight from the bag', but if the sand is very wet, it may be useful to allow it to dry out somewhat first. The mixture is messy! If you intend to make several batches, it may be advisable to buy a Spot Board. These are made of heavy-duty plastic and available from larger Do-it-Yourself stores and builders merchants. Alternatively, the store of 'things which might come in useful' at the back of the garage may yield something suitable. Measure out appropriate volumes of the raw materials and mix them thoroughly together, then continue mixing and cautiously add water. The amount of water used should be just sufficient to completely wet the mix, but not enough to make it 'sloppy'.

Cement and wet hypertufa are highly alkaline, so are corrosive and irritant to the skin. Household gloves give suitable protection. Working on a sheet of polythene (a redundant compost bag perhaps?) helps to keep the working area clean.



Spot board with mixed Hypertufa

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Making a sink with hypertufa.

There are numerous ways of using hypertufa to create a sink, depending upon what other items you choose to use: you can cover a polystyrene fishbox, a plastic crate or white-glazed sink, or cast a sink using 100% hypertufa. The following methods are widely used by alpine enthusiasts.

The Fishbox.

Expanded Polystyrene Fishboxes are now very widely available and can usually be had for the asking; enquire at your local fishmonger or fish-and-chip shop. The finished sink is light and robust. With an average-size box, begin by cutting two drainage holes in the base, at least 2 cm in diameter. Next wrap small-gauge galvanised chicken wire closely around the box.

This is not essential, but does give a more robust product. Turn the box upside down, and begin applying the mixture to the bottom of the box by hand, forcing it into the wire mesh. Smooth the surface with sweeping movements of the fingers. Aim to apply a layer not less than 2 cm thick. (Obviously, the thicker the layer, the stronger the product is, but the heavier it is too!) Next, carefully turn the box right-side-up onto a sheet of polythene, using a gentle rolling movement, to avoid dislodging the covering. Finally, extend the coating up the sides of the box, over the rim, and at least 5 cm down the inside. For a very robust product, a thinner layer of the mix can be extended over the whole of the inner surface.



A half completed demonstration fish box



This newly-planted fish box sink will give many years of pleasure

Covering a glazed sink.

The procedure is much the same as for a fish box. The tricky part is to ensure that the hypertufa mixture sticks firmly to the glazed surface. The first step is to thoroughly clean the surface, particularly to remove any deposits of a greasy nature: a vigorous scrub with hot water containing a detergent, followed by rinsing with fresh water will do the trick. A key for the hypertufa can then be provided in either of two ways. The first is to cautiously chip off small areas of the glaze at intervals across the outer surface using a hammer. (Caution: the particles of glaze are sharp; wear hand and eye protection). The second, less vigorous one is to coat the whole of the outer surface, top rim and 5 cm down the inside surface with a PVA adhesive. This is allowed to dry to the point that it does not come off when touched, but still feels tacky. At this stage the hypertufa mixture is firmly applied by hand to the surface. The application of PVA and hypertufa is easier if the sink is raised up on a few bricks before work is started. You will not, of course, be able to apply hypertufa where the bricks are. These areas can be patched-up later.

Casting a solid sink.

This is the traditional method, using two stout cardboard boxes, which can be 'nested' to give a space about 50 mm wide between them. The outer box is set up on a flat surface, and two 50 mm lengths of dowel or broom handle stood on the base to form drainage holes. The hypertufa mix is made to a more fluid consistency than in the previous examples, and poured in and levelled to form the base. The inner box is then lowered into place and filled with sand or bricks to hold it in shape. The outer box will need similar support. Continue to add the hypertufa mix, tamping down at intervals with a scrap of wood to remove air pockets.



Casting a sink around a plastic crate



A finished hypertufa sink

There are many variations on this theme. The boxes can be made of wood (but remember to put a slight taper on the inner box; otherwise you may not be able to get it out!) Covering the surfaces of the wood with light-gauge polythene sheet will give easy release. Another successful scheme is to use a plastic plant or bread tray with just an outer wooden former, when a stiffer mix can be used, and the inner box is unnecessary.

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Finishing off.

Whichever method is used, your masterpiece will need to be finished off. The mixture sets slowly, so should be covered with damp hessian sacking or polythene sheet and left undisturbed for a day or two. Any cardboard boxes, wooden formers, or whatever can then be removed. Now you can use all of your artistic talent, in the process known as 'bashing'. Many genuine stone troughs



Mason's chisel marks on a sandstone trough. The moss and lichen are added by time alone

show a rather irregular surface, or a regular pattern of marks left by the stonemason's chisel. These can be simulated by striking the still slightly-soft surface with a steel chisel, broad screwdriver or a scrap of wood. Finally, all sharp edges are rounded off by rubbing over with a stiff brush; you can add centuries of age and wear in a few minutes. The hypertufa will continue to cure and harden to its full strength for the next week or two. It is best not to move your sink to its planting position until it is fully cured.



The irregular surface of a real stone trough

Making hypertufa rocks.

Artificial rocks can be cast in moulds of many kinds. The mixture can be dropped into an irregular hole dug in the garden or a light-gauge polythene bag. Drop the bag into a cardboard box for a rectangular shape, a bucket, or whatever you choose. Bashing can add a suitably rugged shape.