

NP FORM

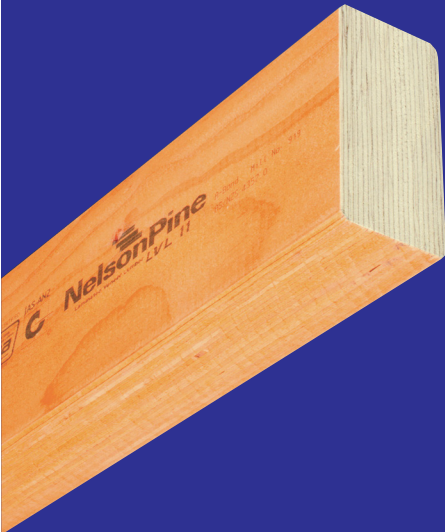
LVL FORMWORK BEAM

UNIFORMITY

RELIABILITY

DURABILITY

SUSTAINABILITY



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The mark of responsible forestry



JOIST TABLE FOR SLAB SOFFIT FORMWORK

Joist Spacing (mm)		Maximum Single Span (m)						Maximum Multiple Span (m)					
Slab thickness	Section Size	225	300	400	450	480	600	225	300	400	450	480	600
100	95x47	1.9	1.7	1.5	1.5	1.4	1.3	2.3	2.1	1.9	1.8	1.8	1.7
	95x65	2.1	1.9	1.7	1.7	1.6	1.5	2.6	2.4	2.1	2.1	2.0	1.9
	130x65	2.9	2.6	2.4	2.3	2.2	2.1	3.6	3.2	2.9	2.8	2.8	2.6
	150x77	3.5	3.2	2.9	2.8	2.7	2.5	4.3	4.0	3.6	3.5	3.4	3.1
150	95x47	1.8	1.6	1.5	1.4	1.4	1.3	2.2	2.0	1.8	1.7	1.7	1.6
	95x65	2.0	1.8	1.6	1.6	1.5	1.4	2.5	2.2	2.0	1.9	1.9	1.8
	130x65	2.7	2.5	2.2	2.1	2.1	1.9	3.4	3.1	2.8	2.7	2.6	2.4
	150x77	3.3	3.0	2.7	2.6	2.6	2.4	4.1	3.7	3.4	3.3	3.2	3.0
200	95x47	1.7	1.5	1.4	1.3	1.3	1.2	2.1	1.9	1.7	1.6	1.6	1.5
	95x65	1.9	1.7	1.5	1.5	1.4	1.3	2.3	2.1	1.9	1.8	1.8	1.7
	130x65	2.6	2.3	2.1	2.0	2.0	1.8	3.2	2.9	2.6	2.5	2.5	2.3
	150x77	3.1	2.8	2.6	2.5	2.4	2.3	3.9	3.5	3.2	3.1	3.0	2.8
300	95x47	1.5	1.4	1.3	1.2	1.2	1.1	1.9	1.7	1.6	1.5	1.5	1.4
	95x65	1.7	1.6	1.4	1.4	1.3	1.2	2.1	1.9	1.8	1.7	1.7	1.5
	130x65	2.4	2.1	1.9	1.9	1.8	1.7	2.9	2.7	2.4	2.3	2.3	2.1
	150x77	2.9	2.6	2.4	2.3	2.2	2.1	3.6	3.3	3.0	2.9	2.8	2.6
400	95x47	1.4	1.3	1.2	1.1	1.1	1.0	1.8	1.6	1.5	1.4	1.4	1.3
	95x65	1.6	1.5	1.3	1.3	1.2	1.1	2.0	1.8	1.6	1.6	1.5	1.4
	130x65	2.2	2.0	1.8	1.7	1.7	1.6	2.8	2.5	2.3	2.2	2.1	2.0
	150x77	2.7	2.5	2.2	2.1	2.1	1.9	3.4	3.1	2.8	2.7	2.6	2.4
600	95x47	1.3	1.2	1.1	1.0	1.0	0.9	1.6	1.5	1.3	1.3	1.2	1.1
	95x65	1.4	1.3	1.2	1.1	1.1	1.0	1.8	1.6	1.5	1.4	1.4	1.3
	130x65	2.0	1.8	1.6	1.6	1.5	1.4	2.5	2.3	2.1	2.0	1.9	1.8
	150x77	2.4	2.2	2.0	1.9	1.9	1.8	3.0	2.8	2.5	2.4	2.4	2.2
1000	95x47	1.1	1.0	0.9	0.9	0.9	0.8	1.4	1.3	1.1	1.0	1.0	0.9
	95x65	1.3	1.1	1.0	1.0	1.0	0.9	1.6	1.4	1.3	1.2	1.2	1.0
	130x65	1.7	1.6	1.4	1.4	1.3	1.2	2.2	2.0	1.8	1.7	1.6	1.4
	150x77	2.1	1.9	1.7	1.7	1.6	1.5	2.6	2.4	2.2	2.1	2.0	1.8

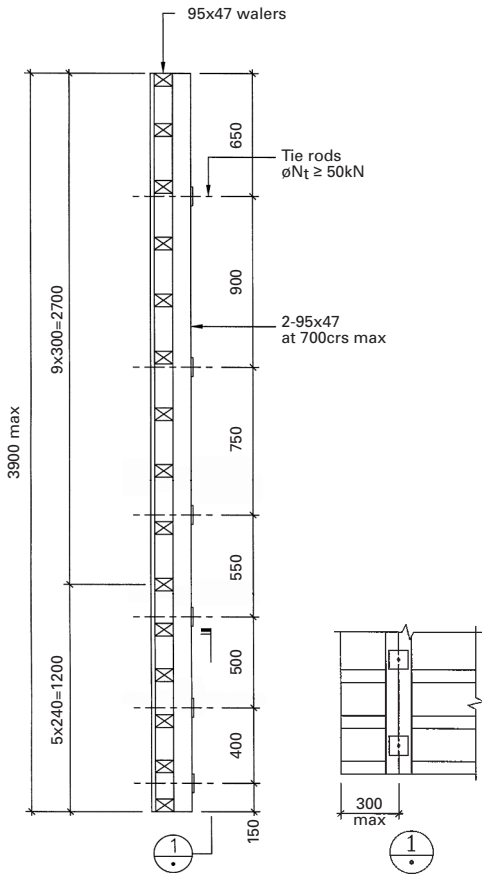
BEARER TABLE FOR SLAB SOFFIT FORMWORK

Bearer Spacing (m)		Maximum Single Span (m)						Maximum Multiple Span (m)					
Slab thickness	Section Size	0.9	1.2	1.5	1.8	2.1	2.4	0.9	1.2	1.5	1.8	2.1	2.4
100	95x65	1.3	1.2	1.1	1.0	1.0	0.9	1.6	1.5	1.3	1.2	1.1	1.0
	130x65	1.8	1.6	1.5	1.4	1.3	1.3	2.2	2.0	1.8	1.6	1.5	1.4
	150x77	2.2	2.0	1.8	1.7	1.6	1.6	2.7	2.5	2.3	2.1	1.9	1.8
150	95x65	1.2	1.1	1.0	1.0	0.9	0.9	1.5	1.4	1.2	1.1	1.0	1.0
	130x65	1.7	1.5	1.4	1.3	1.3	1.2	2.1	1.9	1.7	1.5	1.4	1.3
	150x77	2.1	1.9	1.7	1.6	1.6	1.5	2.6	2.3	2.1	1.9	1.8	1.7
200	130x65	1.6	1.4	1.3	1.3	1.2	1.1	2.0	1.7	1.6	1.4	1.3	1.2
	150x77	2.0	1.8	1.6	1.5	1.5	1.4	2.4	2.2	2.0	1.8	1.7	1.5
300	130x65	1.5	1.3	1.2	1.2	1.1	1.0	1.8	1.6	1.4	1.3	1.2	1.0
	150x77	1.8	1.6	1.5	1.4	1.4	1.3	2.2	2.0	1.8	1.6	1.5	1.4
400	130x65	1.4	1.2	1.2	1.1	1.0	1.0	1.7	1.4	1.3	1.1	1.0	0.8
	150x77	1.7	1.5	1.4	1.3	1.3	1.2	2.1	1.8	1.6	1.5	1.3	1.2
600	130x65	1.2	1.1	1.0	1.0	0.9	0.8	1.4	1.2	1.0	0.8	0.7	0.6
	150x77	1.5	1.4	1.3	1.2	1.1	1.1	1.8	1.6	1.4	1.2	1.0	0.9
1000	130x65	1.1	1.0	0.9	0.7	0.6	0.5	1.1	0.8	0.6	0.5	0.4	0.4
	150x77	1.3	1.2	1.1	1.0	0.8	0.7	1.5	1.1	0.9	0.7	0.6	0.5

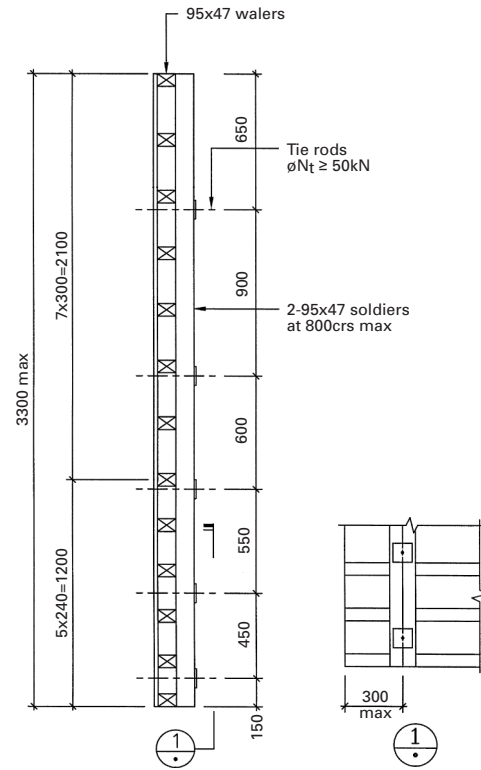
NOTES FOR JOIST AND BEARER TABLES

- The design for the joist and bearer tables include a 4kPa allowance for stacked materials in accordance with AS3610. Where this allowance can be reduced, the spans given above may be increased with advice from the formwork designer.
- The deflections of the joists and bearers have been limited to those required for a Class 3 finish (the greater of span/270 and 3mm). Since the finish quality is dependent on a number of other factors including formface quality, support deformations and the accuracy of the set up, a class 3 finish cannot be guaranteed.
- For multiple spans, the design has assumed the most conservative of 3 and 2 spans and that all spans are of equal length and equally loaded.
- The design has assumed that the joists are continually restrained by the sheeting and the bearers are restrained by the joists.
- To satisfy the bearing requirements of the timber, the thickness of the bearer must be equal to or greater than the thickness of the joists it is supporting.
- Span values may be interpolated for intermediate slab thicknesses.

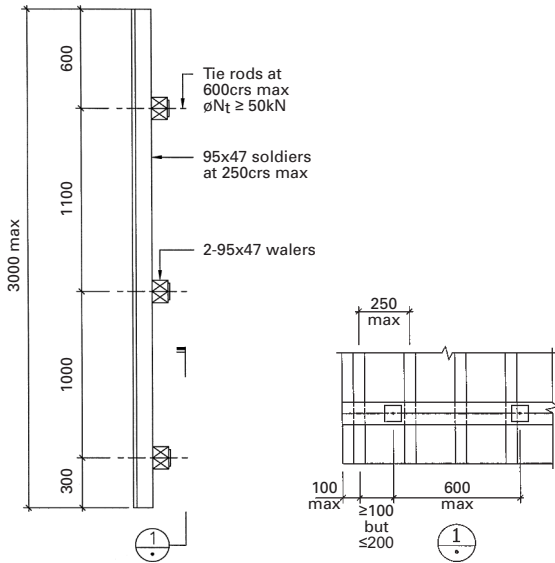
VERTICAL FORMS UP TO 3.9M



VERTICAL FORMS UP TO 3.3M

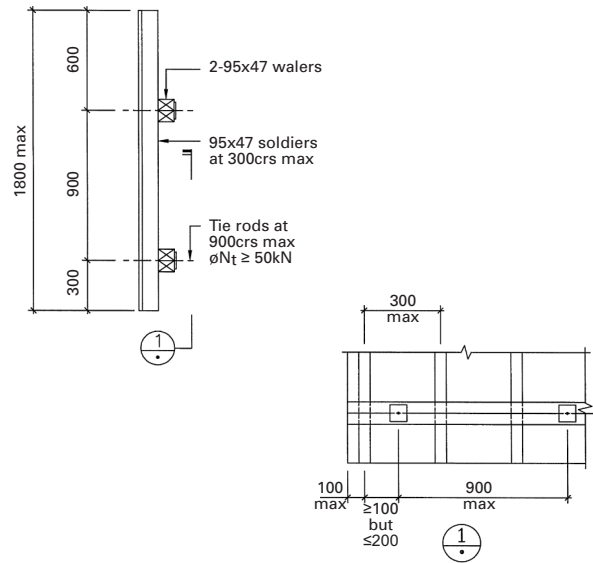


VERTICAL FORMS UP TO 3.0M



* Minimum distance between tie-rod and soldier is ≥ 100 but ≤ 200 mm.

VERTICAL FORMS UP TO 1.8M



* Minimum distance between tie-rod and soldier is ≥ 100 but ≤ 200 mm.

NOTES FOR VERTICAL FORMS

- The design of the vertical forms is based on a hydrostatic pressure distribution.
- Deflections of the soldiers and walers have been limited to the greater of span/270 and 3mm as required for a class 3 finish. Since the finish quality is dependent on a number of factors including the formface used and the accuracy of the set up, a class 3 finish cannot be guaranteed.
- Tie bolt holes are not to be bored through any of the soldier or waler members.
- The maximum distance from the top of the form to the nearest tie rod must be a maximum of 650mm.
- The forms are not suitable for grout injected concrete, concrete pumped from below, deep re-vibration or external vibration of the concrete.

PRODUCT DESCRIPTION

NP FORM is manufactured from NelsonPine LVL and is intended for use as concrete formwork, joists, bearers, walers, soldiers and supports. NP FORM is strong, light, straight and uniform which will reduce forming costs and improve the quality of concrete finish.

NP FORM has chamfered edges for ease of handling and a water repellent paint finish.

NelsonPine LVL is an engineered composite made from rotary peeled veneers, laid up with parallel grain orientation unless it is crossbanded. One of the main features of LVL is the dispersal or removal of strength reducing characteristics of wood.

NelsonPine LVL is an engineered, highly predictable, uniform timber product, because natural defects like knots, slope of grain and splits have been dispersed throughout the veneer assembly or have been removed altogether. In addition to this, the veneer sheets are placed in a specific sequence and location within the product to maximise the potential of the stiffer stronger veneers. The average of most strength characteristics is higher and the variation significantly lower when compared to traditional timber products.

STRUCTURAL RELIABILITY

The structural properties of NelsonPine LVL have been determined by testing in accordance with the requirements of AS/NZS 4357.0:2005 Structural Laminated Veneer Lumber.

The Engineered Wood Products Association of Australasia (EWPAA) is engaged to independently audit that NelsonPine LVL is manufactured under a fully qualified controlled process.

PRODUCT SPECIFICATION

Veneer

Thickness	Nominal 3.6mm
Species	Radiata Pine
Joints	Scarf/overlap/butt

Moisture content

8-15% at time of dispatch

Adhesive

Phenolic (AS 2754.1) producing a Type A (marine) bond

Dimensional Tolerances

Length	-0mm, +15mm
Depth	-2mm, +2mm
Spring	<(L/1000)

STORAGE AND HANDLING

NelsonPine LVL expands in thickness and depth when allowed to get wet. To ensure the full benefits of NelsonPine LVL as a dry, straight and true material are available at the time of use, the following recommendations regarding storage are made:

1. NelsonPine LVL is kept dry during storage and transport
2. Store under a ventilated cover with fillets placed between each layer
3. Stack clear of the ground on at least three evenly spaced bearers
4. Bearers and fillets to be placed vertically in line and support NelsonPine LVL evenly and flat
5. Avoid mechanical damage during handling
6. Re-seal cut edges with a water repellent paint

NP FORM LVL11 SECTION PROPERTIES

Width x Depth (mm)	Mass (kg/m)	Rigidity EI (x10 ⁹ Nmm ²)	Design Capacity	
			ØM (kNm)	ØV (kN)
95 x 47	2.5	36.9	2.3	13.0
95 x 65	3.5	51.1	3.2	18.0
130 x 65	4.8	130.9	6.1	24.6
150 x 77	6.6	238.2	9.6	33.6

1. Design capacities calculated for $\phi = 0.9$ for short duration loads, $K_1 = 0.97$.
2. Members are assumed to be laterally restrained
3. Capacities apply to on-edge orientation of the section

APPLICATION OF CAPACITY TABLES

The capacity tables and standard designs in this brochure have been prepared in accordance with the following standards:

AS3610:2005	Formwork for Concrete
AS1720.1:2010	Timber Structures