



ENVIRO
BUILD

INSTALLATION GUIDELINES



MANTICORE

LUMBER

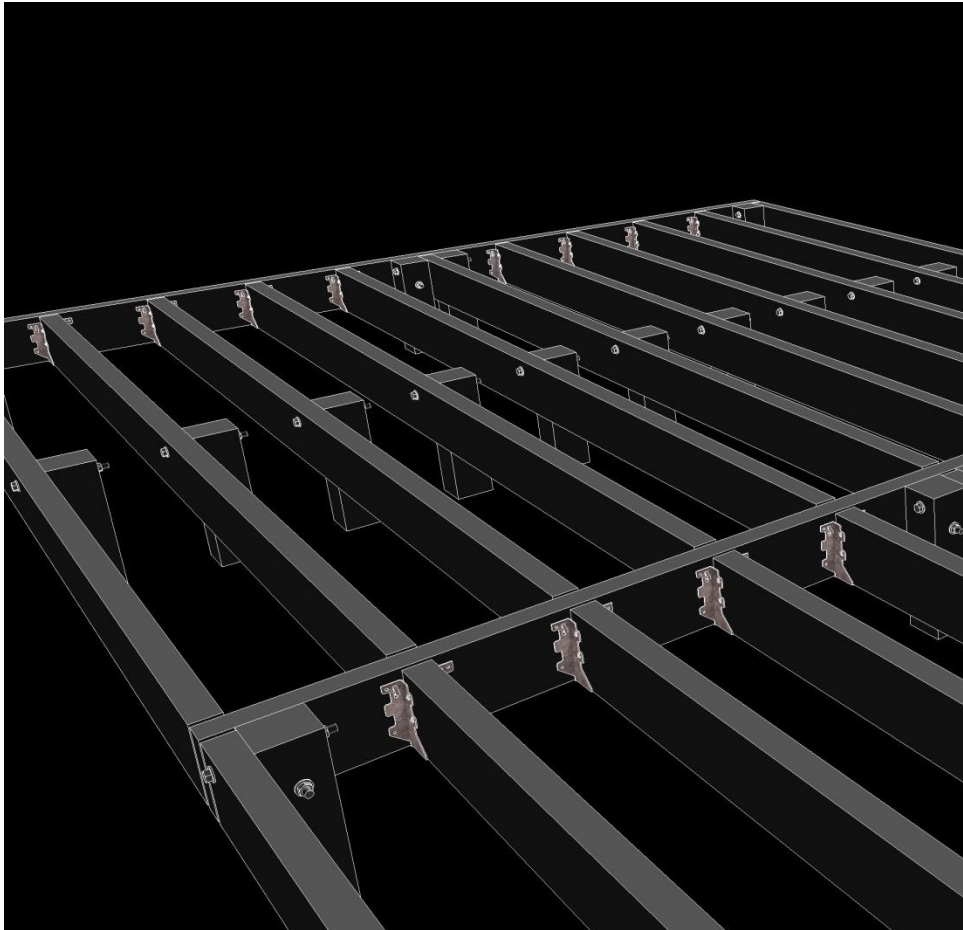
Manticore Lumber will provide years of service with the proper installation

(Please make sure you are using the most up-to-date installation guidelines)





CONTENTS



Tools	01
Calculating Materials – Decking Substructure	02
Calculating Materials – Fencing	03
Decking Substructure Installation	04
Fencing Installation	06





TOOLS

Required Tools

Standard woodworking tools can be used when working with Manticore Lumber. If you are unsure on how to use any tool, please consult the manufacturer's user manual.

- Circular Saw
- Power Mitre Saw with tungsten carbide tipped blade (can also be useful for efficiency and bevelled cuts)
- Jig Saw
- Hand Drill
- Impact Driver
- Tape Measure
- Carpentry Square
- Spirit Level
- Safety Glasses and relevant Personal Protection Equipment (PPE)





CALCULATING MATERIALS

To determine how much Manticore Lumber material you will require, you can either use our quick and easy online lumber calculator or follow the method below.

Please feel free to call our team for any assistance with this on **0208 088 4888**

DECKING SUBSTRUCTURE

- 1 Start off by measuring your proposed decking area(s) width, length and height off the ground
- 2 Based on the square meterage of the area(s), multiply this by 4 and add 10% for wastage to determine the total linear meters of deck bearers required
- 3 Divide the total linear meters of bearers, by the individual length of bearer you require (3.1 or 3.4m) to get the total quantity of bearers

Example 20m² Decking area:
 $(20m^2 \times 4) \times 1.1 = 88$ linear meters of bearer
 $88LM / 3.4m$ length bearer = **26 bearers** (rounded up)

- 5 You now need to decide on the type of bearer profile you require: 50x50, 50x100 or 50x150mm, as this will determine the required structure support. The allowable deck height and the ground conditions will also determine what support system would best suit your build, either:

- 100x100mm posts to be cement into soft ground, or;
- Adjustable support pedestals placed on hard flat ground

One factor to take into account will be how often the bearer profiles require supporting:

Bearer Profile	Max. Support Span	Pedestals per m ²
50x50mm	500mm	7
50x100mm	750mm	5
50x150mm	1500mm	3

- 6 If the deck frame is planned to sit onto of a flat roof, it will also be important to have the correct amount of protective rubber mats for each support in order not to damage the roof membrane





CALCULATING MATERIALS

FENCING

- 1 Start off by measuring your proposed fencing area(s) length and height
- 2 The type of fence you require will determine the profile size and quantity of each lumber profile required:
 - Firstly choose the support post profile required, either 80x80mm or 100x100mm
 - Then for the following fence types you have the fence panel profile choices:

Fence Type	Panel Profile (mm)	Max. Support Span
Birdsmouth/ Knee/ Trip Rail	80x80 / 100x100	1550mm
Closeboard Fencing	20x100 / 30x100	1500mm
Picket & Pale Fencing	20x100 / 30x100	1500mm
Post & Rail Fencing	20x100 / 30x100 / 40x100	1500mm

- 3 To determine the amount of fence posts required, divide the total fence length by the desired post span (no greater than the max. span), and add 1 for the end post
- 4 To work out the total post height you will need to add on a third of the post height (min.500mm) to the height of the fence. If a length of a lumber profile (3.1 or 3.4m) is divisible by the post height, then you can work out how many posts per lumber length you get. From this you can determine the amount of lumber post lengths to order
- 5 For the fence panels, you simply need to divide the total length of fencing by the length of the lumber profile (1.8m, 3.1m or 3.4m)
- 6 If you require more than 1 cross panel per post span, multiply this number by the number of lumber profiles as per above
- 7 Closeboard and Picket fencing, as well as requiring the cross panels above (min.2), will also need vertical screening panels. You need to divide the total length of the fencing by the width of the panel (100mm for closeboard or 175mm for picket). With the number of panels detrained, you will need to identify how may vertical panels fit into a length of lumber, to work out the amount of lumber required



DECKING SUBFRAME INSTALLATION

During the recycling process metal fragments are removed from the scrap plastics, however on occasion small pieces can still form part of the lumber. Thus we recommend only using tungsten carbide tipped drill bits and saw blades for drilling and cutting plastic lumber, we do not recommend diamond tipped blades.

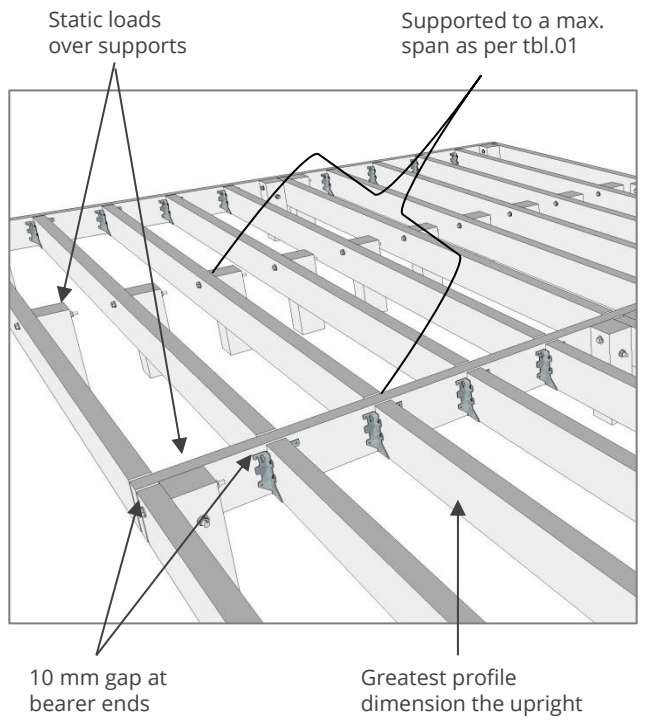
When using plastic lumber profiles to support decking, you must ensure:

- Each bearer/ joist is supported in a minimum of 3 places, to the max. span as per tbl.01
- The bearers are designed to take live loads, any static loads must be placed over the main supports
- Plastic bearers should be installed with the greatest dimension as the upright
- The bearer must not overhang a support by more than 50mm
- A full joist width must be used under each deck board end, thus you must ensure to have a double joist structure for deck board butt joints
- Where lumber ends abut a cross beam, you must leave min. 10mm gap from the bearer end to the cross beam. These can be joined using expansion L-brackets over a support or joist hangers
- You must leave min. 20mm between end to end lumber butt joints
- Do not fix bearers directly to the foundations; if you have to fix the bearers to the substructure, use expansion clips

tbl.01

Bearer Profile	Max. Support Span
50x50mm	500mm
50x100mm	750mm
50x150mm	1500mm

fig.01





DECKING SUBFRAME INSTALLATION

Soft / Non-Concrete Foundations – Plastic Post Support

- On soft ground you would require post supports for your deck. These need to be cemented into the ground min.500mm so that the substructure is supported as per the max support span table (tbl.01)
- Posts should be attached using good quality galvanised mushroom capped bolts which penetrate both the plastic lumber and the upright, typically with countersunk nuts where appropriate. The holes should be oversized by 3mm to allow for expansion and contraction
- Where lumber ends about a cross beam, you must leave min. 5mm gap from the bearer end to the cross beam. These can be joined using expansion L-brackets over a support or joist hangers
- Where you have joist butt joints, these can be fixed using expansion brackets
- You can insert cross beams to help strengthen the substructure

Hard / Concrete / Flat Roof Foundations – Pedestal Support

- With solid, flat foundations the decking substructure can be supported with adjustable support pedestals (fig.03)
- These are simply placed straight onto the ground and the height of each is adjusted by rotating the pedestal top to the height required to support the bearer
- On flat roofs, protective rubber mats should be in place under the pedestal to avoid damaging the roofing membrane
- Additional joist cradles can be used to fix the pedestal to the joist above if required, the pedestals themselves can then be attached to the ground below (except onto flat roofs) through the bolt holes in the pedestal base
- To create or take account of a slope in the deck surface or foundations, incline adjusting pedestals can be used

fig.02

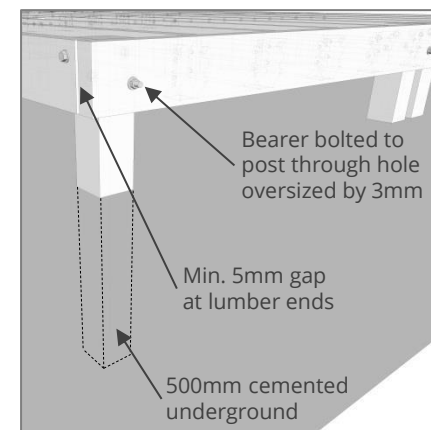
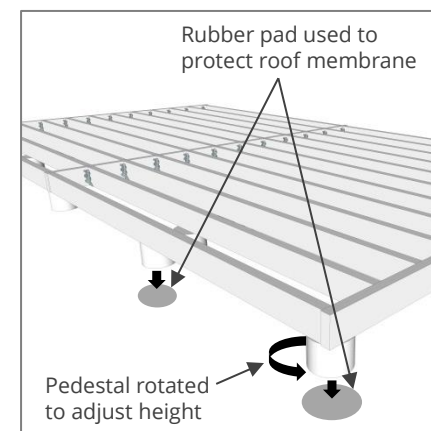


fig.03

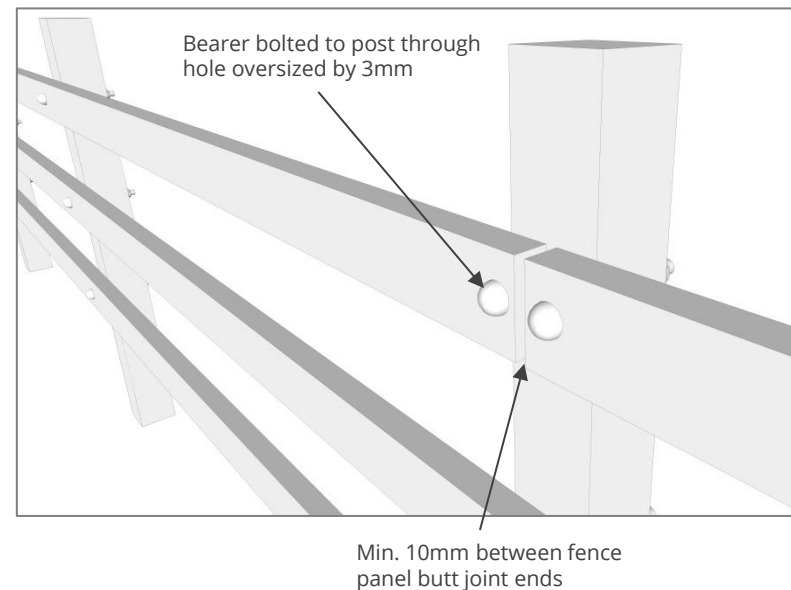




FENCING INSTALLATION

- Fencing rails when attached to posts, should be attached using good quality galvanised mushroom capped bolts which penetrate both the plastic lumber and the upright, typically with countersunk nuts where appropriate
- The bolt holes should be oversized by 3mm to allow for expansion and contraction
- A gap of min. 10mm must also be left between fence panel butt joints (fig.04)
- Upright posts (80x80mm or 100x100mm profiles only) should be installed with a third of the post below ground (min. 500mm). Dependent on weight and span of rails or palings, also site specific application (weather and ground conditions), you may require using a concrete surround for the posts in the ground
- When supporting plastic lumber profiles, please adhere to the following support span table **tbl.02** (the greatest dimension being used as the upright)
- For post and wire fencing, galvanised fencing staples (max. 25mm length) can be used, but it is important that two pilot holes are pre-drilled for each staple, as the plastic lumber outer surface is tough to penetrate and fencing staples may bounce off with the potential to cause injury
- Ideally screw fixings should be used instead of hammered nails or staples. Whilst fixing wire into plastic lumber may take slightly longer than hammering staples, plastic lumber will not require further maintenance or replacement for many years beyond the lifetime of traditional timber posts

fig.04



tbl.02

Panel Profile	Fence Type	Max. Support Span
80x80mm	Birdsmouth/ Knee/ Trip Rail	1500mm
100x100mm	Birdsmouth/ Knee/ Trip Rail	1500mm
20x100mm	Closeboard/ Picket/ Post & Rail	1500mm
30x100mm	Closeboard/ Picket/ Post & Rail	1500mm
40x100mm	Post & Rail	1500mm





M A N T I C O R E
L U M B E R

ENVIROBUILD.COM



+44 (0) 208 088 4888

EnviroBuild Materials Ltd. Unit 210, Bon Marche Centre, 241-251 Ferndale Road, London, SW9 8BJ