

Laying a small concrete slab

Follow these simple step-by-step instructions to lay a small concrete slab in your garden using Cement Australia Concrete Mix.

Tools you will need:

- Metal screed
- Wooden float
- Magnesium float
- Steel trowel
- Edging trowel
- Jointing trowel (groover)
- Spirit level
- Tape measure
- Shovel
- Turf cutter (if required)
- Mattock
- Measuring jug
- Hose
- Broom
- Bucket
- Hammer
- Timber saw
- Carpenters' square
- Rake
- Wheelbarrow or concrete mixer
- Tamper or plate compactor for compacting the base material

Materials you will need:

- Bags of Concrete Mix 20kg
- Lengths of timber for formwork
- Timber stakes
- Clean water
- Reinforcing mesh (& bar chairs if required)
- Double headed nails for easy removal
- Road base or crusher dust to bed slab

Tip: For larger jobs it is worthwhile hiring a concrete mixer and a plate compactor to get the job done properly.

Recommended products

If you have established that concrete made from a bag is suitable for your project, then to ensure a high quality, durable finish for your slab we recommend using Cement Australia Concrete Mix.



Concrete Mix

Hardens within 24 hours, can be finished to a smooth surface



NEW Extra Strength Concrete Mix 50MPa

Hardens within 24 hours, can be finished to a smooth surface

Before you get started

- Read the [Hints & Tips](#) section
- Ensure there are no pipes or services below the ground; contact Dial Before You Dig on 1100 or via their website www.1100.com.au for advice on the locations of submerged pipes and cables.



- Use our [Calculator](#) to work out how much Concrete Mix you will need for the project.
- If there is a specified concrete strength required for your project (i.e. N20/10) you must call in the professionals and have the concrete delivered via a truck - its the only way to ensure a specified final strength of concrete.
- How can you tell which method of concrete mixing is best for your job? A handy guide is any amount of concrete under 0.1m³ you can easily mix yourself using bags of Cement Australia Concrete Mix. For jobs between 0. 1m³ and 0.5m³ then consider mixing your own using [Cement Australia's Builder's Cement](#), sand and aggregate. For any job over 0. 5m³ where access isn't an issue then it is best to have pre-mixed concrete delivered via a truck.
- Ideally concrete should be placed and finished during the early morning, before air

temperatures and wind speed rise and the air humidity drops.

Safety

Before you begin any project, please ensure you protect yourself with the following:



BOOTS



FACE MASK



GLOVES



GOGGLES



LONG PANTS
& SLEEVES



TEAM LIFT

Look after yourself properly

- Protect your skin and eyes. Cement based products are alkaline and can cause burns to exposed skin or eyes.
- When working outdoors, be **SunSmart** - Slip on some sun-protective clothing – Slop on sunscreen - Slap on a hat - Seek shade - Slide on some sunglasses.
- All 20kg bags of cement products require 2 people to lift them safely. Always follow safe lifting procedures to avoid injury. So you will need a friend to help you handle the 20kg bags and at least one friend to assist you with mixing, placing and screeding the concrete - the more friends the merrier for larger jobs!

How to use Concrete Mix to lay a small concrete slab

STEP 1: CONSTRUCT THE FORMWORK

Measure, mark using a Carpenters square, cut squarely and nail the formwork together so that the internal measurement is the required dimensions for the slab.

With square or rectangular slabs, ensure that the formwork is true to square by measuring the diagonals between the opposite corners - these must be equal for the shape to be correctly square.

Tip: The height of the timber used for your formwork should equal the thickness of your concrete slab to enable you to screed the finished surface level with the top of the formwork.

STEP 2: MEASURE THE AREA TO BE DUG OUT

Place the formwork in situ and use a spade to mark around the outside edge of the formwork. This will be the area you will need to dig out to the required depth.

STEP 3: EXCAVATING THE AREA FOR THE CONCRETE SLAB

Move the formwork out of the way and dig out the area for the slab to the required dimensions. Allow an extra 5 cm of depth for a bed of crusher dust or road base under the slab.

Place the formwork back in position and ensure that it is level using a spirit level. You might need to dig a trench to ensure that the formwork is set at the correct height and backfill against the

formwork so that it stays in place. Insert the formwork and hammer in timber pegs at 100 cm intervals on the outside of the formwork to hold it firmly in position whilst you pour your slab.

Tip: Cut off the pegs to ensure they are level with or below the top of the formwork so that it is possible to screed the surface when the concrete is poured.

STEP 4: PREPARING THE SLAB BEDDING

Place a bed of road base or crusher dust 6-7cm thick, rake it to a level surface and tamp it down firmly all over to a thickness of 5cm. This provides a stable surface for the slab.

Tip: The secret to a crack-free slab is a firm, well drained base so for larger areas consider hiring a plate compactor to do the base preparation work properly.

STEP 5: PLACE THE REINFORCING MESH (IF REQUIRED)

If reinforcing mesh is required, cut it to fit inside the formwork allowing 5 cm clearance between the boxing and end of the bars so the reinforcing is completely covered in concrete. Use plastic bar chairs placed closely together to support the reinforcing mesh and hold it in the centre of the slab. The reinforcement must be at least 5cm above the compacted base and 4 cm or so below the top of the slab.

Tip: Do not allow the reinforcement to sag between the supports or sit directly on the compacted road base; it is important that it is fully encased by the finished concrete.

STEP 6: MIXING THE CONCRETE

In a non-porous vessel, such as a wheelbarrow, add the Concrete Mix no more than 2 bags at a time. Add exactly 2.5 litres of clean water per bag of Concrete Mix and mix thoroughly remembering that excess water ruins good concrete.

[Watch this video to see how to it's done.](#)

STEP 7: POURING THE SLAB

Prior to placing the concrete, soak the compacted base with water to minimise moisture loss. Start by placing the concrete against one edge of the formwork and add further batches working away from the edge, spreading with a shovel to ensure that all of the edges and corners of the formwork are completely filled. Fill all the way to the top of the formwork, using your shovel to tamp the product into position to get any air pockets out of the concrete. Level the concrete with a screed held against the top of the formwork and by working from side to side and moving from one end of the formwork across to the other. It is necessary to repeat this process to ensure that the surface is flat. Fill in any low spots as you work the surface.

Tip : Be ready to keep on mixing concrete from when you start until the formwork is completely full. This is not a job where you can take a long lunch break half way through!

STEP 8: FINISHING THE CONCRETE SLAB SURFACE

Water (bleedwater) will appear on the surface and then gradually evaporate. Do not work the surface at all while the bleedwater is present. When it has evaporated and the surface has stiffened a little, use a float to flatten the concrete and remove the ridges from the initial screeding. Use a

steel trowel to produce the final surface finish if you require a very smooth surface. This tends to be too slippery for outdoor concrete - particularly for pathways so alternatively broom the concrete or use a wooden float to produce a textured, non-slip surface.

Tip: Work the concrete in a circular motion angling the trowel towards you and slightly off the surface to prevent it from digging into the concrete.

STEP 9: EDGING THE CONCRETE AND ADDING A CONTROL (EXPANSION) JOINT

Cut the concrete away from the formwork using an edging trowel around the entire perimeter which will also compact the edges of the concrete. For larger slabs, cut a 2 cm groove into the slab every 150 cm using a jointing trowel to provide control joints. The inclusion of control joints will prevent cracking.

Tip: As it dries concrete will shrink slightly and adding control joints creates a straight line break rather than allowing random cracking to form.

STEP 10: CURING THE CONCRETE SLAB (PROTECTING THE SURFACE AGAINST MOISTURE LOSS)

Moisten the surface and edges of the slab using a hose twice daily for 7 days. Curing provides a continuous supply of moisture to ensure a better surface quality and a stronger slab. Curing must start the same day – as soon as you have finished the surface.

STEP 11: REMOVING THE FORMWORK

Formwork may be carefully removed after 24 hours. You can walk on the surface after 3 days but avoid any heavy loads for at least 7 days.

Hints & tips

- Ensure that the timber for the boxing is the same height as the thickness of the slab you want to pour. For example, for 100mm thick slabs purchase 100mm x 50mm timber to make your formwork.
- In hot or very dry weather you need to prevent the rapid loss of surface moisture by:
 - Soaking the compacted base under the slab thoroughly
 - Minimising the finishing time by having enough workers available to complete the pour quickly
 - Use light mist sprays to prevent excessive evaporation
 - Begin the curing process as soon as you have finished smoothing the surface of the slab.