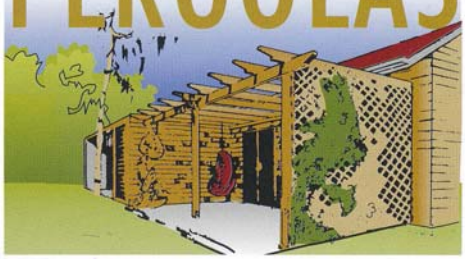
WADE TIMBERS

HOW TO BUILD TREATED PINE PERGOLAS



1 PLAN

Draw the pergola out in plan on graph paper and to a scale (e.g. 1m = 5 squares). Use a grid of 3.6m or less. Support posts will be located at grid line intersections. Remember to allow for the overhangs of the rafters and their supporting beams.

2 FOOTINGS

If the pergola is not constructed over a concrete slab then a concrete pad is required to support brackets. These are placed at the grid intersections. Holes for this concrete pad are dug 300 x 300 x 300mm deep.

3 POSTS

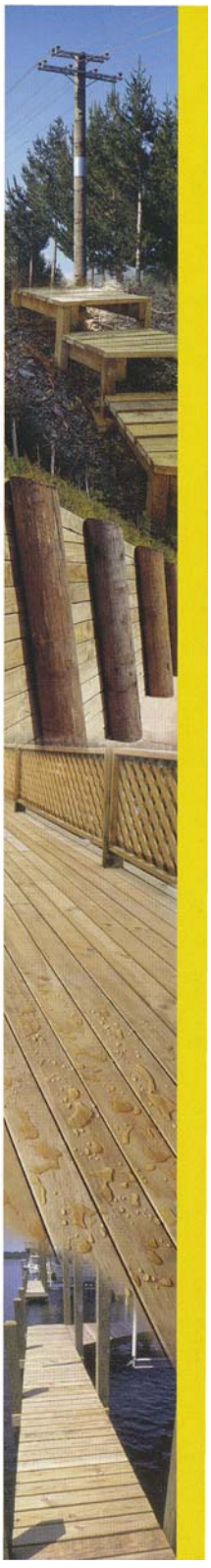
The minimum size of posts shall be F7 - 100 x 100mm, F7 - 90 x 90mm. These sizes are suitable for post heights not exceeding 2.7m.

4 BEAMS

These members are attached to the posts, and support the rafters. Their size shall be determined from the table as follows:

Osmose® Lifewood® CCA H1-H5 50 YEAR GUARANTEE*

DIY BROCHURE OSM12



a) Select the type of timber to be used (stress grade).
b) Determine the post spacing (beam span).
c) Determine the rafter span, enter the table, and derive beam size.
NOTE: Seasoned treated pine sizes 70mm or thicker, may be made up by vertical lamination using 3.75 x 75mm galvanized nails every 450mm.

STRESS GRADE	POST SPACING (m)	BEAM SIZE (mm) RAFTER SPAN UP TO (m) 3.0	4.8
*F5	2.4	150 x 38	175 x 50
	3.0	175 x 50	200 x 50
	3.6	200 x 75	250 x 75
F5	2.4	140 x 35	170 x 45
	3.0	170 x 35	170 x 45
	3.6	190 x 45	190 x 70

*NOTE: Maximum overhang for beams is 900mm

5 RAFTERS

These members are supported by the beam and they in turn support battens, shade cloth or lightweight roofing material. Their size shall be determined from the table as follows:

a) Select the type of timber to be used (stress grade).
b) Determine the rafter spacing.
c) Determine the rafter span, enter the table, and derive rafter size.

STRESS GRADE	RAFTER SPACING (m)	RAFTER SIZE (mm) RAFTER SPAN (m) 2.4	3.0	3.6	4.2	4.8
*F5	600	100 x 38	125 x 38	150 x 50	175 x 38	200 x 38
	900	100 x 50	150 x 38	150 x 50	175 x 50	225 x 50
	1200	125 x 38	150 x 38	175 x 38	200 x 38	225 x 50
F5	600	90 x 35	120 x 35	120 x 35	140 x45	190 x 35
	900	90 x 45	120 x 35	140 x 45	190 x 35	190 x 35
	1200	120 x 35	140 x 45	190 x 35	190 x 45	240 x 35

*NOTE: Maximum overhang for beams is 900mm

6 BATTERNS

The size of battens required to support shade cloth or lightweight sheet roofing material may be determined from the table

STRESS GRADE	BATTERN SPACING	BATTERN SIZE RAFTER SPACING (mm) 600	900	1200
*F5	600	38 x 75	50 x 75	50 x 100
	900	50 x 75	50 x 100	N.S
F5	600	45 x 70	45 x 70	70 x 35
	900	45 x 70	45 x 90	70 x 35

7 BRACING

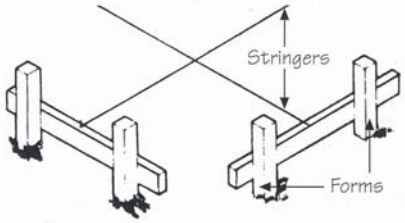
Where the pergola is attached to a well supported existing structure such as a house or garage, additional bracing may not be required.

Where the pergola is free standing, bracing is required in both directions. This bracing can be achieved by either infill screens, such as diagonal lattice work or knee bolted to the posts beams and rafters.

CONSTRUCTION STEPS

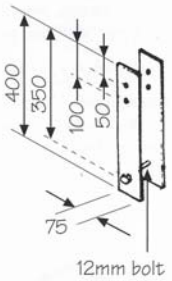
1 SETTING OUT

Set out on the ground with a string line tape and level. Locate post positions of pergola, measure diagonals and check that the structure is square. Diagonals should be equal. Use a line level and a string line to obtain the heights of the slab or concrete pad footing. If the area is to be paved allow a fall of 1 in 50 away from the house. Peg the positions and note from the forms the height to which concrete should be placed.



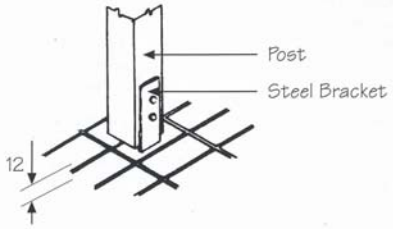
2 FOOTINGS

Dig holes to take the footings illustrated 300 x 300 x 300mm deep. If necessary box the hole with scrap plywood or the like. Using lengths of timber and the string lines, position the steelwork. Check the height and allow for 12mm clearance between the concrete and the posts. Proprietary brands of footings are available, but if you prefer you can get the type shown made up. Footings should be galvanized.



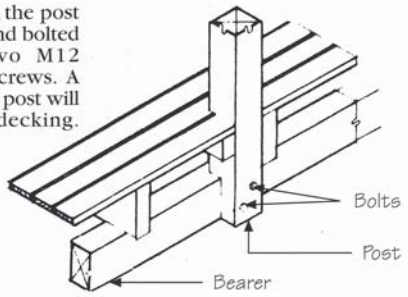
3 POSTS TO FOOTINGS

Posts are bolted to the steel post brackets when the concrete is at least four days old. The bolts used should be M12 hexagonal headed galvanized mild steel. Allow 12mm clearance from the concrete to the underside of the post. Alternatively treated pine posts maybe in direct ground contact. Ensure from your supplier that all posts which are to be set in ground are treated to a suitable level (H5).



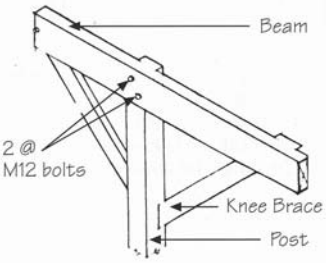
4 POSTS TO TIMBER DECK

Where a timber deck exists, the post should be halved checked and bolted to the bearer using two M12 galvanized bolts or coach screws. A blocking piece nailed to the post will support the end of the decking.



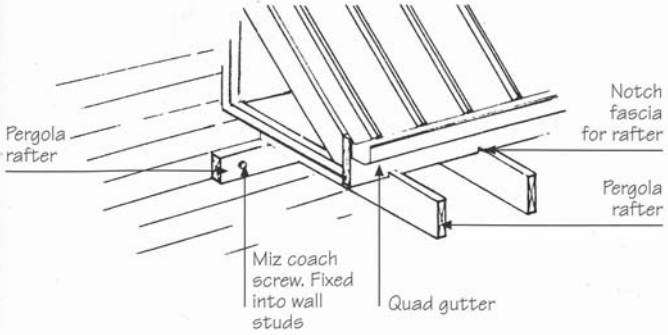
5 BEAMS

The top of the post should be halved to take the beam that supports the rafters. The beam is bolted to the post with 2 - M12 galvanized cup head bolts. Cut top of the post 12mm lower than top of beam. If the pergola is not to be attached to a substantial structure, 100 x 38mm knee braces may be bolted to the posts and beams to provide bracing. Ends of brace should be 600mm from post/beam junction.



6 LEDGERS

Where an adjacent structure is sufficiently substantial to support the loading, a ledger can be bolted to it with masonry expanding bolts or coach screws. The bolts or coach screws should be galvanized and a minimum of 10mm in diameter and fixed at 1200mm centres.

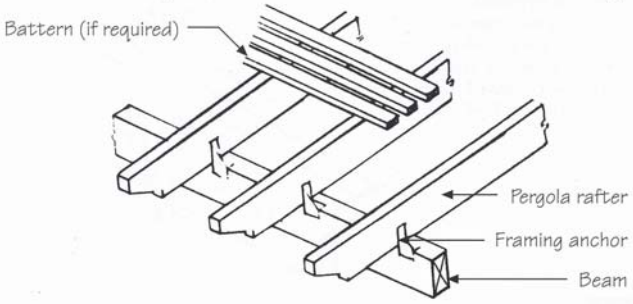


7 RAFTERS AND BATTERNS

Rafters should be skew nailed to the beams or ledger. If the roof is to be sheeted, one framing anchor at each joint should also be provided.

If battens are used at close intervals they may be nailed to the rafters.

If battens are to support sheet roofing they should be secured with one 75mm long 4.5mm diameter screw of each crossing.



TIMBER CARE

Cutting, notching or boring may expose untreated heartwood. A liberal coating of **PROTIM RESEAL** is recommended to restore the protective envelope. For more details refer to the **PROTIM** *Timber***Care** product literature. The appearance and surface water repellency of Osmose *Life***wood** and *Life***wood** *Plus* treated timber can be enhanced periodically with **PROTIM** ***Rain*****Coat UV** *Plus*.

CLASSIFICATIONS FOR TREATED TIMBER

H1 Hazard Level

Exposure - inside above ground. **Conditions** - completely protected from the weather and well-ventilated. **Biological Hazards** - insects other than termites (i.e. lyctid or anobiid). **Uses** - framing, flooring, furniture, and interior joinery.

H2 Hazard Level

Exposure - inside above ground. **Conditions** - completely protected from the weather and well-ventilated. **Biological Hazard** - borers including termites. **Uses** - framing, flooring, furniture and interior joinery.

H3 Hazard Level

Exposure - outside above ground. **Conditions** - subject to periodic moderate wetting and leaching. **Biological Hazard** - moderate decay, borers and termites. **Uses** - weatherboard, fascia, window joinery, framing and decking.

H4 Hazard Level

Exposure - outside in ground. **Conditions** - subject to severe wetting and leaching. **Biological Hazard** - severe decay, borers and termites. **Uses** - fencing, greenhouses, pergolas and landscaping timber (non-critical structures).

H5 Hazard Level

Exposure - outside in ground contact with or in fresh water. **Conditions** - subject to extreme wetting and leaching and/or where the critical use requires a higher degree of protection. **Biological Hazard** - very severe decay, borers and termites. **Uses** - retaining walls, piling, house stumps, building poles, cooling tower fill.

H6 Hazard Level

Exposure - marine water. **Conditions** - subject to prolonged immersion in sea water. **Biological Hazard** - marine wood borers and decay. **Uses** - boat hulls, marine piling, jetty cross bracing, landing steps etc.

WADE TIMBERS

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Lifewood® CCA HAS BEEN BRANZ APPRAISED SPECIFY WITH CONFIDENCE

For further information see separate brochure, Consumer Information and Handling Guide and Guarantee documents.

These plans have been checked and approved (at the time of printing) by Roy B.Hoskins & Associates of Qld 4006 (Structural & Civil Engineers), to be technically accurate and designed in accordance with the appropriate Australian Building standards. As local & National laws are subject to change, please ensure you check with your local authorities prior to starting construction.