

# Advice on Timber Decking

## Timber Decks in Residential Building

Decks attached to elevated houses with a timber subfloor normally conform to the same rules of construction (BCA – Building Code of Australia) that apply to the whole structure regarding ground clearance, ventilation and subfloor and footing materials. In recent decades there has been a shift in deck construction from simply being a perimeter addition to a house, to forming part of the architecture of the surrounding landscape. In the transition, some of these basic rules of construction have been overlooked.
Most failures of timber decks are partial and affect timber appearance and overall symmetry. The extent of partial failure can be as expensive to remedy as replacement in most cases - which requires us to get things right in the planning stages. From experience, decks fail due to the following causes.

- Poor deck design
- Use of unsuitable materials and timber sizes
- Incorrect fixing and gapping

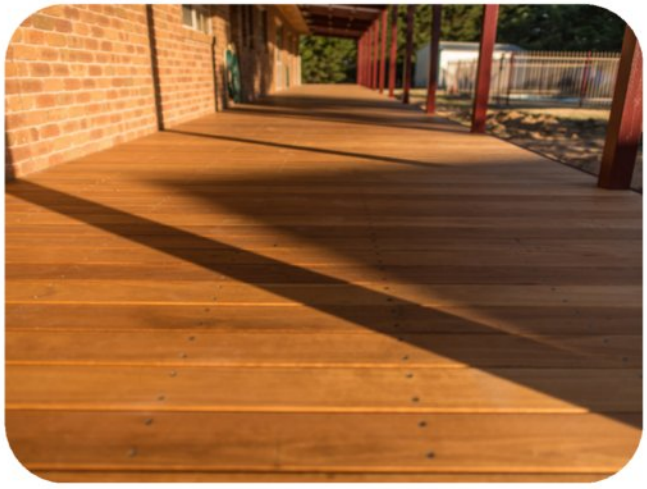
**Decks as extension of a house**
Decks should be designed to last 25 years - the minimum life of a residential building. Subfloor bearers should have ground clearance of 450mm. Joists require capping with waterproof plastic. If the ground beneath deck is subject to wetting, it should be well ventilated on two or three sides for crossflow of air and sloped for drainage. Fixings should be hot-dipped galvanized steel or stainless steel.

**Decks as part of the landscape – or as extension of a slab footing.**
These decks usually bypass the rules on ground clearance laid down under the BCA - and may be exempt from the code because of extent and character. The rules on ventilation and fixing should apply here wherever possible. If decking boards are close to ground (less than 300mm) or if there is little cross-ventilation, always use a DC1 - Durability Class 1 timber - Ironbark, Tallowwood, Forest Red Gum, White Mahogany, Darwin Stringybark, or treated Spotted Gum.

**Do not use 135x19mm boards in this application. This dimension will cup significantly. 86x19mm or narrower widths are more stable (4:1 ratio of width to thickness as maximum) and offer more ventilation gaps per square metre of deck.**

Paint the underside with black/charcoal fence paint to reduce absorption of moisture. Set 19mm boards at a minimum 6mm apart; 32mm board at a minimum 10mm apart. During winter or wet seasons, these boards will grow slightly in width, and it is important they continue to drain rainwater and never swell and touch. Oil upper face soon after installation and then annually or regularly in dry weather.





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**Drainage of base**
Excavate the footprint of the landscape deck so that it drains naturally - then top with sand or scoria. On flat ground lay drainage pipe in the scoria/sand base to take water away and prevent pooling. Then build the deck subfloor with H4 resistant timbers that allow as much airflow as possible. Paint joists black as well if they are not a visible feature of the installation. Make sure ends of timber decking boards and joists are clear of contact with soil – especially when adjacent garden beds become established. Use end-grain sealant or *Eco-Protecta on all cut timber ends.

**Decks fixed to battens over concrete slab.**
Many decks are installed on slabs where no fall is allowed for - or where battens are laid across the fall to prevent water run-off. Even with well-gapped decking boards, moisture problems will develop quickly in this type of installation. Design this installation type carefully with drainage and ventilation as a primary consideration.

**Boxed sides to low decks**
The slatted baseboard design to enclose deck platforms has been popular now for almost 20 years, but it has the effect of reducing crossflow ventilation significantly. If you are committed to boxing the deck perimeter – use narrow boards or battens and allow as a minimum a 12mm gap between boards, 50mm of ground clearance and airflow from three sides. However, at design stage - why not investigate a different deck perimeter aesthetic that allows much better frontal and side airflow for the subframe? It may even celebrate the elements of visible structure - the fundamental Arts & Crafts principle.

**Pots and deck furniture**
Pot plants and permanent clutter need to be moved regularly, and decks cleaned beneath to prevent mould, lichen, and compost build-up atop joists between decking boards.

**Cleaning Your Decks**
Pressure washing on its own will restore most decks to clean. Avoid alkaline deck cleaners unless the condition of the deck is so bad the pressure wash by itself does not work. Try warm water with a bit of detergent and a broom first - and the caustic cleaner only as a last resort. The intention should be to clean the surface so you can re-oil to protect the timber – rather than trying to restore colour.

Alkaline cleaners can be a way of accelerating the weathering process. You take years off the life of a deck if you overdo it. Surfaces become furred or cracked from alkali scorch and too high a pressure blast. A worst-case scenario is when the alkaline cleaner gradually removes the protective coating on the fixing nails or screws and initiates rust spots. The rusty stains will then seep into the timber around fixings. This can happen when owners set the bar too high in trying to restore a raw timber colour and then overdoing the cleaning.

**Oiling Your Deck**
Pressure wash timber decking annually and reapply a topcoat of decking oil. The practice of oiling decks is not high-science, and you do not need to buy expensive cans of the very latest promise in decking oil. Avoid products with an organic oil base - such as linseed or tung oil. The decking product needs to be biologically-inert - not raw organic oil that is a food source for precursor mould. Choose an oil with a moldicide component to save adding one to the can.

Avoid decking products that form a hard transparent film. They can function as a moisture trap and always flake off in patches - making annual maintenance difficult. The oil you use should penetrate the surface of the timber and saturate the outer case of hardwood to minimize take-up of moisture. If water beads on the surface of the deck after application, then the treatment is working. No suitable product seems to last longer than 12 months for weather-exposed decks - so clean the deck with a pressure washer and re-oil annually.

**Polished Decks: Expectations vs Reality**
Media often give the impression that an oiled deck will look like a polished indoor floor, but this is misleading. It is unrealistic to expect a polished appearance to last outdoors in full sun. Rather than investing heavily in products that promise a polished look, it is more practical to use an effective oil, allowing the deck suitable protection from weather and then appreciate the mellow outdoor character of the timber as it ages in sympathy with the garden landscape.



