



# 2026 DIARY



Waipa State Mill Road | PO Box 1748, Rotorua, 3040 | Phone: 07 349 5800 | Fax: 07 349 5882

**0800 REDSTAG (0800 733 7824)**

**[www.redstagtimber.co.nz](http://www.redstagtimber.co.nz)**

# Contacts



## Upper North Island Account Manager

### Kevin Bell

MOB:  
027 540 5842  
EMAIL:  
kevin.bell@redstagtimber.co.nz

## Central North Island Account Manager

### Danielle Vercoe

MOB:  
027 201 0289  
EMAIL:  
danielle.vercoe@redstagtimber.co.nz



## Lower North Island Account Manager

### Steve Daube

MOB:  
027 540 5811  
EMAIL:  
steve.daube@redstagtimber.co.nz

## South Island Account Manager

### Tony White

MOB:  
021 104 9822  
EMAIL:  
tony.white@redstagtimber.co.nz



## Domestic Sales Coordinator

### Sophie Elmiger

PHONE:  
07 349 5884  
FAX:  
07 349 5882  
EMAIL:  
sophie.elmiger@redstagtimber.co.nz

## New Zealand Sales Manager

### Mike Tocker

MOB:  
027 808 6419  
EMAIL:  
mike.tocker@redstagtimber.co.nz



## Customer Services Administrator

### Helen Delamore

PHONE:  
07 349 5884  
FAX:  
07 349 5882  
EMAIL:  
helen.delamore@redstagtimber.co.nz

Our Sales team is available  
for further Technical training

**0800 RED STAG**



# About Red Stag Timber

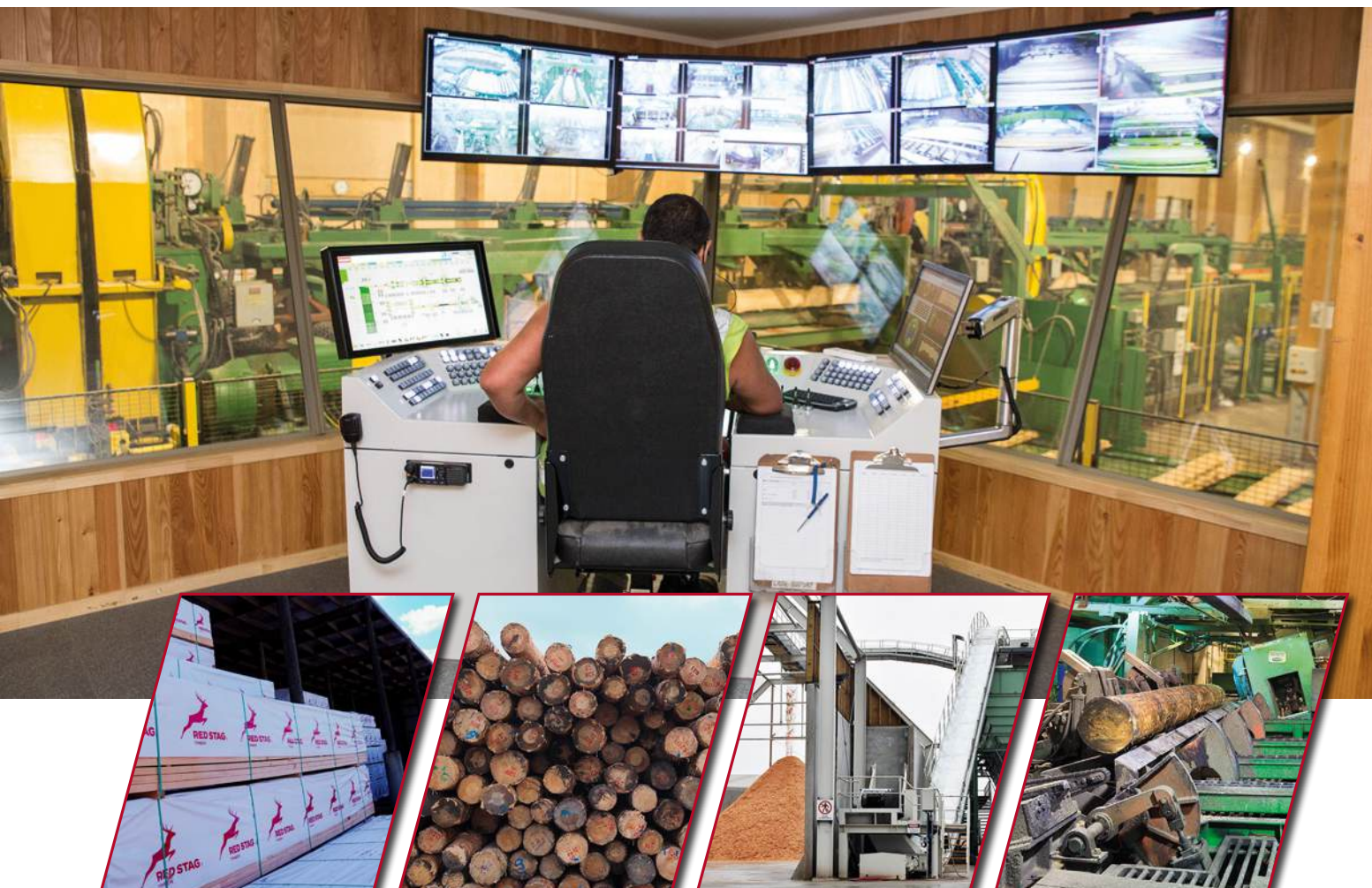
Red Stag Timber consists of a USNR Tandem-Quadsaw sawmill line, with associated timber processing operations for kiln drying, planing, treating and remanufacturing. Currently producing over 600,000m<sup>3</sup> of Radiata Pine and Douglas-fir timber per annum. Red Stag Timber employs over 400 staff on site.

Red Stag Timber has a long-term commitment to further developing its product range and market base. Its particular focus is on structural timber products, but it also produces landscaping, industrial, appearance and furniture timber grades. These products are sold in New Zealand and exported to Australia, the Pacific Islands, Asia, Africa, Europe and North America.

To achieve this, Red Stag Timber is committed to continual upgrades of its production facilities. Combined with a long term secure log contract, an enthusiastic stable workforce and a commitment to highest quality products and relationships, gives Red Stag Timber the edge for long term success in its chosen markets.

Recent investments of over \$250 million include:

- Acoustic grading of logs and timber (2004 and 2006)
- The latest technology dry-mill planing plant (2006)
- Three new high-speed drying kilns (2006, 2008 and 2016)
- A new sawmill trimmer and stacker (2008)
- The latest metriguard high-speed machine stress grader (2009)
- A new H1.2 timber treatment plant (2009)
- Upgrade pusher-lug sawmill bin-sorter (2010)
- Three new continuous drying kilns (2011, 2013 and 2017)
- High tech remanufacturing plant (2012)
- Planer Mill grade scanning trimmer (2013)
- Upgraded Chip System (2014)
- New high speed Saw Mill (2016)
- Upgraded sawmill acoustic grader (2017)
- New high speed Gilbert Planer (2018)
- Third boiler added (2018)
- Second turbine added (2018)
- Second Gilbert planer added (2021)
- Second sawmill trimmer, binsorter & stacker (2023)
- Second H1.2 treatment plant (2023)
- AI cameras and software for grading (2024)



# Sawmill Process

## LOG YARD

The Log Yard accepts deliveries 24 hours a day, seven days a week. It has four days of log stock.

## DEBARKER

The Debarker removes the bark from the log. The Bark is used as bio-fuel for boilers to generate electricity and heat the kilns.

## LOG SORTER

The Log Sorter, sorts logs into batches allowing maximum production.

## SAW MILL

Uses twin quadsaw breakdowns to cut up to eight side boards then saws the cant on a new curve sawing gang for better quality framing. Cuts 10 logs per minute.

## BIN SORTER

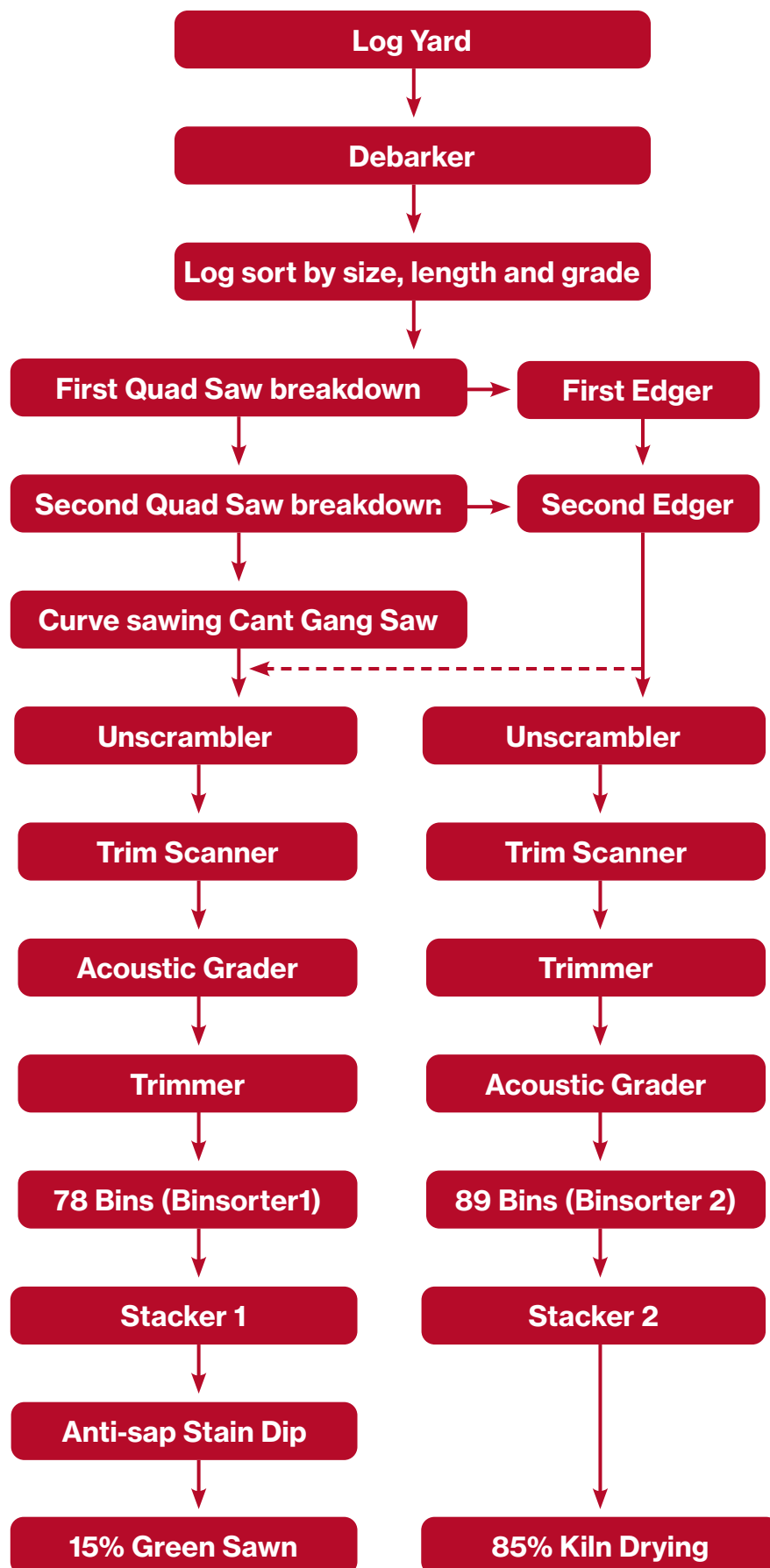
The Bin Sorter, sorts and trims the boards from both mills by size, grade, and length. Operates at 140 pieces per minute.

## STACKER

The Stacker, stacks and fillets the packets ready for kiln drying. Produces a packet every 90 seconds.

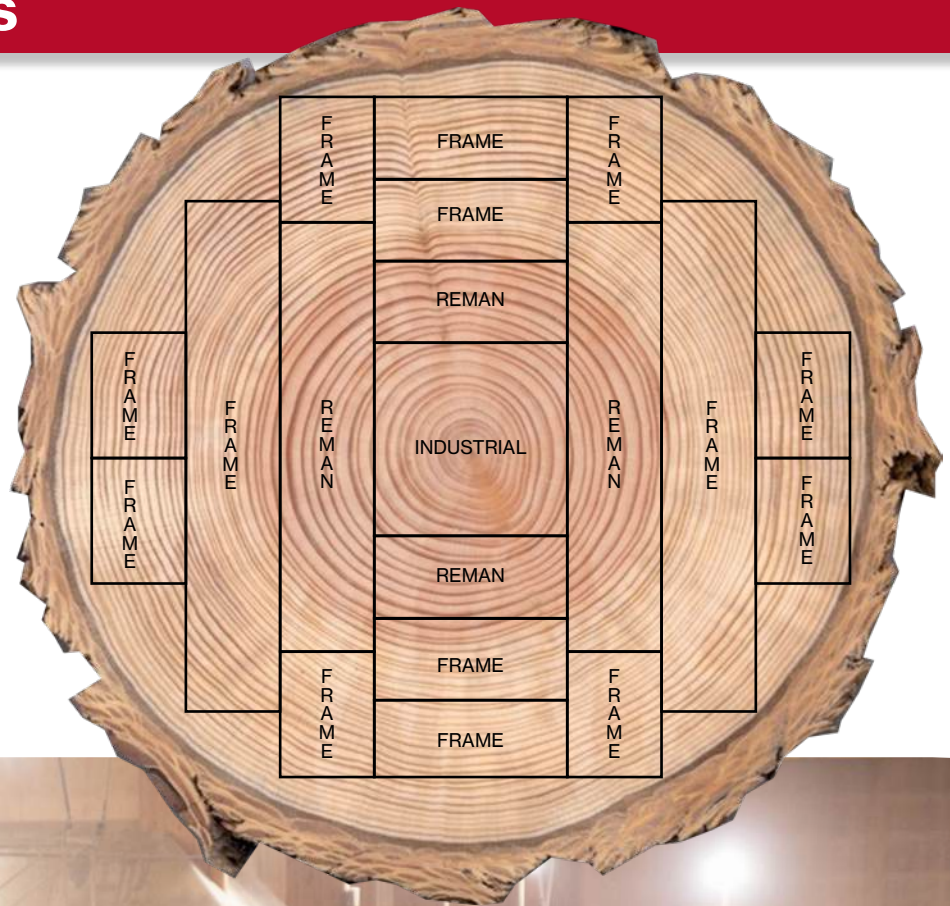
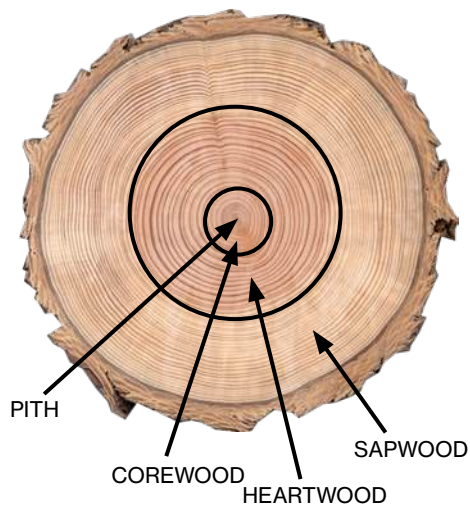
## ANTI-SAP STAIN DIP

Anti-Sap Stain Dip provides protection from sap-stain. There are two anti-sap stain dips, one is domestic strength and provides 6 weeks protection. The other is export strength and provides 3 months protection.





# Cutting Patterns





# Kilns

## MAHILD

High Temperature kilns.  
150m<sup>3</sup> chambers drying  
in the 90-120 celsius range.  
Quick turnaround for  
volume drying.  
85,000m<sup>3</sup> /pa /chamber.

## WINDSOR

Accelerated conventional  
temperature (ACT) kilns.  
100m<sup>3</sup> chambers drying in the  
60-120 celsius range.  
Used for appearance grades / wides  
and treated timber.  
35,000m<sup>3</sup>/pa/chamber.

## COUNTER FLOW KILN (CFK)

High Temperature Double  
Track kiln.  
600m<sup>3</sup> chamber – continuous drying.  
120°C drying temperature.  
Set up to dry 50mm structural timber.  
115,000m<sup>3</sup> /pa/kiln.

## RECONDITIONING

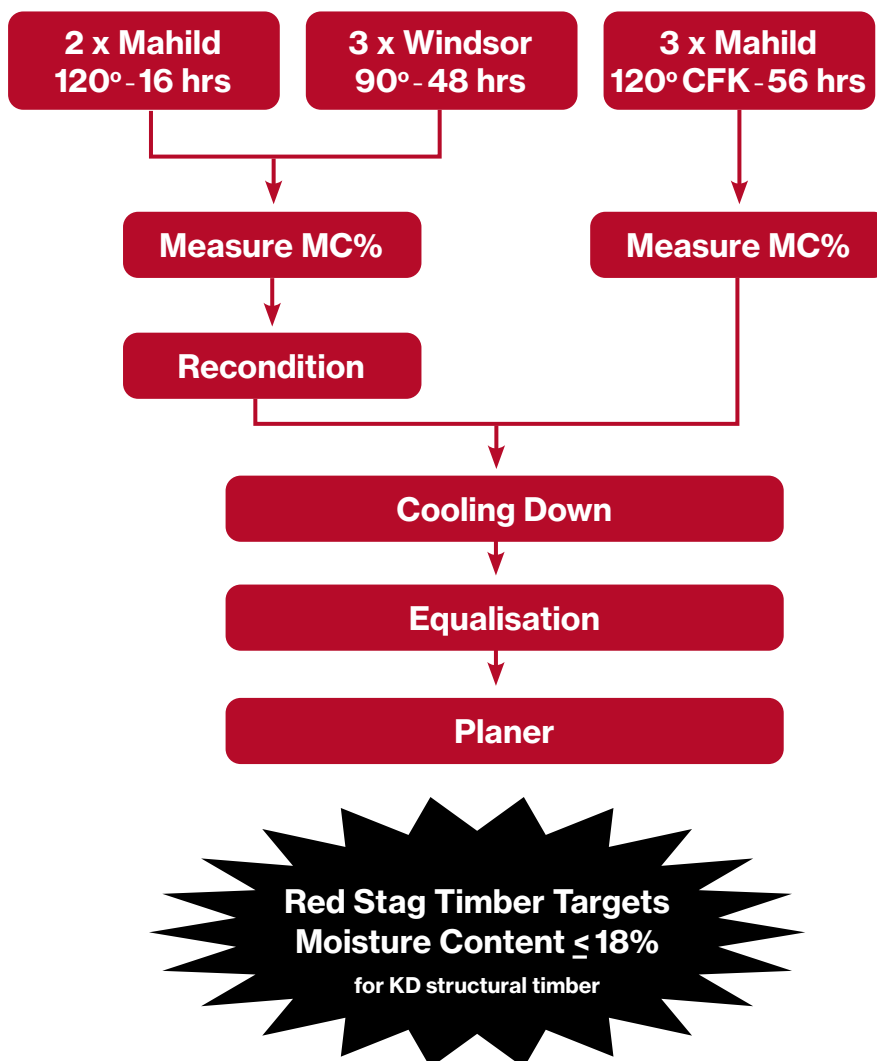
Four reconditioning chambers  
reconditioning at 95 celsius.  
Boils a water bath to generate steam.  
Equalises drier outer layers  
of timber to wetter core  
therefore relieving stress.

## COOLING DOWN

Charge needs to cool down  
under weights for 3-4 hours  
after reconditioning to  
release residual stress.

## EQUALISATION

Storage in dry shed for 2-3 days  
minimum prior to going to planer.  
Allows dry timber to equalise with  
surrounding atmosphere.  
Equilibrium Moisture Content (EMC)  
is dependant on how moisture laden  
the surrounding air is, (i.e. higher in  
the winter, lower in the summer).



## Keeping KD Timber Dry

Red Stag Dried Structural Timber is produced and leaves the production facility at a target moisture content between 18% and 20%. We recommend every effort be made to keep the product dry during storage and construction by keeping it covered and allowing free air circulation to dry any temporary surface wetness.

Where wetness is unavoidable, timber will dry back to EMC given the right conditions - low humidity, continuous air circulation, heat and shielding from the weather.





# ***Red Stag***



# ***Superior Structural Timber***





# Planer Process

## MOISTURE CONTENT

The Moisture Content of every board is checked in five places along its length. Boards with the MC between 10 – 20% are sent to the Planer. Boards that are too wet or over dry are dropped out.

## ACOUSTIC GRADER

The A-Grader measures the average MoE (stiffness) of each board. Nonstructural boards are dropped out.

## GILBERT PLANER

The Gilbert planer gauges boards to size, e.g. 90 x 45, and has capacity to operate at up to a maximum speed of 1200m/min

## METRIGUARD

The Metriguard measures the average and low point stiffness (MOE) of each board and applies a colour mark(s) at the end of the piece, and low stiffness points along the length of each piece.

## GRADE EXPERT SCANNER

The Metriguard does not grade knots, distortion, or wane, so each board needs to be Visually Graded by the Comact Grade Scanner using the latest cameras and AI software to ensure a minimum strength and appearance is maintained.

This process determines the final grade of the board. Boards that originally dropped out also get Visually Graded to different products.

## INK JET PRINTER

If the board is SG it is Ink Jet Printed at 1200mm intervals along the face. This stamp shows the grade of the board, the verifying body, the treatment hazard class, the way in which the timber has been graded and the producer.

## BIN SORTER

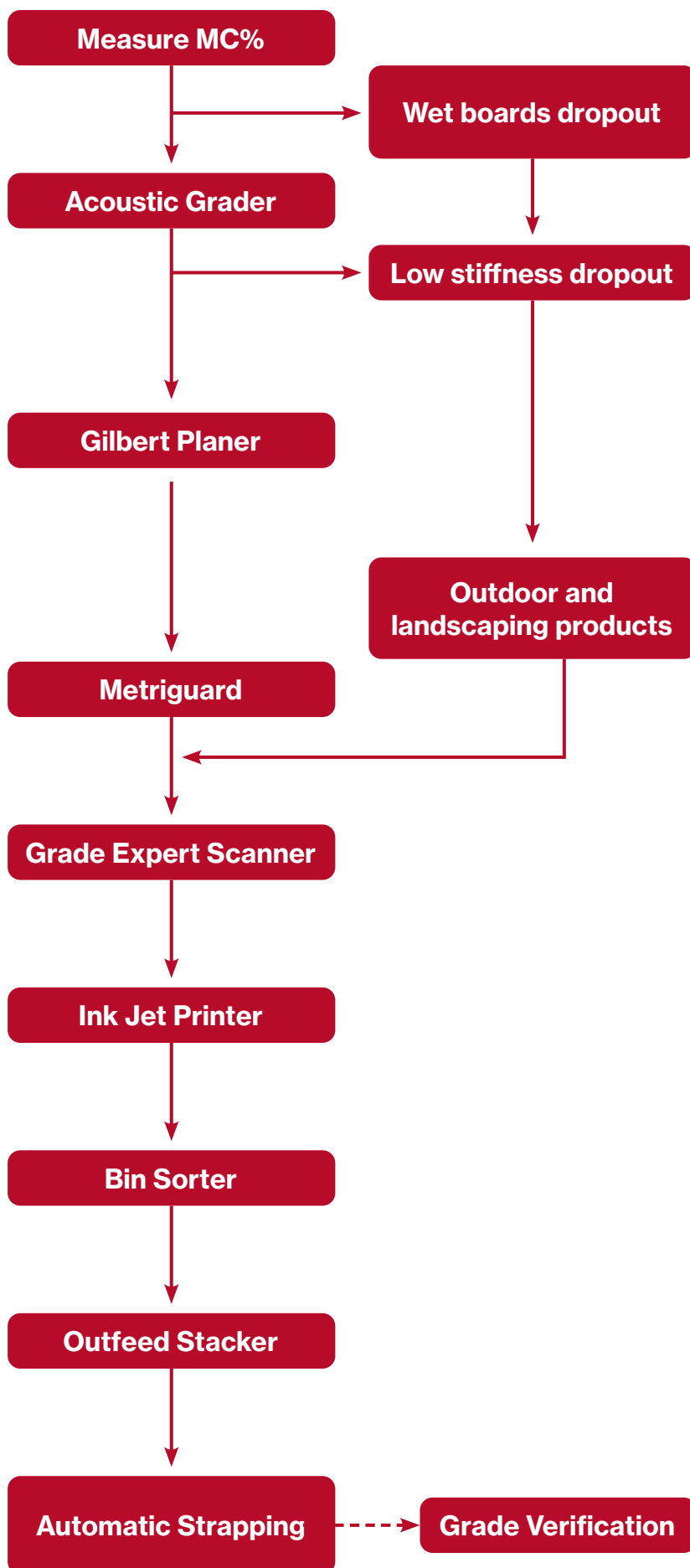
Each board is sorted into bins by grade and length.

## OUTFEED STACKER

The Outfeed Stacker, stacks and automatically straps packets.

## GRADE VERIFICATION

Sample boards of each run are automatically dropped out by the scanner into a separate bin. They are then tested for compliance against the Timber Verification Standard for strength and stiffness.





# Planer Mill

**AI Optical Grade Scanner**



**Gilbert Planer**



**Metriguard**



**Critical Truss & Frame Applications**



**Frame & Truss Applications**



**Bin Sorter**



**Non Critical Applications**



Use as determined by NZS3604:2011

# Preservation Process

## AZOLES H3.1

Low toxicity, highly effective treatment that protects against decay and insect attack when used in cavity battens.

## BORON H1.2

Low toxicity, highly effective timber treatment that protects against decay and insect attack when in internal frames.

## LOW PRESSURE BORON

Specially designed treatment vessel that ensures consistent uptake of preservatives and minimal increase in moisture content. Dry after treatment.

## HIGH PRESSURE CCA

Full cell treatment for demanding exterior environments, both above ground and ground contact. Wet after treatment.

## CCA NATURAL FIXATION

CCA is not dispatched from the plant until the chemical is fully fixed to the wood.

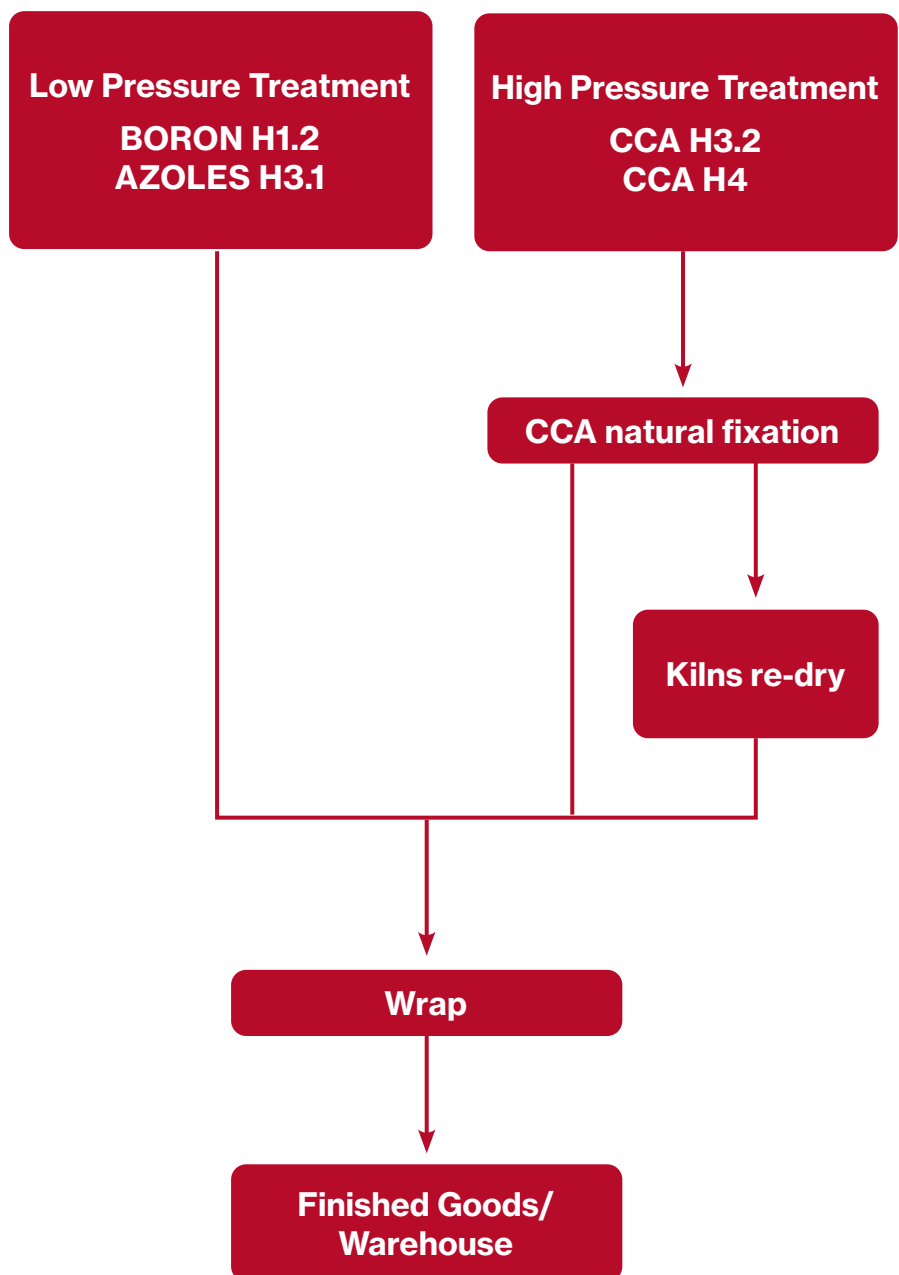
## CCA H3.2/H4

Timber protection against the effects of decay and insect attack for external exposure (H3.2) and ground contact (H4). Timber can be re-dried for interior use.

## KEY

WB – Water Borne

CCA – Copper Chrome Arsenate





## Treated Timber

Red Stag H1.2 Timber is treated with Boron to prevent both insect damage and decay. Boron treated timber is non-toxic to humans and has many environmental and Health & Safety benefits. Boron has been used as a timber treatment for 60 years and has proven its effectiveness.

Because it is treated as a soluble salt, the high levels of Boron in Red Stag Timber increase the electrical conductivity of the timber. This causes electrical conductivity meters to read higher than the true MC. This becomes even more apparent using short uninsulated needles or capacitance type meters which measure conductivity at the surface where boron concentration tends to be highest. For accurate measurements insulated probes should be used penetrating one third of the timber thickness, a procedure recommended in NZS1080.

To compensate for the electrical effect of the boron, and to get an accurate measure of the moisture content the following table should be used with Red Stag H1.2 boron treated timber. For example, using insulated probes, if the meter reads 21%, the true MC will be 18% which is acceptable for close-in under the Building Code. If uninsulated probes or a capacitance meter is used, the procedure does not conform to AS/NZS 1080 then a larger correction factor needs to be applied.

## Boron Treated Timber exposed to weather

Where boron treated timber is exposed to the weather for periods of less than 3 months, and remains in sound visible condition, it will be fit for purpose in the intended application.

Exposure to sunlight will fade the pink dye quite quickly but the surface dye is not an indicator of treatment level and is not colourfast. Sunlight by itself will not deteriorate the timber or treatment at all.

Frequent wetting and drying of the timber over a prolonged period can be a concern as this may cause some distortion and warping of the frames and trusses which will be visible to the naked eye.

When the timber has been exposed to continuously running water for a period exceeding 3 months we would recommend a biscuit of timber from the frames or trusses is taken to an independent laboratory to confirm that the boron levels remain above the minimum requirement.

## Moisture Content

| METER READS | TRUE MC BH1.2 | TRUE MC LH3.1 | TRUE MC MH3.2 |
|-------------|---------------|---------------|---------------|
| 14          | 13            | 17            | 13            |
| 15          | 13            | 18            | 14            |
| 16          | 14            | 19            | 14            |
| 17          | 15            | 20            | 15            |
| 18          | 16            | 21            | 16            |
| 19          | 16            | 22            | 17            |
| 20          | 17            | 23            | 18            |
| 21          | 18            | 24            | 19            |
| 22          | 19            | 25            | 19            |
| 23          | 20            | 26            | 20            |
| 24          | 21            | 28            | 21            |

INFORMATION PROVIDED ABOVE IS BASED ON RESEARCH UNDERTAKEN LOCALLY AND INTERNATIONALLY

## Treatment Colour

| TREATMENT | ACTIVE CHEMICAL | COLOUR      |
|-----------|-----------------|-------------|
| BH1.2     | BORON           | Pink        |
| LH3.1     | AZOLES          | Light Green |
| MH3.2     | CCA             | Green       |
| MH4       | CCA             | Dark Green  |

# Remanufacturing Plant

## WOODEYE OPTIMIZER

Uses four cameras to scan each board and identify the best grades.

## DIMTER OPTICUT SAWS

Use the cut plan from the Woodeye to cut each board into solid MSG8 Studs or clear and knotty 'shook' for finger jointing. ( A "Shook" is a short piece of timber ready to be assembled).

## SHOOK SORTING

After being cut, each stud or piece of Shook must be sorted and sent to the correct processing area.

## DOUBLE END TENONER

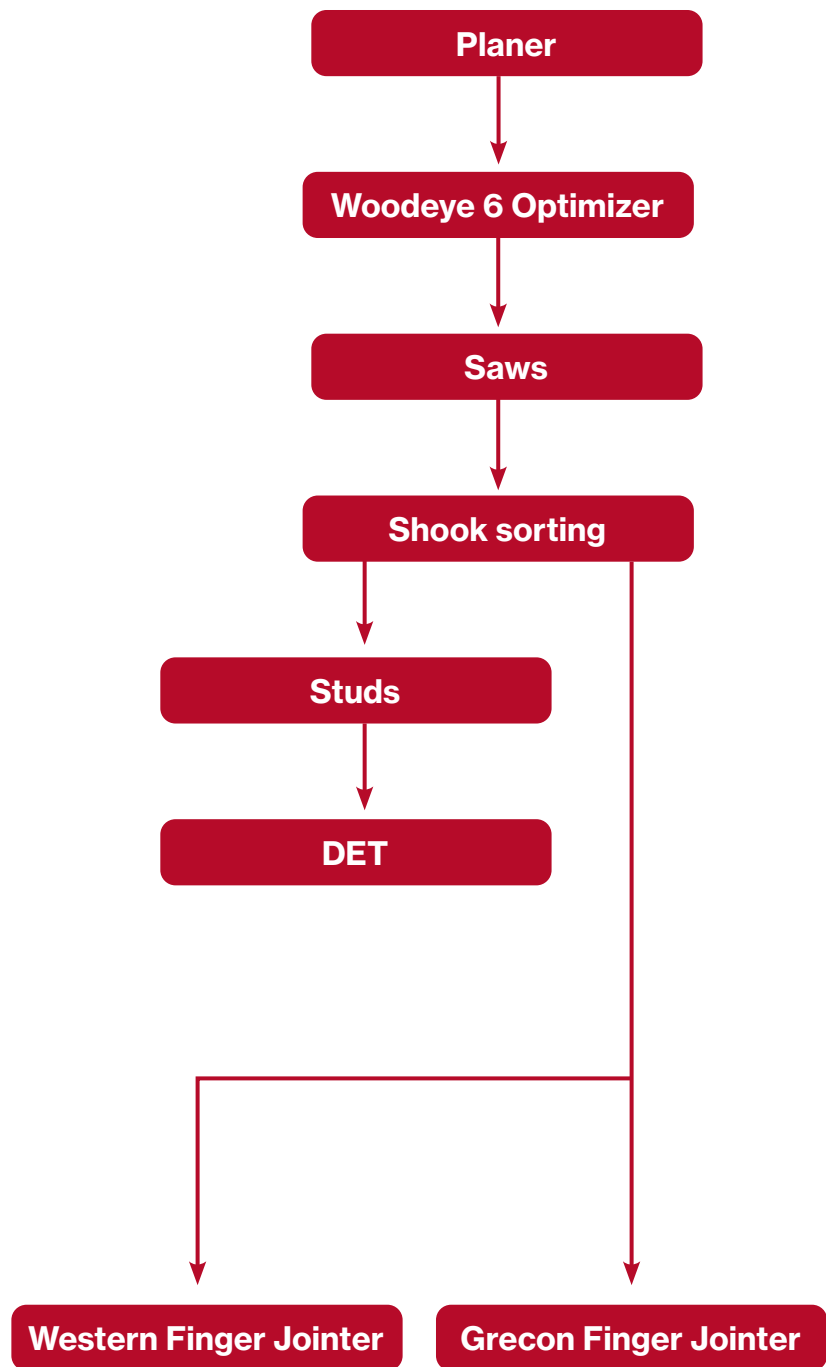
Trims each stud to length and then stamps the grade and stacks it into packets.

## WESTERN PNEUMATIC FINGER JOINTER

Uses an edge-to-edge profile for an appearance grade joint that is best for making clear mouldings.

## GRECON FINGER JOINTER

Uses a face-to-face profile for an appearance grade joint that is best for making clear mouldings.







# ***Red Stag***



# ***Superior Structural Timber***



# Structural Radiata Products

| FRAME/TRUSS |           |           |          |             |                              |        |
|-------------|-----------|-----------|----------|-------------|------------------------------|--------|
| GRADE       | TREATMENT | CONDITION | SIZE     | FINISH SIZE | LENGTH (m)                   | PIECES |
| MSG10       | BH1.2     | KD<br>GGD | 100 x 50 | 90 x 45     | 4.8, 5.4, 6.0                | 143    |
|             |           |           | 150 x 50 | 140 x 45    |                              | 91     |
| FRAME/TRUSS |           |           |          |             |                              |        |
| MSG8        | BH1.2     | KD<br>GGD | 75 x 50  | 70 x 45     | 3.6*, 4.2*,<br>4.8, 5.4, 6.0 | 182    |
|             |           |           | 100 x 50 | 90 x 45     |                              | 143    |
|             |           |           | 150 x 50 | 140 x 45    |                              | 91     |
|             |           |           | 200 x 50 | 190 x 45    |                              | 65     |
|             |           |           | 250 x 50 | 240 x 45    | 4.8, 5.4, 6.0                | 52     |
|             |           |           | 300 x 50 | 290 x 45    |                              | 39     |
|             | MH3.2     |           | 100 x 50 | 90 x 45     | CTL Studs                    | 143    |
|             |           |           | 150 x 40 | 140 x 35    | 4.8, 5.4, 6.0                | 112    |
|             |           |           | 75 x 50  | 70 x 45     | 4.8, 5.4, 6.0                | 182    |
|             |           |           | 100 x 50 | 90 x 45     |                              | 143    |
|             |           |           | 150 x 50 | 140 x 45    |                              | 91     |
|             |           |           | 200 x 50 | 190 x 45    |                              | 65     |
|             |           |           | 250 x 50 | 240 x 45    |                              | 52     |
|             |           |           | 300 x 50 | 290 x 45    |                              | 39     |
| FRAME       |           |           |          |             |                              |        |
| MSG6        | BH1.2     | KD<br>GGD | 75 x 50  | 70 x 45     | 4.8, 5.4, 6.0                | 182    |
|             |           |           | 100 x 50 | 90 x 45     |                              | 143    |

\*Limited Availability

| SIZES         |         |          |           |          |          |          |          |
|---------------|---------|----------|-----------|----------|----------|----------|----------|
| Call Size     | 75 x 50 | 100 x 50 | 150 x 40  | 150 x 50 | 200 x 50 | 250 x 50 | 300 x 50 |
| IMP Call Size | 3 x 2   | 4 x 2    | 6 x 1-1/2 | 6 x 2    | 8 x 2    | 10 x 2   | 12 x 2   |
| GGD Size      | 70 x 45 | 90 x 45  | 140 x 35  | 140 x 45 | 190 x 45 | 240 x 45 | 290 x 45 |



# Structural Radiata Products

| LINEAL/m <sup>3</sup> PER PACKET |       |                |       |                |       |                |       |                |        |                |
|----------------------------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|--------|----------------|
|                                  | 3.6   |                | 4.2   |                | 4.8   |                | 5.4   |                | 6.0    |                |
| SIZE                             | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin    | m <sup>3</sup> |
| 75 x 50                          | 655.2 | 2.457          | 764.4 | 2.867          | 873.6 | 3.276          | 982.8 | 3.686          | 1092.0 | 4.095          |
| 100 x 50                         | 514.8 | 2.574          | 600.6 | 3.003          | 686.4 | 3.432          | 772.2 | 3.861          | 858.0  | 4.290          |
| 150 x 40                         | –     | –              | –     | –              | 537.6 | 3.226          | 604.8 | 3.629          | 672.0  | 4.032          |
| 150 x 50                         | 327.6 | 2.457          | 382.2 | 2.867          | 436.8 | 3.276          | 491.4 | 3.686          | 546.0  | 4.095          |
| 200 x 50                         | 234.0 | 2.340          | 273.0 | 2.730          | 312.0 | 3.120          | 351.0 | 3.510          | 390.0  | 3.900          |
| 250 x 50                         | –     | –              | –     | –              | 249.6 | 3.120          | 280.8 | 3.510          | 312.0  | 3.900          |
| 300 x 50                         | –     | –              | –     | –              | 187.2 | 2.808          | 210.6 | 3.159          | 234.0  | 3.510          |

# Structural Douglas Fir Products

| FRAME OR TRUSS |           |           |          |             |                            |        |
|----------------|-----------|-----------|----------|-------------|----------------------------|--------|
| GRADE          | TREATMENT | CONDITION | SIZE     | FINISH SIZE | LENGTH (m)                 | PIECES |
| DFSG8          | BH1.2     | KD<br>GGD | 100 x 50 | 90 x 45     | 3.6, 4.2,<br>4.8, 5.4, 6.0 | 132    |
|                |           |           |          |             | CTL Studs                  |        |
|                |           |           | 150 x 50 | 140 x 45    | 4.8, 5.4, 6.0              | 84     |

| LINEAL/m <sup>3</sup> PER PACKET |       |                |       |                |       |                |       |                |       |                |
|----------------------------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|
|                                  | 3.6   |                | 4.2   |                | 4.8   |                | 5.4   |                | 6.0   |                |
| SIZE                             | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> | lin   | m <sup>3</sup> |
| 100x50                           | 475.2 | 2.376          | 554.4 | 2.772          | 633.6 | 3.168          | 712.8 | 3.564          | 792.0 | 3.960          |
| 150x50                           | –     | –              | –     | –              | 403.2 | 3.024          | 453.6 | 3.402          | 504.0 | 3.780          |



# Outdoor Products

## EXTERIOR CONSTRUCTION

| GRADE | TREATMENT | CONDITION | SIZE     | FINISH SIZE | LENGTH (m)           | PIECES |
|-------|-----------|-----------|----------|-------------|----------------------|--------|
| SG8   | MH3.2     | TW GGD    | 75 x 50  | 70 x 45     | 4.8, 6.0             | 126    |
|       |           |           | 100 x 50 | 90 x 45     |                      | 99     |
|       |           |           | 150 x 50 | 140 x 45    | 3.6, 4.2<br>4.8, 6.0 | 63     |
|       |           |           | 200 x 50 | 190 x 45    |                      | 45     |
|       |           |           | 250 x 50 | 240 x 45    | 4.8, 6.0             | 36     |
|       |           |           | 300 x 50 | 290 x 45    |                      | 27     |

## FENCING

|        |           |       |          |  |          |     |
|--------|-----------|-------|----------|--|----------|-----|
| Rails  | MH3.2     | TW RS | 75 x 50  |  | 4.8, 6.0 | 104 |
|        |           |       | 100 x 50 |  |          | 80  |
|        | MH3.2/MH4 |       | 150 x 40 |  |          | 63  |
| FRMN02 | MH3.2     | TW RS | 150 x 40 |  | 4.8, 6.0 | 63  |

## GROUND CONTACT

|        |     |       |          |  |          |    |
|--------|-----|-------|----------|--|----------|----|
| FRMN02 | MH4 | TW RS | 150 x 50 |  | 4.8, 6.0 | 56 |
|        |     |       | 200 x 50 |  |          | 40 |

## RETAINING WALL

|           |     |        |          |          |          |    |
|-----------|-----|--------|----------|----------|----------|----|
| Retaining | MH4 | TW TGV | 150 x 50 | 135 x 42 | 4.8, 6.0 | 63 |
|           |     |        | 200 x 50 | 185 x 42 |          | 45 |



# Outdoor Products

## LINEAL/m³ PER PACKET FOR OUTDOOR PRODUCTS

| SG8    |       |       |       |       |       |       |       |       |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
|        | 3.6   |       | 4.2   |       | 4.8   |       | 6.0   |       |
| SIZE   | lin   | m³    | lin   | m³    | lin   | m³    | lin   | m³    |
| 75x50  | –     | –     | –     | –     | 604.8 | 2.268 | 756.0 | 2.835 |
| 100x50 | –     | –     | –     | –     | 475.2 | 2.376 | 594.0 | 2.970 |
| 150x50 | 226.8 | 1.701 | 264.6 | 1.986 | 302.4 | 2.268 | 378.0 | 2.835 |
| 200x50 | 162.0 | 1.620 | 189.0 | 1.890 | 216.0 | 2.160 | 270.0 | 2.700 |
| 250x50 | –     | –     | –     | –     | 172.8 | 2.160 | 216.0 | 2.700 |
| 300x50 | –     | –     | –     | –     | 129.6 | 1.946 | 162.0 | 2.432 |

| FRMN02 |       |       |       |       |
|--------|-------|-------|-------|-------|
|        | 4.8   |       | 6.0   |       |
| SIZE   | lin   | m³    | lin   | m³    |
| 150x50 | 268.8 | 2.017 | 336.0 | 2.521 |
| 200x50 | 192.0 | 1.920 | 240.0 | 2.400 |
| 150x40 | 302.4 | 1.814 | 378.0 | 2.268 |

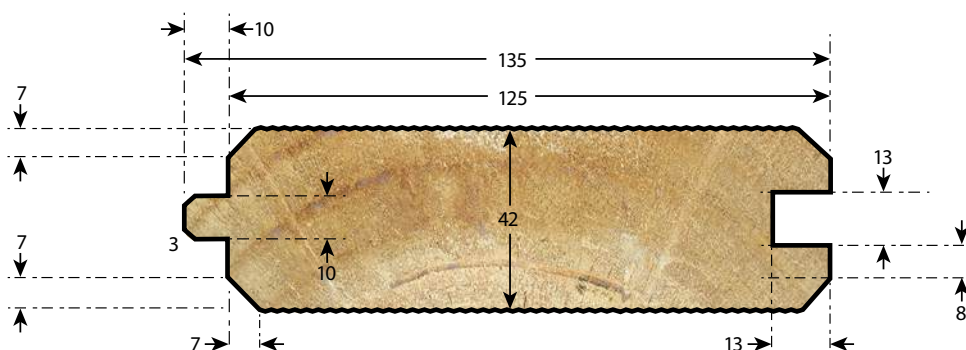
| RAILS  |       |       |       |       |
|--------|-------|-------|-------|-------|
|        | 4.8   |       | 6.0   |       |
| SIZE   | lin   | m³    | lin   | m³    |
| 75x50  | 499.2 | 1.872 | 624.0 | 2.340 |
| 100x50 | 384.0 | 1.920 | 480.0 | 2.400 |
| 150x40 | 302.4 | 1.814 | 378.0 | 2.268 |

| RETAINING |       |       |       |       |
|-----------|-------|-------|-------|-------|
|           | 4.8   |       | 6.0   |       |
| SIZE      | lin   | m³    | lin   | m³    |
| 150x50    | 302.4 | 2.268 | 378.0 | 2.836 |
| 200x50    | 216.0 | 2.160 | 270.0 | 2.700 |

# Outdoor Products

| GRADE               | TREATMENT | CONDITION    | SIZE    | FINISH SIZE | LENGTH                       | PIECES  |
|---------------------|-----------|--------------|---------|-------------|------------------------------|---------|
| DECKING             |           |              |         |             |                              |         |
| Premium Decking     | MH3.2     | TW/SM        | 100x25  | 90x21       | RL                           | 200     |
|                     |           | TW<br>SM/GP2 | 100x40  | 88x32       |                              | 130     |
|                     |           |              | 150x40  | 140x32      |                              | 91      |
| GROUND CONTACT      |           |              |         |             |                              |         |
| Merch               | MH4       | TW/RS        | 100x25  |             | 4.8,5.4,6.0                  | 120     |
|                     |           |              | 150x25  |             |                              | 84      |
|                     |           |              | 200x25  |             |                              | 60      |
| FORMWORK AND BOXING |           |              |         |             |                              |         |
| Reman               | UT        | KD/GGD       | 100x50  | 90x45       | 6.0                          | 143/165 |
|                     |           |              | 150x50  | 140x45      |                              | 105     |
| Industrial          |           | AD/RS        | 150x25  |             |                              | 140     |
|                     |           |              | 200x25  |             |                              | 100     |
| POSTS AND PALINGS   |           |              |         |             |                              |         |
| Post                | MH4       | TW/RS        | 100x100 |             | 1.8, 2.1, 2.4, 2.7, 3.0, 3.6 | 40      |
| Paling              | MH3.2     | TW/RS        | 150x25  |             | 1.2, 1.5, 1.8, 2.1, 2.4      | 210     |

## 150 x 50 TG & V Profile





# Decking Profiles

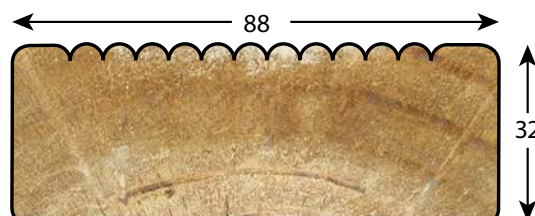
## 100x25 Smooth

**Finish size = 88 x 21mm**  
4mm pencil rounds



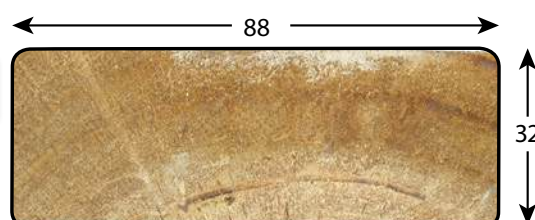
## 100x40 Grip Tread

**Finish size = 88 x 32mm**  
11 x 3mm R with Flats.  
4mm pencil rounds



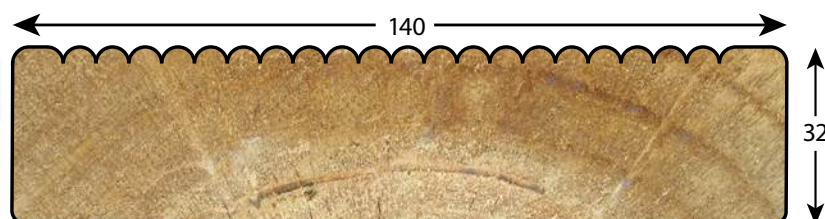
## 100x40 Smooth

**Finish size = 88 x 32mm**  
4mm pencil rounds



## 150x40 Grip Tread

**Finish size = 140 x 32mm**  
20 x 3mm R with Flats.  
4mm pencil rounds

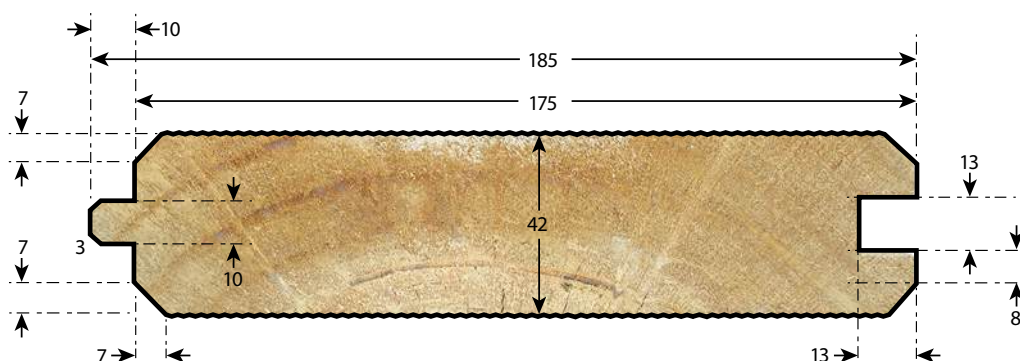


## 150x40 Smooth

**Finish size = 140 x 32mm**  
4mm pencil rounds



# 200 x 50 TG & V Profile



# Non-Structural Products

| CEILING BATTEN   |           |           |          |             |            |        |
|------------------|-----------|-----------|----------|-------------|------------|--------|
| GRADE            | TREATMENT | CONDITION | SIZE     | FINISH SIZE | LENGTH (m) | PIECES |
| FJSTRAP          | BH1.2     | KD<br>GGD | 75 x 40  | 70 x 35     | 5.4        | 224    |
| STRAP            |           |           |          |             | RL         |        |
| TOP PLATE PACKER |           |           |          |             |            |        |
| FJSTRAP          | BH1.2     | KD<br>GGD | 150 x 40 | 140 x 35    | 5.4        | 112    |
| STRAP            |           |           |          |             | RL         |        |
| CAVITY BATTEN    |           |           |          |             |            |        |
| FJ BATTEN        | LH3.1     | KD<br>GGD | 50 x 25  | 45 x 20     | 5.4        | 552    |
| TILE BATTEN      |           |           |          |             |            |        |
| BATTENS          | BH1.2     | GD RS     | 50 x 40  | 50 x 40     | 5.4, 6.0   | 247    |
|                  |           |           | 50 x 50  | 50 x 50     | 6.0        | 190    |

## Estimated Weight per Packet KD GGD (Tonne)

|          | 3.6 | 4.2 | 4.8 | 5.4 | 6.0 |
|----------|-----|-----|-----|-----|-----|
| 75 x 50  | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 100 x 50 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 |
| 150 x 50 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 200 x 50 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 250 x 50 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
| 300 x 50 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 |

## Estimated Weight per Packet TW GGD (Tonne)

|          | 3.6 | 4.2 | 4.8 | 5.4 | 6.0 |
|----------|-----|-----|-----|-----|-----|
| 75 x 50  | –   | –   | 2.3 | 2.6 | 2.8 |
| 100 x 50 | –   | –   | 2.4 | 2.7 | 3.0 |
| 150 x 50 | 1.7 | 2.0 | 2.3 | 2.6 | 2.8 |
| 200 x 50 | 1.6 | 1.9 | 2.2 | 2.4 | 2.7 |
| 250 x 50 | 1.6 | 1.9 | 2.2 | 2.4 | 2.7 |
| 300 x 50 | 1.4 | 1.7 | 1.9 | 2.2 | 2.4 |



## Common Abbreviations

| Red Stag Timber Abbreviations | Common Industry Terms                           |
|-------------------------------|---|
| <b>TIMBER SPECIES</b>         |   |
| RAD                           | Radiata   |
| DF                            | Douglas Fir, NZ Oregon                          |
| <b>DRYNESS</b>                |   |
| KD                            | Kiln Dried                                      |
| GD                            | Green Dipped, Unseasoned, Green Sawn            |
| TW                            | Treated Wet, Wet after treatment                |
| AD                            | Air Dried                                       |
| <b>FINISH</b>                 |   |
| GGD                           | Gauged Dry Size, Planner Gauged, Machine Gauged |
| RS                            | Rough Sawn                                      |
| TGV                           | Tongue, Groove and 'V'                          |
| RH                            | Rougher Header                                  |
| SM                            | Smooth  |
| GP2                           | GripTread                                       |
| <b>LENGTHS</b>                |   |
| RL                            | Random Length                                   |
| SL                            | Select Length                                   |
| CTL                           | Cut to Length                                   |
| PET                           | Precision End Trim                              |
| <b>GRADES</b>                 |   |
| SG10                          | MSG10   |
| SG8                           | MSG8, VSG8                                      |
| SG6                           | MSG6  |
| STRAPPING                     | Ceiling Batten, Merch                           |
| FJ                            | Finger-Joint                                    |

## Conversion Table

| SIZE     | lin per m <sup>3</sup> | m <sup>3</sup> per lin |
|----------|------------------------|------------------------|
| 50 x 25  | 800.00                 | 0.001250               |
| 75 x 25  | 533.33                 | 0.001875               |
| 100 x 25 | 400.00                 | 0.002500               |
| 150 x 25 | 266.66                 | 0.003750               |
| 200 x 25 | 200.00                 | 0.005000               |
| 250 x 25 | 160.00                 | 0.006250               |
| 300 x 25 | 133.33                 | 0.007500               |

| SIZE     | lin per m <sup>3</sup> | m <sup>3</sup> per lin |
|----------|------------------------|------------------------|
| 50 x 32  | 625.00                 | 0.001600               |
| 75 x 32  | 416.67                 | 0.002400               |
| 100 x 32 | 312.50                 | 0.003200               |
| 150 x 32 | 208.33                 | 0.004800               |
| 200 x 32 | 156.25                 | 0.006400               |
| 250 x 32 | 125.00                 | 0.008000               |
| 300 x 32 | 104.17                 | 0.009600               |

| SIZE     | lin per m <sup>3</sup> | m <sup>3</sup> per lin |
|----------|------------------------|------------------------|
| 50 x 40  | 500.00                 | 0.002000               |
| 75 x 40  | 333.33                 | 0.003000               |
| 100 x 40 | 250.00                 | 0.004000               |
| 150 x 40 | 166.66                 | 0.006000               |
| 200 x 40 | 125.00                 | 0.008000               |
| 250 x 40 | 100.00                 | 0.010000               |
| 300 x 40 | 83.33                  | 0.012000               |

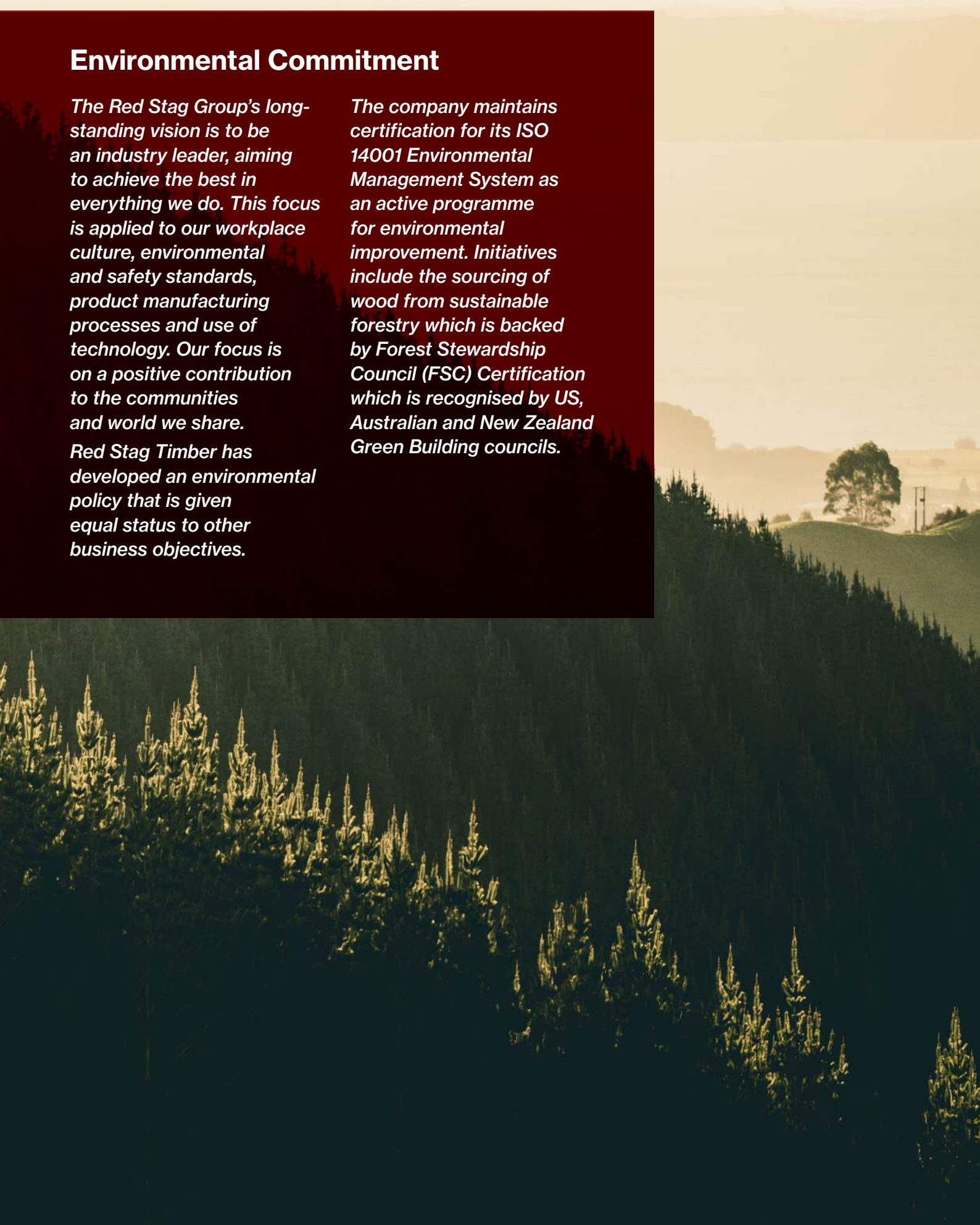
| SIZE     | lin per m <sup>3</sup> | m <sup>3</sup> per lin |
|----------|------------------------|------------------------|
| 50 x 50  | 400.00                 | 0.002500               |
| 75 x 50  | 266.67                 | 0.003750               |
| 100 x 50 | 200.00                 | 0.005000               |
| 150 x 50 | 133.33                 | 0.007500               |
| 200 x 50 | 100.00                 | 0.010000               |
| 250 x 50 | 80.00                  | 0.012500               |
| 300 x 50 | 66.67                  | 0.015000               |

# Caring for the Environment

## Environmental Commitment

*The Red Stag Group's long-standing vision is to be an industry leader, aiming to achieve the best in everything we do. This focus is applied to our workplace culture, environmental and safety standards, product manufacturing processes and use of technology. Our focus is on a positive contribution to the communities and world we share. Red Stag Timber has developed an environmental policy that is given equal status to other business objectives.*

*The company maintains certification for its ISO 14001 Environmental Management System as an active programme for environmental improvement. Initiatives include the sourcing of wood from sustainable forestry which is backed by Forest Stewardship Council (FSC) Certification which is recognised by US, Australian and New Zealand Green Building councils.*





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## **OBJECTIVES OF THE RED STAG TIMBER ENVIRONMENTAL PRODUCT DECLARATION:**

Red Stag Timber has developed an Environmental Product Declaration to help to showcase the environmental credentials of their wood products. The EPD also provides life cycle data for calculating the impacts of wood products at a building level. This data may be used by specifiers and developers to calculate and present the environmental impacts of particular construction projects.

The EPD can allow the represented products to qualify for points under green rating tools, such as the Green Star rating tool of the New Zealand Green Building Council (NZGBC).

The Red Stag Timber sawmill site has been in a constant state of improvement since 2003. Modernisation of processes with state of the art systems and equipment offers higher efficiencies and lower impact on the environment. In the early days some timber preservation was carried out off site, incurring transportation costs and carbon impacts. Investment into on-site closed-loop preservation plants has eliminated the need for double handling and produces higher quality products with lower environmental impacts. Additional new boilers at the new Energy Centre generates more energy from burning wood waste. This energy is by means of steam to operate the kilns and a surplus of renewable electricity. The recent addition of a USNR sawmill increases wood production capacity with less wastage and lower power consumption.



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## **ELECTRIC VEHICLES:**

Looking to the future Red Stag has gone beyond simply looking at ways to improve environmental performance and have extended to staff and visitors' charging stations for EVs using the on-site electricity. This promotes the use of low cost pollution-free transport as well as giving flexibility to site visitors who may be coming from afar wishing to recharge for their trip home.

Over the longer term we are looking at new ways of protecting kiln dried product without the use of plastic film. Another environment supporting measure that will reduce the volume of plastics that may potentially enter waste and waterways. Until then methods of reducing wastage of plastic wrap and strapping are being investigated and recycling is being encouraged.



# Caring for the Environment

## FORESTRY AND CONSTRUCTION – DOUBLE THE BENEFIT

Over recent years Red Stag has made significant investment into plantation pine forestry for timber.

The humble pine stands alone as one of the most effective methods of absorbing carbon from the atmosphere, storing it as a tree, and then again in the wooden structure – an offsetting factor mitigating climate change. Additionally, increased ownership of forests provides potential supply chain guarantees to Red Stag Timber production facilities during times of reduced supply from traditional sources. Long term supply contracts are in place with plantation owners that will cater for production commitments made to our customer base for the foreseeable future, but increased ownership adds an element of security to the mix.

The carbon sequestering nature of wood is a major benefit of its use in construction. Trees extract carbon from the atmosphere and store it away for the life-span of the tree. Once harvested the lumber produced continues to store carbon for the entire economic duration of the structure it has become part of. Research has shown, that over and above the many environmental benefits, in living spaces and working areas where wood is an integral component the aesthetic and ambient qualities provide a positive contribution to the wellbeing of the occupants. These inherent characteristics of wood offer contributions to the planet and to human habitation that are unmatched by any other building material.

Red Stag Timber products have a highly positive environmental impact when compared to many alternatives.

## QUALITY ACCREDITATIONS:

Red Stag Timber has a stringent internal framework of documented quality processes and procedures. It covers our primary breakdown, drying, gauging, mechanical grading and preservation processes. This quality assurance programme is aimed at ensuring that every piece of structural and/or treated timber leaving the site complies with and exceeds the applicable New Zealand and Australian standards.

## RESPONSIBLE OPERATIONS:

Red Stag Timber has become a recognised market leader in terms of product innovation, manufacturing capacity and conservation having received the 2018 EECA award for large Energy User of the Year. Over the past 15 years Red Stag has taken measures to improve the local and greater environment through various conservation and sustainability measures.

## BIO-FUEL THERMAL AND ELECTRICAL ENERGY

Red Stag Timber utilises wood waste offcuts and sawdust from sawing and planing as a bio-fuel to generate electricity and provide thermal energy to dry timber. Red Stag Timber is also a net exporter of electricity to the national grid to help power New Zealand's growing energy needs. The

Red Stag Energy Centre produces a total of 50MW of Energy, and up to 7.5MW of Renewable Electricity Generation– or enough to power 20% of the homes in Rotorua.

Utilising its own wood-waste as an energy source ensures that both CO2 emissions and landfill disposal requirements are minimised.

## PRESERVATION:

Timber products may undergo a preservation process where environmentally stable chemicals, all of which meet applicable safety guidelines are applied to meet and exceed all applicable treatment standards and to ensure a long and useful life in their intended application. Red Stag Timber was a pioneer in promoting the reintroduction of boron as a safe and effective preservative.

Treated timber products include those treated with Boron, Light Organic Solvent preservatives (LOSP) and Copperchrome-arsenate (CCA). No products declared within our company EPD contain substances exceeding the limits for registration according to the European Chemicals Agency's "Candidate List of Substances of Very High Concern for authorisation".

## END OF LIFE

At the end of its useful life, a timber product is removed from the building and may end up recycled, reused, combusted to produce energy, or landfilled. In New Zealand, the most common end-of-life method is landfill, especially for treated products, which have limitations for recycling and incinerating. The landfill scenario and other possible end of life scenarios are described in our EPD document.



## ENVIRONMENTAL PRODUCT DECLARATION

To be fully transparent in relation to our impact on the environment Red Stag Timber has commissioned and produced a formal EPD. This document can be provided to our merchant customers in full via hard copy (please request from your Red Stag Timber Account Manager) or can be viewed on the Red Stag Timber website at [www.redstagtimber.co.nz](http://www.redstagtimber.co.nz)

This document measures and documents the impact on the environment in terms of:



### *Global Warming Potential (GWP)*

Carbon footprint |  
Climate Change



### *Eutrophication Potential (EP)*

Algal Blooms



### *Ozone Depletion Potential (ODP)*

Ozone Hole



### *Photochemical Ozone Creation Potential (POCP)*

Smog



### *Acidification Potential (AP)*

Acid Rain



### *Abiotic Depletion Potential (ADPE and ADPF)*

Resource Consumption







Preferred by Nature hereby certifies that

## Red Stag Timber Limited

Waipa State Mill Road, PO Box 1748  
Rotorua, 3040  
New Zealand

conform with the following standards:

FSC-STD-40-004 V3-1  
FSC-STD-40-005 V3-1  
FSC-STD-50-001 V2-1 EN

The certificate is valid from 25 March 2024 to 24 March 2029  
Certificate version date: 03 March 2025

### Certification scope

Single Chain of Custody and Controlled Wood

### Certificate registration code

PBN-COC-003967  
PBN-CW-003967

### FSC™ license code

FSC-C008413



Justinas Janulaitis  
Management board member  
Filosoofi 31, Tartu, Estonia

### Appendix A: Scope of Red Stag Timber Limited FSC Chain of Custody and Controlled Wood Certificate PBN-COC-003967 PBN-CW-003967

| Product type | Trade name  | Output FSC claims |
|--------------|---|-------------------|
| W13.4        | Fences, fence stakes, pales                             | FSC Mix Credit    |
| W13.5        | Decking and garden sleepers                             | FSC Mix Credit    |
| W3.1         | Wood chips  | FSC Mix Credit    |
| W4.3         | Solid Wood Products (Treated rough sawn)                | FSC Mix Credit    |
| W4.3.2       | Solid Wood Products (Treated rough sawn)                | FSC Mix Credit    |
| W5.2         | Solid Wood Products (Green sawn, kiln dried rough sawn) | FSC Mix Credit    |
| W6.1         | Solid wood products (machined timber, shook)            | FSC Mix Credit    |
| W9.1         | Assembled finger jointed                                | FSC Mix Credit    |

Specific information regarding products and/or sites is listed in the appendix(es) of this certificate. The validity and exact scope covered by this certificate shall always be verified at [www.info.fsc.org](http://www.info.fsc.org). This certificate itself does not constitute evidence that a particular product supplied by the certificate holder is FSC certified [or FSC Controlled Wood]. Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required FSC claim is clearly stated on sales and delivery documents. The physical printed certificate remains the property of Preferred by Nature OÜ and shall be returned upon request.

Certificate version date: 03-03-2025

# Renew™

QUALITY TIMBER WRAP NOW  
MADE WITH A MINIMUM OF  
**50%** RECYCLED MATERIAL

Renew™ Timber Wrap is made from minimum 50% recycled LDPE material derived from New Zealand waste

Renew™ Timber Wrap is a soft plastic and is 100% recyclable in New Zealand



Click on the links below to find your recycling partner

#### Recycling schemes

- Future Post [www.futurepost.co.nz/recycling-partners](http://www.futurepost.co.nz/recycling-partners)
- Soft Plastics Recycling [www.recycling.kiwi.nz/contact-us](http://www.recycling.kiwi.nz/contact-us)
- Save board [www.saveboard.nz/send-your-waste](http://www.saveboard.nz/send-your-waste)
- Plasbak [www.plasback.co.nz/](http://www.plasback.co.nz/)

#### Commercial recyclers

- Comspec [www.comspec.co.nz](http://www.comspec.co.nz)
- Pact Recycling East Tamaki [www.pactgroup.com](http://www.pactgroup.com)
- Reclaim [www.reclaim.co.nz/plastic-recycling](http://www.reclaim.co.nz/plastic-recycling)
- Waste Management [www.wm.nz](http://www.wm.nz)

For information on recycling options click on the link below for the Plastics NZ web site

[www.plastics.org.nz/environment/recycling-disposal/industrial-recycling](http://www.plastics.org.nz/environment/recycling-disposal/industrial-recycling)

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# Biomass powered sawmilling



The Waipa State Mill (now Red Stag Timber) was founded in 1939 to supply sustainable timber to the New Zealand domestic market from plantation forestry. Today the site is the largest sawmill in the Southern Hemisphere, employing around 500 people



Over 1 million m<sup>3</sup> of logs are consumed annually for supplying the New Zealand domestic market and export. *That's the equivalent of over 35,000 logging trucks.*



Red Stag Timber is a unique site in that it generates all its electricity and steam from its own process waste and is a net exporter of electricity to the national grid.



This is achieved by burning all the sawdust, shavings and reject timber in 3 biomass boilers. These boilers produce up to 69 tonnes per hour of 415 degree steam at 42 bar.



This steam then passes through 2 Siemens turbines that lower the steam to 200 degrees at 10 bar whilst producing up to 7.7MW of electricity, which is sufficient to cover the requirements of the site and export to the national grid. The energy produced is enough to power a town of 15,000 people.

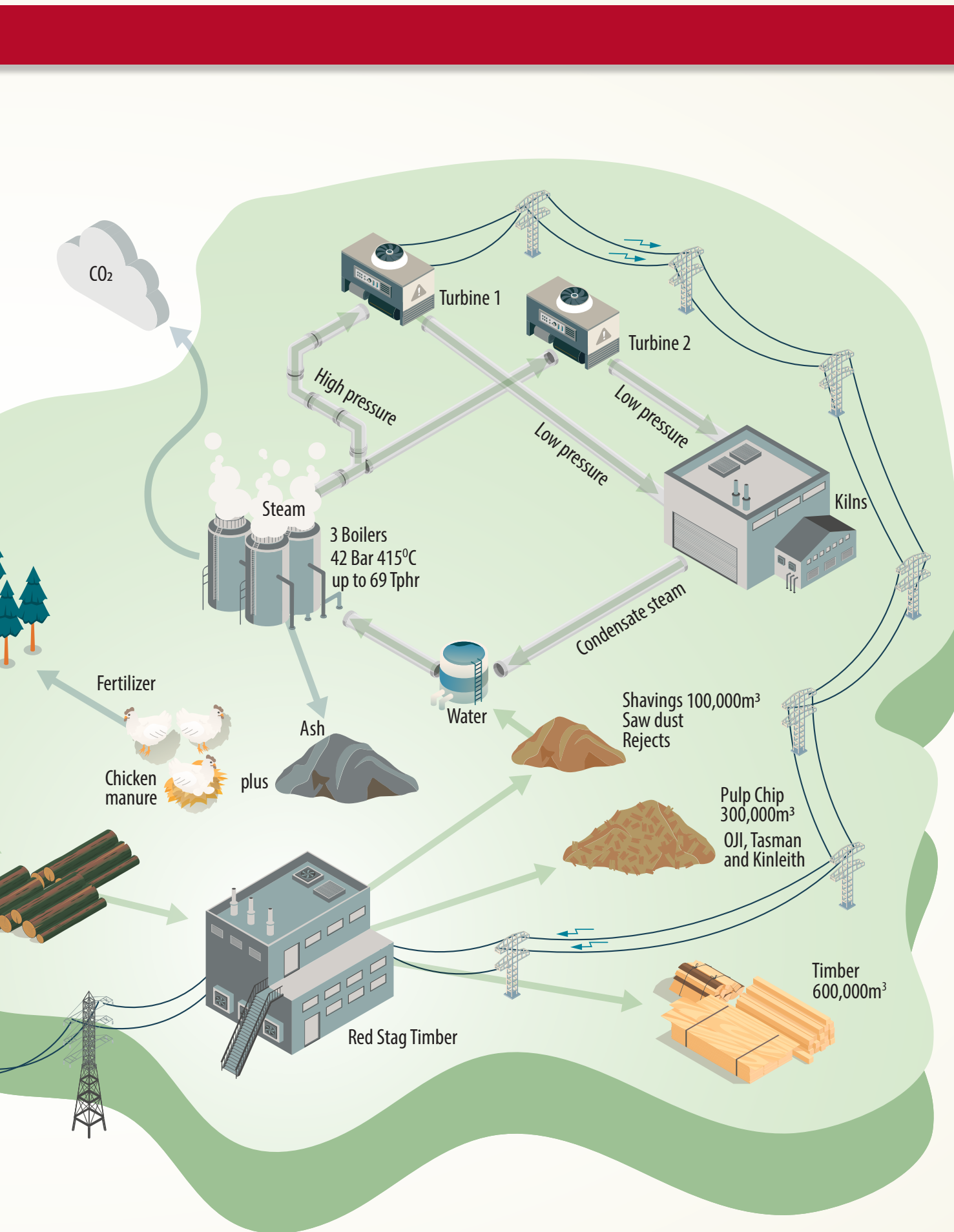


The steam then passes to the kilns where it is used to dry the timber for end use. The cooled steam (condensate) is then returned to the boilers where the process is repeated.



Red Stag was the winner of the EECA Business Awards 2018 'Large energy user of the year' award and the 2019 Deloitte Excellence Awards 'Large energy user initiative of the year'. Both awards were for its commitment to sustainable energy use. In 2021, Red Stag also won the ITM 'Supplier of the year' award.





# NZS 3604 Frames & Floors

**Table 8.2 – Studs in loadbearing walls for all wind zones – SG 8 (see 8.5.1.1)**

| Wind zone   | Loaded dimension* of wall | Stud sizes for maximum length (height) of: (m) |           |           |                                  |           |           |                                  |           |           |
|---|---------------------------|--|-----------|-----------|----------------------------------|-----------|-----------|----------------------------------|-----------|-----------|
|   |                           | 2.4  |           |           | 2.7                              |           |           | 3.0                              |           |           |
|   |                           | At maximum stud spacing (mm) of:               |           |           | At maximum stud spacing (mm) of: |           |           | At maximum stud spacing (mm) of: |           |           |
|   |                           | 300  | 400       | 600       | 300                              | 400       | 600       | 300                              | 400       | 600       |
|   | (m)                       | (mm x mm)                                      | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) |
| (width x thickness)   |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>(a) Single or top storey – Light and heavy roof</b>  |                           |  |           |           |                                  |           |           |                                  |           |           |
| Extra high  | 2.0                       | –  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
|   | 4.0                       | –  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
|   | 6.0                       | –  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
| Very high   | 2.0                       | –  | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|   | 4.0                       | –  | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|   | 6.0                       | –  | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
| High  | 2.0                       | –  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   |
|   | 4.0                       | –  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   |
|   | 6.0                       | –  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   |
| Medium  | 2.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
|   | 4.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
|   | 6.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
| Low   | 2.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   |
|   | 4.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   |
|   | 6.0                       | –  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   |
| Internal walls for all wind zones   | 2.0                       | –  | 70 x 45   | 70 x 45   | 70 x 45                          | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   |
|   | 4.0                       | –  | 70 x 45   | 70 x 45   | 70 x 45                          | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   |
|   | 6.0                       | –  | 70 x 45   | 70 x 45   | 70 x 45                          | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   |
|   |                           | 3.6  |           |           | 4.2                              |           |           | 4.8                              |           |           |
|   |                           | At maximum stud spacing (mm) of:               |           |           | At maximum stud spacing (mm) of: |           |           | At maximum stud spacing (mm) of: |           |           |
|   |                           | 300  | 400       | 600       | 300                              | 400       | 600       | 300                              | 400       | 600       |
|   | (m)                       | (mm x mm)                                      | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) |
| (width x thickness)   |                           |  |           |           |                                  |           |           |                                  |           |           |
| Extra high  | 2.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 90  | 190 x 90  |
|   | 4.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 90  | 190 x 90  |
|   | 6.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 90  | 190 x 90  |
| Very high   | 2.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 45  | 190 x 90  |
|   | 4.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 45  | 190 x 90  |
|   | 6.0                       | 140 x 45                                       | 140 x 45  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 45  | 140 x 90                         | 190 x 45  | 190 x 90  |
| High  | 2.0                       | 90 x 90  | 140 x 45  | 140 x 45  | 140 x 45                         | 140 x 90  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 90  |
|   | 4.0                       | 90 x 90  | 140 x 45  | 140 x 45  | 140 x 45                         | 140 x 90  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 90  |
|   | 6.0                       | 90 x 90  | 140 x 45  | 140 x 45  | 140 x 45                         | 140 x 90  | 140 x 90  | 140 x 90                         | 140 x 90  | 190 x 90  |
| Medium  | 2.0                       | 90 x 70  | 90 x 70   | 140 x 45  | 90 x 90                          | 140 x 45  | 140 x 90  | 140 x 45                         | 140 x 90  | 140 x 90  |
|   | 4.0                       | 90 x 70  | 90 x 70   | 140 x 45  | 90 x 90                          | 140 x 45  | 140 x 90  | 140 x 45                         | 140 x 90  | 140 x 90  |
|   | 6.0                       | 90 x 70  | 90 x 70   | 140 x 45  | 90 x 90                          | 140 x 45  | 140 x 90  | 140 x 45                         | 140 x 90  | 140 x 90  |
| Low   | 2.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
|   | 4.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
|   | 6.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
| Internal walls for all wind zones   | 2.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
|   | 4.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
|   | 6.0                       | 90 x 35  | 90 x 70   | 90 x 70   | 90 x 70                          | 90 x 90   | 140 x 45  | 140 x 45                         | 140 x 45  | 140 x 90  |
| * For definition of loaded dimension see 1.3.   |                           |  |           |           |                                  |           |           |                                  |           |           |
| NOTE –  |                           |  |           |           |                                  |           |           |                                  |           |           |
| (1) Determine the loaded dimension of the wall at floor level and the loaded dimension of the wall above at roof level and use the greater value in this table.   |                           |  |           |           |                                  |           |           |                                  |           |           |
| (2) 140 x 45 may be substituted for 90 x 90, 90 x 35 may be substituted for 70 x 45.  |                           |  |           |           |                                  |           |           |                                  |           |           |
| (3) Studs 70 mm and 90 mm thick may be replaced with studs of 35 mm and 45 mm thickness respectively, provided they are placed at no more than one half the spacing required for the 70 mm and 90 mm stud they are replacing. |                           |  |           |           |                                  |           |           |                                  |           |           |
| (4) Studs 70 mm and 90 mm thick may be substituted with built-up members sized in accordance with 8.5.1.2 and nailed together in accordance with 2.4.4.7.   |                           |  |           |           |                                  |           |           |                                  |           |           |



**Table 8.2 – Studs in loadbearing walls for all wind zones – SG 8 (continued) (see 8.5.1.1)**

| Wind zone   | Loaded dimension* of wall | Stud sizes for maximum length (height) of: (m) |           |           |                                  |           |           |                                  |           |           |
|---|---------------------------|--|-----------|-----------|----------------------------------|-----------|-----------|----------------------------------|-----------|-----------|
|   |                           | 2.4  |           |           | 2.7                              |           |           | 3.0                              |           |           |
|   |                           | At maximum stud spacing (mm) of:               |           |           | At maximum stud spacing (mm) of: |           |           | At maximum stud spacing (mm) of: |           |           |
|   |                           | 300  | 400       | 600       | 300                              | 400       | 600       | 300                              | 400       | 600       |
|   | (m)                       | (mm x mm)                                      | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) |
| (width x thickness)   |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>(b) Lower of two storeys or subfloor beneath one storey</b>  |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>Extra high</b>   | 2.0                       | -  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 90   | 140 x 45  |
|   | 4.0                       | -  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 90   | 140 x 45  |
|   | 6.0                       | -  | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 90   | 140 x 45  |
| <b>Very high</b>  | 2.0                       | -  | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|   | 4.0                       | -  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 45                          | 90 x 70   | 90 x 90   |
|   | 6.0                       | -  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 45                          | 90 x 70   | 90 x 90   |
| <b>High</b>   | 2.0                       | -  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 35                          | 90 x 70   | 90 x 70   |
|   | 4.0                       | -  | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|   | 6.0                       | -  | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
| <b>Medium</b>   | 2.0                       | -  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
|   | 4.0                       | -  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 45   | 90 x 70   |
|   | 6.0                       | -  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   |
| <b>Low</b>  | 2.0                       | -  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   |
|   | 4.0                       | -  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 45   |
|   | 6.0                       | -  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
| <b>Internal walls for all wind zones</b>  | 2.0                       | -  | 70 x 45   | 90 x 35   | 70 x 45                          | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   |
|   | 4.0                       | -  | 70 x 45   | 90 x 35   | 70 x 45                          | 70 x 45   | 90 x 45   | 70 x 45                          | 90 x 35   | 90 x 45   |
|   | 6.0                       | -  | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   | 70 x 45                          | 90 x 35   | 90 x 70   |
| * For definition of loaded dimension see 1.3.   |                           |  |           |           |                                  |           |           |                                  |           |           |
| <p><b>NOTE –</b></p> <p>(1) Determine the loaded dimension of the wall at floor level and the loaded dimension of the wall above at roof level and use the greater value in this table.</p> <p>(2) 140 x 45 may be substituted for 90 x 90, 90 x 35 may be substituted for 70 x 45.</p> <p>(3) Studs 70 mm and 90 mm thick may be replaced with studs of 35 mm and 45 mm thickness respectively, provided they are placed at no more than one half the spacing required for the 70 mm and 90 mm stud they are replacing.</p> <p>(4) Studs 70 mm and 90 mm thick may be substituted with built-up members sized in accordance with 8.5.1.2 and nailed together in accordance with 2.4.4.7.</p> |                           |  |           |           |                                  |           |           |                                  |           |           |

# NZS 3604 Frames & Floors

**Table 8.2 – Studs in loadbearing walls for all wind zones – SG 8 (continued) (see 8.5.1.1)**

| Wind zone  | Loaded dimension* of wall | Stud sizes for maximum length (height) of: (m) |           |           |                                  |           |           |                                  |           |           |
|--|---------------------------|--|-----------|-----------|----------------------------------|-----------|-----------|----------------------------------|-----------|-----------|
|  |                           | 2.4  |           |           | 2.7                              |           |           | 3.0                              |           |           |
|  |                           | At maximum stud spacing (mm) of:               |           |           | At maximum stud spacing (mm) of: |           |           | At maximum stud spacing (mm) of: |           |           |
|  |                           | 300  | 400       | 600       | 300                              | 400       | 600       | 300                              | 400       | 600       |
|  | (m)                       | (mm x mm)                                      | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) | (mm x mm)                        | (mm x mm) | (mm x mm) |
| (width x thickness)  |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>(c) Subfloor beneath two storeys</b>  |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>Extra high</b>  | 2.0                       | 90 x 45  | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
|  | 4.0                       | 90 x 45  | 90 x 70   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 90   | 140 x 45  |
|  | 6.0                       | 90 x 45  | 90 x 70   | 90 x 90   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 90   | 140 x 45  |
| <b>Very high</b>   | 2.0                       | 90 x 35  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 45                          | 90 x 70   | 90 x 90   |
|  | 4.0                       | 90 x 35  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
|  | 6.0                       | 90 x 35  | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   | 90 x 70                          | 90 x 70   | 140 x 45  |
| <b>High</b>  | 2.0                       | 90 x 35  | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|  | 4.0                       | 90 x 35  | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
|  | 6.0                       | 90 x 35  | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   | 90 x 45                          | 90 x 70   | 90 x 90   |
| <b>Medium</b>  | 2.0                       | 90 x 35  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   |
|  | 4.0                       | 90 x 35  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   |
|  | 6.0                       | 90 x 35  | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   | 90 x 35                          | 90 x 45   | 90 x 70   |
| <b>Low</b>   | 2.0                       | 90 x 35  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
|  | 4.0                       | 90 x 35  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
|  | 6.0                       | 90 x 35  | 90 x 35   | 90 x 35   | 90 x 35                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
| <b>Internal walls for all wind zones</b>   | 2.0                       | 70 x 45  | 70 x 45   | 90 x 35   | 70 x 45                          | 70 x 45   | 90 x 45   | 70 x 45                          | 90 x 35   | 90 x 70   |
|  | 4.0                       | 70 x 45  | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   | 70 x 45                          | 90 x 35   | 90 x 70   |
|  | 6.0                       | 70 x 45  | 70 x 45   | 90 x 35   | 70 x 45                          | 90 x 35   | 90 x 45   | 90 x 35                          | 90 x 35   | 90 x 70   |
| * For definition of loaded dimension see 1.3.  |                           |  |           |           |                                  |           |           |                                  |           |           |
| <b>NOTE –</b><br>(1) Determine the loaded dimension of the wall at floor level and the loaded dimension of the wall above at roof level and use the greater value in this table.<br>(2) 140 x 45 may be substituted for 90 x 90. 90 x 35 may be substituted for 70 x 45.<br>(3) Studs 70 mm and 90 mm thick may be replaced with studs of 35 mm and 45 mm thickness respectively, provided they are placed at no more than one half the spacing required for the 70 mm and 90 mm stud they are replacing.<br>(4) Studs 70 mm and 90 mm thick may be substituted with built-up members sized in accordance with 8.5.1.2 and nailed together in accordance with 2.4.4.7. |                           |  |           |           |                                  |           |           |                                  |           |           |

**Table 7.1 – Floor joists – SG 8 up to 2 kPa floor loads (see 7.1.1.1)**

| <b>(a) 1.5 kPa floor load SG 8 (dry in service)</b>                          |  |            |            |
|--|--|------------|------------|
| <b>Floor joist size</b>  | <b>Maximum span* of joists at a maximum spacing (mm) of:</b> |            |            |
|  | <b>400</b>   | <b>450</b> | <b>600</b> |
| (mm x mm)  | (m)  | (m)        | (m)        |
| 90 x 45  | 1.45   | 1.40       | 1.25       |
| 140 x 35   | 2.10   | 2.00       | 1.80       |
| 140 x 45   | 2.70   | 2.60       | 2.00       |
| 190 x 45   | 3.55   | 3.45       | 3.15       |
| 240 x 45   | 4.40   | 4.30       | 3.90       |
| 290 x 45   | 5.20   | 5.05       | 4.60       |
| <b>(b) 2 kPa floor load SG 8 and SG 8 (Wet) (wet in service)</b>             |  |            |            |
| <b>Floor joist size</b>  | <b>Maximum span* of joists at a maximum spacing (mm) of:</b> |            |            |
|  | <b>400</b>   | <b>450</b> | <b>600</b> |
| (mm x mm)  | (m)  | (m)        | (m)        |
| 90 x 45  | 1.60   | 1.50       | 1.30       |
| 140 x 35   | 2.20   | 2.05       | 1.80       |
| 140 x 45   | 2.50   | 2.35       | 2.05       |
| 190 x 45   | 3.40   | 3.20       | 2.75       |
| 240 x 45   | 4.30   | 4.05       | 3.50       |
| 290 x 45   | 5.20   | 4.90       | 4.25       |
| * Spans may be increased by 10 % for joists continuous over 2 or more spans. |  |            |            |

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**Table 8.3 – No. 2 Framing in internal and non-loadbearing walls (see 8.5.1.1)**

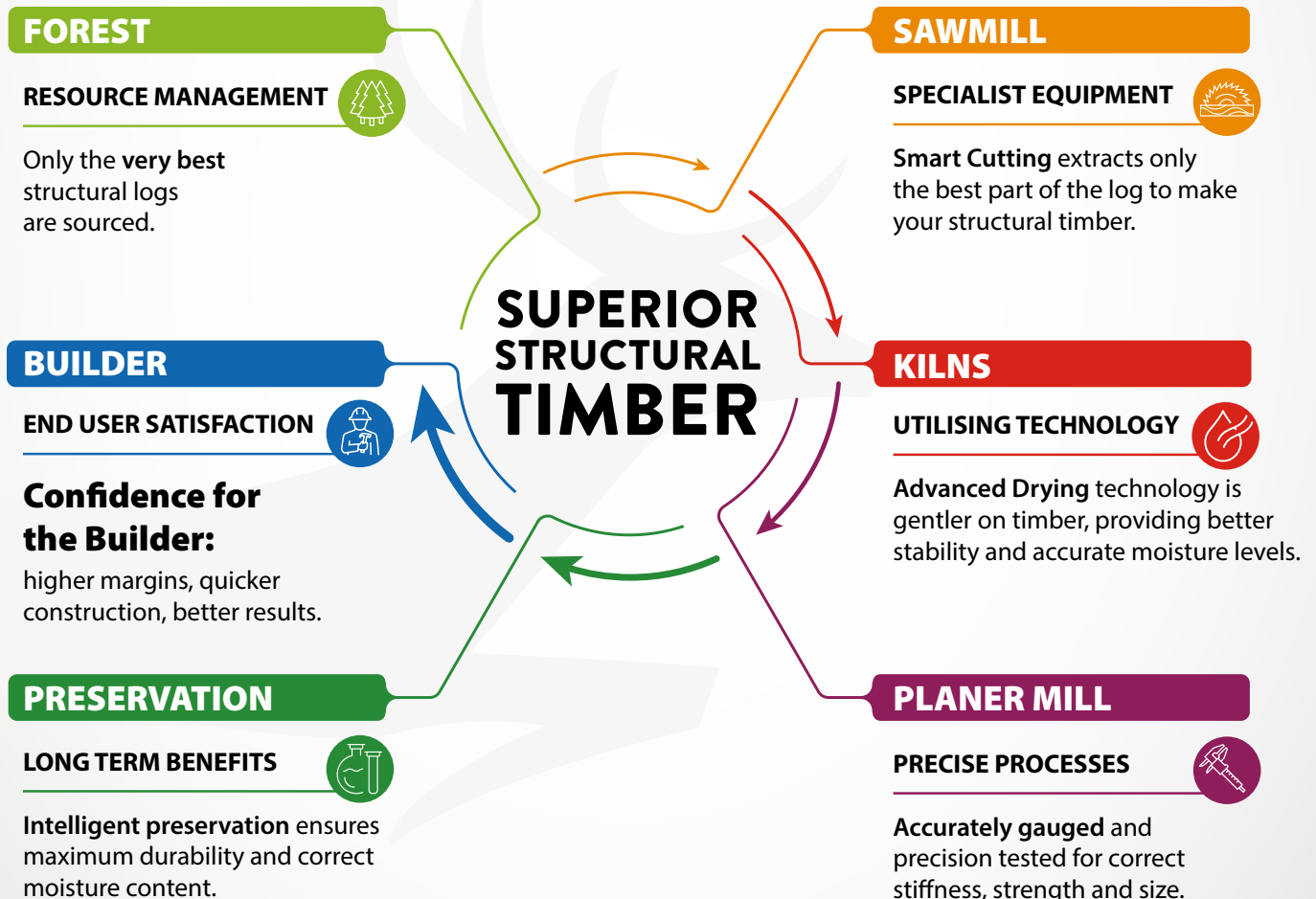
|   | <b>Maximum length<br/>(height) of stud</b> | <b>Minimum stud size for maximum spacing of studs (mm) of:</b> |            |            |
|---|--|--|------------|------------|
|   |  | <b>400</b>   | <b>450</b> | <b>600</b> |
|   | (m)  | (mm x mm)  | (mm x mm)  | (mm x mm)  |
| <b>Internal non-loadbearing walls in all wind zones</b> | 2.4  | 70 x 45  | 70 x 45    | 90 x 35    |
|   | 2.7  | 90 x 35  | 90 x 35    | 90 x 45    |
|   | 3.0  | 90 x 35  | 90 x 35    | 90 x 45    |

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# TIMBER TREATMENT

## FRAMING GUIDE

**CCA H3.2**  
Rafters where exposed

**H1.2**  
Enclosed Balustrade

**CCA H3.2**  
Floor Joists where exposed or cantilevered

**CCA H4**  
Fence Post

**CCA H3.2**  
Fence Rail

**CCA H3.2**  
Fence Paling

**Damp Proofing Moisture Barrier**

**CCA H4**  
Non-structural Retaining Wall

**CCA H5**  
If structural or > 1.5m in height

**H1.2**  
Wall Framing

**H1.2**  
Enclosed Roof Framing

**CCA H3.2**  
Exposed Roof Framing

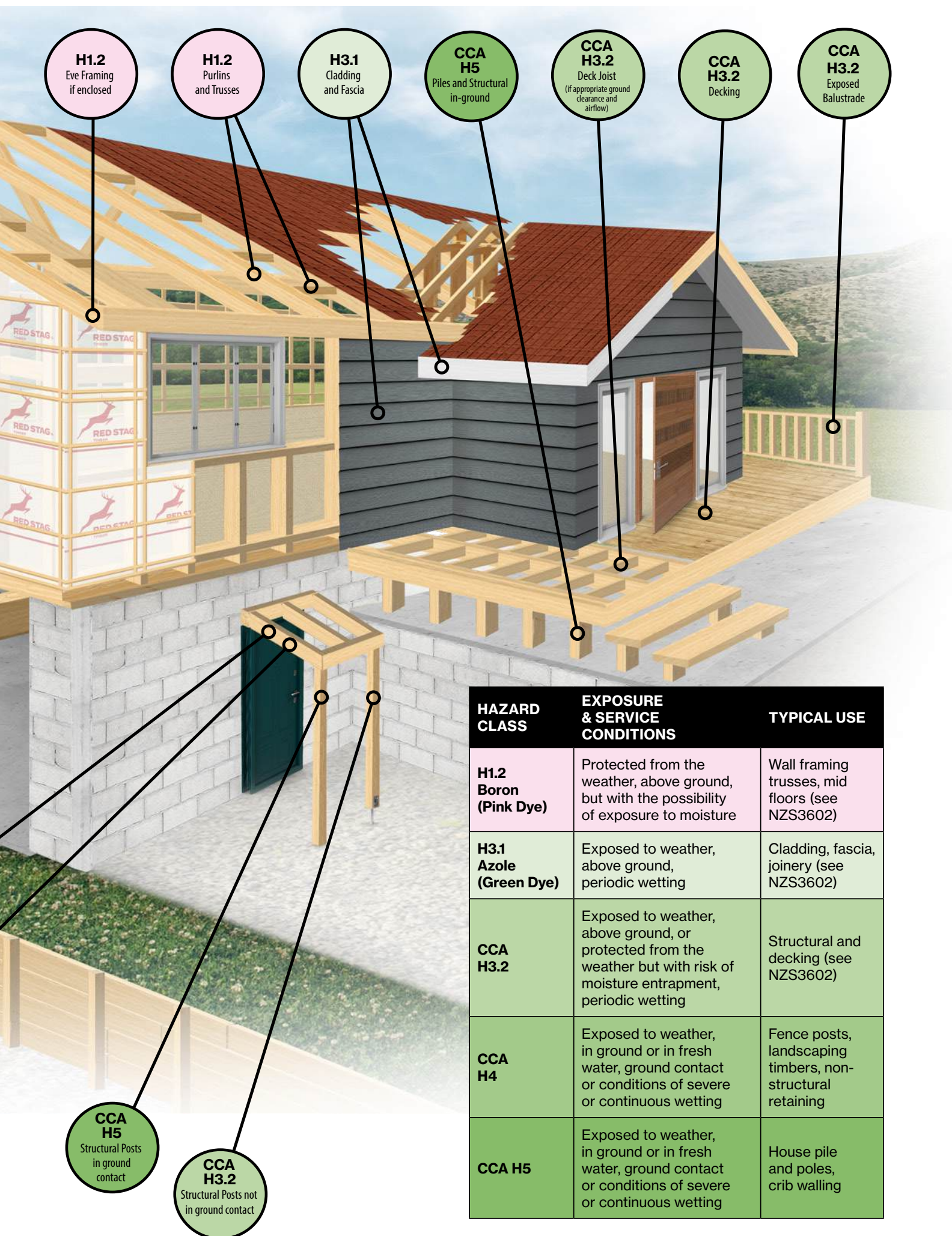
**H1.2**  
Mid-floor Joist

**H3.1**  
Cavity Batten



**RED STAG®**  
TIMBER



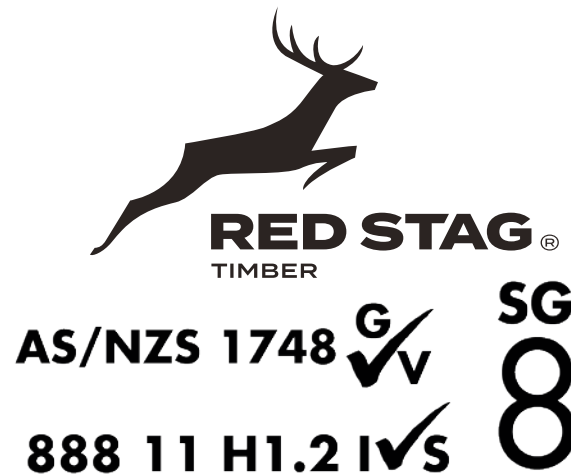


| HAZARD CLASS                  | EXPOSURE & SERVICE CONDITIONS  | TYPICAL USE  |
|-------------------------------|--|--|
| <b>H1.2 Boron (Pink Dye)</b>  | Protected from the weather, above ground, but with the possibility of exposure to moisture                             | Wall framing trusses, mid floors (see NZS3602)             |
| <b>H3.1 Azole (Green Dye)</b> | Exposed to weather, above ground, periodic wetting   | Cladding, fascia, joinery (see NZS3602)                    |
| <b>CCA H3.2</b>               | Exposed to weather, above ground, or protected from the weather but with risk of moisture entrapment, periodic wetting | Structural and decking (see NZS3602)                       |
| <b>CCA H4</b>                 | Exposed to weather, in ground or in fresh water, ground contact or conditions of severe or continuous wetting          | Fence posts, landscaping timbers, non-structural retaining |
| <b>CCA H5</b>                 | Exposed to weather, in ground or in fresh water, ground contact or conditions of severe or continuous wetting          | House pile and poles, crib walling                         |

January 2026

## PRODUCER STATEMENT FOR STRUCTURAL GRADE (SG) TIMBER

### Grade and Treatment Identification



Mechanically stress graded SG timber intended for interior construction will have the grade and treatment identification at 1200mm centres along the board. Visually stress graded SG8 intended for exterior construction will have one grade and treatment identification at the end of the board.

### Grading

Red Stag Timber produces SG10, SG8 and SG6 structural timber that complies with the design requirements of NZS3604:2011 Timber Framed Buildings. The engineering properties are contained in NZS3603:1993 A4 and are verified by the process specified in NZS3622:2004 A1.

Each board is labelled with a grade stamp in black ink showing:

- The Timber Grade: SG10, SG8, or SG6
- The Manufacturing Standard: AS/NZS1748:2011 for Machine Stress Graded timber or NZS3631:1988 for Visually Stress Graded timber
- The Qualified Grading Auditor: Grade Right
- The Producing Company: Red Stag Timber

Any structural timber displaying these marks complies with the above mentioned standards in terms of stiffness, strength, knot-size, permissible distortion and other allowable characteristics.

## Treatment

Red Stag Timber produces H1.2 and H3.2 treated structural timber that complies with the requirements of NZS3640:2003 A5 Chemical Preservation of Round and Sawn Timber.

Each board is labelled with a treatment stamp in black ink showing:

- The Treatment Plant Number: 888 is Red Stag Timber
- The Treatment Chemical: 1 is CCA, 11 is Boron.
- The Hazard Class: H1.2 or H3.2
- The Qualified Treatment Auditor: Independent Verification Services
- The Producing Company: Red Stag Timber

Any structural timber displaying these marks complies with the above mentioned standard in terms of retention, penetration and formulation requirements.

## Moisture Content

Red Stag Timber produces kiln dried structural timber that has a moisture content of between 10% and 14% at the time of drying. As with all timber, it will absorb or release moisture as it adapts to the local equilibrium moisture content. Red Stag Timber recommends that all kiln dried timber is kept dry until the building is fully enclosed.

## Sizing

Red Stag Timber produces SG10, SG8, and SG6 structural timber that complies with the requirements of the Wood Producers' Association Structural Timber Quality Scheme. This sets a tolerance of +/- 1mm from the timber design size at time of manufacture. The timber design size is printed on the side of the board. The absorption or release of moisture will affect sizing.



**Shane Batchelor**  
**SALES & MARKETING MANAGER**  
**Red Stag Timber Limited**

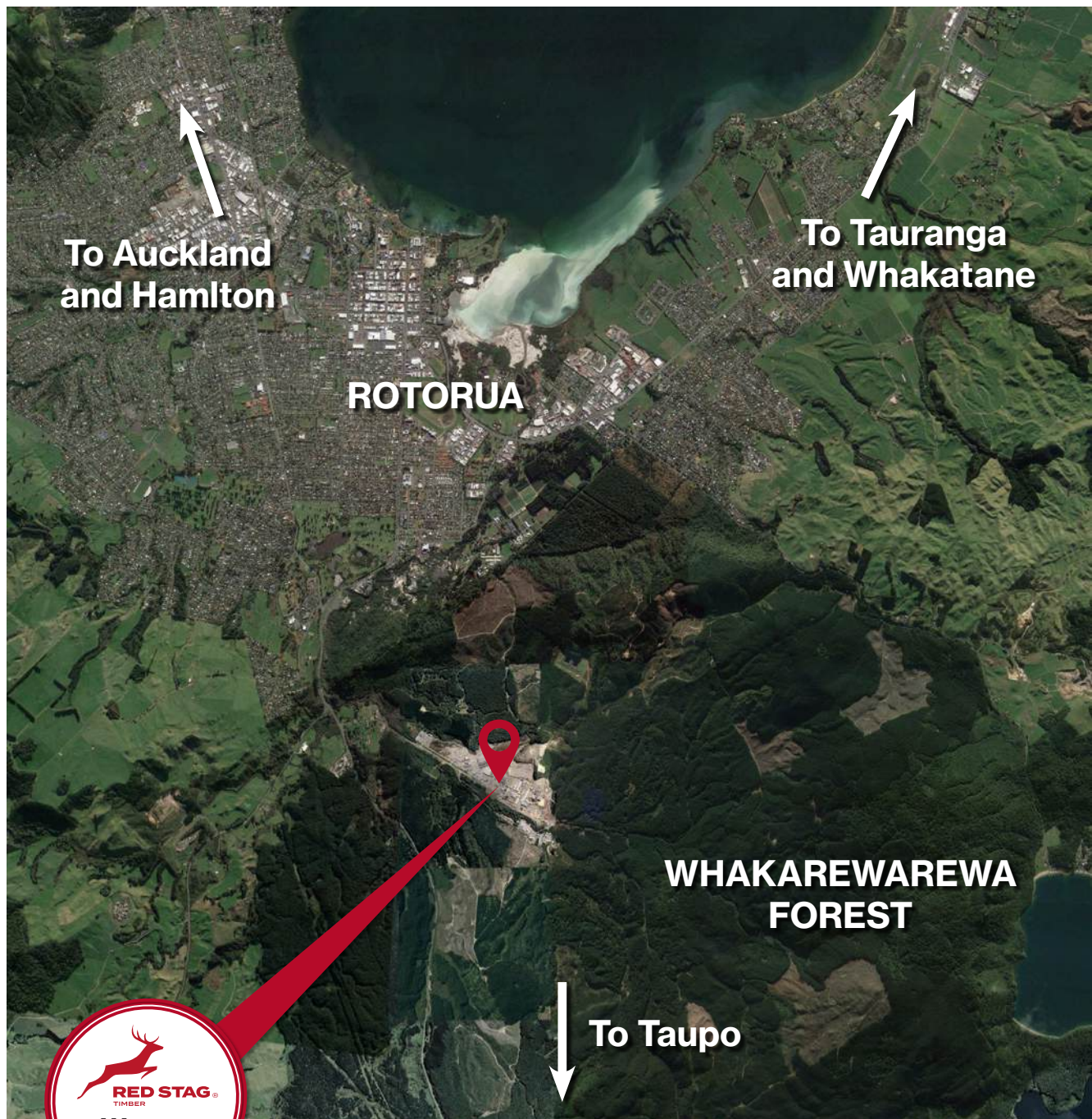
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