PRORAFTER

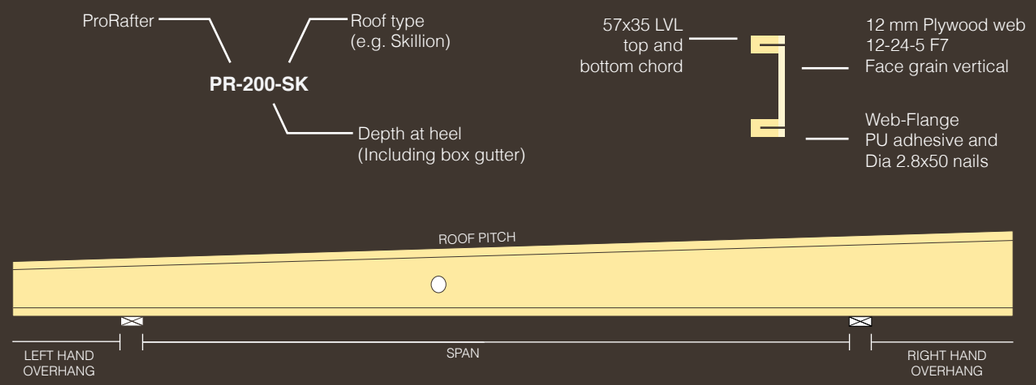
Safety • Stability • Efficient

INTRODUCTION

01.

ProRafters are a new engineered wood product that combines highly reliable plywood and LVL to form a composite 'C' section beam. The composite beam allows an economical formation of a wide variety of geometric shapes, ranging from linear tapered, top edge curved and to fully curved. refer to page 2 for other geometries.

Designed and fabricated to Australian standards to product confirms to all.



Loading

Dead load

MASS OF TYPICAL ROOF CONSTRUCTIONS

Mass of roof kg/ m^2	Material
10	Steel sheet roofing 0.50 mm thick and battens
20	Metal sheet tiles or medium gauge steel sheet roofing, battens, 12 mm softwood ceiling lining, sarking and lightweight insulation
30	Steel sheet roofing 0.75 mm thick, 13 mm plaster ceiling, roof and ceiling battens, sarking and lightweight insulation
40	Steel sheet roofing 0.75 mm thick, battens, graded purlins and high density fibreboard ceiling lining

Live load

Uniformly Distributed Action = max[(1.8/A + 0.12), 0.25] kPa
Concentrated Action= 1.4 kN

Wind load

WIND CLASS		DESIGN GUST WIND SPEED	
REGION A AND B NON CYCLONIC	REGION C AND D CYCLONIC	SERVICABILITY LIMIT STATE	ULTIMATE LIMIT STATE
N1	-	26	34
N2	-	26	40
N3	C1	32	50
N4	C2	39	61
N5	C3	47	74
N6	C4	55	86

Design

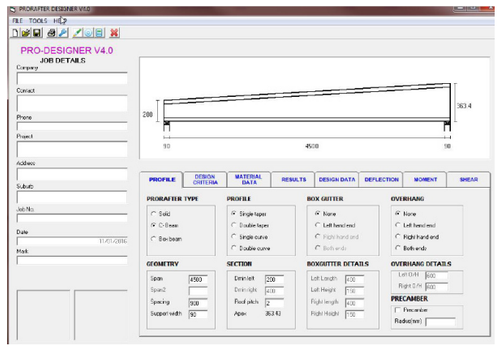
ProRafters are designed in accordance with the relevant Australian standards and the first principles of structural mechanics.

Australian Standards
AS1170.1 Design action 2011
AS1170.2 Wind loads
AS1684.1
AS1720.1 Timber design

ProRafter Software

To assist engineers, designers, and specifiers, Timber Imagineering in association with Tim Gibney and Associates has developed specific software that can determine the appropriate size or span for a ProRafter. The software user can specify simpl e span applications, cantilevers, geometry, box gutters and many more common applications.

Please contact: Timber Imagineering to learn more about receiving a complimentary copy of ProRafter software.



DESIGN INFORMATION

Advantages

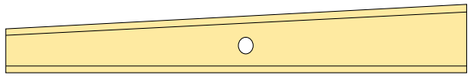
- Light-weight and easy to handle
- Direct fixing of ceiling lining
- No need for raking battens as roof pitch is built-in
- Large spans
- Trimmable on site
- Box gutters can be built into the rafter
- Penetrations can be fabricated in on request
- Internal supports may be eliminated due to span
- capabilities.

Whilest ProRafters are predominately used without an eave overhang, several different overhang details are possible and can be included at fabrication. i.e exposed hardwood or softwood outrigger, tapered top and horizontal eave soffit, profiled and standard.

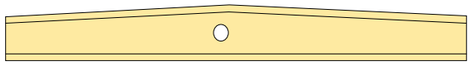
The materials are profiled using state-of-the-art CNC machines which enables these to be made with ease.

Profiles

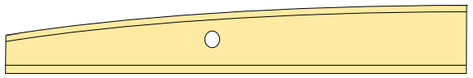
ProRafters can come in a variety of profiles to suit all geometrical roof shapes and other geometric current not suitable for existing construction methods.



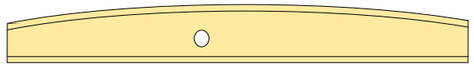
Skillion (SK)



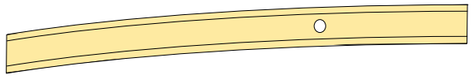
Gable (GA)



Half Top Curved (CH)



Full top curved (CF)



02.

Safety

Blocking, bracing and temporary fixings must be installed before any construction loads including workers are placed on rafters. Blocking along supports is to be provided as per detail 4 or 5 below at centres no greater than 1800mm.Green timber (unseasoned) shall not be used anywhere in the connection or bracing structure of a ProRafter roof.

Roof & Ceiling Battens

ProRafters specified within this installation guide are designed to have roof battens fixed to top edge at a-maximum 1200cts. The ceiling is to be either, attached directly or with ceiling battens at 600 cts. Suspended ceiling does not meet the requirement of bottom chord restraint and will require internal blocking.

Web holes

A 40mm diameter hole is permitted anywhere within the web area. Larger circular, rectangular, and square holes are also permitted for services. Contact Timber Imagineering for specific design advice.

Tie Down

Tie down and brackets used must be installed as per details below Site Trimming ProRafters can be trimmed on-site, however, it should be kept to a minimum and where necessary seek advice.

Site Trimming

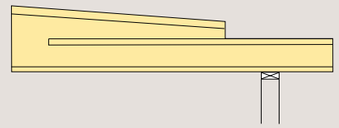
ProRafters can be trimmed on-site, however, it should be kept to a minimum and where necessary seek advice.

Handling and Storage Guidelines

- Prorafter should be protected from the weather and stored lying flat.
- Product must not be stored in contact with the ground.
- Store Prorafter in wrapped bundles, provide air circulation and support bundles with 90mm bearers
- Protect from the weather on the job site both before and after installation. Prorafter is intended for use in covered, dry conditions only.
- Except as described in this product guide, Prorafter should not be cut, drilled or notched.
- Do not install wet or visually damaged product.

Box Gutter

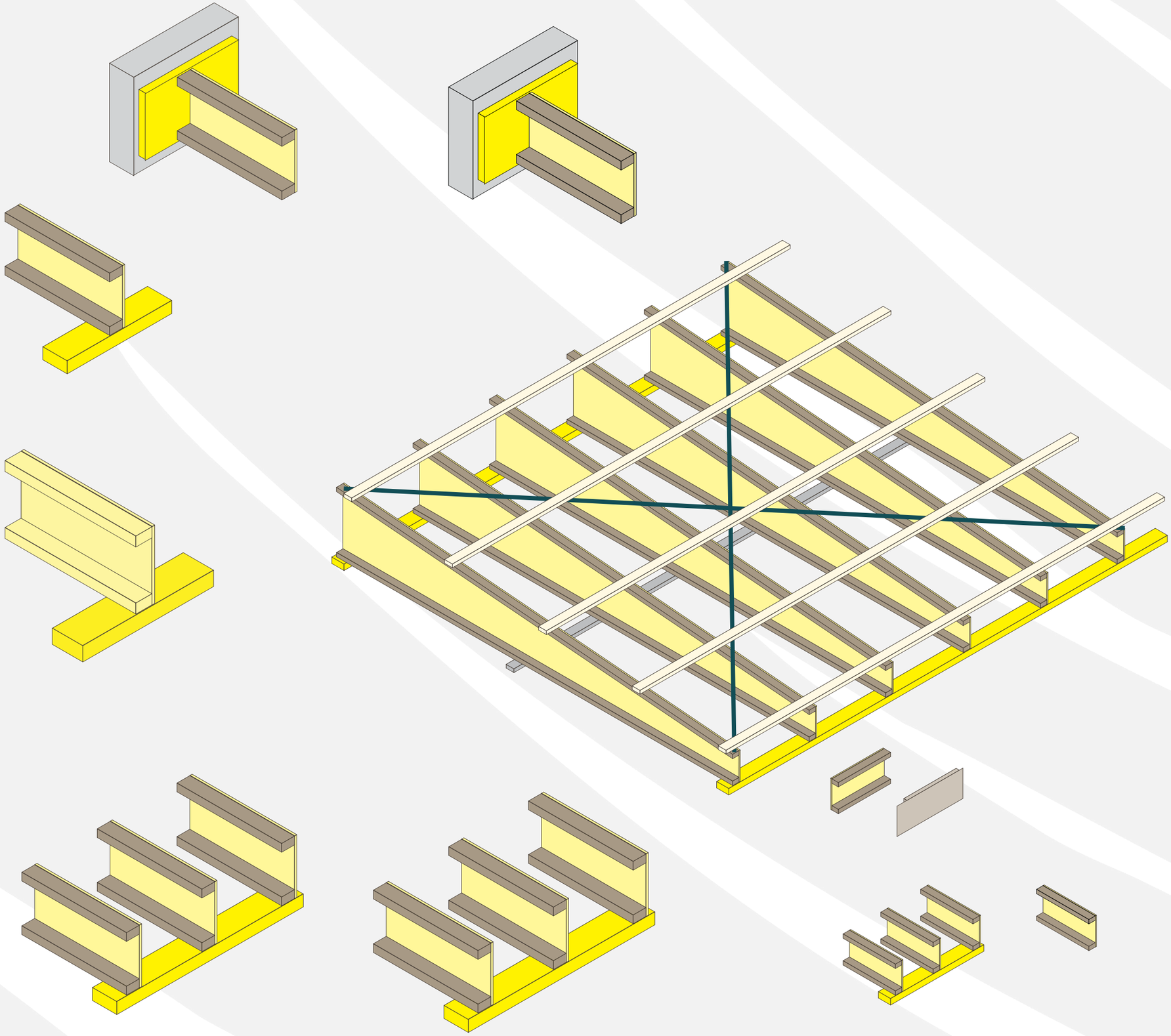
Box gutter end details is one of the major reasons why ProRafters were developed. ProRafters are ideal for use in low pitch roofs where a concealed box gutter is necessary. While difficult for others, ProRafters do not need large a heel depth to accommodate a gutter.



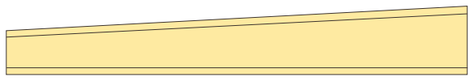
DETAILS

03.

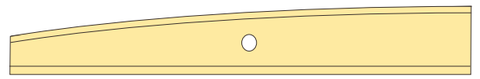
04.



SPAN TABLES

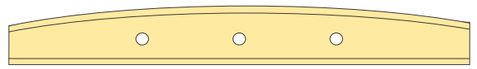


PRORAFTER CODE	ROOF MASS KG/M2	1 DEG			2 DEG			3 DEG		
		SPACING								
		600	900	1200	600	900	1200	600	900	1200
PR120-SK	20	5.6	4.8	3.9	6.8	6.0	5.3	7.8	6.9	6.3
	30	4.8	4.1	3.6	6.0	5.1	4.4	6.9	6.1	6.0
	40	4.3	3.6	3.2	5.3	4.4	3.8	6.3	5.3	4.5
PR150-SK	20	6.4	5.7	5.1	7.5	6.7	6.2	8.5	7.6	6.9
	30	5.7	4.9	4.3	6.7	5.9	5.2	7.6	6.7	6.1
	40	5.1	4.3	3.8	6.2	5.2	4.5	6.9	6.1	5.3
PR170-SK	20	6.8	6.2	5.6	7.9	7.1	6.5	8.9	7.9	7.3
	30	6.2	5.4	4.8	7.1	6.3	5.7	7.9	7.0	6.4
	40	5.6	4.8	4.2	6.5	5.7	4.9	7.3	6.4	5.7
PR200-SK	20	7.4	6.7	6.2	8.4	7.6	7.0	9.4	8.5	7.8
	30	6.7	6.0	5.4	7.6	6.8	6.2	8.5	7.5	6.9
	40	6.2	5.4	4.8	7.0	6.2	5.6	7.8	6.9	6.2
PR240-SK	20	8.1	7.4	6.8	9.1	8.2	7.6	10.1	9.1	8.4
	30	7.4	6.6	6.1	8.2	7.4	6.8	9.1	8.1	7.4
	40	6.8	6.1	5.5	7.6	6.8	6.2	8.4	7.4	6.7



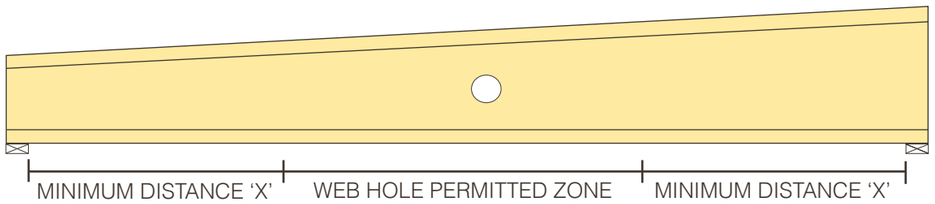
PRORAFTER CODE	ROOF MASS KG/M2	150 rise			300 rise			450 rise		
		SPACING								
		600	900	1200	600	900	1200	600	900	1200
PR120-CH	20	6.7	6.1	5.6	8.1	7.4	7.0	9.2	8.5	7.9
	30	6.1	5.4	4.9	7.4	6.8	6.3	8.5	7.7	7.2
	40	5.6	4.9	4.4	7.0	6.3	5.	7.9	7.2	6.7
PR150-CH	20	7.2	6.6	6.2	8.6	7.9	7.4	9.6	8.9	8.3
	30	6.6	6.0	5.5	7.9	7.1	6.7	8.9	8.1	7.5
	40	6.2	5.5	4.9	7.4	6.7	6.2	8.3	7.5	7.0
PR170-CH	20	7.5	6.9	6.5	8.8	8.1	7.6	9.9	9.1	8.5
	30	6.9	6.3	5.8	8.1	7.4	6.9	9.1	8.3	7.7
	40	6.5	5.8	5.2	7.6	6.9	6.4	8.5	7.7	7.2
PR200-CH	20	8.0	7.3	6.9	9.2	8.5	8.0	10.3	9.4	8.9
	30	7.3	6.7	6.2	8.5	7.7	7.2	9.4	8.6	8.0
	40	6.9	6.2	5.7	8.0	7.2	6.7	8.9	8.0	7.4
PR240-CH	20	8.6	7.9	7.4	9.7	9.0	8.4	10.7	9.9	9.3
	30	7.9	7.2	6.7	9.0	8.2	7.6	9.9	9.0	8.4
	40	7.4	6.7	6.2	8.4	7.6	7.1	9.3	8.4	7.8

PRORAFTER CODE	ROOF MASS KG/M2	1 DEG			2 DEG			3 DEG		
		SPACING								
		600	900	1200	600	900	1200	600	900	1200
PR120-GA	20	5.2	4.5	4.0	6.2	5.4	4.7	7.0	6.3	5.6
	30	4.5	3.8	3.4	5.4	4.5	3.9	6.2	5.3	4.5
	40	4.0	3.4	3.0	4.7	3.9	3.4	5.6	4.5	3.9
PR150-GA	20	6.1	5.4	4.8	6.9	6.2	5.6	7.7	6.9	6.3
	30	5.4	4.6	4.1	6.2	5.3	4.7	6.9	6.1	5.3
	40	4.8	4.1	3.6	5.6	4.7	4.1	6.3	5.3	4.6
PR170-GA	20	6.5	5.9	5.3	7.3	6.6	6.1	8.1	7.2	6.7
	30	5.9	5.1	4.5	6.6	5.8	5.1	7.2	6.4	5.8
	40	5.3	4.5	4.0	6.1	5.1	4.5	6.7	5.8	5.0
PR200-GA	20	7.1	6.5	6.0	7.9	7.1	6.6	8.6	7.8	7.1
	30	6.5	5.8	5.1	7.1	6.4	5.8	7.8	6.9	6.3
	40	6.0	5.1	4.6	6.6	5.8	5.1	7.1	6.3	5.6
PR240-GA	20	7.8	7.1	6.6	8.5	7.7	7.2	9.3	8.4	7.7
	30	7.1	6.4	5.9	7.7	6.9	6.4	8.4	7.5	6.8
	40	6.6	5.9	5.3	7.2	6.4	5.8	7.7	6.8	6.3



PRORAFTER CODE	ROOF MASS KG/M2	100 rise			200 rise			300 rise		
		SPACING								
		600	900	1200	600	900	1200	600	900	1200
PR120-CF	20	6.4	5.9	5.3	7.7	7.1	6.6	8.8	8.1	7.6
	30	5.9	5.2	4.6	7.1	6.5	6.0	8.1	7.4	6.8
	40	5.3	4.6	4.1	6.6	6.0	5.4	7.6	6.8	6.3
PR150-CF	20	7.0	6.4	6.0	8.2	7.5	7.0	9.2	8.5	7.9
	30	6.4	5.7	5.2	7.5	6.8	6.4	8.5	7.7	7.1
	40	6.0	5.2	4.7	7.0	6.3	5.9	7.9	7.2	6.6
PR170-CF	20	7.3	6.7	6.3	8.5	7.8	7.3	9.5	8.7	8.1
	30	6.7	6.1	5.5	7.8	7.1	6.6	8.7	7.9	7.3
	40	6.3	5.5	5.0	7.3	6.6	6.1	8.1	7.4	6.8
PR200-CF	20	7.8	7.1	6.7	8.9	8.2	7.6	9.8	9.0	8.5
	30	7.1	6.5	6.0	8.2	7.4	6.9	9.0	8.2	7.7
	40	6.7	6.0	5.4	7.6	6.9	6.4	8.5	7.7	7.1
PR240-CF	20	8.3	7.7	7.2	9.4	8.6	8.1	10.3	9.5	8.9
	30	7.7	7.0	6.5	8.6	7.9	7.3	9.5	8.6	8.0
	40	7.2	6.5	6.0	8.1	7.3	6.8	8.9	8.0	7.4

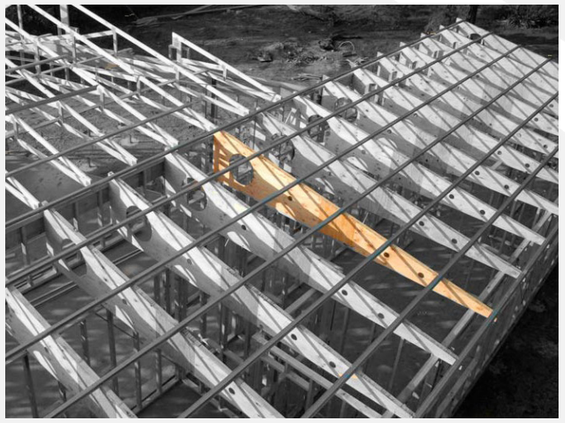
WEB HOLES



PRORAFTER CODE	HOLE SIZE	SKILLION			GABLE			HALF TOP CURVED			FULL TOP CURVED		
		SPACING											
		600	900	1200	600	900	1200	600	900	1200	600	900	1200
PRC120	100												
	150												
	200												
PRC150	100												
	150												
	200												
PRC170	100												
	150												
	200												
PRC200	100												
	150												
	200												
PRC240	100												
	150												
	200												

BATTERNS

RAFTER SPACING (mm)	BATTEN SPACING (mm)	F5	F17	MGP10
600	600	35x90	35x42	35x90
	900	35x90	35x42	35x90
	1200	35x90	35x42	35x90
900	600	35x90	35x42	35x90
	900	45x70	35x42	45x70
	1200	45x90	35x42	45x70
1200	600	45x90	35x42	45x70
	900	-	35x70	45x90
	1200	-	35x70	45x90




PRO-RAFTER
PRO-RAFTER

20 Sydney Road
Bayswater, 3153
Victoria, Australia

Ph: 03 9780 4866
Email: inquires@stfab.com.au
Website: www.stfab.com.au