

## INTRODUCTION

A timber slatted deck creates a flow between indoor and outdoor spaces. It is an extension of the indoor living space, forming an additional outside room, adding value to your home. On a sloping section it can add a practical and accessible flat area for barbecuing and entertaining.

This document contains instructions and information to help you build your own timber slatted deck. Before you start, familiarise yourself with the materials and techniques involved by reading the complete document then use it to help you plan your project.

The deck is a system of piles, bearers and joists supporting the timber decking material. Piles must be treated to H5 level of treatment and all other timber to at least H3.2. Fixings (nails, bolts, brackets) must be stainless steel.

## PLANNING & BUILDING CONSENT

Before planning your deck, check with your local authority on any planning restrictions. Some Councils require a consent for any deck partly supported by a house regardless of height. The deck featured in this brochure is less than a metre above ground and doesn't require a building consent but it does have to comply with the building code. Planning restrictions will vary from area to area and may require planning consent, neighbour's permission or be limited in area according to distance from boundaries, heights etc.

Any deck from which a person may fall more than one metre will require handrails and a building consent from your local authority.

Detailed plans showing the position of the deck and how it is to be constructed, including handrails, steps and bracing, to comply with the New Zealand Building Code, will need to be prepared for your building consent application. We suggest you seek professional advice on the design of your deck if it is more than one metre out of the ground and obtain a building consent before you proceed with any work on site.

The deck detailed here is suitable for a flat or gently sloping site and must be attached to the house which has a timber or concrete floor, at least 400 mm above the ground level. The deck detailed below will comply with the provisions of the NZ Building Code, and will not require a building consent if it is not possible to fall more than one metre from the deck onto the surrounding ground. No handrail is required, but take care if installing seating, planter-boxes or other structures which people, especially children might fall from.

You may wish to obtain a building consent in any event, to assure a future buyer that the deck was correctly built. The deck is 3.0 metres wide and extends from the house 2.7 metres. It consists of four bays. Other bays may be added to produce a larger deck, or bays omitted if a smaller deck is required.

Building Act – Under the Act if a Deck is less than a metre above finished ground level, you don't need a Building Consent or to produce plans, however it's helpful to draw a plan to work out joist and bearer spacings and lengths.

## STEP 1 - SETTING OUT

A week or two before starting your deck, it is a good idea to weed spray the area to be covered to keep weeds down after the deck is completed.

### SET OUT THE DECK AS FOLLOWS:

1. Measure down from floor level at least 170 mm and draw a level line to mark where the top of the stringer (the timber member attached to the house) will go and check that fixings (75 mm below this line) will be securely set into the framing or foundation wall. It may be necessary to adjust the height of the deck to ensure that a secure fixing can be obtained.
2. Fix 150 x 50 mm stringer, 3.0 metres long, to this line with a minimum of three 12 mm bolts, 300 mm from each end and in the centre, through the foundation. Use a 50 x 50 x 3 mm washer where the bolt bears on the timber.

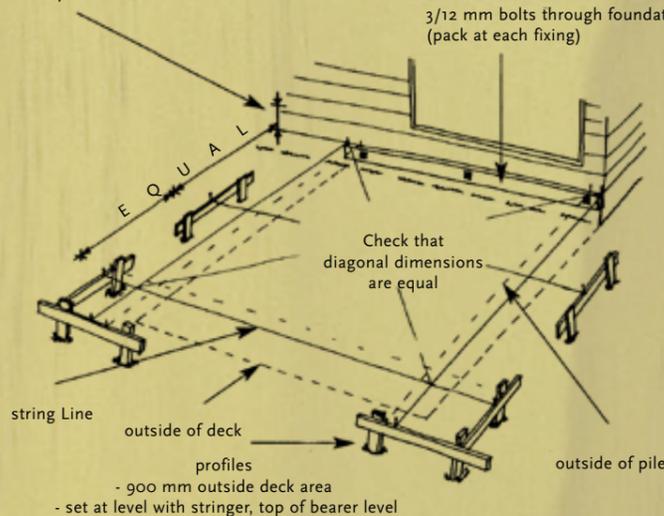
3. Pack stringers off wall cladding with 75 x 12 x 150 mm long timber packers at each bolt position. This will allow drainage between stringer and wall cladding.
4. About 900 mm outside the outline of the deck construct profiles as shown on drawing 1, ensuring that the horizontal profile rails are the same level as the top of the stringer.
5. Using string lines set out the perimeter of the deck, checking that the diagonal dimensions are equal, to ensure the deck is square.
6. Partly hammer a nail into the top of the profile to mark these lines and another 200 mm inside these lines to mark the outside edge of the piles.

The basic set-out of your deck is now done.

Drawing 1

170 mm below floor level

150 x 50 mm stringer packed out 20 mm from wall and fixed with 3/12 mm bolts through foundation (pack at each fixing)



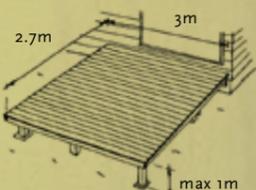
## TOOLS NEEDED

- |   |  |
|---|--|
| <input type="checkbox"/> Electric drill           | <input type="checkbox"/> Set square        |
| <input type="checkbox"/> Hammer                   | <input type="checkbox"/> Adjustable wrench |
| <input type="checkbox"/> Handsaw or electric saw  | <input type="checkbox"/> Spade             |
| <input type="checkbox"/> Retractable tape measure | <input type="checkbox"/> Spirit level      |
|   | <input type="checkbox"/> String line       |

## MATERIALS

- 6/ 125 x 125 mm H5 treated timber piles lengths to suit terrain
- 1/ 3.0 m length Ex 150 x 50 mm No.1 or G8 framing grade H3.2 treated stringer
- 2-3 bags (approx) handy concrete mix
- 10/ 3.0 m lengths Ex 100 x 50 mm No.1 or G8 framing grade H3.2 treated joists
- 100 metres, Ex 100 x 25 mm or 100 x 40 mm profiled decking
- 7/ 12 mm stainless steel bolts (check lengths)
- 2/ 3.0 m lengths Ex 100 x 75 mm No. 1 or G8 framing grade H3.2 treated bearers
- 75 x 12 x 150 mm long timber packers for wall fixings
- 14/ 50 x 50 x 3 mm washers (stainless steel)
- quantity of 100 x 4 mm galv flat head nails
- quantity of 60 mm or 75 mm annular groove galvanised flat head nails
- 8 wire dogs

When constructing decks under one metre in height check with your local council as it may require you to use stainless bolts.



## DISCLAIMER

**Please Note:** Whilst the advice and recommendations contained in this brochure have been produced with proper care, they are offered only with the object of assisting those interested in home improvement projects and ITM does not accept responsibility for the advice, recommendations, etc, contained herein.

If you have any queries please contact your local ITM store for further advice.

**Note:** A Building Consent may be required.



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[Mar, 2007] "We'll see you right"

## THE RIGHT WAY

### TO BUILD A DECK

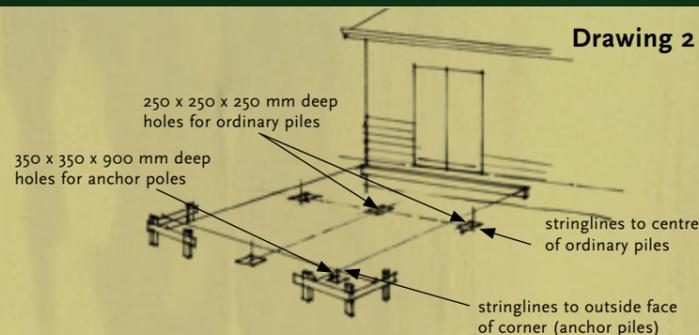


"We'll see you right"

## STEP 2 - DIGGING THE PILE HOLES

Using the string lines set to the inside nails on the profiles, mark the positions of each 125 x 125 mm square pile on the ground. At each corner the pile will be positioned with the outside face in line with the stringline. The intermediate piles will be centred below the string line and in the centre of the deck (see Drawing 2). The position of the piles can be marked easily with a can of spray paint and the size of the hole to be dug measured from the midpoint of the pile.

For the two corner piles dig a 350 x 350 mm square hole 900 mm deep (below top soil level). This will form the foundation for an anchor pile which will brace your deck. For the other piles dig a 200 x 200 mm hole at least 200 mm deep or until the topsoil layer has been penetrated and the ground at the bottom of the hole is firm. The spacing between piles should be 1350 mm (centre to centre). The poles can also be extended up to support a handrail or overhead pergola.



Drawing 2

## STEP 3 - PLACING PILES

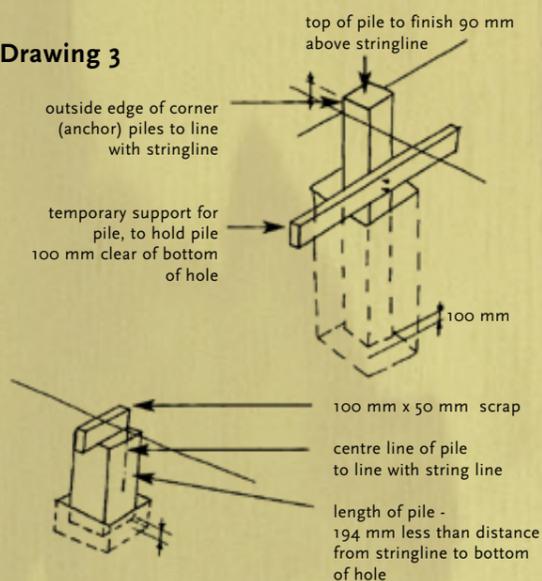
### (A) CORNER OR ANCHOR PILES

The length of the corner piles will be 100 mm shorter than the distance from the string line to the bottom of the 900 mm deep hole. This is to provide clearance above the pile when the joists are fitted. If the pile needs to be cut to length, ensure that the cut end is placed at the top. Temporarily nail a timber batten to the pile to hold the end of the pile 100 mm above the bottom of the hole as shown in Drawing 3 (to allow at least 100 mm of concrete under the pile). Align the outside edges of the pile with the string lines and if necessary provide temporary braces to the pile to secure it in position while concrete is placed in the hole. Place only 150 mm of concrete in the bottom of the hole and rod it with a piece of 50 x 25 timber to ensure that concrete is forced completely under and around the pile. Check that the pile is still accurately in position (check height and that the pile is square with the string line and check that it is plumb with a spirit level), make adjustments if necessary and then proceed to add further concrete, about 150 mm at a time, rodding the concrete as you go until the hole is full. Check the position of the pile again and then leave for seven days for the concrete to set.

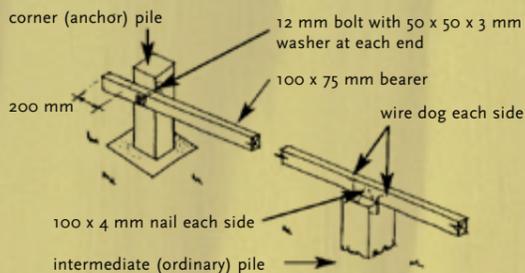
### (B) INTERMEDIATE (ORDINARY) PILES

The other intermediate piles will be 194 mm shorter than the distance from the string line to the bottom of the hole. This is to allow 100 mm of concrete under the pile and a 100 x 75 mm bearer (finished width of 94 mm) to be fitted on the pile. Place slightly over 100 mm of concrete in the hole and then place the pile on this pad of concrete (uncut end down). Work the pile gently into the concrete and check the finished height by placing a 94 mm thick, timber off-cut on the pile. The off-cut should finish at the stringline height and the pile should be centred under the string line. When the concrete has set, the remainder of the hole around the pile can be filled with earth or concrete.

Drawing 3



## STEP 4 - PLACING THE BEARERS



Drawing 4

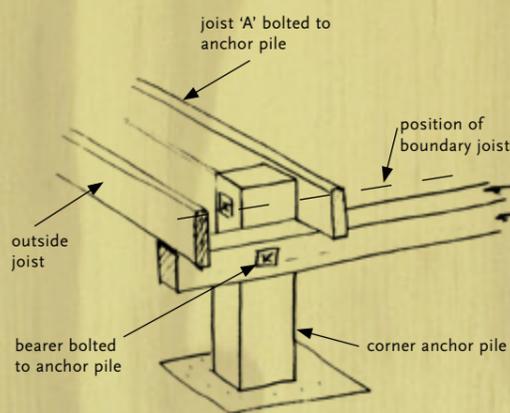
To the front edge of the deck, the 100 x 75 mm bearer should be bolted to the corner piles by using a 12 mm bolt with a 50 x 50 x 3 mm washer under the head and nut. The top surface of the bearer should line with the string line and the bearer should sit on the centre pile. Fix to the centre pile with a 100 x 4 mm nail and a wire dog, each side of the pile as shown in Drawing 4. For the centre bearer place the bearer on the piles and fix with nails and wire dogs.

When fixing the bearers check the level of the bearer and if required pack with malthoid, or notch over the pile. If the piles have been set accurately this adjustment should be no more than a few millimetres either way. The bearers when fixed should be level across their length and with one another. Trim the ends of the bearers to finish in line with the outside string line (Drawing 2).

## STEP 5 - PLACING THE JOISTS

Place the joists against the inside face of the corner piles and bolt to these piles with a 12 mm bolt and 50 x 50 x 3 mm washers (see Drawing 5). At the middle bearer and stringer, fix with 2/100 x 4 mm nails. Place the outside joists in line with the ends of the bearers and the remainder of the intermediate joists in position, evenly spaced at a maximum of 450 mm centres. Nail at each bearer with two 100 x 4 mm nails.

Trim the front edge of the joists 50 mm inside the line of the outside string line (Drawing 1) and fix a 100 x 50 mm boundary joist to the ends of the joists with two 100 x 4 mm nails nailed into the ends of each joist.

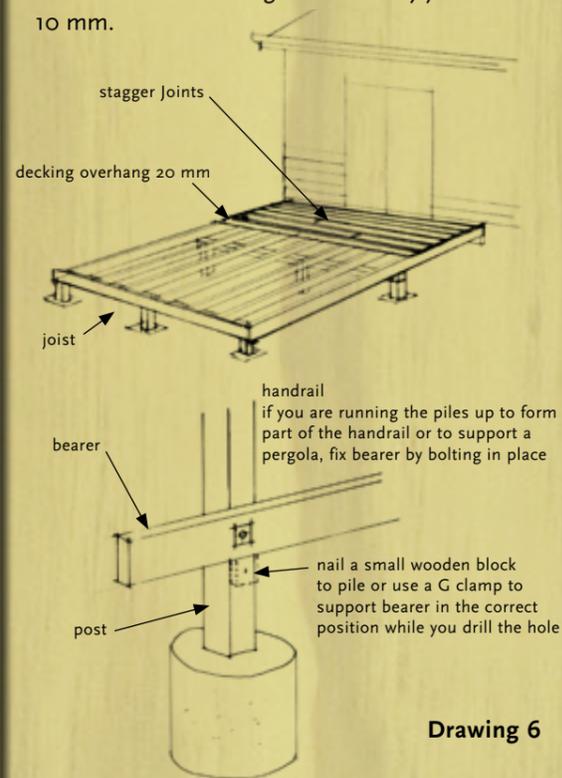


Drawing 5

## STEP 6 - PLACING THE DECKING

Lay the first piece of decking with a 10 mm gap to the house to allow drainage. Tack in place, check that it is straight, then nail the board with two 60 mm galvanised flat head nails at each joist. Overhang the ends of the boards approximately 100 mm. Proceed with the next boards, using a 75 mm nail to set the space between the boards. Note 60 mm galvanised nails for 19 mm decking - 75 mm galvanised nails for 40 mm decking. Any joints should be centrally over a joist with both boards carefully lined up and nailed (it may be necessary to drill for the nails on the end of the boards to reduce the chance of the wood splitting). Joints in boards should be staggered, i.e. they should not occur on the same joist in adjacent boards. The number of joints should be kept as few as possible by selecting the lengths to be cut to minimise short pieces (see Drawing 6).

Check every fifth or sixth board to ensure they are still parallel with the house foundation and that the outside ends of the boards are in line with a consistent overhang to the outside joist. The last board should overhang the boundary joist about 10 mm.



Drawing 6

## STEP 7 - CARE OF YOUR DECK

It is not necessary to paint or stain your deck, but if you wish to have a stain finish, the joists and bearers should be stained prior to fixing the decking and the decking should be stained on the top and edges before fixing.

The surface of the decking should be profiled to provide a slip resistant finish. This surface will require cleaning once a year to remove mould which will grow on the surface over the damper winter months. This can be done with a proprietary cleaner to ensure your deck remains clean and safe to walk on.