# Home Project

Magnet MART Home Warehouse

# Lay Concrete



- Easy to follow step-by-step guide
- Important and handy tips
- Materials check list
- Project Cost Estimator

**Before you start, please read through this pamphlet carefully and estimate and assemble all the materials you will need for the project and gather your tools and equipment together. Refer to the checklist and estimating form on the back panel of the pamphlet to assist in this preparation.**

## Project Cost Estimator

| Materials Description | Quantity | Cost |
|---|---|---|
| Timber edge boards and stakes | | |
| Expansion Joints | | |
| Sand | | |
| Cement | | |
| Gravel | | |
| Nails | | |
| Plastic Sheet | | |
| **Equipment** | | |
| Hammer | | |
| Steel Trowel | | |
| Wooden Float | | |
| Edge Tool | | |
| String Line | | |
| Shovel | | |
| Timber Screed | | |
| Wheelbarrow | | |
| Cement Mixer (optional) | | |
| **Total** | | |

Note: Due to the general nature of this advice and its individual application, neither the publisher nor the retailer assumes any responsibility for any loss, damage, injury or expense which may be incurred or suffered as a result of the use of this pamphlet.

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## 5. Pouring and Screeding

- Once mixed, pour your concrete straight away, starting at one end and spreading with a shovel, tamping well into corners (Fig 8).
- For large areas use an expansion joint every three metres (Fig 9). An expansion joint can be a piece of softwood or preferably, a piece of bituminous stripping available from Magnet Mart. This joint must be the same height as the finished slab and stays in the slab to take up any movement in the finished concrete.
- Use a length of timber as a screed, laying it across the top of the edging boards (Fig 10) and working it back and forth across the surface of the concrete with a sawing action. This levels the surface of the slab.
- Then use the screed to firmly tamp down the surface, moving across the slab by half the screed's width with each blow.
- Screed each section of the slab as you pour each batch of concrete.

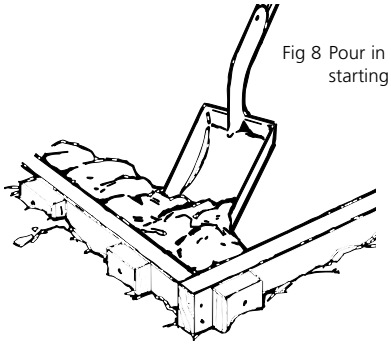


Fig 8 Pour in concrete starting with one end.

Fig 9 Use an expansion joint for large areas.

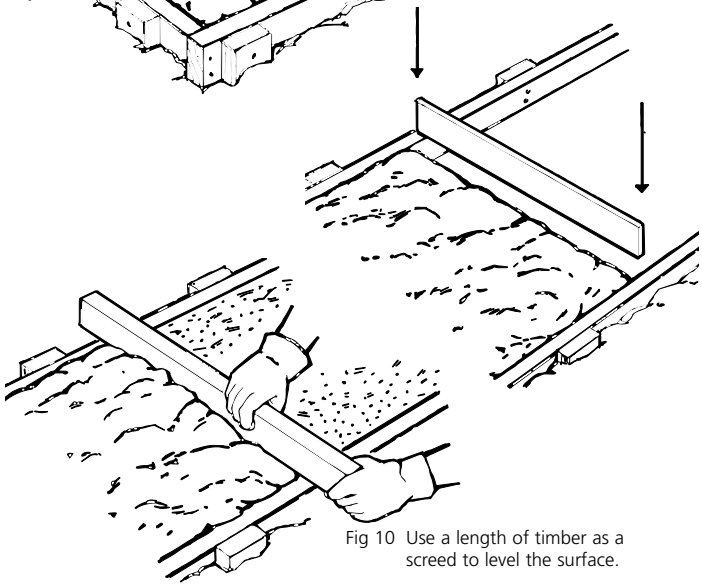


Fig 10 Use a length of timber as a screed to level the surface.

## 6. Final Finishing

- As soon as the water sheen has left the surface of the slab, you can commence final trowelling or floating.
- For driveways and paths a good non-slip surface finish can be achieved by simply drawing a stiff bristled broom lightly across the surface to create a pattern of small, straight ridges or lines.
- For a smooth surface, use a steel trowel (Fig 11), working the surface smooth with light sweeps of the trowel.
- For a non-skid surface use a wooden float (Fig 12), smoothing the slab with firm circular scrubbing actions.
- Edging can be performed after floating with an edge tool (Fig 13) or the tip of a trowel.

## 7. Curing the Slab

- When you have completed the surfacing of the slab, cover with plastic sheeting or used cement bags and let stand for several days. Keep the bags damp over this time.
- After one week of curing you can remove the formwork edging. Your slab is now complete.

Fig 11 Smooth the surface with a steel trowel.

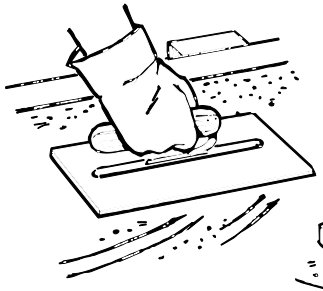


Fig 12 Use a wooden float for non-skid surface.

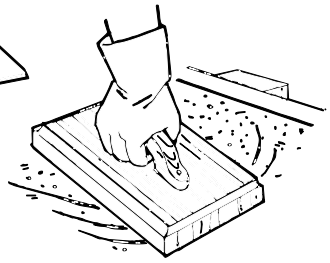
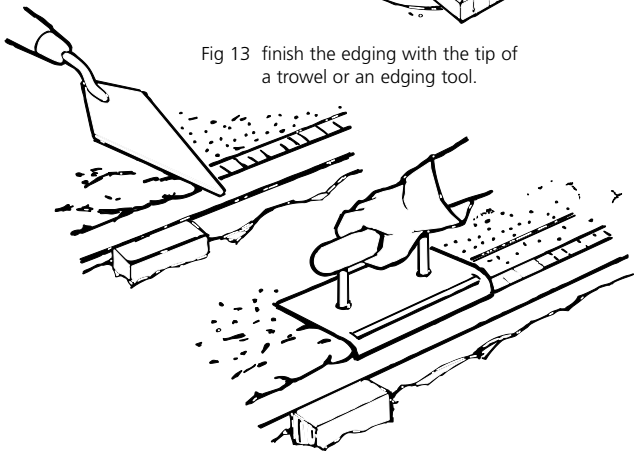


Fig 13 finish the edging with the tip of a trowel or an edging tool.



## 3. Reinforcing

- The slab will need steel reinforcing if it is large, near trees or on unstable soil (eg. reactive clay soils) or will have heavy traffic.
- Cut the steel mesh to fit with a 50mm gap between the mesh and the formwork (Fig 6), support the mesh on broken bricks or steel 'bar chairs' to keep it midway in the slab thickness.

Fig 6 Set the steel reinforcing using steel bar chairs or broken bricks.

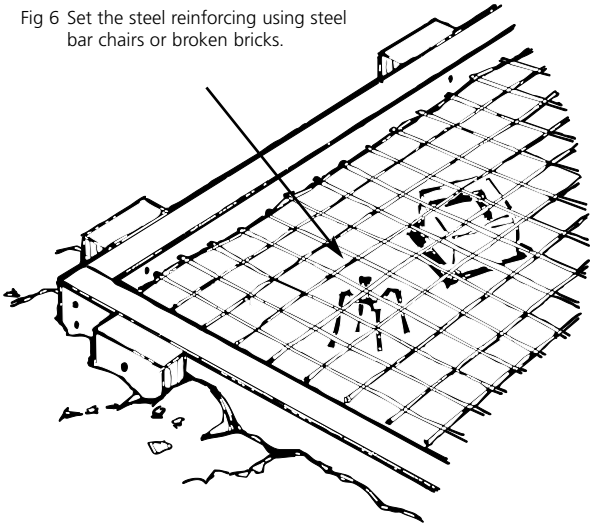
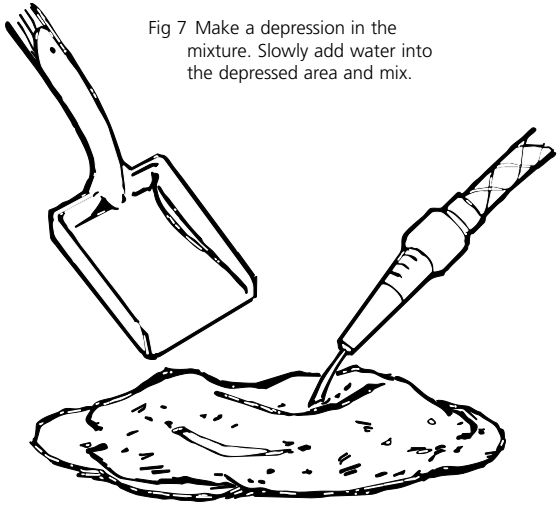


Fig 7 Make a depression in the mixture. Slowly add water into the depressed area and mix.



## 4. Mixing Concrete

### Hand Mixing

- For small jobs, you can buy ready mixed cement, gravel and sand in 40kg bags all you need to do is add water. Larger jobs will be more economical if you buy cement, sand and gravel separately and mix your own.
- Hand mixing is best done in a wheelbarrow or on a flat, smooth surface (eg. a plywood sheet), a power mixer is best for large jobs.
- To mix by hand, place the measured dry ingredients in a pile. Turn and mix until the pile is a uniform colour without streaks.

**For a good concrete mix as a rule:**
**1 part Cement**
**2 parts Sand**
**4 parts Gravel**

- Make a depression in the mixture and slowly add a little water, turning the dry material into the centre until the water is absorbed (see Fig 7). Turn the pile well until it is evenly moist. Make a new depression in the centre of the pile and add more water. Continue until a thick paste consistency is reached.
- Pour into formwork immediately.

### Power Mixing

You can hire a power cement mixer to save you lots of time and effort for larger concreting jobs. Here is how to operate a power mixer using measured amounts of dry ingredients:

- Turn the mixer on and add the gravel, then add the sand, followed by the cement and let the ingredients combine thoroughly.
- Add some water after the mix has combined for a minute or two. Let the water mix for another 2 – 3 minutes.
- Check the consistency and add more water to make a workable mix. Let it mix for another minute or so prior to tipping out.
- Always wash out the mixer drum with water after each mix.
- When finished for the day, run the mixer with some gravel and water to clean the drum.

### Ready Mixed Concrete

- Perhaps the simplest method when you need to make a large concrete slab, ready mix suppliers often have small trucks that can access your yard when delivering the concrete.
- To order, tell the supplier your measurements for the size of the slab and the desired thickness. The supplier will calculate exactly what you need and deliver it on the agreed date.
- When using readymix concrete be sure that you are ready to pour the concrete immediately the truck arrives – they will not be able to delay. The formwork must all be completed and it is a good idea to have lots of helpers – you may need to have a few wheelbarrows to move the concrete quickly from the truck to the site.

## YOU CAN – Lay Concrete

### 1. Site Preparation

Note: Concrete surfaces affect drainage, to allow for water run-off excavate the site to take into account a fall of 1cm per metre. Plan for the low end to finish on or just above ground level.

- Measure and mark out the site using a string line (Fig 1).
- Check the area is square by measuring the diagonals – they should be the same length.

### 2. Excavate the Site

- Determine the depth of the concrete and dig out the topsoil to the appropriate level, ensuring that the excavation is at least 150mm larger all round than the finished slab to allow room for the formwork (see Fig 2).
- Ensure that the ground surface is firm and free of tree roots or other obstructions. Add a layer of stones or broken bricks to soft surfaces and tamp down firmly.
- Position edging boards along the string line and drive stakes firmly into place to support the form (see Fig 4). Ensure the top of the formwork is level and at the correct height for the finished slab. Align the boards ensuring there are no gaps that will allow concrete to seep out. Nail the boards securely to the stakes.
- Trim the stakes to the top of the edging boards (Fig5). Pack soil tightly around the perimeter.

Fig 1 Measure and mark out the site with a string line.

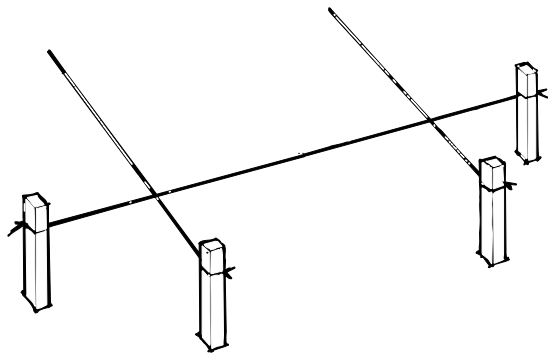


Fig 2 Excavate 150mm larger all round and remove the top soil.

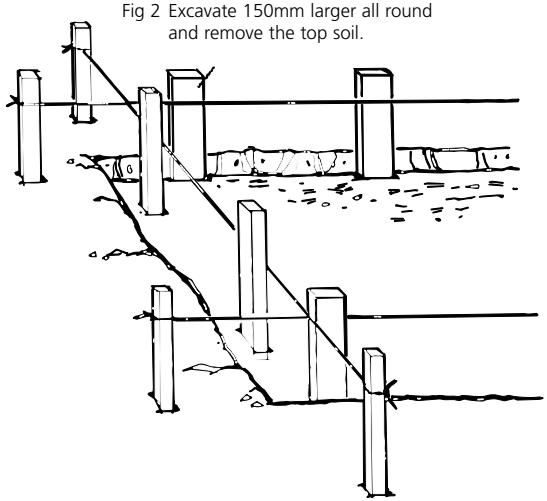
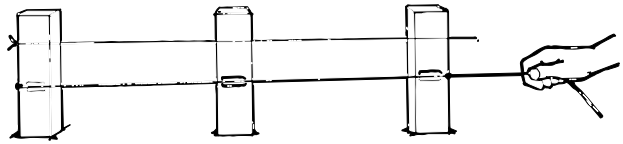


Fig 3 Set up the stakes and mark correct height for the formwork.



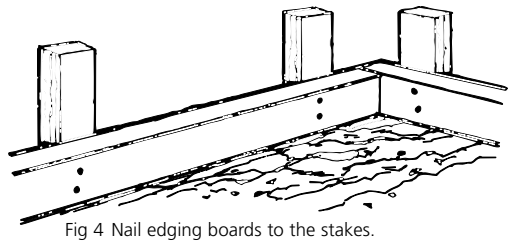


Fig 4 Nail edging boards to the stakes.

Fig 5 Trim and level off the stakes to the edging board height. Pack soil tightly around the perimeter

