

6.2 Brickwork for base

- Mark the centre of the foundation slab. Draw a 1,6 m diameter circle on the foundation slab using two nails tied 800 mm apart on a piece of string. This is the outside diameter of the base wall.
- Mark out the position and width (500 – 600 mm) of the opening in the base. The opening is used to access the storage space under the pizza oven.

Proportions and quantities of materials:

150 Clay bricks (222 x 106 x 73 mm)

Mortar

1 x 50 kg bag of cement

2 Wheelbarrows of building sand

Water – add in small quantities, mixing after each addition, until the mix is soft and plastic.

Mix a small batch of bedding mortar at a time. If too much mortar is mixed it will begin to stiffen before it can be used and will need to be thrown away.

Do not add water to mortar that has stiffened to retemper it as this will weaken it.

Note: this allows for some wastage.

Use a tin or bucket of convenient size for batching all the solid ingredients.

The following mix proportions should be used:

Bedding Mortar	Mix proportions by volume	
	Cement	Sand
	1	5

- The base is built up to a convenient working height. Nine courses of bricks are recommended.

It is very time consuming to lay bricks using a spirit level to line them up. An alternative method is to set up a perpendicular pole/pipe/broomstick or similar in the centre of the slab and use some form of pointer that rotates around it to indicate the position and height of the bricks.

For example, a 20 mm round tube can be used as the perpendicular guide and a short piece of 25 mm tube slipped over it with a pointer fastened to it. The pointer can be a piece of mild steel rod 680 x 6 mm welded perpendicular to this short piece of tubing. The pointer is positioned so that its tip is 85 mm above the foundation slab. Marks are then made on the perpendicular guide tube every 85 mm above this reference mark. A 'G' clamp can be clamped onto the perpendicular guide tube at each marking to hold the pointing device at the correct level. As brickwork progresses, this pointer is rotated to indicate the height and position of each brick. Although this takes time to set up, it makes accurate brick laying much quicker. (See photograph above right.)



Unless the base will be plastered, a pointing tool is now used to finish the mortar between the bricks. To improve bond strength and make brick laying easier, clay bricks should be pre-soaked. If 'cement bricks' are used for the base, they should be laid dry.

To allow the mortar to continue to gain strength, it is recommended that the brickwork be kept wet for 7 days after completion of the brickwork.

6.3 Suspended slab

The suspended slab can be cast in situ or made using precast concrete lintels. If concrete lintels are used, they need to be carefully chosen. Find a supplier of straight lintels that have been carefully and neatly cast. The lintels will need to be positioned on the base and cut to fit.

A cast-in-situ slab requires careful preparation, but the end result can be neat and satisfying. Temporary support and formwork is required to hold the concrete until it gains sufficient strength to be self supporting. This support must be strong enough to hold the entire weight of fresh concrete and the loads imposed during placing and finishing.

- Strong board is required as formwork, on which to cast the slab. The board must not distort during or after concrete placing. Suitable boards include 19 mm shutter board or shutter ply.

The board is placed over the top of the brickwork and the **inside** shape of the base marked on the board from underneath. The board is then removed and cut to shape so that it fits inside the brickwork of the base. In order to be able to remove the board after the concrete has gained strength, it is advisable to cut it down the centre so that the two halves can be removed from the base opening later.

Make sure the board is well supported under the joint during casting of the fresh concrete. The joint in the board and the joint between the board and brickwork must be sealed to prevent paste loss from the fresh concrete. There are various options available including joint sealer, foam strips squeezed into the gaps, thin plastic sheeting over the joint, duct tape, etc. Another option is to cover the entire surface with a plastic sheet.

- Sturdy support will be required under the board to hold it up in position during concrete placing and curing. A simple method is to use brick 'pillars' in several places under the board. These pillars can be constructed by stacking bricks in a pillar formation without the use of bedding mortar. At least seven support pillars will be required to support the formwork board, six around the circumference and one in the middle. After curing the slab for 7 days, the pillars can be taken out easily by wiggling out a few loose bricks, allowing the pillar to collapse.

DO NOT remove these pillars too soon, or the suspended slab could collapse.

- Additional formwork is required around the edges of the slab. Tie a ratchet strap or sturdy piece of rope around the top of the base brickwork. Use the shutter board off cuts to make approximately 15 battens 50 mm wide and 200 mm long. Tuck these battens between the strap and the brickwork around the top of the base. Allow them to protrude approximately 75 mm above the brickwork. Cut 75 mm wide strips from the 4 mm to 6 mm thick plywood/masonite. A total length of approximately 5 m will be required. Cut these strips in the longest possible lengths to reduce the joints required. This will make it easier to form a nice round form. Fasten these strips to the inside of the battens using small screws. Joints in the strips should coincide with a batten position. The formwork is now in place to support the fresh concrete required for the suspended slab.



- To make removal of the formwork easier, a thin layer of release agent should be applied to the inside of the side forms as well as the top surface of the base timber. Spray and Cook, Vaseline or cooking oil have been found to be satisfactory.

6.4 Casting the suspended slab

For the suspended slab, 0,15 m³ of high-strength concrete and 30 m of 6 or 8 mm diameter steel reinforcing rod will be required.

Concrete made using relatively small stone is preferable for casting thin slabs. Although it is possible to use 19 mm stone, a maximum stone size of 13,2 mm is recommended.

Concrete proportions and quantities:

The concrete proportions and quantities for the suspended slab are as follows:

1,5 x 50 kg bags of cement

1,5 Wheelbarrows concrete sand

1,25 Wheelbarrows of 13,2 or 19 mm concrete stone (13,2 mm stone produces a concrete that is easier to place)

Use a tin or bucket of convenient size for batching all the solid ingredients.

The following mix proportions should be used:

High strength concrete	Mix proportions by volume		
	Cement	Sand	Stone
	1	2	1,5

- Concrete is placed in two operations. A 25 mm layer of concrete is placed and compacted on the formwork, the reinforcing rods are placed in two layers, at right angles to each other and 150 mm apart on top of this layer. The remaining concrete is immediately placed and compacted. The delay between placing and compacting the first layer of concrete and placing the second layer must be as short as possible.

When compacting the second layer, tamping must be deep enough to reach the first layer in order for the concrete to be well bonded. Compact the concrete very well around the edges to remove excess air. In conjunction with tamping the concrete, the side forms can be lightly tapped to help expel excess air.

- Once the concrete has been placed, use a straight edge in a tamping and sawing motion to produce a flat surface and to bring sufficient paste to produce a good finish to the surface. A spirit level is used to ensure the surface is level in all directions.
- Allow the surface to stiffen slightly and excess water to evaporate before using a wood float to finish the surface. For best results allow the surface to further stiffen before floating a second time.

Adding additional water to the concrete during floating will weaken the surface.

- Cover the concrete with a plastic sheet to prevent evaporation and allow it to cure. The plastic should be well secured all around the edges to prevent wind from blowing between the plastic and the concrete. For best results keep the plastic in place until construction of the oven floor begins. (Allow the suspended slab to cure for 7 days before removing supports and starting construction of the dome)