



Installation Guidelines

Key Points

1. Woodhouse TerraFrame is treated to H4 and is highly suited to installation in exterior applications subject to severe wetting and leaching.
2. Design decks in such a way to prevent water from ponding underneath the structure and to allow for cross-ventilation around decking materials.
3. Apply a remedial in-can preservative like Tanalised® Ecoseal to bare timber exposed by the installation process and avoid rip-sawing or resurfacing treated timber.
4. Ensure that connectors and fasteners are at least hot dip galvanised (HDG). Stainless steel hardware should be used in coastal areas and around swimming pools.
5. Be aware of installation requirements that apply to timber and wood plastic composite decking. Timber decking is often not suited to installations within 400mm of ground level. Composite decking may be subject to additional requirements regarding spanability, blocking and double joisting.
6. Always follow the manufacturer's guidelines when installing decking products on top of Woodhouse TerraFrame.

Timber Selection

The Australian Standard for preservative treated timber products [AS/NZS 1604.1:2021] lays out a series of 'Hazard Classes' for wood-based products that defines the service conditions to which different types of products are exposed, and the level of protection that should be given to timber in these conditions.

Under this Standard, exterior timber meets the criteria for Hazard Class 3 (H3) when it is exposed to termite and fungal decay hazards presented by 'periodic wetting and leaching.' This definition assumes that H3 treated timber will be given an opportunity to dry out between wetting cycles, which cannot occur when products are installed in close proximity to rising moisture at ground level.

To satisfy the durability requirements for deck framing in AS/NZS 1604.1:2021, timber installed within 150mm of ground level must therefore be preservative treated to Hazard Class 4 (H4) or higher. Woodhouse TerraFrame, treated to H4 with Micronized Copper Azole (MCA), meets these criteria.

For critical use installations – including applications where products are subject to permanent wetting or installed into direct contact with fresh or salt water – H5 or H6 treated timber should be used. **The 50-year fungal decay and termite guarantees given to TerraFrame do not apply to installations classified as H5 and above.**

Bushfire Prone Areas

The selection and installation of wood products in bushfire-prone areas is governed by AS3959:2018 – Construction of buildings in bushfire-prone areas, which assigns a number of risk profiles to new buildings in the form of Bushfire Attack Levels (BAL).

Enclosed and unenclosed decking framing systems constructed on sites with a low to moderate risk of ember attack – i.e., locations where the Bushfire Attack Level has been determined as BAL-LOW, BAL-12.5 and BAL-19 – are typically exempt from provisions in this Standard requiring the selection of bushfire-resisting timber (BRT) or non-combustible materials like steel or aluminium. Woodhouse TerraFrame is therefore highly suited to use as a subfloor framing material in these installations.

Alternatively, deck framing systems constructed on sites at a high-risk of ember attack – i.e., locations where the Bushfire Attack Level has been determined as BAL-29, BAL-40 and BAL-FZ – are subject to more stringent material selection and installation guidelines that require: (1) unenclosed deck subfloors to be built from a BRT or non-combustible material; and (2) enclosed deck subfloors built from non-BRTs to be wrapped with a non-combustible cladding such as fibre cement.

Be aware of the provisions that apply to your site, and always ensure that deck framing systems comply with the provisions of AS3959:2018 and Wood Solutions Design Guide 04 – Building with Timber in Bushfire-prone areas when building in BAL-rated areas.

Site Preparation

Construction debris, garden waste and other obstructions should be cleared from areas immediately below the deck. Slope soil or concrete away from adjacent structures and in such a way that water does not pond underneath the deck.

Plastic membrane can be installed under the deck and covered with gravel or sand to keep it in place. This will aid sub-floor ventilation and prevent vegetation from growing beneath the sub-frame and decking boards.

Termite Management

The H4 MCA treatment applied to TerraFrame includes preservatives that protect products from termite attack. Installations should, however, still be designed with the durability of decking boards and adjoining structures firmly in mind. Allow a minimum 40mm gap between deck framing and adjoining structures as a pest inspection zone, and to allow for the re-application of perimeter treatment systems to primary dwellings.

Installation

TerraFrame is kiln dried to an average moisture content of 12% as part of the manufacturing process. Keep products dry prior to installation and install them at close to their long-run equilibrium moisture content to minimise initial shrinkage and/or expansion as the timber settles into its application environment.

Apply a remedial in-can preservative designed for H4 timber – such as Tanalised® EcoSeal – to cuts, notches, penetrations, and any other areas of wood exposed by the installation process. **Note that TerraFrame products should not be rip sawn lengthwise or substantially planed, sanded, or resurfaced by the installer. These actions will void warranty.**

Good quality joist tapes can extend the service life of framing timbers by discharging water away from the tops of bearers and joists. We have tested and recommend the application of VapourSeal® sealing tapes to TerraFrame products.

Connectors and fasteners should have a durability level appropriate for the intended application. MCA treated timber exhibits corrosion levels equal to CCA and ACQ treated timber. Hangers, plates, bolts, nails, and screws should therefore be hot dip galvanized (HDG) or better. Stainless steel connectors and fasteners are recommended in coastal areas and around swimming pools.

Where the shrinkage or expansion of framing timbers is undesirable, consider applying secondary paint or stain coatings to the surfaces and ends of TerraFrame products before they are fixed into position. This will further slow down the transfer of moisture into (or out of) the timber and ensure maximum dimensional stability throughout the service life of the deck.

Ventilation and Decking Board Selection

Although TerraFrame products can be installed in- or on-ground, best practice is to allow for cross-flow ventilation around decking materials. Where possible, keep the perimeter of decks open by omitting fascia boards from design and installation programmes.

Timber decking boards installed within 400mm of ground level are at high risk of cupping and distortion and should be pre-coated prior to installation to ensure equal movement of moisture into all surfaces and edges. For best performance, select a narrow width decking board – either 65mm or 86mm – and ensure that gapping between boards is set to 5mm or greater.

Some composite decking manufacturers require timber joists to be set out at 400mm centre-to-centre in contrast to industry conventions which prescribe a joist layout of 450mm centre-to-centre for residential decks. Be aware of any framing requirements – including guidelines for blocking and double joisting – and fixing specifications that apply to selected decking products before commencing installation with TerraFrame.

Always follow the manufacturer's guidelines when installing timber or composite decking on top of Woodhouse TerraFrame.

Additional Resources

Timber Queensland (2019), Technical Data Sheet 13 – Residential Timber Decks Close to or on the Ground. Available at <https://www.timberqueensland.com.au>.

Timber Preservers Association of Australia (2023), Timber Treatment. Available at <https://www.tpaa.com.au/timber-treatment>.

Wood Solutions (2020), Technical Design Guide 04 – Building with Timber in Bushfire-prone Areas. Available at <https://www.woodsolutions.com.au>.

Wood Solutions (2020), Technical Design Guide 21 – Domestic Timber Deck Design. Available at <https://www.woodsolutions.com.au>.

RESIDENTIAL DECK BEARERS: N1/N2								
Section Size (mm)	Single Span				Continuous Span			
	Floor Load Width (m)							
	1.2	1.8	2.4	3.0	1.2	1.8	2.4	3.0
	Joist Spacing 300mm							
70x45	-	-	-	-	900	-	-	-
90x45	1100	900	-	-	1200	900	-	-
140x45	1800	1500	1300	1100	1800	1500	1300	1100
190x45	2400	2000	1700	1500	2400	2000	1700	1500
	Joist Spacing 450mm							
70x45	-	-	-	-	900	-	-	-
90x45	1100	900	-	-	1200	900	-	-
140x45	1800	1500	1300	1100	1800	1500	1300	1100
190x45	2400	2000	1700	1500	2400	2000	1700	1500
Notes:								
Bearer spans assume a maximum decking mass of 25 kg/m ² , a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.								
Cantilevers shall not exceed 30% of the backspan of the bearer.								
Continuous bearers require 50mm minimum bearing length at end supports and 75mm minimum bearing length at intermediate supports.								
RESIDENTIAL DECK JOISTS: N1/N2								
Section Size (mm)	Single Span				Continuous Span			
	Joist Spacing (mm)							
	300	350	400	450	300	350	400	450
70x45	1000	900	-	-	1700	1500	1300	1100
90x45	1900	1700	1600	1500	2600	2100	1900	1800
140x45	3300	2900	2700	2600	3900	3700	3300	3000
190x45	4500	4300	3900	3600	4900	4700	4600	4400
Notes:								
Joist spans assume a maximum decking mass of 25 kg/m ² , a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.								
Cantilevers shall not exceed 30% of the backspan of the joist.								
Solid blocking is required for joists where depth ÷ width is ≥ 4. Refer to AS1684.2 for further information.								