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# DIY Bricklaying

- An easy-to-follow guide to achieving a perfect result.
- Outlines all the tools you will need for the job.
- Includes a materials checklist.

diy SUPPORT

**PLEASE NOTE:**
Before starting this project or buying any materials, it is worth your time to read all steps thoroughly first to be sure you understand what is required.

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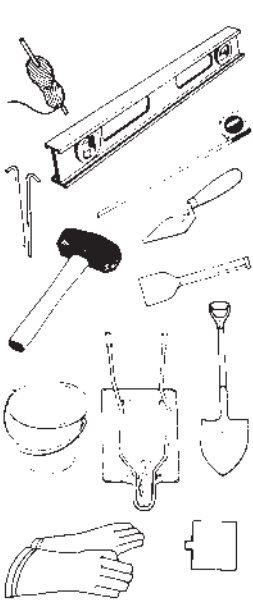
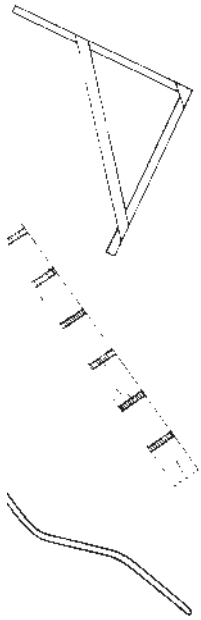
## What you'll need



Long spirit level
Steel measuring tape
Stringline
Bricklayer's pins
Bricklaying trowel
(280 – 300mm blade)
Mash hammer
Brick bolster
Wheelbarrow
Shovel
Bucket
Strong gloves
Bricklayer's steel scraper
(for raked joins if required)

## ✓ CHECKLIST

- ✓ Selected bricks
- ✓ Ready-Mix concrete for foundations
- ✓ Ready-Mix mortar or Bricklayer's sand
- ✓ Cement
- ✓ Lime
- ✓ Liquid Plasticiser (such as Bycol)
- ✓ Mortar board - approx 1m square for mixing
- ✓ Scrap timber - for building hurdles



### Builder's Square

Essential for checking that corners are 90 deg. Make it from 75 x 25mm timber with the shortest side marked at 600mm, the second side at 800mm and the diagonal at 1000mm. Nail them together with a half joint at the right angle corner and the diagonal nailed on top.

### Gauge Rod

Ensures that the height of each brick course is accurate. Make it from 50 x 25mm timber at least equal to the full height of the brickwork. Mark lines square across the face every 86mm – the thickness of one brick +10mm mortar joint.

### Joint Rule

Used to indent and smooth mortar joints. Bend it into shape from 10mm mild steel rod.

# Learn to lay bricks in easy steps - with a little help from Melbourne Brick.

The beauty of bricks is that they can add real style anywhere in your garden. And laying bricks is within the average handy person's ability.

So you can easily build small earth-retaining walls to create such interesting features as a raised lawn or sunken patio, or to add terraced garden beds, planter boxes, garden seats, a barbecue or a gatepost/mailbox. And there are few DIY projects more satisfying and rewarding than a job built from bricks laid by your own hands.

Just stick to this easy step-by-step guide from Melbourne Brick and you're well on your way to becoming your own brickie. Of course, for home extensions and very large, substantial walls, don't hesitate to call in a qualified tradesman.

Fig. 1

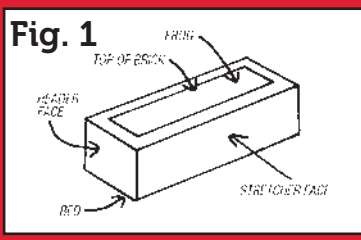



Fig. 2

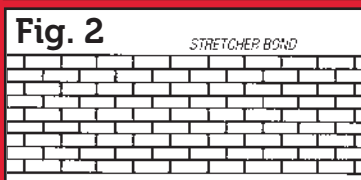
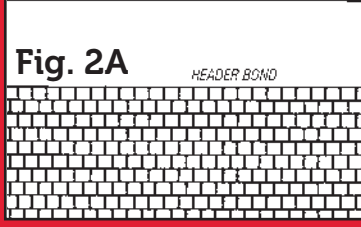



Fig. 2A




## Step 1: Come to terms

The first thing to learn is some of the brickie's language so you'll understand some of the steps used here later (Fig 1).

Other terms you should know include:

**Course:** A single row of bricks.

**Joints:** The mortar between bricks, usually 10mm thick.

**Buttering:** Coating the end of a brick with mortar to form a vertical joint.

**Piers:** Supporting columns built in at regular intervals and at the ends of high or long walls to give added strength.

## Step 2: Choose a bond

The bricks are laid in patterns called bonds, which prevent one vertical joint (called a perpend) being laid directly above the vertical joint on the course below. There are a number of different bonds, but a stretcher bond is the simplest (Fig. 2). Bricks overlap by half their length. Alternate courses finish with 1/2 bricks at each end. A header bond is formed by laying bricks head on, with each course overlapping by half the header face width. Alternate courses finish with two 3/4 bricks laid next to each other at each end (Fig 2A).

## Step 3: Get approval

If you're planning a large structure, such as a high front brick wall, check your local council's or Shire's regulations first. Most authorities specify the types of fences you can build and how high they can be and you may need a permit. However, small edging walls, barbecues and so on do not usually need a permit. There's also a big variation in load bearing capacities of soils, sometimes only a few metres apart in the same locality. Even for small projects, a solid foundation is important and this depends on the nature of your soil. Again, seek the advice of your local council.

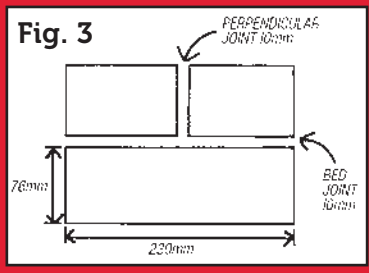
## Step 4: Buying materials

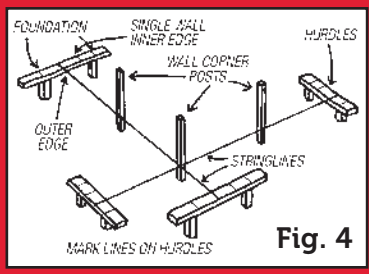
**Bricks:** The actual size of a standard brick is 230mm long, 110mm wide and 76mm deep. But for estimating how many bricks you need, use the format size. This includes 10mm in each dimension to allow for one mortar joint (Fig. 3). Which means each brick face is measured as 240 x 86mm.

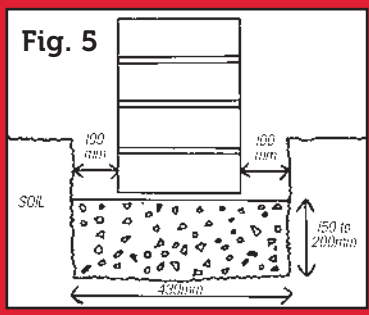
**Mortar:** For small jobs, one 40kg bag of ready-mixed mortar makes enough to lay 40 – 50 bricks. For larger jobs, it's cheaper to mix your own. Cement and lime usually come in 40kg bags and sand by the 1/4, 1/2 and whole cubic metre. Specify bricklayer's 'fatty' sand – other sands tend to crumble and fall off when trowelled onto bricks. Allow 3/4 cubic metre of sand, 4 bags of cement and 4 bags of lime per 1,000 bricks laid with a stretcher bond.

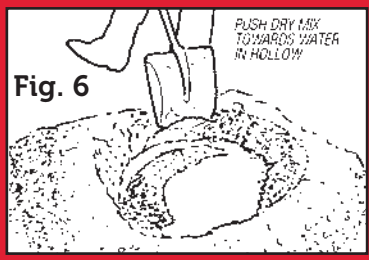
## Step 5: On with the job

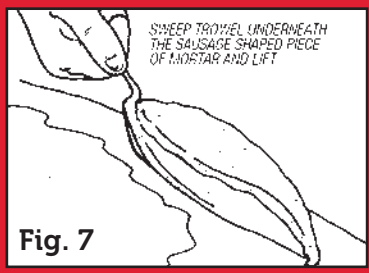
The first thing to do is to set out reference lines for the thickness of both the foundation and walls using the stringline. Build hurdles from suitable scrap timber and erect them at opposite ends of the walls, clear of the working areas (Fig. 4). Measure the exact locations of the wall corners on the ground, then extend stringline between these points to the hurdles and mark by hammering in a nail. Tie the line to one of the nails and stretch to the other hurdles.




the line around each nail and keep taut. The stringlines will give you an accurate line to follow for digging out the foundation and laying your bricks.

## Step 6: Foundations

Once you have sought the advice of your council about load capacities of soils in your area, dig the foundation trench to their recommendation. Remember to dig out enough for the depth of the concrete base. Large structures may need to be thicker, but for low walls, planter boxes, barbeques and so on, a concerete base 150mm to 200mm thick and about 100mm on each side of the bricks is usually sufficient (Fig 5).
As a guide to laying the concrete level, hammer in pegs at 600mm intervals along the middle of the trench. The peg's length above the ground marks the thickness of the concrete. Place a long, straight piece of timber across the first two pegs and test with a spirit level.
In this way, adjust all pegs so their tops are all perfectly level. Then pour in the concrete (suggested mixture: 4 parts metal, 2 parts sand, 1 part cement) until it's flush with the tips of the pegs. Leave it to set hard.

## Step 7: Mix the mortar

Unless you're using dry-ready mis mortar, mix 1 part cement, 1 part lime and 6 parts sand on your mortar board for the brickwork. Measuring quantities by the shoveful is acceptable but beware that any over or under measuring of ingredients from one mix to another may result in different mortar colouring. Allow roughly 1 bucket of water for each bucket of cememnt. Thoroughly mix the cement into the sand, turning it over at least three times. Form a hollow in the middle of the pile and pour in the half of the water (Fig. 6). Mix in the dry mortar from the inside walls of the hollow, gradually adding a little more water as it gets absorbed. Turn the whole mix over several times. Mortar has the right consistency when it will hold the impression of the trowel point, or your fingers when it's squeezed.

## Step 8: Lay the bricks

Move the stringline for the outer face of the wall on the hurdles (refer Fig.4), then lay the bricks out dry the first course along the foundation to work out their correct placement. Now lift them to one side and set this course accurately to the stringline by laying a mortar bed.

**Using a trowel** - to lay a bed, chop off a section of morar with the trowel that's about the same sizeas it. Seperate it from the bulk of the mortar with a clean slicing action and shape it into a curve, as near to a sausage shape, and use the tip in a stepping action down the middle to spread it out. Lay enough for at least two bricks at a time. Lay the first brick in place and tap down the trowel handle until the top outer corner of the brick rests agains the stringline. The mortar should make a 10mm joint.

**Buttering** - for the next brick, butter one end to create the vertical join before you lay it (Fig. 8). Hold the brick in one hand and scrape on mortar with your trowel to one 'perp' end. Place the buttered end against the first brick to form a vertical joint 10mm thick and firm down the trowel handle, again so the top outer edge for the bricksrest against the stringline. Repeat this for the next four or five bricks, still following the stringline. Test with your spirit level that the bricks are truly horizontal. Carefully scrape off excess mortar with your trowel.

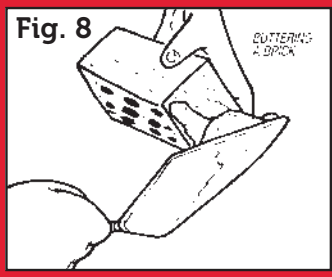


Fig. 8

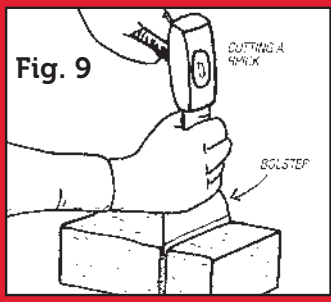


Fig. 9

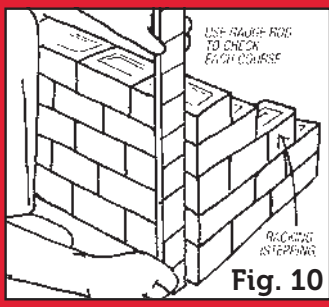


Fig. 10

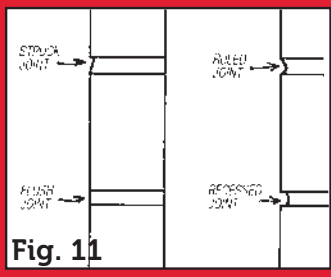


Fig. 11

When the first course is laid, you can dispense with the hurdle line and use bricklayer's pins and line, gauge rod and spirit level instead.

**Brick cutting** - each brick for all following courses should straddle two on the last course, so you'll probably have to cut to fit the ends of alternative courses. Mark a cutting line on each face of the brick and nick the line all around with your bolster and mash hammer. Place the brick botom on grass or sand, put the bolster on the nicked line, give it a sharp blow and the brick should cleanly break along the line (Fig. 9).

**Racking** - the corners should now be 'racked' - that is, built up by several courses (Fig. 10). With each new course, check that the corners are rising correctly with the gauge rod (Fig. 10). With a spirit level, check that each brick you lay is level and that the brick faces are both vertical and plumb. To lay the second course, tap flat bricklayer's pins into a vertical mortar joing at one end of the wall. Stretch a stringline from these pins to the other end of the wall, then secure the line taut with a second pin so that it's in line wiht the top edge of the next course. Lay the bricks in the middle to this line, testing each course for level and plumbness. Move the pins and line up to each course until all courses are filled between the racked corners. When the last course is complete, build up the ends again and fill in the middle until you reach the planned height.

## Step 9: Finishing off

Joints must be finished off before the mortar dries and there are many ways to do this (Fig. 11). The simplest is the 'flush' joint, made by drawing a trowel across the face of the bricks to create a mortar join which sets flush to the brick surface. A 'struck' joint can be made by drawing the trowel acros the face of the bricks to create a mortar join which sets flush to the brick surface. A 'struck' joint can be made by drawing the trowel steadily at a 20-30 deg. angle along the joint.

Do vertical joins first then horizontal ones using the full length of the trowel in a firm backwards action. The ruled joint is done by pressing about half the diameter of your home-made joint rule and drawing it the full length of the course. A recessed joint is made by undercutting the joints with a steel scraper with a protruding head the same size as thebrick joints, or a block of timber with a nail protuding to the depth you want the joint to be.

## Step 10: Cleaning up

Never leave brickwork uncleaned longer than two days after it's laid. Start at the top and hose off as much mortar as possible. Then scrape with a wooden scraper using plenty of water to help. For remaining mortar smearsl, clean with a mixture of 1 part spirits of salts (hydrochloric acid) to 10 parts water.

Protective clothing must be worn for this job - long trousers, a shirt giving full upper body and arm protection and a pair of industrial elbow length rubber gloves. Goggles are also strongly recommended.

Working in 1 square metre sections, fully saturate the brick wall surface with water first. Then, using a stiff dairy brush dipped continually in the acid and water mix, vigorously rub the wall. Stubborn smears and lumps can be removed with a steel scraper. Once each section is clean, wash down immediately with water. Do not let mixture dry on the bricks. If the mixture splashes on your skin, wash it off immediately with water.