MITREPLAN PROJECT PLANNER

Do your own 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.

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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Learn to lay bricks in easy steps – with a little help from Mitre 10.

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 Mitre 10 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.

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 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. Loop...
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, barbecues and so on, a concrete 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-mix mortar, mix 1 part cement, 1 part lime and 6 parts sand on your mortar board for the brickwork. Measuring quantities by the shovelful 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 cement. 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 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 for 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 mortar with the trowel that’s about the same size as it. Separate it from the bulk of the mortar with a clean slicing action and shape it into a curve, as near to a sausage shape as possible (Fig. 7). Sweep the trowel underneath to lift it from the mortar board in one go. Slide the trowel sharply backwards to lay the mortar in 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 with the trowel handle until the top outer corner of the brick rests against the stringline. The mortar should make a 10mm joint.

**Buttering.** For the next brick, butter one end to create the vertical joint 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 with the trowel handle, again so the top outer edge for the bricks rests 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. 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 bricks to fit at 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 bottom 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). A spirit level, check that each brick you lay is level and that the brick faces are both vertical and plum. To lay the second course, tap flat bricklayer’s pins into a vertical mortar joint 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 with the top edge of the next course. Lay the bricks in the middle to this line, testing each course for level and plumness. Move the pins and line up to each course until all courses are filled between the raked 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 the 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 steadily at a 20-30 deg. angle along the joint. Do vertical joints first then horizontal ones using the full length of the trowel in a firm backwards action. The ruled joint is done by pressing half the diameter of your home-made joint rule and drawing it the full length of the course. A recessed joint is made by cutting the joints with a steel scraper with a protruding head the same size as the brick joints, or a block of timber with a nail protruding to the depth you want the joint to be.

**Step 10: Cleaning up**

Never leave brickwork uncleansed 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 smears, 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 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 the mixture dry on the bricks. If the mixture splashes on your skin, wash it off immediately with water.
**MIGHTY HELPFUL HINTS TO MAKE THE JOB EASIER**

- Any mortar not used within 2 hours of mixing should be discarded. If used it would dry too quickly and not be strong enough.
- Use an empty tin when adding water bit by bit to your mortar mixture. It gives more control than a bucket.
- Wherever possible, your structure should fit brick dimensions and be laid to the nearest half brick in length, width and thickness.
- If mortar is too stiff, bricks will be difficult to bed – too soft, and they won’t stay in place. Test by holding it on the trowel upside down. If it doesn’t fall off, it's usually right.
- Before laying a brick, check with your local council or shire about regulations, permits and soil conditions in your area.

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