WOODHOUSE TERRAFRAME

INSTALLATION GUIDE & SPAN TABLES

OVERVIEW

Woodhouse TerraFrame® is a range of MGP10-graded structural timber products treated to H4 with Micronized Copper Azole (MCA) preservative and designed specifically for exterior in-ground and on-ground applications. Woodhouse TerraFrame® is highly suited to installation as structural framing or landscaping in locations subject to severe wetting and leaching.

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

Enclosed and unenclosed deck framing systems constructed on sites with a low-to-moderate risk of bushfire attack – defined by AS3959:2018 – Construction of buildings in bushfire-prone areas as locations with BAL-LOW, BAL-12.5 and BAL-19 attack levels – are typically exempt from provisions 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 bushfire attack – i.e. BAL-29 and above – are subject to more stringent material selection and installation requirements that: (1) require unenclosed deck subfloors to be built from a BRT or non-combustible material; and (2) enclosed deck subfloors built from low density, 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 precoated 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.**

SPAN TABLES

Application	Distributed Action	Concentrated Action	Member Type	Floor Mass (Dead Load)	Table Number
Residential	2.0kPa	1.8kN	Bearers	25kg/m^2	Table 1
				40kg/m^2	Table 2
			Joists	25kg/m^2	Table 3
				40kg/m^2	Table 4
Commercial	4.0kPa	4.5kN	Bearers	25kg/m^2	Table 5
				40kg/m^2	Table 6
			Joists	25kg/m^2	Table 7
				40kg/m^2	Table8

Table 1 - Span Table Index

The span tables in this guide have been broadly divided into two categories related to the type of activity or occupancy for which the deck area will be used.

The RESIDENTIAL engineering shown in Table 1 to Table 4 applies to decking or balcony installations attached to domestic, self-contained dwellings. These values assume a uniformly distributed action of 2.0kPa and a concentrated action of 1.8kN, as required by Section A1 – Table 3.1 of AS/NZS 1170.1, and should be used when designing floor bearers or joists for most residential applications.

The COMMERCIAL engineering shown in Table 5 to Table 8 accounts for greater imposed actions on the decking installation, such as when the area will be subjected to large amounts of foot traffic as a public corridor or balcony. These tables assume a uniformly distributed action of 4.0kPa and a concentrated action of 4.5kN, as required by Section C3 – Table 3.1 of AS/NZS 1170.1.

All of the span tables in this guide include allowances for permanent ('dead') loads applied to decking installations via flooring materials – see the section on decking mass below – however, no provisions have been made for additional loads applied to members by pool fences, loadbearing walls, ceilings or roofs.

Specialised engineering should be obtained for decking installations where floor members will be supporting loadbearing walls or roof loads. It should also be obtained for installations that will be subjected to additional permanent or imposed actions in the form of pools, pool fences, spas and tubs, heavy outdoor equipment, or vehicle traffic.

DECKING MASS

A second point of distinction in the tables refers to differences in the permanent or dead load applied to floor members by the selection of different decking materials.

Figure 1 outlines the weight per square metre of common decking products available at time of writing. An installer laying Spotted Gum decking (18.8kg / m2) over the top of TerraFrame bearers and joists at a private dwelling would design floor members using the residential span tables for 25kg / m2 floor mass – i.e. Tables 1 and 3.

Another installer laying a capped or uncapped WPC composite board – which typically weigh in at 25kg / m2 to 30kg / m2 – over TerraFrame at a different residential installation would need to design floor members using the span tables for 40kg/m2 floor mass – i.e. Tables 2 and 4.

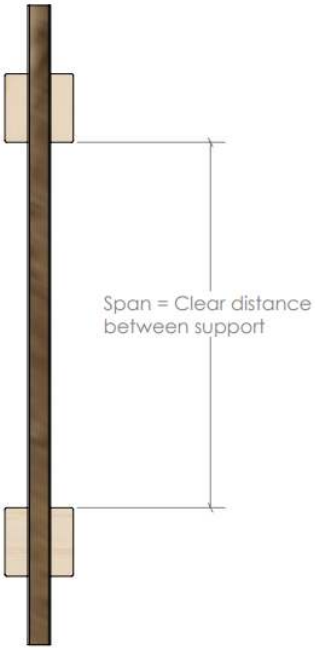
Some decking systems – for example, 15mm compressed fibre cement sheeting and ceramic tile at approx. 43.5kg / m2 – fall outside the scope of the TerraFrame span tables and require specialised engineering to determine bearer and joist sizes.

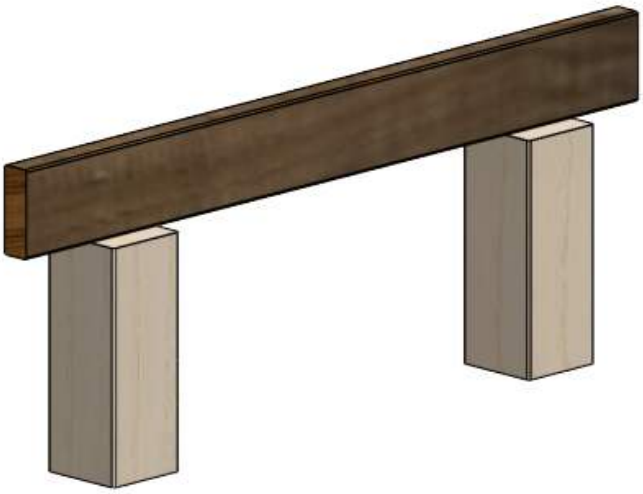
Always check the weight per square metre of your decking product before consulting the span tables in this guide.

Decking Material	Weight per m^2 (kg)
Treated Pine	12.4
Capped Composite - PVC Construction	16.0
Merbau	16.3
Blackbutt	17.1
Capped Composite - RMC Construction	18.5
Spotted Gum	18.8
Fibre Cement Decking Board	19.0
Grey Ironbark	20.9
Capped Composite - WPC Construction	27.0
Uncapped Composite - WPC Construction	29.5
15mm Compressed FC Sheet + Ceramic Tile	43.5

SINGLE VS CONTINUOUS SPAN

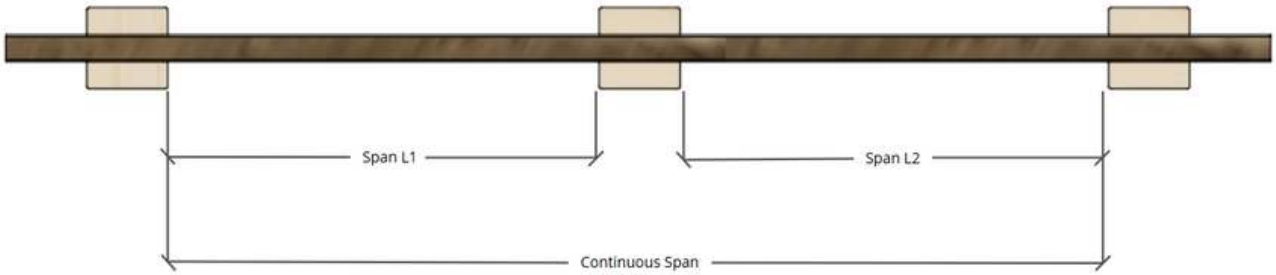
In the TerraFrame tables, span refers to the clear distance between supports on which the bearer or joist is located.





Bearers and joists qualify as single span when supported at two points only.

Bearers and joists qualify as continuous span when supported at three or more points along their length. In order to be deemed a continuous span member, each span on either side of the central support(s) must be of equal length. If they are not, use the single span tables.



OTHER DESIGN PARAMETERS

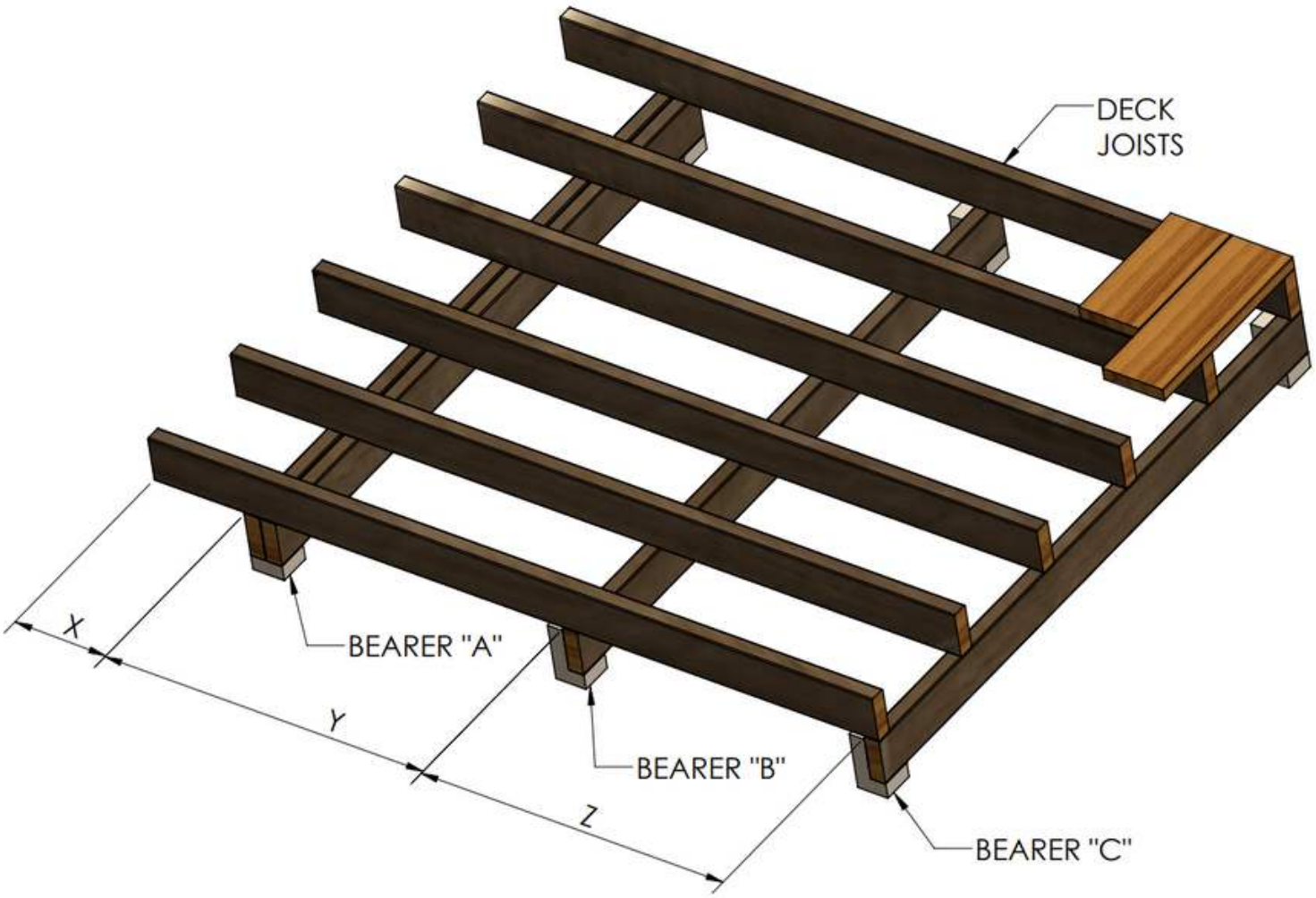
The bearer engineering in Tables 1, 2, 5 and 6 includes columns for floor load width (FLW), a design parameter that sets out the amount of floor area that will be supported by bearers as part of the installation.

In general terms, floor load width is calculated by assessing the span of the floor joists bearing directly upon the floor bearer. In the example below, bearer B is supporting half of the span of the joists from bearer A to bearer B (span Y), and half of the span of the joists from bearer B to bearer C (span Z). The equation for floor load width for bearer B is therefore as follows:

$$FLW = \frac{Y + Z}{2}$$

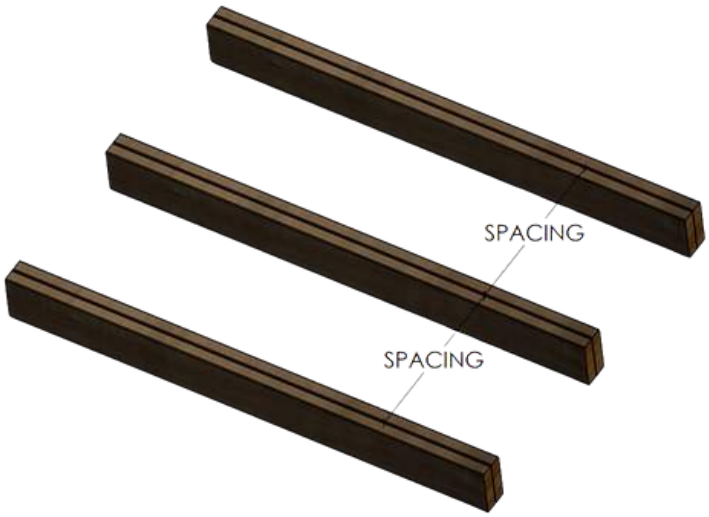
The calculation for bearer A is similar, however the joist cantilever represented by span X is supported solely by bearer A and must therefore be accounted for separately as follows:

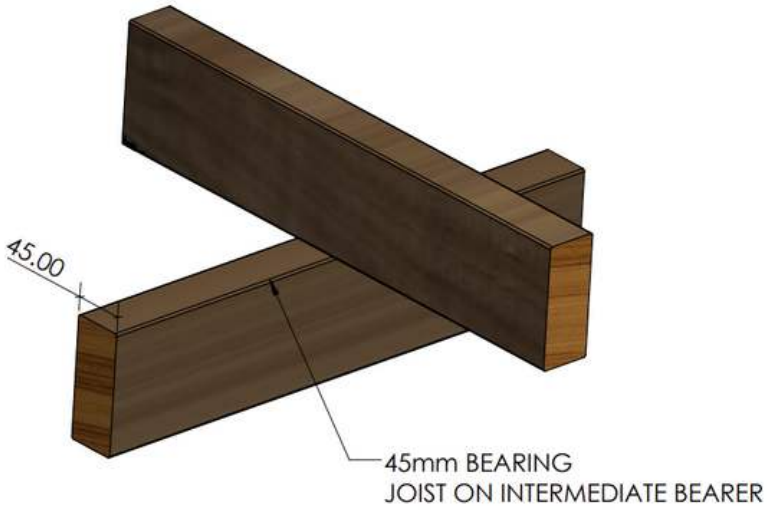
$$FLW = \frac{Y}{2} + X$$



The joist engineering in Tables 3, 4, 7 and 8 requires the user to select their preferred joist spacing as part of the design process. Where required, joist spacing refers to the centre-to-centre distance between parallel joists, as shown below.

Floor bearers should be given at least 50mm of bearing at end supports and 100mm of bearing at intermediate supports. Floor joists require at least 45mm of bearing at end and intermediate supports, and a minimum of 90mm of bearing immediately adjacent to cantilevers.





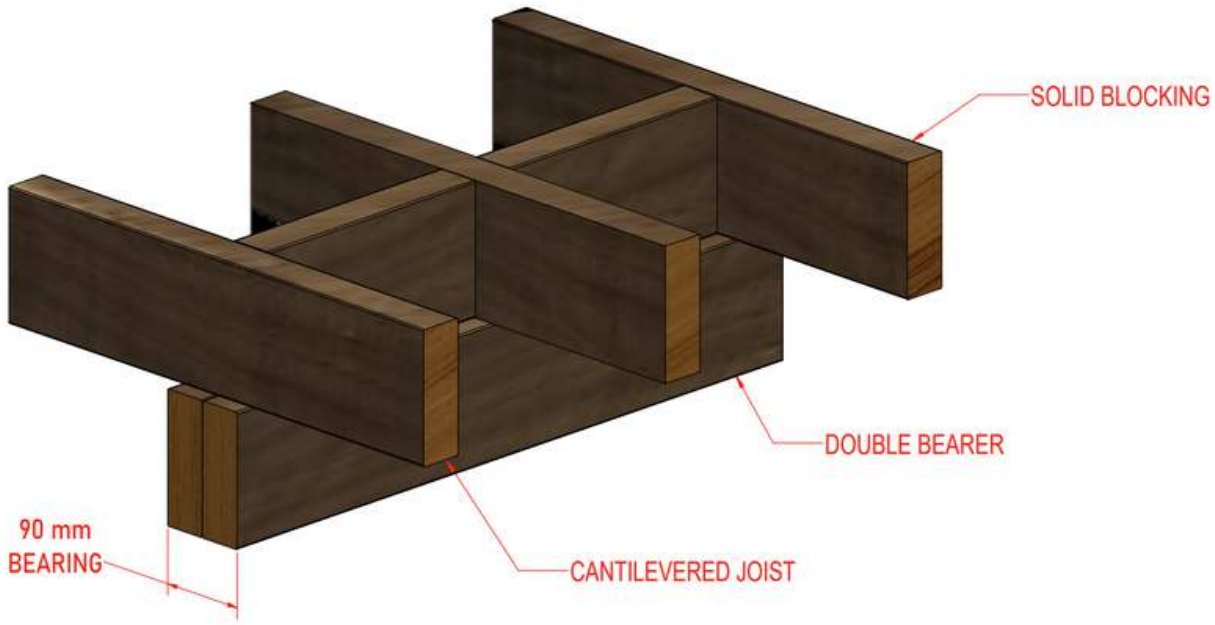
CANTILEVERS

Cantilevers – or overhangs – are a design option where deck bearers or joists are extended beyond their supports in a horizontal direction, so that the ends of floor members do not transfer loads directly onto bearers, stumps or posts.

The maximum cantilevers that apply to TerraFrame products are shown next to the primary spans in the residential and commercial tables below. Note that these values are the maximum cantilevers available to floor members at their maximum spans. Any reduction in the actual span of a bearer or joist below its maximum value will shorten the length it can cantilever beyond supports.

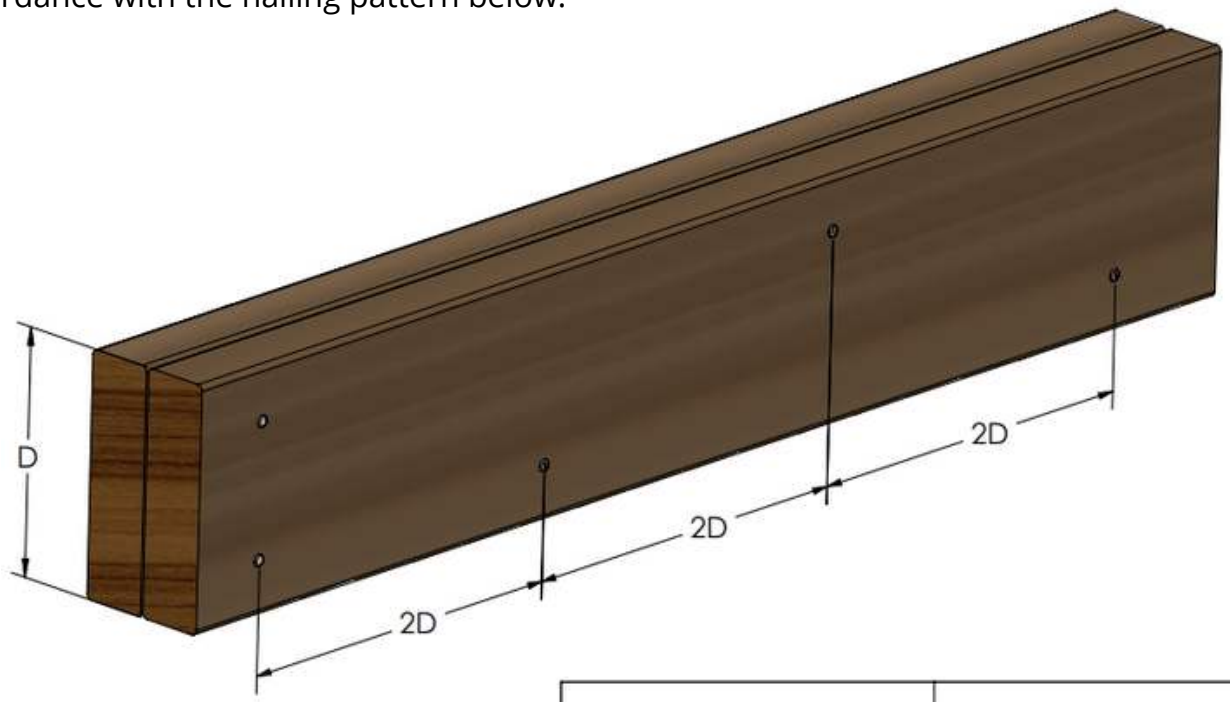
In no circumstances should the length of the cantilever exceed 30 per cent of the actual span (i.e. backspan) of the bearer or joist.

Where joists are to be cantilevered, a row of blocking should also be installed between joists over the deck bearer supporting both primary span and cantilever.



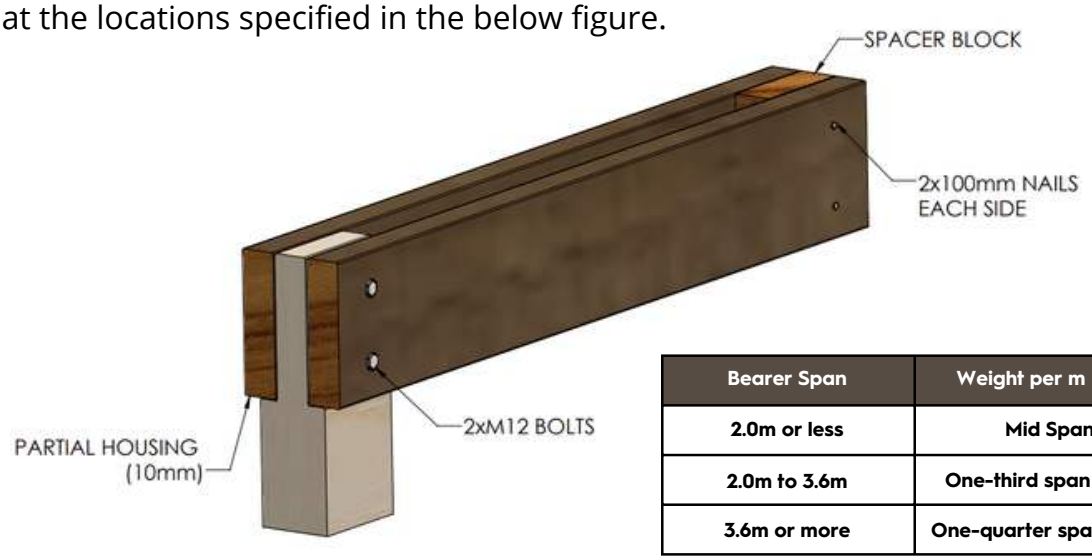
NAIL LAMINATION AND CONNECTIONS

The residential and commercial bearer tables in this guide include a number of double member options, characterised by a 2/- prefix next to the specified section size. Where double bearers are selected by the installer, they should be fastened together by process of nail lamination in accordance with the nailing pattern below.



2.8mm NAILS	Through nailed and clinched: or nailed from both sides
10 -GAUGE SCREWS	Should penetrate at least 75% into receiving member

Double bearers may also be partially housed into the side of posts or stumps and fastened with two (2) M12 bolts. If installed using this method, spacer blocks should be fitted between double bearers at the locations specified in the below figure.

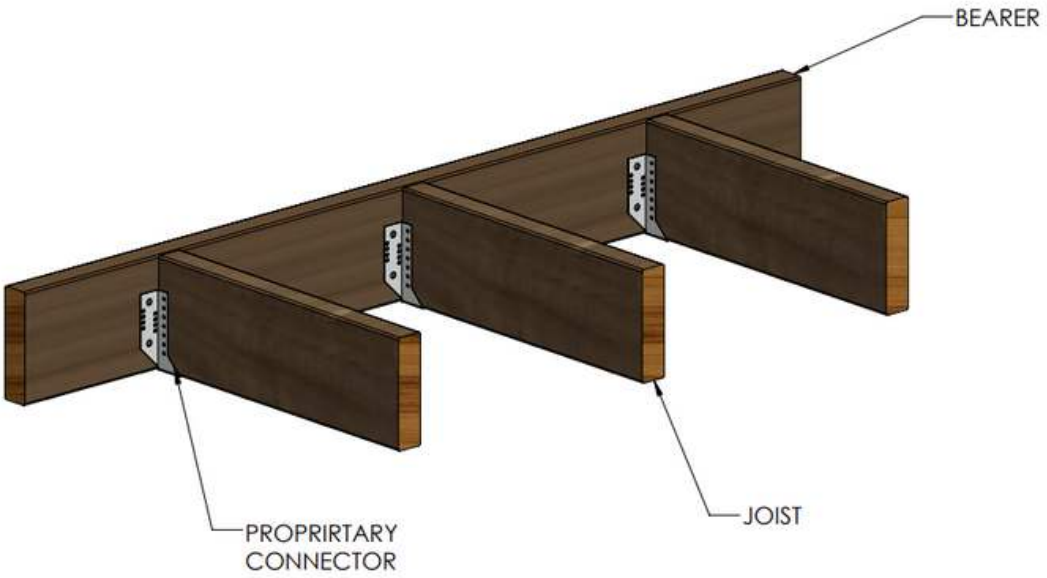


Bearer Span	Weight per m (kg)	Weight per m (kg)
2.0m or less	Mid Span	2/100mm nails each side
2.0m to 3.6m	One-third span points	4/100mm nails each side
3.6m or more	One-quarter span points	2/M10 through bolts

Single bearers supported by posts should be partially or fully housed and bolted through with two (2) M12 bolts, or secured to the top of posts or stumps with four (4) 3.33mm x 75mm machine driven nails and one (1) 30mm x 0.8mm G.I. strap fastened to both sides of the post with four (4) 2.8mm diameter nails.

Floor joists should be connected to bearers at all points of support with two (2) 3.15mm x 75mm skew nails.

Proprietary connectors such as joist hangers, straps and multigrips can be used as an alternative to the fasteners above, so long as connectors are (a) compliant with AS 1684; (b) have sufficient durability for the intended application; and (c) are installed in accordance with the manufacturer's guidelines.



ADDITIONAL RESOURCES

This guide gives a broad overview of the technical parameters governing deck construction, with emphasis placed on the selection, placement and fixing of framing timbers as outlined in AS 1684.

For those with access to AS 1684.2:2021 – Residential timber framed construction, it is the authoritative handbook on timber construction in Australia. Section 4 deals specifically with floor framing, presenting twelve pages on material selection, member design and construction practices that the deck builder will find valuable.

Readers interested in low-to-ground decking applications might also consider studying Timber Queensland's *Residential Timber Decks Close to or on the Ground* and Wood Solutions' *Domestic Timber Deck Design* manuals before undertaking their project. These guides are free to download, and contain a number of great alternatives to conventional joist-over-bearer construction that minimise the depth of the subframe and maximise system performance following installation.

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.

DISCLAIMER

This guide is intended to assist the end user by providing general information on best practices and design criteria relating to the installation of Woodhouse TerraFrame® products. This information is not a substitute for professional building advice. It is the responsibility of the purchaser and/or reader to ensure that the design and installation of Woodhouse TerraFrame® satisfies all relevant building regulations, codes, and Australian Standards.

TABLE 1 - RESIDENTIAL DECK BEARERS

N2/W33 Wind Speed - 25kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
70x45	-	-	-	-	-	-	-	-	-	-	-	-
90x45	1000	NS	900	NS	800	NS	-	-	-	-	-	-
140x45	2400	450	1700	450	1400	420	1100	330	900	NS	600	NS
190x45	3100	600	2200	600	1800	540	1600	480	1200	360	1000	300
2/90x45	2000	400	1600	400	1300	390	1100	300	900	NS	700	NS
2/140x45	3200	600	2500	600	2100	600	1800	540	1400	420	1200	360
2/190x45	4100	700	3300	700	2800	700	2300	700	1900	570	1600	480

Size	Continuous Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
70x45	-	-	-	-	-	-	-	-	-	-	-	-
90x45	1100	NS	1000	NS	800	NS	-	-	-	-	-	-
140x45	2400	450	1700	450	1400	420	1100	330	900	NS	600	NS
190x45	3100	600	2200	600	1800	540	1600	480	1200	360	1000	300
2/90x45	2200	400	1600	400	1300	400	1100	300	900	NS	700	NS
2/140x45	3600	600	2600	600	2100	600	1800	540	1400	420	1200	360
2/190x45	4800	700	3500	700	2800	700	2400	700	1900	570	1700	510

DISCLAIMER

- Bearer spans assume a maximum decking mass of 25kg/m2, a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.
- Continuous span values apply only to bearers supported by posts or columns at equal intervals. If spans are unequal, select single span values.
- Maximum bearer span is the clear distance between supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Bearers should have at least 50mm of bearing at end supports and 100mm of bearing at intermediate supports.
- Cantilevers must not exceed 30% of the actual span of the bearer.

TABLE 2 - RESIDENTIAL DECK BEARERS

N2/W33 Wind Speed - 40kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
70x45	-	-	-	-	-	-	-	-	-	-	-	-
90x45	900	NS	800	NS	700	NS	-	-	-	-	-	-
140x45	2300	450	1600	450	1300	390	1000	300	800	NS	-	-
190x45	3000	600	2100	600	1700	510	1500	450	1100	330	900	NS
2/90x45	1800	400	1500	400	1200	360	1000	NS	800	NS	600	NS
2/140x45	3100	600	2400	600	2000	600	1700	510	1300	390	1100	330
2/190x45	4000	700	3200	700	2700	700	2300	660	1800	540	1500	450

Size	Continuous Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
70x45	-	-	-	-	-	-	-	-	-	-	-	-
90x45	1000	NS	900	NS	800	NS	-	-	-	-	-	-
140x45	2300	450	1600	450	1300	390	1000	300	800	NS	-	-
190x45	3000	600	2100	600	1700	510	1500	450	1100	330	900	NS
2/90x45	2100	400	1500	400	1200	NS	1000	NS	800	NS	600	NS
2/140x45	3500	600	2500	600	2000	600	1700	510	1300	390	1100	330
2/190x45	4700	700	3400	700	2700	700	2300	390	1800	540	1600	480

DISCLAIMER

- Bearer spans assume a maximum decking mass of 40kg/m2, a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.
- Continuous span values apply only to bearers supported by posts or columns at equal intervals. If spans are unequal, select single span values.
- Maximum bearer span is the clear distance between supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Bearers should have at least 50mm of bearing at end supports and 100mm of bearing at intermediate supports.
- Cantilevers must not exceed 30% of the actual span of the bearer.

TABLE 3 - RESIDENTIAL DECK JOISTS

N2/W33 Wind Speed - 25kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
45x45	-	-	-	-	-	-	-	-
70x45	800	NS	600	NS	550	NS	500	NS
90x45	1600	300	1400	300	1300	300	1100	300
140x45	3000	450	2500	450	2300	450	2200	450
190x45	4200	600	3600	600	3400	600	3000	600

Size	Continuous Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
45x45	-	-	-	-	-	-	-	-
70x45	900	NS	800	NS	750	NS	700	NS
90x45	2300	300	1700	300	1600	300	1400	300
140x45	3700	450	3100	450	2800	450	2500	450
190x45	4700	600	4300	600	4000	600	3400	600

DISCLAIMER

- Joist spans assume a maximum decking mass of 40kg/m2, a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.
- Continuous span values apply only to joists supported by bearers or pedestals at equal intervals. If spans are unequal, select single span values.
- Joist spacing is the centre-to-centre distance between parallel joists.
- Maximum joist span is the clear distance between bearers, pedestals or other supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Joists should have at least 45mm of bearing at end and intermediate supports. This increases to 90mm for cantilevered joists.
- Cantilevers must not exceed 30% of the actual span of the joist.

TABLE 4 - RESIDENTIAL DECK JOISTS

N2/W33 Wind Speed - 40kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
45x45	-	-	-	-	-	-	-	-
70x45	800	NS	600	NS	550	NS	500	NS
90x45	1600	300	1400	300	1300	300	1100	300
140x45	3000	450	2500	450	2300	450	2200	450
190x45	4200	600	3600	600	3400	600	3000	600

Size	Continuous Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
45x45	-	-	-	-	-	-	-	-
70x45	900	NS	800	NS	750	NS	700	NS
90x45	2300	300	1700	300	1600	300	1400	300
140x45	3700	450	3100	450	2800	450	2500	450
190x45	4700	600	4300	600	4000	600	3400	600

DISCLAIMER

- Joist spans assume a maximum decking mass of 40kg/m2, a uniformly distributed action (live load) of 2.0kPa, and a concentrated action (point load) of 1.8kN.
- Continuous span values apply only to joists supported by bearers or pedestals at equal intervals. If spans are unequal, select single span values.
- Joist spacing is the centre-to-centre distance between parallel joists.
- Maximum joist span is the clear distance between bearers, pedestals or other supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Joists should have at least 45mm of bearing at end and intermediate supports. This increases to 90mm for cantilevered joists.
- Cantilevers must not exceed 30% of the actual span of the joist.

TABLE 5 - COMMERCIAL DECK BEARERS

N2/W33 Wind Speed - 25kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-	-	-	-	-
140x45	1000	300	900	NS	800	NS	700	NS	-	-	-	-
190x45	1800	450	1600	450	1300	390	1100	330	900	NS	-	-
2/90x45	900	NS	800	NS	700	NS	600	NS	NS	NS	NS	NS
2/140x45	2300	450	1800	450	1500	450	1300	390	1000	300	800	NS
2/190x45	3300	600	2500	600	2000	600	1700	510	1400	420	1200	360

Size	Continuous Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-	-	-	-	-
140x45	1100	330	1000	300	900	NS	800	NS	-	-	-	-
190x45	2000	450	1600	450	1300	390	1100	330	900	NS	-	-
2/90x45	1100	NS	1000	NS	900	NS	800	NS	NS	NS	NS	NS
2/140x45	2500	450	1900	450	1500	450	1300	390	1000	300	800	NS
2/190x45	3500	600	2500	600	2000	600	1700	510	1400	420	1200	360

DISCLAIMER

- Bearer spans assume a maximum decking mass of 25kg/m2, a uniformly distributed action (live load) of 4.0kPa, and a concentrated action (point load) of 4.5kN.
- Continuous span values apply only to bearers supported by posts or columns at equal intervals. If spans are unequal, select single span values.
- Maximum bearer span is the clear distance between supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Bearers should have at least 50mm of bearing at end supports and 100mm of bearing at intermediate supports.
- Cantilevers must not exceed 30% of the actual span of the bearer.

TABLE 6 - COMMERCIAL DECK BEARERS

N2/W33 Wind Speed - 40kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-	-	-	-	-
140x45	900	NS	800	NS	700	NS	-	-	-	-	-	-
190x45	1700	450	1500	450	1200	360	1000	300	800	NS	-	-
2/90x45	800	NS	700	NS	600	NS	NS	NS	NS	NS	NS	NS
2/140x45	2200	450	1700	450	1400	420	1200	360	900	NS	700	NS
2/190x45	3200	600	2400	600	1900	570	1600	480	1300	390	1100	330

Size	Continuous Span											
	Floor Load Width (mm)											
	600		1200		1800		2400		3600		4800	
	Maximum Span and Cantilever (mm)											
	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-	-	-	-	-
140x45	1000	NS	900	NS	800	NS	-	-	-	-	-	-
190x45	1900	450	1500	450	1200	360	1000	300	800	NS	-	-
2/90x45	1000	NS	900	NS	800	NS	NS	NS	NS	NS	NS	NS
2/140x45	2400	450	1800	450	1400	420	1200	360	900	NS	700	NS
2/190x45	3400	600	2400	600	1900	570	1600	480	1300	390	1100	330

DISCLAIMER

- Bearer spans assume a maximum decking mass of 40kg/m2, a uniformly distributed action (live load) of 4.0kPa, and a concentrated action (point load) of 4.5kN.
- Continuous span values apply only to bearers supported by posts or columns at equal intervals. If spans are unequal, select single span values.
- Maximum bearer span is the clear distance between supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Bearers should have at least 50mm of bearing at end supports and 100mm of bearing at intermediate supports.
- Cantilevers must not exceed 30% of the actual span of the bearer.

TABLE 7 - COMMERCIAL DECK JOISTS

N2/W33 Wind Speed - 25kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-
140x45	1500	300	1200	300	1100	300	1000	300
190x45	3600	450	2900	450	2700	450	2300	450

Size	Continuous Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-
140x45	1700	300	1400	300	1300	300	1200	300
190x45	3700	450	3100	450	2900	450	2500	450

DISCLAIMER

- Joist spans assume a maximum decking mass of 25kg/m2, a uniformly distributed action (live load) of 4.0kPa, and a concentrated action (point load) of 4.5kN.
- Continuous span values apply only to joists supported by bearers or pedestals at equal intervals. If spans are unequal, select single span values.
- Joist spacing is the centre-to-centre distance between parallel joists.
- Maximum joist span is the clear distance between bearers, pedestals or other supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Joists should have at least 45mm of bearing at end and intermediate supports. This increases to 90mm for cantilevered joists.
- Cantilevers must not exceed 30% of the actual span of the joist.

TABLE 8 - COMMERCIAL DECK JOISTS

N2/W33 Wind Speed - 40kg/m2 Decking Mass
Supporting Floor Loads Only

Size	Single Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-
140x45	1400	300	1100	300	1000	300	900	300
190x45	3500	400	2800	400	2600	400	2100	400

Size	Continuous Span							
	Floor Load Width (mm)							
	300		400		450		600	
	Maximum Span and Cantilever (mm)							
	Span	Cant	Span	Cant	Span	Cant	Span	Cant
90x45	-	-	-	-	-	-	-	-
140x45	1600	300	1400	300	1300	300	1200	300
190x45	3600	400	3100	400	2900	400	2400	400

DISCLAIMER

- Joist spans assume a maximum decking mass of 40kg/m2, a uniformly distributed action (live load) of 4.0kPa, and a concentrated action (point load) of 4.5kN.
- Continuous span values apply only to joists supported by bearers or pedestals at equal intervals. If spans are unequal, select single span values.
- Joist spacing is the centre-to-centre distance between parallel joists.
- Maximum joist span is the clear distance between bearers, pedestals or other supports.
- NS indicates that the section size is insufficient for main span or cantilever.
- Joists should have at least 45mm of bearing at end and intermediate supports. This increases to 90mm for cantilevered joists.
- Cantilevers must not exceed 30% of the actual span of the joist.