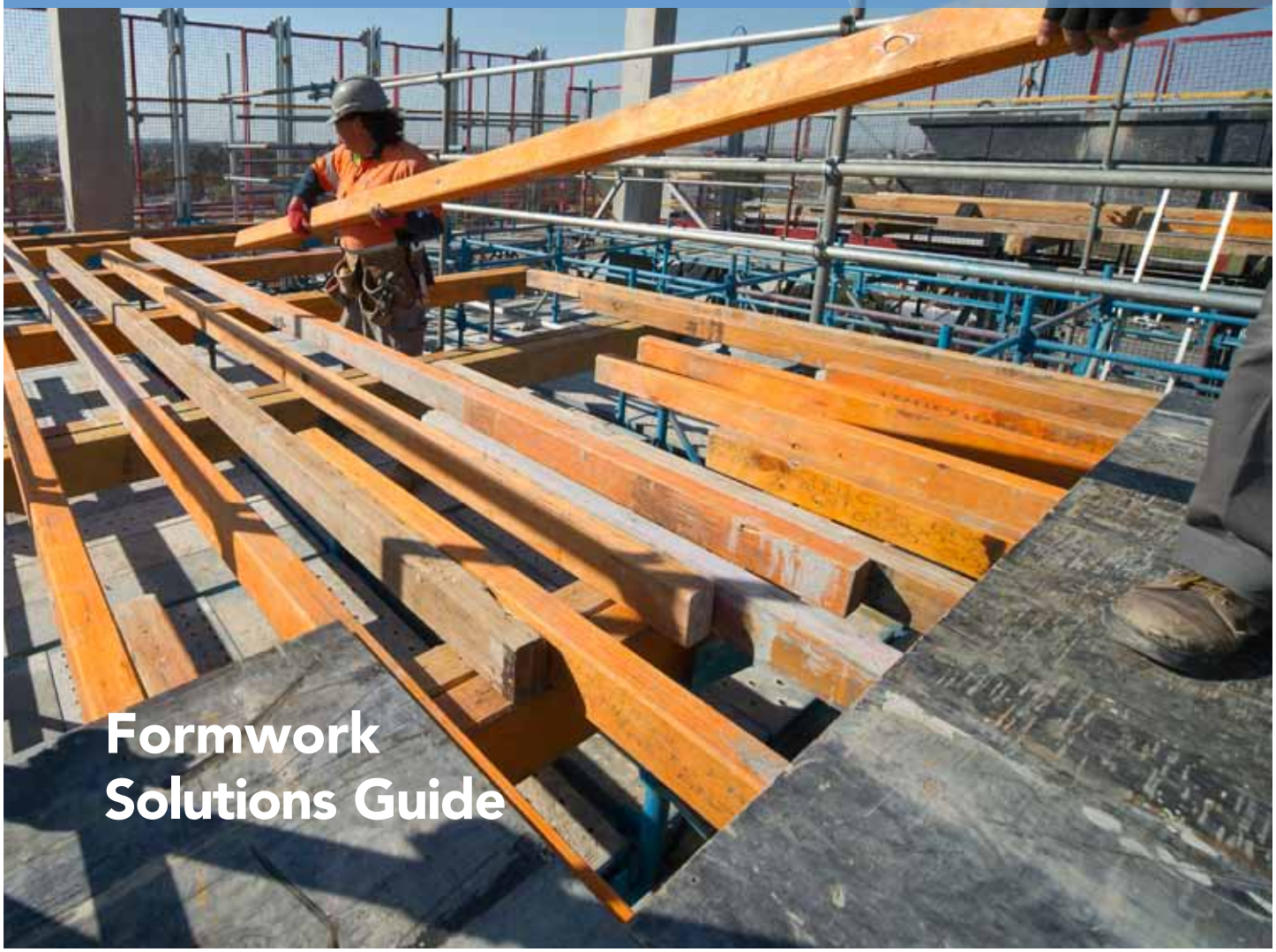
ENGINEERED WOOD PRODUCTS

truFORM®



Formwork Solutions Guide

The natural solution for you.

CarterHoltHarvey
Woodproducts Australia

Trust truFORM

truFORM® is structural Laminated Veneer Lumber (LVL) specially manufactured for use in structural concrete formwork applications. It is manufactured in a controlled process to meet the requirements of AS/NZS 4357. Quality control is independently audited and the product quality certified by Engineered Wood Products Association of Australasia.

PRODUCT CERTIFIED paa ENGINEERED WOOD JAS-ANZ www.jas-anz.org/register

Benefits

- Painted bright orange for product identification and moisture resistance
- Easy length identification on site – ends are colour coded by length
- Lighter and stronger than traditional timber alternatives
- Faster and easier to install – enhances productivity and reduces forming costs
- Use results in an improved concrete finish – straight and true
- Product independently audited and quality certified by the EWPAA
- Less than 0.3mg/l Formaldehyde (equivalent to Super E0) emissions from the final product
- Sourced from managed plantation forests – available FSC 'Chain of custody' on request for Green Star credits

FSC www.fsc.org FSC® C007103 The mark of responsible forestry

Suitable applications

- Formwork bearers and joists
- Soldiers and walers

Use of publication

The tables and other technical data provided in this publication apply only for truFORM. The data provided for truFORM does not apply to lookalike substitution products. Use of the truFORM data for substitution products may be unsafe or result in unsatisfactory performance.

Specification

Veneer

Species	Radiata Pine	
Thickness	3.5 mm	
Joints	Face	scarf
	Other	scarf/butt
Adhesive	Phenolic	
Bond	Type A (Marine)	AS/NZS 2098 and AS 2754
Density	580 kg/m^3 approximately	
Finish	Arris's removed – (approx. 3 mm chamfer) painted orange	
Branding	truFORM PAA and JAS-ANZ logos	
Tolerances	Depth	-0 mm, +2 mm
	Thickness	-2 mm, +2 mm
	Length	-0, +10 mm
	Spring	‹ (L/1000)

Length colour code

The ends of all truFORM pieces are colour coded for easy length identification.

Ends are colour coded by length			
Yellow	2.4	White	4.2
Grey	3.0	Green	4.8
Purple	3.3	Black	5.4
Red	3.6	Blue	6.0

Structural design

The tabular data and standard designs provided in this publication have been prepared in accordance with the following Australian Design Standards: AS3610:1995 Formwork for Concrete. AS1720.1:2010 – Timber Structures using design characteristic values determined in accordance with AS/NZS 4063.2:2010 Section 4. truFORM is manufactured, tested and has characteristic values determined in accordance with AS/NZS 4357:2005 Structural Laminated Veneer Lumber.

truFORM product range

Section d x b (mm)	Mass kg/m	Pieces per pack
95 x 47	2.6	84
95 x 65	3.6	66
130 x 77	5.8	40
150 x 77	6.7	35

Selected lengths of 2.4 m to 6 m (in 600 mm increments)
Other lengths available on request

Joist Table for Forming Slab Soffits

CONCRETE SLAB THICKNESS (mm)	truFORM SECTION (mm)	JOIST SPACINGS (mm)											
		225	300	400	450	480	600	225	300	400	450	480	600
		MAXIMUM SINGLE SPAN (m)						MAXIMUM MULTIPLE SPAN (m)					
100	95 x 47	1.8	1.7	1.5	1.5	1.4	1.3	2.3	2.1	1.9	1.8	1.8	1.6
	95 x 65	2.1	1.9	1.7	1.6	1.6	1.5	2.5	2.3	2.1	2.0	2.0	1.8
	130 x 77	3.0	2.7	2.5	2.4	2.3	2.2	3.7	3.4	3.0	2.9	2.9	2.7
	150 x 77	3.4	3.1	2.8	2.7	2.7	2.5	4.3	3.9	3.5	3.4	3.3	3.1
150	95 x 47	1.7	1.6	1.4	1.4	1.4	1.3	2.2	2.0	1.8	1.7	1.7	1.6
	95 x 65	2.0	1.8	1.6	1.6	1.5	1.4	2.4	2.2	2.0	1.9	1.9	1.7
	130 x 77	2.8	2.6	2.3	2.2	2.2	2.0	3.5	3.2	2.9	2.8	2.7	2.5
	150 x 77	3.3	3.0	2.7	2.6	2.5	2.4	4.0	3.7	3.3	3.2	3.1	2.9
200	95 x 47	1.7	1.5	1.4	1.3	1.3	1.2	2.1	1.9	1.7	1.6	1.6	1.5
	95 x 65	1.9	1.7	1.5	1.5	1.4	1.3	2.3	2.1	1.9	1.8	1.8	1.7
	130 x 77	2.7	2.5	2.2	2.1	2.1	1.9	3.3	3.0	2.8	2.6	2.6	2.4
	150 x 77	3.1	2.8	2.6	2.5	2.4	2.2	3.8	3.5	3.2	3.1	3.0	2.8
300	95 x 47	1.5	1.4	1.3	1.2	1.2	1.1	1.9	1.7	1.6	1.5	1.5	1.3
	95 x 65	1.7	1.6	1.4	1.4	1.3	1.2	2.1	1.9	1.8	1.7	1.7	1.5
	130 x 77	2.5	2.3	2.1	2.0	1.9	1.8	3.1	2.8	2.5	2.4	2.4	2.2
	150 x 77	2.9	2.6	2.4	2.3	2.2	2.1	3.6	3.2	2.9	2.8	2.8	2.6
400	95 x 47	1.4	1.3	1.2	1.1	1.1	1.0	1.8	1.6	1.5	1.4	1.4	1.2
	95 x 65	1.6	1.5	1.3	1.3	1.3	1.2	2.0	1.8	1.7	1.6	1.6	1.4
	130 x 77	2.3	2.1	1.9	1.9	1.8	1.7	2.9	2.6	2.4	2.3	2.3	2.1
	150 x 77	2.7	2.5	2.2	2.1	2.1	2.0	3.3	3.0	2.8	2.7	2.6	2.4
600	95 x 47	1.3	1.2	1.1	1.0	1.0	0.9	1.6	1.5	1.3	1.2	1.2	1.1
	95 x 65	1.5	1.3	1.2	1.2	1.1	1.1	1.8	1.6	1.5	1.4	1.4	1.3
	130 x 77	2.1	1.9	1.8	1.7	1.7	1.5	2.6	2.4	2.2	2.1	2.0	1.9
	150 x 77	2.5	2.2	2.0	1.9	1.9	1.8	3.0	2.8	2.5	2.4	2.4	2.1
1000	95 x 47	1.1	1.0	0.9	0.9	0.9	0.8	1.4	1.3	1.1	1.1	1.0	0.9
	95 x 65	1.3	1.2	1.1	1.0	1.0	0.9	1.6	1.4	1.3	1.2	1.2	1.1
	130 x 77	1.9	1.7	1.5	1.5	1.4	1.3	2.3	2.1	1.9	1.8	1.7	1.5
	150 x 77	2.1	1.9	1.8	1.7	1.7	1.5	2.6	2.4	2.2	2.0	2.0	1.8

1. Design for the joist table presented above includes a 4 kPa allowance for stacked materials in accordance with AS 3610.
   Where the stacked material load is reduced in accordance with AS 3610, then spans used may be larger than those given above - refer formwork designer.
2. In the preparation of the above table, deflections were limited to the greater of span/270 or 3 mm (Class 3 to AS 3610). Finish quality is however also dependant upon combinations of sheeting, joist, bearer and support deformations and upon the accuracy of alignment in set-up. The use of the table should not therefore be interpreted to necessarily guarantee the achievement of a Class 3 finish.
3. For multiple spans, the design has assumed (a) the most conservative of two or three span use, (b) all spans equally loaded, and (c) all spans equal.
4. truFORM used in accordance with the above table need not be provided with intermediate lateral restraint.
5. Span values may be interpolated for intermediate slab thicknesses.

Bearer Table for Forming Slab Soffits

CONCRETE SLAB THICKNESS (mm)	truFORM SECTION (mm)	BEARER SPACINGS (m)											
		900	1200	1500	1800	2100	2400	900	1200	1500	1800	2100	2400
		MAXIMUM SINGLE SPAN (m)						MAXIMUM MULTIPLE SPAN (m)					
100	95 x 65	1.3	1.2	1.1	1.0	1.0	0.9	1.6	1.4	1.2	1.1	1.0	1.0
	130 x 77	1.9	1.7	1.6	1.5	1.4	1.4	2.3	2.0	1.8	1.7	1.5	1.4
	150 x 77	2.2	2.0	1.8	1.7	1.6	1.6	2.7	2.3	2.1	1.9	1.7	1.6
150	95 x 65	1.2	1.1	1.0	1.0	0.9	0.9	1.5	1.3	1.2	1.1	1.0	0.9
	130 x 77	1.8	1.6	1.5	1.4	1.3	1.3	2.2	1.9	1.7	1.6	1.4	1.3
	150 x 77	2.1	1.9	1.7	1.6	1.6	1.5	2.5	2.2	1.9	1.8	1.6	1.5
200	130 x 77	1.7	1.5	1.4	1.4	1.3	1.2	2.1	1.8	1.6	1.5	1.4	1.3
	150 x 77	2.0	1.8	1.7	1.6	1.5	1.4	2.4	2.0	1.8	1.7	1.5	1.4
300	130 x 77	1.6	1.4	1.3	1.3	1.2	1.1	1.9	1.6	1.5	1.3	1.2	1.2
	150 x 77	1.8	1.7	1.5	1.4	1.4	1.3	2.1	1.9	1.7	1.5	1.4	1.3
400	130 x 77	1.5	1.3	1.2	1.2	1.1	1.1	1.7	1.5	1.3	1.2	1.1	1.1
	150 x 77	1.7	1.6	1.4	1.4	1.3	1.2	2.0	1.7	1.5	1.4	1.3	1.2
600	130 x 77	1.3	1.2	1.1	1.1	1.0	0.9	1.5	1.3	1.2	1.1	1.0	0.9
	150 x 77	1.5	1.4	1.3	1.2	1.1	1.1	1.7	1.5	1.3	1.2	1.1	1.1
1000	130 x 77	1.2	1.1	1.0	0.9	0.8	0.8	1.3	1.1	1.0	0.9	0.8	0.7
	150 x 77	1.3	1.2	1.1	1.0	0.9	0.9	1.4	1.2	1.1	1.0	0.9	0.9

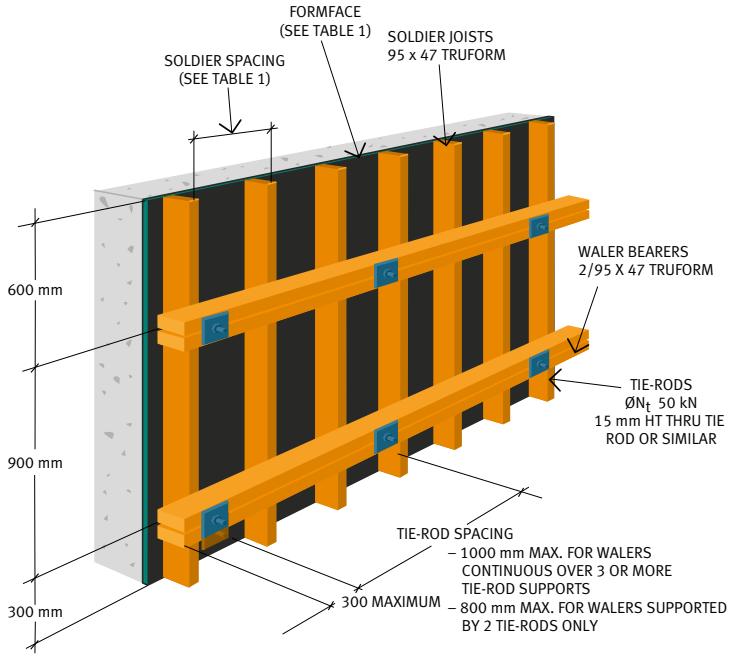
1. Design for the bearer table presented above includes a 4 kPa allowance for stacked materials in accordance with AS 3610.
   Where the stacked material load is reduced in accordance with AS 3610, then spans used may be larger than those given above - refer formwork designer.
2. In the preparation of the above table, deflections were limited to the greater of span/270 or 3 mm (Class 3 to AS 3610). Finish quality is however also dependant upon combinations of sheeting, joist, bearer and support deformations and upon the accuracy of alignment in set-up. The use of the table should not therefore be interpreted to necessarily guarantee the achievement of a Class 3 finish.
3. For multiple spans, the design has assumed (a) the most conservative of two or three span use, (b) all spans equally loaded, and (c) all spans equal.
4. truFORM used in accordance with the above table need not be provided with intermediate lateral restraint.
5. Span values may be interpolated for intermediate slab thicknesses.

Installation

Standard Vertical Forms

Up to 1.8 metres high

– Soldiers supporting formface

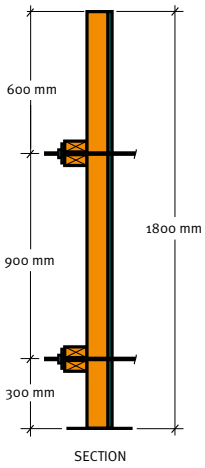


Soldier Spacing for walls up to 1.8m high

Table 1

	Soldier spacing (mm)	
	300	360
17-15-7 (b)	F11	F17/F14
17-24-7	F14	-

(Maximum unfactored Concrete Pressure 43 kPa)
Note: Plywood constructions to AS 6669:2007

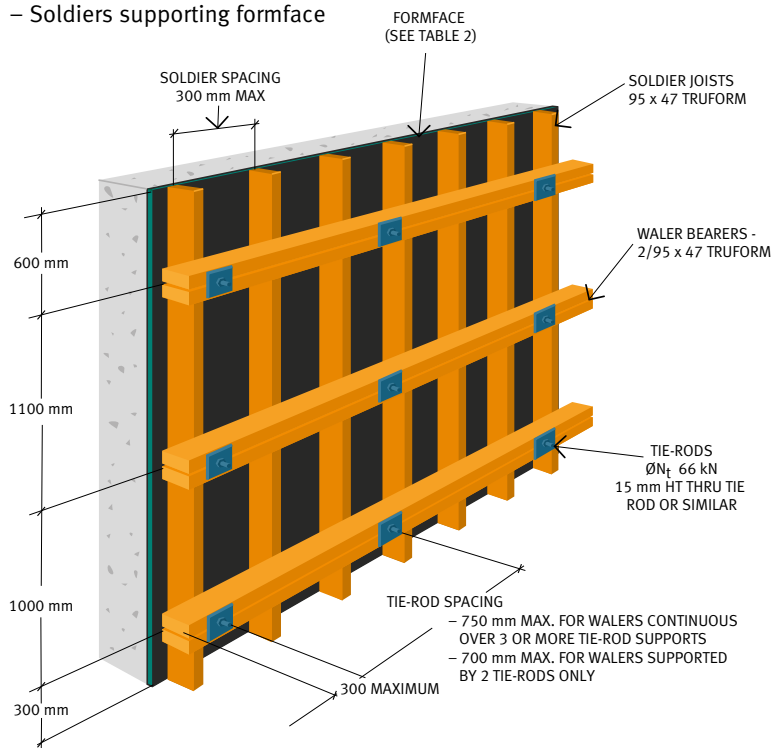


General Notes for Standard Vertical Forms

1. Specifications intended for achievement of Class 3 finish
2. Designs based upon hydrostatic pressure distribution
3. Formface specifications assume plywood continuous over 3 or more spans except where noted otherwise
4. Holes for tie bolts must not be bored through soldier or waler joists

Up to 3.0 metres high

– Soldiers supporting formface

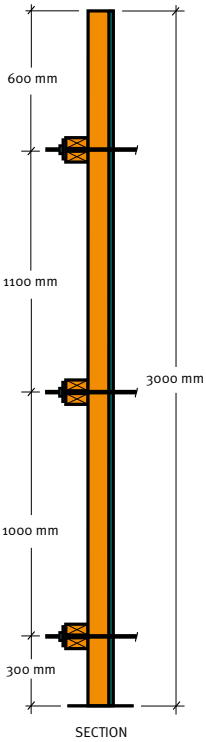


Soldier Spacing for walls up to 3.0m high

Table 2

	Soldier spacing (mm)
	300
17-15-7 (b)	F17/F14
17-24-7	F17/F14

Face Grain Orientated Horizontally Only
(Maximum unfactored Concrete Pressure 72 kPa)
Note: Plywood constructions to AS 6669:2007



Standard Vertical Forms (cont)

2.8 to 3.9 metres high – Wales supporting formface

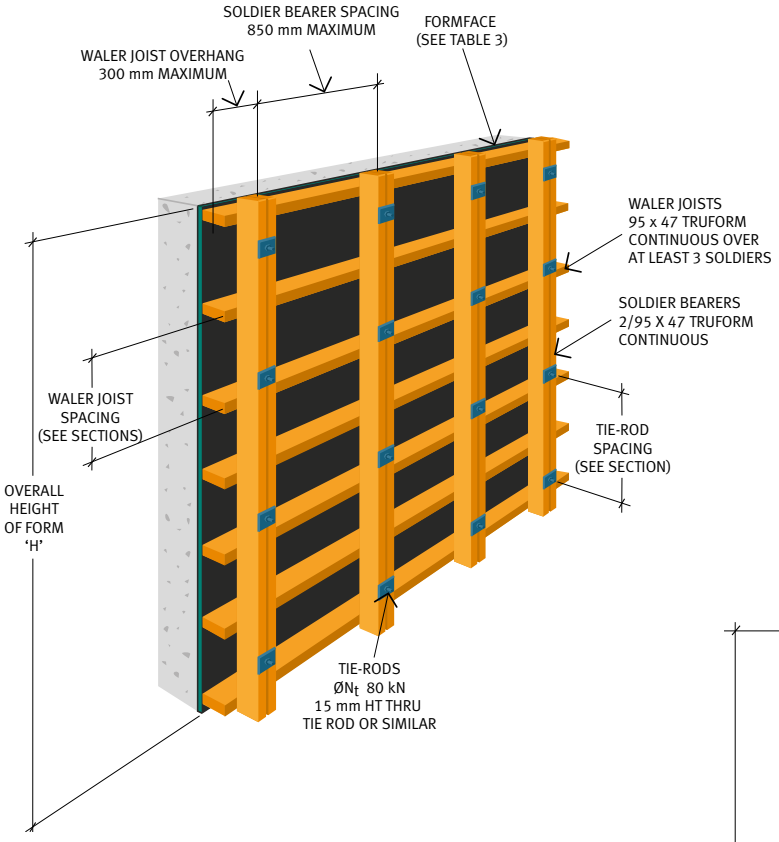
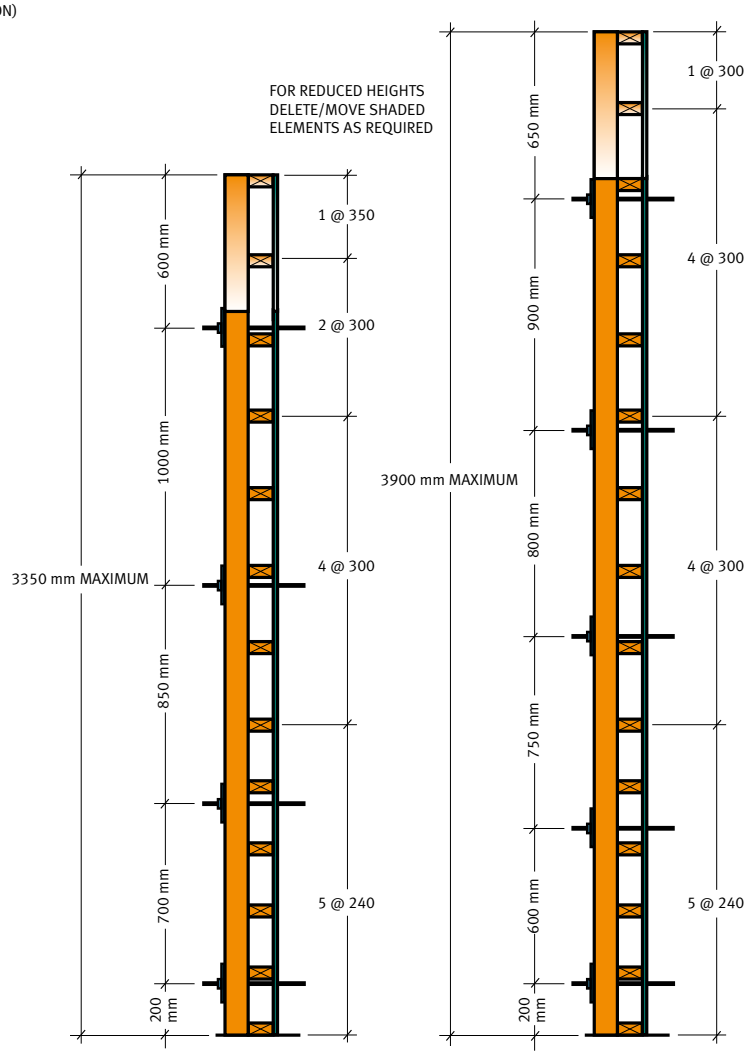


Table 3

Overall form Height 'h'	Plywood Construction Code & Stress Grade	
3.35 < h ≤ 3.9m	17-15-7 (b)	F14
	17-24-7	F14
h ≤ 3.35m	17-15-7 (b)	F11

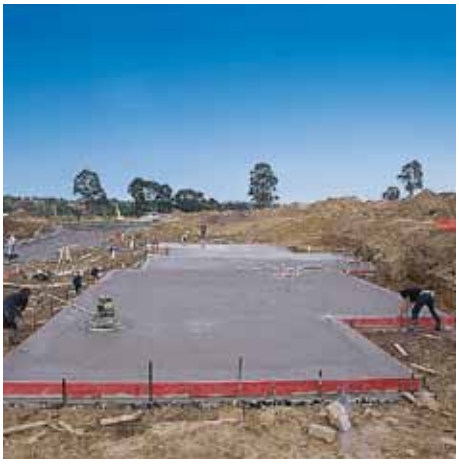
Face Grain Orientated Vertically only.

Plywood at top of form may be single span, supported by top 2 walers or 2 span continuously supported by top 3 walers - elsewhere ply must be continuous over 3 or more spans.
Note: Plywood constructions to AS 6669:2007



General Notes for Standard Vertical Forms

1. Specifications intended for achievement of Class 3 finish
2. Designs based upon hydrostatic pressure distribution
3. Formface specifications assume plywood continuous over 3 or more spans except where noted otherwise
4. Holes for tie bolts must not be bored through soldier or waler joists



Trust edgeFORM

edgeFORM is manufactured from timber veneers assembled in a predefined pattern to be lighter, straighter and more uniform than traditional alternatives.

Benefits

- Arrised and painted red for easy on-site identification and moisture resistance
- Straight and true, lightweight and versatile – faster to install than traditional alternatives
- Sourced from managed forests – available FSC 'Chain of Custody' certified upon request for Green Star credits
- Third party audited process control for peace of mind

FSC www.fsc.org FSC® C007103
The mark of responsible forestry

Suitable Applications

- Edge boards in concrete formwork framing projects
- Boxing for residential slabs

Specification

Veneer

Species	Radiata Pine/Douglas Fir	
Thickness	3.5 mm	
Joints	Face	scarf
	Other	scarf/butt
Adhesive	Phenolic	
Bond	Type A (Marine)	AS/NZS 2098 and AS 2754
Density	580 kg/m^3 approximately	
Finish	painted red	
Branding	edgeFORM	
Tolerances	Depth	-0 mm, +2 mm
	Thickness	-2 mm, +2 mm
	Length	-0, +10 mm

edgeFORM product range

Depth (mm)	Width (mm)	Pieces per pack
100	36	50
150	36	40
170	36	35
200	36	30
240	36	25
300	36	20

Lengths of 4.8 m or 6 m

Trust our formwork solutions

Storage, handling and maintenance

For best durability and longest re-use potential of truFORM and edgeFORM:

- Store under cover in well ventilated area
- Handle and stack with care to avoid damage
- Stack flat clear of ground on at least three evenly spaced bearers
- Re-seal cut edges with acrylic paint
- Wet members (and sheets) should have spacers between layer to allow to dry out

All statements in this manual shall be read subject to the members being properly stored, handled, installed, used and maintained as appropriate to each application in accordance with this brochure, and subject to the governing codes of practice.

Forward thinking

Our timber products are a better environmental choice for building. They're natural, renewable and sustainable.

As Australia's leading timber and engineered wood products supplier, Carter Holt Harvey is committed to conserving the natural environment and actively protecting Australia's flora and fauna.

FSC
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FSC® C007103
The mark of responsible forestry

Carter Holt Harvey ensures that all timber is legally sourced from sustainably managed forests. Production uses natural resources efficiently and actively minimises waste.

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For quick, clear product answers, our technical support phone line **1800 808 131** links you to our expanded, engineering support team. Our experienced support team can assist with enquiries ranging from sizing and design to installation advice.

It's fast, easy and it's free.

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