

It's well worth studying this project carefully as concrete is such a useful and practical material. Plan carefully though, as making changes is extremely difficult once the concrete has set.

Once the art of concreting has been mastered, the technique is basically the same whether laying a small garden path or laying the foundation for a shed.



TOOL CHECKLIST

- | | |
|---|--|
| <input type="checkbox"/> Heavy duty wheelbarrow | <input type="checkbox"/> Wooden or steel float |
| <input type="checkbox"/> Long spirit level | <input type="checkbox"/> Tough bucket |
| <input type="checkbox"/> Shovel | <input type="checkbox"/> Sledge hammer |
| <input type="checkbox"/> Circular saw or handsaw | <input type="checkbox"/> Claw hammer |
| <input type="checkbox"/> Measuring tape | <input type="checkbox"/> Stringline |
| <input type="checkbox"/> Edger | <input type="checkbox"/> Bolt cutters |
| <input type="checkbox"/> Cement Mixer
<i>(optional-may be hired)</i> | |
| <input type="checkbox"/> Grooving trowel | |

You will also require:

(Both of these items can be made at home)

Builders Square

Made from 75 x 25mm timber with the shortest side marked at 600mm, the second side at 800mm and the diagonal at 1000mm. Nail together with a half-joint at the right angle corner and the diagonal nailed on top.

Tamping Board

Made with a perfectly straight 175mm x 25mm board about 300mm longer than the slab width. Use a 150 x 50mm board for very broad slabs. To work standing up, bolt on handles at each end.

PREPARATION

Sooner or later, a concrete structure is going to be needed - whether it's a base for a garden shed, a pathway or even an ornamental pond. Concrete is basically a mixture of cement, sand, stone aggregate and water. How it is made depends on the size of the job at hand. If it's a small job, concrete can be bought already pre-mixed in 20kg bags. Just add water.

For larger jobs, order bags of cement separately, along with a delivery of sand and aggregate. Check with your local Home store.

There are different mixes of concrete, depending on the job. If mixing concrete for a heavy-duty area such as a driveway (at least 100mm thick), use one part cement, two and a half parts sand and four parts aggregate. For lighter-duty strips and pathways, use one part cement, two parts sand and three parts aggregate. Where not much strength is required (garden wall foundations or foundations under pavers) use one part cement, two parts sand and six parts aggregate.

As a quick guide, to make one cubic metre of concrete (enough for an area 10m x 1m x 100mm thick), eight bags of cement, .5 cubic metre of sand and .75 cubic metre of aggregate will be needed.

All concrete work involves some excavation and grading. Measure and mark out the area to be concreted. Peg the corners, then stretch a stringline all around. Excavate the site to the depth wanted. Dig out a little extra to accommodate the formwork. Make sure the ground is firm and level and has no loose vegetation.

HINTS & TIPS

For a large job, consider having concrete delivered in bulk.

STEP 1 CONSTRUCTING THE FORMWORK

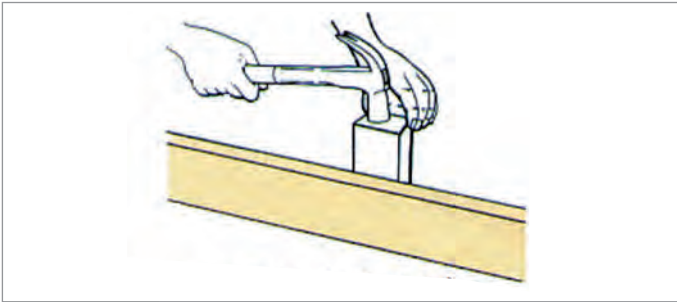


Diagram 01

The formwork is nothing more than a simple timber box to hold the concrete in place while it hardens (*Diagram 1*). The important thing is to ensure the tops of the formwork are all level because this is going to be the finished level of the concrete. In most cases, reinforcing mesh to strengthen the concrete will be needed.

STEP 2 MIXING CONCRETE

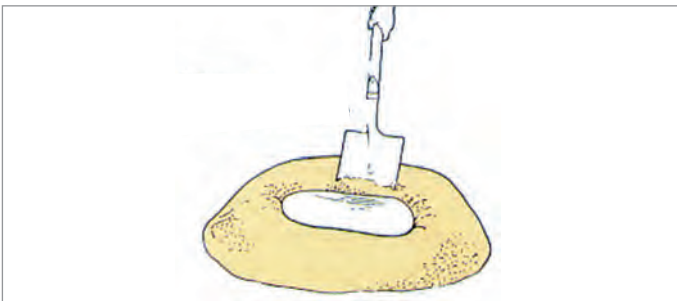


Diagram 02

Now mix the concrete. If it's a small job, do this in a clean wheelbarrow or on a clean, smooth surface such as a large piece of board. Use a plastic bucket to measure out the correct amounts of cement, sand and aggregate (according to the strength of mix wanted). Shovel it several times until it becomes a uniform grey colour with no patches of cement or sand. Add water in the middle of the pile and keep turning it over until the mixture has a good workable moisture (*Diagram 2*). If mixing larger amounts, it may pay to hire a concrete mixer for the day.

For really large projects, the best way is to order it ready-mixed. Just tell the supplier the size of the area to be concreted and he will calculate the amount and cost and deliver it.

STEP 3 POURING THE CONCRETE

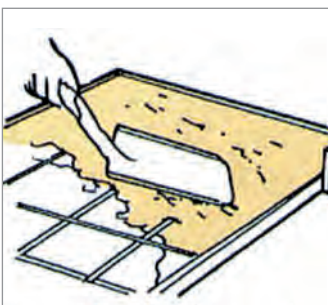


Diagram 03

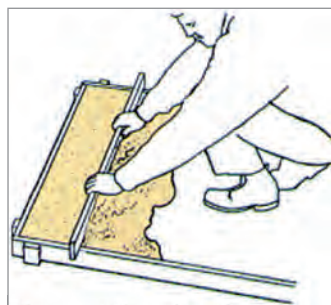


Diagram 04

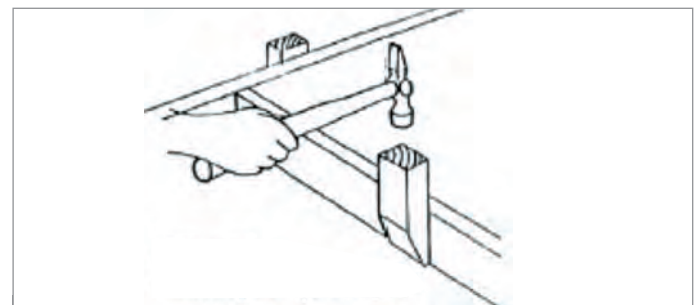


Diagram 05

Pouring the concrete is easy. First wet the formwork and the bottom of the site. Spread the concrete evenly with a shovel or a rake (*Diagram 3*). Make sure all the corners are filled. When the concrete settles, drag a screed (a piece of board) across the top of the forms to level off the concrete. Use a saw action to push the concrete along and fill any low spots behind it (*Diagram 4*).

The concrete slab should not be longer than 3 metres in any direction. Joints are used to control cracking. The simplest way to do this is include a 5mm piece of softwood or bituminous stripping. This remains in the concrete as an expansion joint (*Diagram 5*).

This information is intended as a guide only. Please check with your council for any relevant laws before commencing any work. Always wear personal protection equipment and use tools safely.

STEP 4 FINISHING

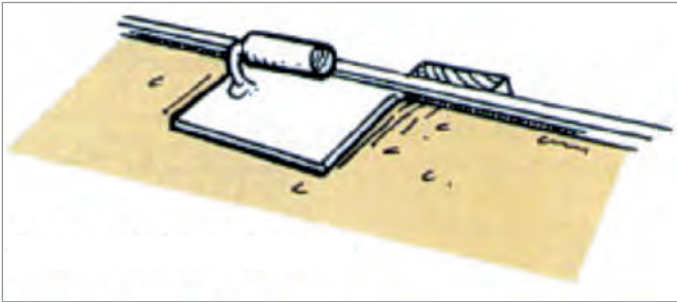


Diagram 06

Finishing the newly concreted surface consists of smoothing it with a wooden float. Run the float back and forth across the concrete. This allows the water in the concrete to rise to the surface. Don't brush this water off. Allow it to evaporate naturally then float to the surface again.

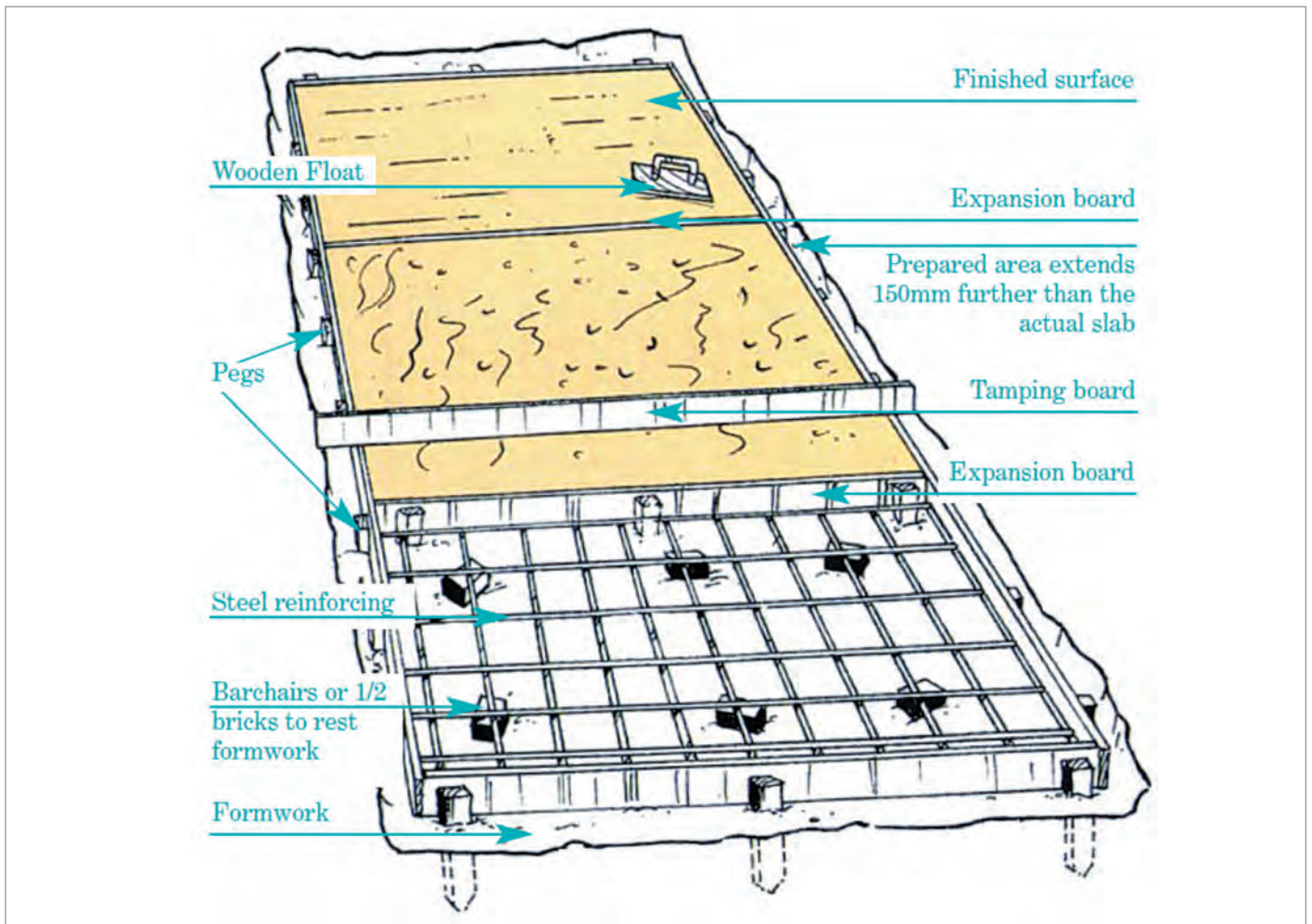
For an even smoother finish, use a steel float. Just two passes should be enough. Round the edges with an edging tool for



Diagram 07

a professional finish (*Diagram 6*). Alternatively, a skid resistant surface is easily achieved by drawing a stiff-bristled broom across the concrete to create a pattern of curved lines (*Diagram 7*).

Allow the concrete to cure. It's best to cover it with damp sacking or plastic. Keep it covered for several days before removing the formwork.



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