



# Truss Component Analysis

## Introduction

Although pre-cut truss webs (or Turb-O-Webs®) have been used successfully around the world for the last 30 years in millions of trusses improving production outcomes and reducing costs, full cost benefit analysis has never been truly assessed until now.

The benefits plants that have incorporated pre-cut componentry have regularly been underestimated. Plants that have not incorporated pre-cut componentry have not been able to see clearly what they are missing out on.

That has resulted in easy excuses as to why they would alter their operations for what has been perceived as a minimal (or even additional) cost outcome.

Programmed Timber have been producing pre-cut components for 27 years, and in that time, every plant that made the change has come out ahead. Sadly, many of those advantages have not been visible as the usual actual cost of in-plant cutting gets consumed into – *overheads*.

To shine a bright light on operational cutting cost, Programmed Timber have developed a production and cost spreadsheet model that gives clarity to outcomes.

By compounding and networking a plant's own cutting, production increases and cost reduction comes without any additional capital commitment.

Through the better utilisation of our national plantation softwood resource and industrial scale production & technology, the product outcome achieved cannot be matched by individual plant processes.

The model also has the functionality to assess the incorporation of pre-cut creeper chords. This adds networking to networking for some surprising results.

# Introduction

Programmed Timber have developed a spreadsheet-based cost and production analysis model to assist frame & truss plants to review their costs & efficiencies in producing truss webs & chords in preparation for jig placement.

The model assesses current operations via the various inputs that determine the finished component cost - in this case primarily truss webs and chords.

The simple data entered for an individual plant will reveal the true costs while, as being a model, those inputs may be varied on a 'what if' basis to see how that impacts the outcomes. It becomes clear where action and change will alter actual outcomes.

The primary function beyond that is to see what impact pre-cut web and creeper chord inclusion has on the operation by way of cost, output and potential increase in income.

Further to that, an analysis can be made regarding the fabricators best use of capital by way of matching their cutting with jig/pressing capacity.

| Truss Component Analysis                                    |       |       |
|-------------------------------------------------------------|-------|-------|
|                                                             | A     | B     |
| <b>What Am I Cutting On My Saw/s?</b>                       |       |       |
| How many pieces do I cut <u>per saw</u> per 7.6 hour shift? | 1,250 | 1,250 |
| <b>Ratios</b>                                               |       |       |
| Web Ratio of <u>Truss</u> Pcs                               | 43.0% | 43.0% |
| Creeper Chord Ratio of <u>Truss</u> Pcs                     | 17.5% | 17.5% |
| Other Components Ratio to <u>All</u> Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                              |       |       |
| Ave Length of Webs                                          | 1.090 | 1.090 |
| Ave Length of All Chords                                    | 2.590 | 2.590 |
| Ave Length of Creeper Chords                                | 1.450 | 1.450 |
| Ave Length of Other Components                              | 0.500 | 0.500 |
| <b>Cuts</b>                                                 |       |       |
| Web Cuts / M3                                               | 703   | 703   |
| All Chords Cuts / M3                                        | 265   | 265   |
| Creeper Chords Cuts / M3                                    | 630   | 630   |
| Other Components Cuts / M3                                  | 790   | 790   |

  

|                                                                        | A          | B          |
|------------------------------------------------------------------------|------------|------------|
| <b>How Much Do I Use My Saw/s</b>                                      |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the <u>per saw</u> running cost per hour?                      | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
| * Sales GP % on Timber (Nett RM)                                       | 30.0%      | 30.0%      |

# Introduction

The model requires the input of information regarding the usual operation of the plant to be analysed. There are other inputs that are available from a large dataset from a number of plants to determine some industry averages.

There are some entries required that the plant in question may not have accurate figures on.

The defaults used are representative of common practice across the industry and can be used as the basis of information within accepted variance.

The premise of the defaults are based on a plant using one linear saw on a single shift using one operator. From there each plant can vary any of those inputs to reflect their own experience.

Just by entering those initial variables, a simple summary is formed showing the difference of the timber cost to the actual finished cost of the components ready at the jig/press.

To allow easy comparison of 'what is' to 'what could be', 2 scenarios (A & B) are shown parallel.

The following slides explain what the various inputs are so they can be meaningful for the plant analysis.

| Truss Component Analysis                                               |            |            |
|------------------------------------------------------------------------|------------|------------|
|                                                                        | A          | B          |
| <b>What Am I Cutting On My Saw/s?</b>                                  |            |            |
| How many pieces do I cut <u>per saw</u> per 7.6 hour shift?            | 1,250      | 1,250      |
| <b>Ratios</b>                                                          |            |            |
| Web Ratio of <u>Truss</u> Pcs                                          | 43.0%      | 43.0%      |
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| Other Components Ratio to <u>All</u> Pcs                               | 10.0%      | 10.0%      |
| <b>Lengths</b>                                                         |            |            |
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| Ave Length of Creeper Chords                                           | 1.450      | 1.450      |
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| <b>Cuts</b>                                                            |            |            |
| Web Cuts / M3                                                          | 703        | 703        |
| All Chords Cuts / M3                                                   | 265        | 265        |
| Creeper Chords Cuts / M3                                               | 630        | 630        |
| Other Components Cuts / M3                                             | 790        | 790        |
| <b>How Much Do I Use My Saw/s</b>                                      |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the <u>per saw</u> running cost per hour?                      | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
| * Sales GP % on Timber (Nett RM)                                       | 30.0%      | 30.0%      |

# What Am I Cutting On My Saw/s?

## How many pieces do I cut per saw per 7.6 Hour Shift?

This is to determine the current saw piece cutting output using all the present infrastructure, staffing and material supply when and if run over a standard 7.6-hour shift.

It is not the maximum the saw can cut or what the saw manufacturer says it can – but how many pieces does it actually cut now.

This is regardless of the time or shifts the saw actually runs – it is used to establish a pro-rata piece rate.

Variations to the actual shift length, number of shifts, and overtime are variables to be entered later.

This figure is per saw – not total if running a number of saws.

Different types of saws will have different results. A linear saw will be different to a pop-up and different to a pull saw.

This is pieces – not metres or individual cuts.

| Truss Component Analysis                             |       |       |
|------------------------------------------------------|-------|-------|
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| Web Cuts / M3                                        | 703   | 703   |
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| Other Components Cuts / M3                           | 790   | 790   |

  

| Truss Component Analysis                                               |            |            |
|------------------------------------------------------------------------|------------|------------|
|                                                                        | A          | B          |
| <b>How Much Do I Use My Saw/s</b>                                      |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does It Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the per saw running cost per hour?                             | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
| * Sales GP % on Timber (Nett RM)                                       | 30.0%      | 30.0%      |

# What Am I Cutting On My Saw/s?

## Ratios

Not all webs and chords are equal.

Different amounts of cutting are required for the different component types. Also, if we want to quantify production outcomes when some in-plant components are replaced with bought-in components, a breakup of the cutting needs to be known.

### Truss Component Analysis

|                                                      | A     | B     |
|------------------------------------------------------|-------|-------|
| <b>What Am I Cutting On My Saw/s?</b>                |       |       |
| How many pieces do I cut per saw per 7.6 hour shift? | 1,250 | 1,250 |
| <b>Ratios</b>                                        |       |       |
| Web Ratio of Truss Pcs                               | 43.0% | 43.0% |
| Creeper Chord Ratio of Truss Pcs                     | 17.5% | 17.5% |
| Other Components Ratio to All Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                       |       |       |
| Ave Length of Webs                                   | 1.090 | 1.090 |
| Ave Length of All Chords                             | 2.590 | 2.590 |
| Ave Length of Creeper Chords                         | 1.450 | 1.450 |
| Ave Length of Other Components                       | 0.500 | 0.500 |
| <b>Cuts</b>                                          |       |       |
| Web Cuts / M3                                        | 703   | 703   |
| All Chords Cuts / M3                                 | 265   | 265   |
| Creeper Chords Cuts / M3                             | 630   | 630   |
| Other Components Cuts / M3                           | 790   | 790   |

|                                          | A   | B    |
|------------------------------------------|-----|------|
| <b>How Much Do I Use My Saw/s?</b>       |     |      |
| How long are my shifts? (Hrs per shift)  | 7.6 | 7.60 |
| How many shifts per day are run?         | 1.0 | 1.0  |
| Overtime? Average Hrs per Day            | -   | -    |
| How many saws?                           | 3.0 | 3.0  |
| How many staff are used to run the saws? | 1.0 | 1.0  |
| How many production days per year?       | 240 | 240  |

### How Much Does it Cost To Run My Saws/s?

|                                                                        |            |            |
|------------------------------------------------------------------------|------------|------------|
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saws/s - Years                                      | -          | -          |
| What is the per saw running cost per hour?                             | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |

### How Much Does Supplemented Product Cost?

|                                  |         |         |
|----------------------------------|---------|---------|
| Pre-cut Webs                     | \$ 2.65 | \$ 2.65 |
| Pre-cut Creeper Chords           | \$ 2.75 | \$ 2.75 |
| Pre-cut Other Components         | \$ 2.30 | \$ 2.30 |
| * Sales GP % on Timber (Nett RM) | 30.0%   | 30.0%   |

### Web Ratio of Truss Pcs.

A default of 43% is used in the model. This ratio has been determined through analysis of large amounts of data from a number of plants over time. Experience shows there is very little variation from this number even when an individual plant analyses are taken. As this is a percentage between webs & chords – the chord percentage will be the balance – 57% in this case.

### Creeper Chord Ratio of Truss Pcs.

From within the chord category, creeper chords can be pre-cut. Therefore, to analyse later the percentage of creeper chords to all truss components is required. There can be a bit more variation of this ratio between plants, but a 17.5% default is used.

### Other Components Ratio to All Pcs.

Typically, there are other components like nogs/trimmers and junction blocks cut on a saw to maximise recovery of the timber infeed. This percentage here is that ratio as part of the overall cut. The lesser length infeed options generally increases this ratio. A 10% default is used.

# What Am I Cutting On My Saw/s?

## Lengths

The defaults used in this section again come from a large data set and are reasonably considered as 'Industry' norms.

**Average Length of Webs** default is 1.090 mtrs.

**Average Length of Chords** default is 2.590 mtrs. Often there is some surprise in this 'short' length. A major contributor in making this length shorter is because it includes creeper chords.

**Average Length of Creeper Chords** is included in the model as the further analysis considers plant outcomes when creeper chords are supplemented with a pre-cut product.

**Average Length of Other Components** default is set at 0.500 mtrs as the majority of 'recovered' items are noggings or junction blocks.

### Truss Component Analysis

|                                                                     | A     | B     |
|---------------------------------------------------------------------|-------|-------|
| <b>What Am I Cutting On My Saw/s?</b>                               |       |       |
| How many pieces do I cut <u>per saw</u> per <u>7.6 hour shift</u> ? | 1,250 | 1,250 |
| <b>Ratios</b>                                                       |       |       |
| Web Ratio of <u>Truss</u> Pcs                                       | 43.0% | 43.0% |
| Creeper Chord Ratio of <u>Truss</u> Pcs                             | 17.5% | 17.5% |
| Other Components Ratio to <u>All</u> Pcs                            | 10.0% | 10.0% |
| <b>Lengths</b>                                                      |       |       |
| Ave Length of Webs                                                  | 1.090 | 1.090 |
| Ave Length of All Chords                                            | 2.590 | 2.590 |
| Ave Length of Creeper Chords                                        | 1.450 | 1.450 |
| Ave Length of Other Components                                      | 0.500 | 0.500 |
| <b>Cuts</b>                                                         |       |       |
| Web Cuts / M3                                                       | 703   | 703   |
| All Chords Cuts / M3                                                | 265   | 265   |
| Creeper Chords Cuts / M3                                            | 630   | 630   |
| Other Components Cuts / M3                                          | 790   | 790   |

|                                                                        | A          | B          |
|------------------------------------------------------------------------|------------|------------|
| <b>How Much Do I Use My Saw/s?</b>                                     |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the <u>per saw</u> running cost per hour?                      | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
| * Sales GP % on Timber (Nett RM)                                       | 30.0%      | 30.0%      |

# What Am I Cutting On My Saw/s?

## Cuts

An important part of determining where the allocation of saw work is required to make truss components is the number of individual saw cuts (strokes) needed to make a nominal cubic metre of those different component types.

Again, the default entries are reflective of the analysis of a large data set from plants. As much as the numbers may be interesting in themselves, it is the ratio or relativity to each other that is most important as it is indicating the work intensity required for each component set.

### Truss Component Analysis

|                                                      | A     | B     |
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| <b>Ratios</b>                                        |       |       |
| Web Ratio of Truss Pcs                               | 43.0% | 43.0% |
| Creepers Chord Ratio of Truss Pcs                    | 17.5% | 17.5% |
| Other Components Ratio to All Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                       |       |       |
| Ave Length of Webs                                   | 1.090 | 1.090 |
| Ave Length of All Chords                             | 2.590 | 2.590 |
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| All Chords Cuts / M3                                 | 265   | 265   |
| Creepers Chords Cuts / M3                            | 630   | 630   |
| Other Components Cuts / M3                           | 790   | 790   |

|                                                                        | A          | B          |
|------------------------------------------------------------------------|------------|------------|
| <b>How Much Do I Use My Saw/s</b>                                      |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
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| Life Expectancy of Saw/s - Years                                       | -          | -          |
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| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
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### Web Cuts / nM3.

The default of 703 may seem high and is due to the fact webs are short in length and may have up to 4 individual cuts.

### All Chords Cuts / nM3.

Once more, the default of 265 is used and is derived from the same large multi-plant sample data set. Its lesser amount than webs is due to the longer average length and many chords only have a single cut each end. Though, this figure does include double mitres and upcuts.

### Creeper Chord Cuts / nM3.

A major factor in cutting chords is affected by the inclusion of the higher work intensity involved in producing creeper chords. It has been reasonably calculated that in isolation, 630 saw cuts are required to make a nM3 of creeper chords.

### Other Component Cuts / nM3.

Simply, this 790 default is based on a single cut each end of the 'recovered' items.



# How Much Do I Use My Saw/s?

This area of the inputs is where individual plant operation is recorded to establish actual production volumes and run times.

## How long are my Shifts? (Hrs per shift)

The 7.6 Hr default is based on a 38-hour working week spaced over 5 days. For simplicity if the plant works 38 hours over 4 or 4.5 days, the default should stand as it is determining non-overtime weekly production hours. If overtime is a regular part of the shift – those hours are entered below.

## How many shifts per day are run?

This is an average of how many. If a plant always runs 2 shifts, simply it is 2. If a plant runs 1 shift for 3 days and 2 shifts for 2 days – the average is 1.4 (7 shifts / 5 days).

## How many saws?

Same sort of calculation as for shifts. If a plant has 2 saws but one is only used 50% of the time the default should be changed to 1.5.

## How many staff are used to run the saws?

This is the total of how many people are used to run the saws. This includes the infeed and outfeed. If staff are shared between the saw/s and other productive function, it is the proportion of time at the cutting function. The number may not be a whole number.

## How many production days per year?

As the model will calculate annual outputs the number of production days is required.

### Truss Component Analysis

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| <b>Lengths</b>                                       |       |       |
| Ave Length of Webs                                   | 1.090 | 1.090 |
| Ave Length of All Chords                             | 2.590 | 2.590 |
| Ave Length of Creeper Chords                         | 1.450 | 1.450 |
| Ave Length of Other Components                       | 0.500 | 0.500 |
| <b>Cuts</b>                                          |       |       |
| Web Cuts / M3                                        | 703   | 703   |
| All Chords Cuts / M3                                 | 265   | 265   |
| Creeper Chords Cuts / M3                             | 630   | 630   |
| Other Components Cuts / M3                           | 790   | 790   |

|                                          | A   | B    |
|------------------------------------------|-----|------|
| <b>How Much Do I Use My Saw/s</b>        |     |      |
| How long are my shifts? (Hrs per shift)  | 7.6 | 7.60 |
| How many shifts per day are run?         | 1.0 | 1.0  |
| Overtime? Average Hrs per Day            | -   | -    |
| How many saws?                           | 3.0 | 3.0  |
| How many staff are used to run the saws? | 1.0 | 1.0  |
| How many production days per year?       | 240 | 240  |

### How Much Does it Cost To Run My Saws/s?

|                                                                        |            |            |
|------------------------------------------------------------------------|------------|------------|
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the per saw running cost per hour?                             | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |

### How Much Does Supplemented Product Cost?

|                          |         |         |
|--------------------------|---------|---------|
| Pre-cut Webs             | \$ 2.65 | \$ 2.65 |
| Pre-cut Creeper Chords   | \$ 2.75 | \$ 2.75 |
| Pre-cut Other Components | \$ 2.30 | \$ 2.30 |

\* Sales GP % on Timber (Nett RM)

|       |       |
|-------|-------|
| 30.0% | 30.0% |
|-------|-------|



# How Much Does It Cost To Run My Saw/s?

This information allows for plant's overall sawing costs.

## What is the 'Grossed Up' hourly rate paid to the operator/s?

This operator hour rate is the grossed up cost to business. It includes pre-tax pay rate plus superannuation, payroll tax, workers compensation and any shift allowances and entitlements. This will vary from plant to plant and state to state but a \$30/hour before tax pay rate will come in around \$40/hour grossed up.

## What % of the time are they being paid but not at the saw?

Apart from paying the grossed up cost, the operator will not be at the saw at times due to annual leave and personal leave. Many plants will have a Christmas shutdown that affects annual Production Days – this can impact this input. The more annual Production Days a plant has the more 'missing %' there will be.

## What is the per saw running cost per hour?

This rate covers a range of costs that are incurred whilst the saw is performing. It includes electricity, repairs, maintenance contracts, ink & other consumables and tooling/blade costs etc. Independent advice places this at around \$40/hour.

## How much per tonne do I pay for waste disposal?

This rate varies considerably across the country due to availability of recycling services and waste type dumping costs. A default of \$100/Tonne is used though that figure may be conservative in a number of markets.

## How much do I pay for my timber I cut webs & chords from (Lin Mtr)?

This requires honesty for this model to provide accurate feedback. Typically, the domestically produced 90x35 MGP rate is used. This is not about putting in the cheapest ever bought or the most ever paid but a true reflection of rate.

## What is my waste %?

Often plants are optimistic on their actual waste % guessed.

### Truss Component Analysis

|                                                             | A     | B     |
|-------------------------------------------------------------|-------|-------|
| <b>What Am I Cutting On My Saw/s?</b>                       |       |       |
| How many pieces do I cut <u>per saw</u> per 7.6 hour shift? | 1,250 | 1,250 |
| <b>Ratios</b>                                               |       |       |
| Web Ratio of <u>Truss</u> Pcs                               | 43.0% | 43.0% |
| Creeper Chord Ratio of <u>Truss</u> Pcs                     | 17.5% | 17.5% |
| Other Components Ratio to <u>All</u> Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                              |       |       |
| Ave Length of Webs                                          | 1.090 | 1.090 |
| Ave Length of All Chords                                    | 2.590 | 2.590 |
| Ave Length of Creeper Chords                                | 1.450 | 1.450 |
| Ave Length of Other Components                              | 0.500 | 0.500 |
| <b>Cuts</b>                                                 |       |       |
| Web Cuts / M3                                               | 703   | 703   |
| All Chords Cuts / M3                                        | 265   | 265   |
| Creeper Chords Cuts / M3                                    | 630   | 630   |
| Other Components Cuts / M3                                  | 790   | 790   |

|                                          | A   | B    |
|------------------------------------------|-----|------|
| <b>How Much Do I Use My Saw/s</b>        |     |      |
| How long are my shifts? (Hrs per shift)  | 7.6 | 7.60 |
| How many shifts per day are run?         | 1.0 | 1.0  |
| Overtime? Average Hrs per Day            | -   | -    |
| How many saws?                           | 3.0 | 3.0  |
| How many staff are used to run the saws? | 1.0 | 1.0  |
| How many production days per year?       | 240 | 240  |

### How Much Does it Cost To Run My Saw/s?

|                                                                        |            |            |
|------------------------------------------------------------------------|------------|------------|
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s Incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the <u>per saw</u> running cost per hour?                      | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |

### How Much Does Supplemented Product Cost?

|                          |         |         |
|--------------------------|---------|---------|
| Pre-cut Webs             | \$ 2.65 | \$ 2.65 |
| Pre-cut Creeper Chords   | \$ 2.75 | \$ 2.75 |
| Pre-cut Other Components | \$ 2.30 | \$ 2.30 |

\* Sales GP % on Timber (Nett RM)

|       |       |
|-------|-------|
| 30.0% | 30.0% |
|-------|-------|

# How Much Does It Cost To Run My Saw/s?

This model allows capital costs to be amortised over the anticipated production of the life of that equipment. By entering the equipment capital cost, a later calculation is possible to determine if a cost can be eliminated.

These entries are optional. It is generally more useful for a plant that is considering the requirement of new capital expenditure.

## Grossed up Cost of Saw/s incl. Capital Cost + Interest (all saws total)

By entering the actual capital cost plus the overall finance interest amount, that total can be shown amortised over the equipment's productive life. This entry can also be seen as the 'Opportunity Cost'.

## Life Expectancy of Saw/s - Years

The life expectancy of the equipment is required to complete the amortisation equation.

### Truss Component Analysis

|                                                      | A     | B     |
|------------------------------------------------------|-------|-------|
| <b>What Am I Cutting On My Saw/s?</b>                |       |       |
| How many pieces do I cut per saw per 7.6 hour shift? | 1,250 | 1,250 |
| <b>Ratios</b>                                        |       |       |
| Web Ratio of Truss Pcs                               | 43.0% | 43.0% |
| Creeper Chord Ratio of Truss Pcs                     | 17.5% | 17.5% |
| Other Components Ratio to All Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                       |       |       |
| Ave Length of Webs                                   | 1.090 | 1.090 |
| Ave Length of All Chords                             | 2.590 | 2.590 |
| Ave Length of Creeper Chords                         | 1.450 | 1.450 |
| Ave Length of Other Components                       | 0.500 | 0.500 |
| <b>Cuts</b>                                          |       |       |
| Web Cuts / M3                                        | 703   | 703   |
| All Chords Cuts / M3                                 | 265   | 265   |
| Creeper Chords Cuts / M3                             | 630   | 630   |
| Other Components Cuts / M3                           | 790   | 790   |

|                                                                        | A          | B          |
|------------------------------------------------------------------------|------------|------------|
| <b>How Much Do I Use My Saw/s?</b>                                     |            |            |
| How long are my shifts? (Hrs per shift)                                | 7.6        | 7.60       |
| How many shifts per day are run?                                       | 1.0        | 1.0        |
| Overtime? Average Hrs per Day                                          | -          | -          |
| How many saws?                                                         | 3.0        | 3.0        |
| How many staff are used to run the saws?                               | 1.0        | 1.0        |
| How many production days per year?                                     | 240        | 240        |
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the per saw running cost per hour?                             | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |
| <b>How Much Does Supplemented Product Cost?</b>                        |            |            |
| Pre-cut Webs                                                           | \$ 2.65    | \$ 2.65    |
| Pre-cut Creeper Chords                                                 | \$ 2.75    | \$ 2.75    |
| Pre-cut Other Components                                               | \$ 2.30    | \$ 2.30    |
| * Sales GP % on Timber (Nett RM)                                       | 30.0%      | 30.0%      |

# How Much Does Supplemented Product Cost?

To be able to identify if savings can be made, we must know what is the cost of the supplemented or replaced product costs. Finished product ready to be directly installed into truss at the jig has all the processing costs already included.

## Pre-cut Webs

Available in 150mm length increments the full length range from 0.450 mtrs to 3.000 mtrs provides the maximum opportunity to maximise cost savings. Some plants opt to use a smaller length range. Ask Programmed Timber what is best range for your plant.

## Pre-cut Creeper Chords

Each plant can nominate the specifications for their range of pre-cut creeper chords including length, pitch and up-cut. Pre-cut creeper chords can either have double mitre or square ends to suit the truss detail.

## Pre-cut Other Components

Those recovery items that are cut to improve timber length utilisation are regularly able to be purchased in bulk from Programmed Timber. These pre-cut components almost inevitably cost less than a plant can produce themselves – either as recovery items or when cut repetitively from long length.

## Sales GP % on Timber

As the model can quantify the additional production that will be achieved through supplementation, the additional income may also be able to be determined. This GP % is calculated on the additional timber only throughput. The extra GP from all the other products and process will be another benefit outside the model results.

### Truss Component Analysis

|                                                      | A     | B     |
|------------------------------------------------------|-------|-------|
| <b>What Am I Cutting On My Saw/s?</b>                |       |       |
| How many pieces do I cut per saw per 7.6 hour shift? | 1,250 | 1,250 |
| <b>Ratios</b>                                        |       |       |
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| Other Components Ratio to All Pcs                    | 10.0% | 10.0% |
| <b>Lengths</b>                                       |       |       |
| Ave Length of Webs                                   | 1.090 | 1.090 |
| Ave Length of All Chords                             | 2.590 | 2.590 |
| Ave Length of Creeper Chords                         | 1.450 | 1.450 |
| Ave Length of Other Components                       | 0.500 | 0.500 |
| <b>Cuts</b>                                          |       |       |
| Web Cuts / M3                                        | 703   | 703   |
| All Chords Cuts / M3                                 | 265   | 265   |
| Creeper Chords Cuts / M3                             | 630   | 630   |
| Other Components Cuts / M3                           | 790   | 790   |

|                                          | A   | B    |
|------------------------------------------|-----|------|
| <b>How Much Do I Use My Saw/s</b>        |     |      |
| How long are my shifts? (Hrs per shift)  | 7.6 | 7.60 |
| How many shifts per day are run?         | 1.0 | 1.0  |
| Overtime? Average Hrs per Day            | -   | -    |
| How many saws?                           | 3.0 | 3.0  |
| How many staff are used to run the saws? | 1.0 | 1.0  |
| How many production days per year?       | 240 | 240  |

|                                                                        | A          | B          |
|------------------------------------------------------------------------|------------|------------|
| <b>How Much Does it Cost To Run My Saws/s?</b>                         |            |            |
| What is the 'Grossed Up' hourly rate of the operator/s?                | \$ 40.00   | \$ 40.00   |
| What % of the time are they being paid but not at the saw?             | 10%        | 10%        |
| Grossed up Cost of Saw/s incl Capital Cost + Interest (all saws total) | \$ 600,000 | \$ 600,000 |
| Life Expectancy of Saw/s - Years                                       | -          | -          |
| What is the per saw running cost per hour?                             | \$ 40.00   | \$ 40.00   |
| How much do I pay per tonne for waste disposal?                        | \$ 100.00  | \$ 100.00  |
| How much do I pay for my timber I cut webs & chords from (Lin Mtr)?    | \$ 2.50    | \$ 2.50    |
| What is my waste %?                                                    | 5.0%       | 5.0%       |

|                                                 | A       | B       |
|-------------------------------------------------|---------|---------|
| <b>How Much Does Supplemented Product Cost?</b> |         |         |
| Pre-cut Webs                                    | \$ 2.65 | \$ 2.65 |
| Pre-cut Creeper Chords                          | \$ 2.75 | \$ 2.75 |
| Pre-cut Other Components                        | \$ 2.30 | \$ 2.30 |
| * Sales GP % on Timber (Nett RM)                | 30.0%   | 30.0%   |