appli-cad
Australia

Roof Wizard

Advanced Software for Roof Modeling and Estimating

Tutorial for Estimating Metal Roofs

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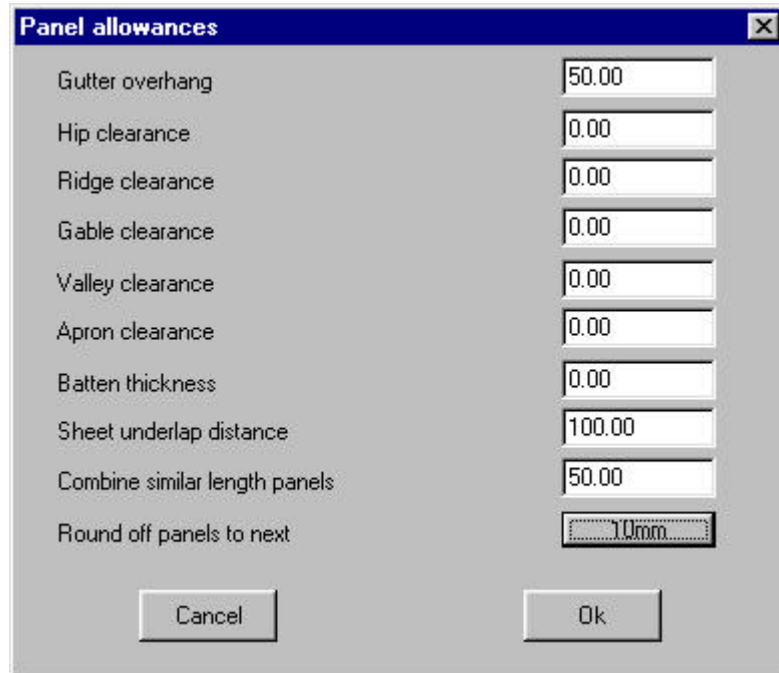## Introduction

Using this manual

This tutorial is designed to explain, step by step, the process of estimating a metal roof.

While not essential, it is recommended that the basic Learning Guide for Sorcerer or Roof Wizard has been completed prior to attempting to work through this tutorial. An understanding of the process is helpful, as is a basic understanding of the construction of a roof.

Estimating Metal Panels

Setting Allowances

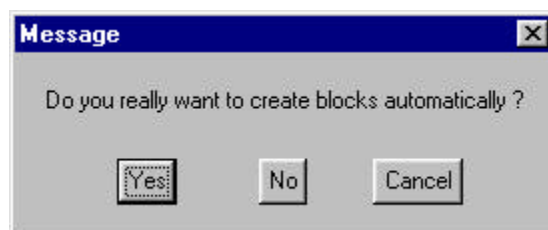The first step when estimating a roof is to select **Estimate | Allowances** from the main menu. The dialog box below is displayed.

With this dialog box now open you can now set the allowances for your roof panels. To change your allowances click on the appropriate field and type in what you want your allowances to be. Once you have set the allowances, select **Ok**.

Block Method

Auto Block

The next step in our estimating process is to **Auto Block**. Select **Auto Block** from the **Estimate** menu and the following dialog box will appear asking you if you want to create blocks automatically. Select **Yes**.


If you have not chosen a cover for your roof, the program will ask take you through the metal selection process. (See tutorial Defining Metal Panels). If you have already selected your material the software will block your roof.

The **Auto Block** method is a semi-automatic method. If the blocks don't especially suit your job, you may wish to manually modify some blocks, using the **Man-Block** command.

Manual Block Menu

By selecting **Man-Block** in the Estimate menu the above menu bar appears. From here you can make manual changes to the blocking that Auto-Block may have done differently to the way you want it to block.

The first command under manual block is **Insert-Rect**. Select this command and the following dialog box will appear.
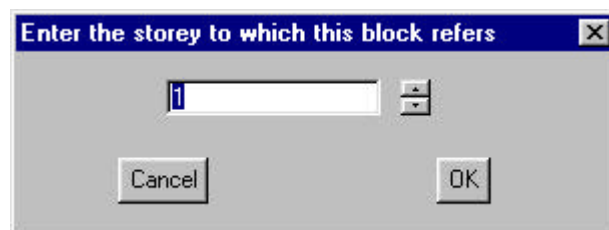

Enter the storey of the block you wish to enter, and select **Ok**.

Enter the pitch   ✕

Pitch   22.00

Cancel   Ok

Enter the pitch of the new block you wish to add and select **Ok**. Following this you will be asked to select the first corner of where you want your block to go. Select the point and left click. You will then be asked to select the opposite corner of the block you wish to create. Locate the opposite corner and press the left mouse button. Following this, you will be asked to the locate the line which defines the length of the block. Select the appropriate line and click **Ok**, and your block will now be drawn.

The next command on the Man-Block menu is **Insert-Line**. This command will take a line and use the extents of the line to be the diagonal length of the block you are trying to create. To do this simply click on **Insert-Line** and the following dialog box will appear.

**Enter the pitch**   ✕

Pitch   22.00

Cancel   Ok
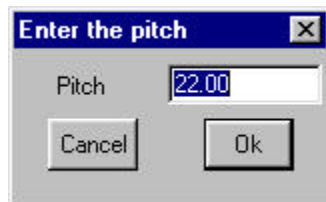
Enter the appropriate pitch of your block and click on **Ok**. Now select the line you want to use for your block, and the software will create the block around this line.

The next command on the Man-Block menu is the **Extend-Edge** command. This command will allow you to easily move a line any distance relative to the line. Select **Extend-Edge** and then select the line that you want to move. The software will then ask you where you want to move the line to. Move the pointer to the position where you want the line to go and click the right mouse button.

The next command on the Man-Block menu is **Rotate**. To use this command simply click on **Rotate** and then select the panel that you want to rotate and the panel will rotate 90 degrees.

The next command on the Man-Block menu is **Change-Details**. This command will allow you to change the amount and the size of the panels in a block. As shown in the dialog box below. This won't physically change the size of the block on the screen, just the way it is quantified.

Block details   ✕

Number of sheets   8

Sheet length   2207.00

Cancel   Ok
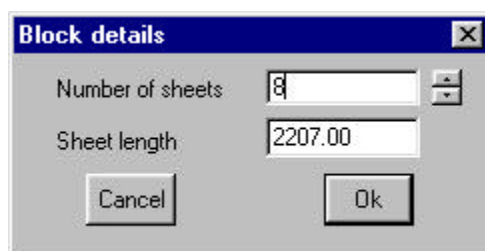
The next command in the Man-Block menu is **Add-to-Verandah**. This command is used for bullnose verandahs. Simply select the **Add-to-Verandah** command and then select the bullnose verandah, and then click on the block that covers the

verandah, and the software will make the allowance for the bullnose verandah.

The next command in the Man-Block menu is **Change-Pitch**. This functions allows you to change the pitch of a block. Simply click on the **Change-Pitch** command and then select the block you wish to change the pitch of. Upon doing the this the following dialogue box will appear asking you what you want to change the pitch to. Enter the pitch you want and then click on **Ok**.

The next commands in the Man-Block menu are **Show-Blocks** and **Hide-Blocks**. Clicking on them will either show the blocks, or hide the blocks.

The next commands in the Man-Block menu are **Delete-One** and **Delete-All**. These are used to delete one or all of the blocks. To delete one block, click on Delete-One and then select the block that you want to delete. Selecting **Delete-All** will delete all of the blocks.

The next command in the Man-Block menu is **Verify**. This command is used to verify that there is a panel or block there, where it starts and where it finishes.

The next command in the Man-Block menu is **Merge-Blocks**. This command will merge as many of the blocks into one block.

The final command in the Man-block menu is **Reduce-Runs**. This command will merge as many of the runs into one run.

Tallying Blocks

Back at the Estimate menu, the next command we come across is the **Tally-Blocks** command. What this function does is nest all the sheets, to provide the most efficient way the order the sheets and reduce wastage. Clicking on this command will bring up the following dialog box.
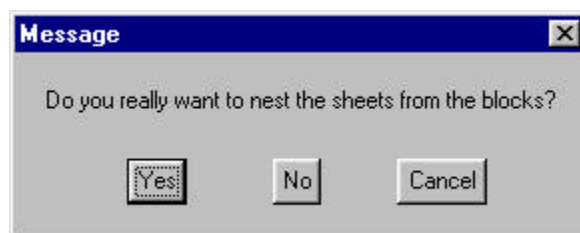
From here select **Yes**. The software will then nest the sheets and a dialog similar to the following will appear.

Panel cutting list summary

Sample SS001 StandingSeam Slate Grey0.43 768.0

44 / 12800,

Total sheet length : 563.200m

Sheet area : 433 m2

Panel area : 67 m2

Block area : 69 m2
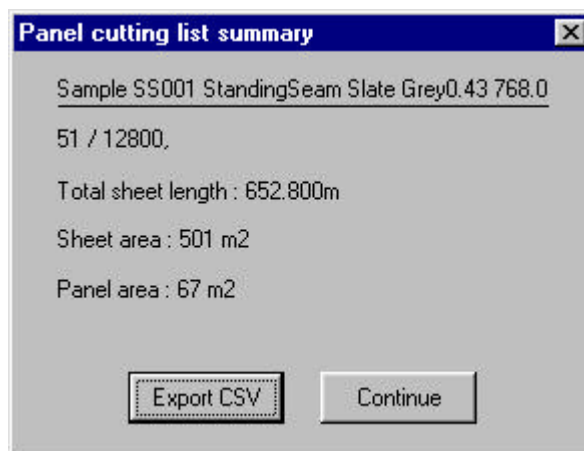
Export CSV   Continue
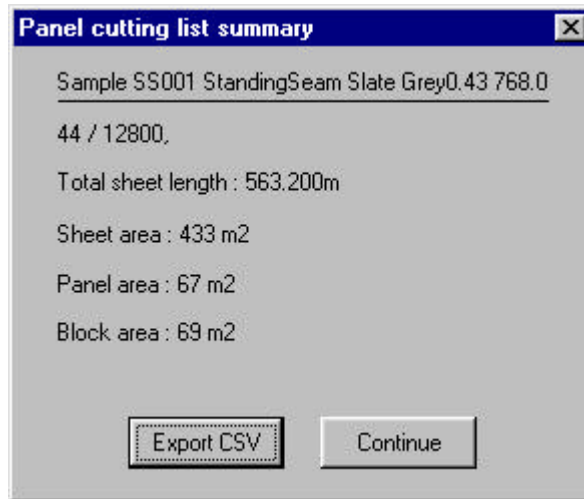
This dialog box shows you the total sheet length that you are going to need, as well as the sheet, panel and block area. The box also gives you the option to export this data and save it as a *.CSV file so you can open the information into a spreadsheet if you want. If you don't want to export the data, simply select **Continue**.

Offcuts Method

This method just described is one of the ways to estimate the panel area. The next method uses the **Gen-Offcuts** command in the Estimate menu. Select this command the following dialog box will appear.

Message

Do you really want to generate offcuts ?

Yes   No   Cancel
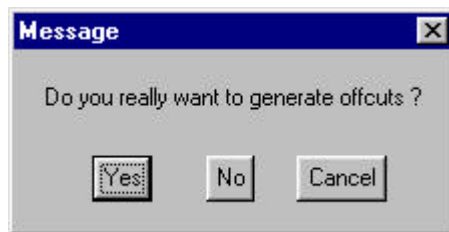
From here simply select **Yes** and the software will proceed to generate the offcuts. When the software has finished making its calculations, a dialog similar to the following will appear.

Panel cutting list summary

Sample SS001 StandingSeam Slate Grey0.43 768.0

51 / 12800,

Total sheet length : 652.800m

Sheet area : 501 m2

Panel area : 67 m2

Export CSV   Continue

As with the Tally-Blocks method you have the ability to export this data if you wish to, but if you don't simply click on **Continue**.

The next command the Estimate menu is the **Del-Offcuts** option. This will delete everything that has been done in the Gen-Offcuts step.
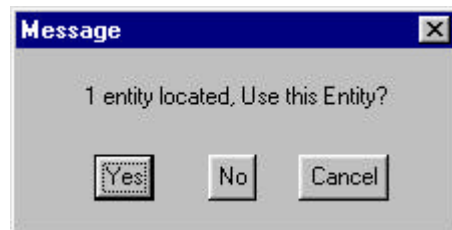
Panels Method

Lap Directions

This now completes the Offcuts method of estimation. The third and final method of estimation is a 3 step process and utilizes lap directions. First select **Ins-Lap-Dir-Auto**. This command will insert all of your lap directions for you in the most efficient and logical way.

If you want to insert your lap directions manually, select the **Ins-Lap-Dir** command to insert your lap directions. The program will ask you which panel you would like to assign lap directions to. Select the appropriate panel. The program will then ask you to locate the start point of the arrow. Move the pointer to where you want the arrow to start in relation to the panel that you have previously selected and then click the mouse button. You will then be asked to find the end point of the arrow. Move the cursor in the direction you want the arrow to point and then click the left mouse button. To complete this you must assign lap directions for all runs.

The next command in this section is **Swap-Lap-Dir**. This command allows you to change the direction of the direction arrows that you have inserted. Simply select this command and the select the arrow that you wish to change the direction of, and the direction will be changed.

The final command in this section is **Del-Lap-Dir**. This command is used to delete any lap directions that you don't want. Simply select this command and then select the arrow(s) that you want to delete. Press the right mouse button and the following dialog box will appear.

To delete the arrow that you have selected simply press **Yes**.

Generating Panels

This now completes the first part of the third estimation method. The next step in this method is to generate the panels. To do this select **Gen-Panels-All**. This will automatically generate all of the panels for the roof. If you don't want to generate all of the panels you can do them individually. To do this select the **Gen-Panels-One**. The program will then ask you which panel you wish to select. Following the selection of the panel, you will be asked where you want to put the slice line of the panel. Move the cursor to where you want the panel to begin and press the left mouse button. The software will then generate the panels for that plane.
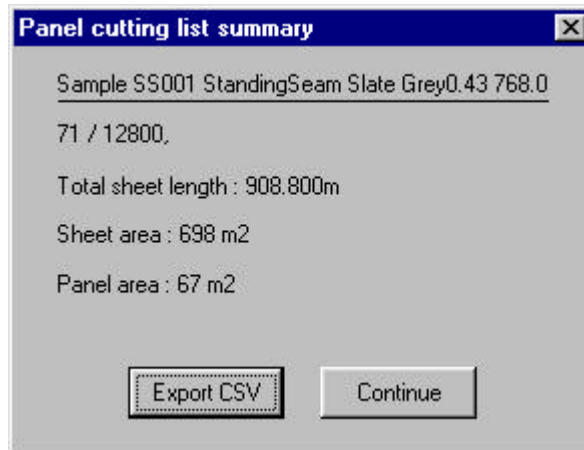
The next command available in the Gen-Panels section is **Del-Panels**. This command is used for deleting all panels that you have previously inserted.

Tallying Panels

The final command in the Gen-Panels section is **Tally-Panels**. Only use this command if you don't plan to linear nest. This is used to calculate how many sheets of metal will be used and the area of the roof, similar to Gen-Offcuts and Tally Blocks. By selecting **Tally-Panels** the following dialog box will appear asking you where you want to save the you have created.
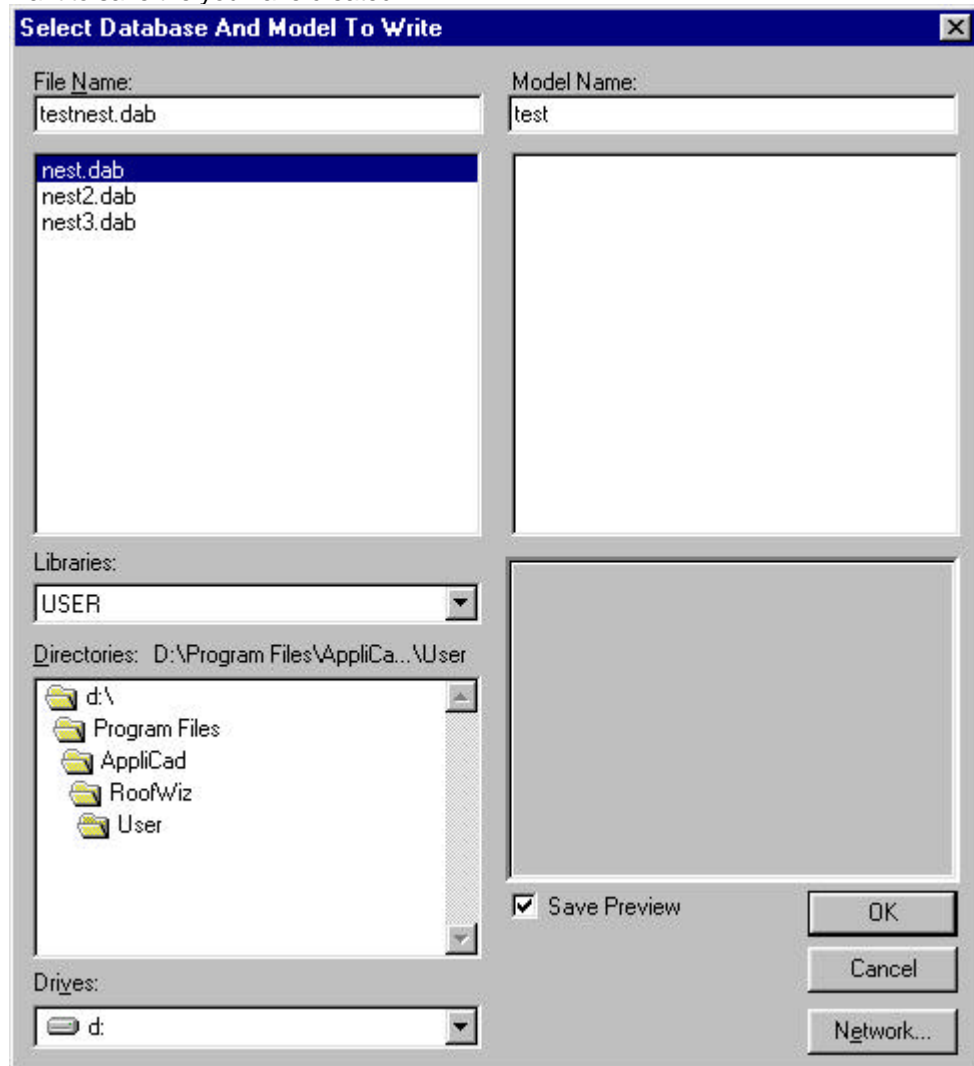

After typing in the filename and model name select **Ok** and the program will proceed to calculate the sheets in the roof, bringing up a dialog box similar to the following when it has finished.

Panel cutting list summary

Sample SS001 StandingSeam Slate Grey0.43 768.0

71 / 12800,

Total sheet length : 908.800m

Sheet area : 698 m2

Panel area : 67 m2

[Export CSV]   [Continue]

As with these earlier Panel Summary boxes you can export the data, or just press **Continue**.
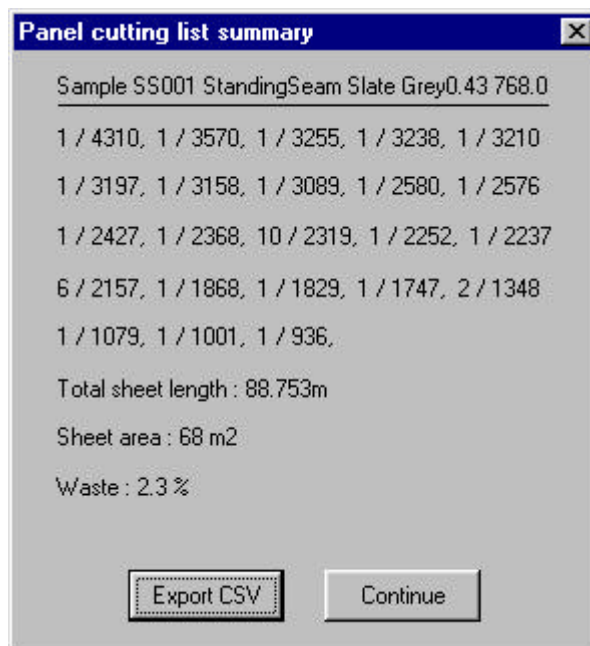
Linear Nesting

The other estimating calculation method you can use is **Linear-Nesting**. To use Linear-Nesting simply select it. By selecting Linear-Nesting the following dialog box will appear asking you if you really want to nest the sheets.

Message

Really nest the sheets ?

[Yes]   [No]   [Cancel]
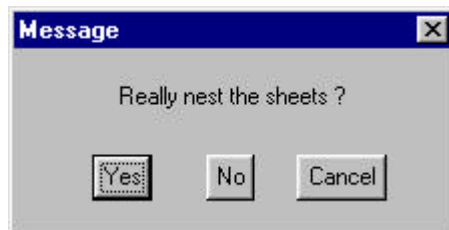
From here select **Yes**.

When the software has finished making its calculations the following dialog box will appear.

Panel cutting list summary

Sample SS001 StandingSeam Slate Grey0.43 768.0

1 / 4310, 1 / 3570, 1 / 3255, 1 / 3238, 1 / 3210

1 / 3197, 1 / 3158, 1 / 3089, 1 / 2580, 1 / 2576

1 / 2427, 1 / 2368, 10 / 2319, 1 / 2252, 1 / 2237

6 / 2157, 1 / 1868, 1 / 1829, 1 / 1747, 2 / 1348

1 / 1079, 1 / 1001, 1 / 936,

Total sheet length : 88.753m

Sheet area : 68 m2

Waste : 2.3 %

[Export CSV]   [Continue]

As shown in the above dialog box this method of estimation also gives you a wastage factor. And as before you can export this data if you want to, or just press **Continue** to exit.

Now we have completed the three estimation methods, we can look at the other four functions in the Estimate menu. The first of these commands is **View-PanelList**. This command will bring up the panel cutting list that comes up at the end of every estimating method (Above Dialog Box).

The next two commands are to do with roof offset. This option is based on the rafter size that you specified when first drawing up your roof. The idea of this command is to offset the roof as it would be in real life therefore giving a slightly more accurate final answer. To apply this to your roof simply select **Offset-Roof**. This will generate the roof allowances automatically. The command **Del-Offset**, will delete the roof offset.

N.B. When using roof offset be sure to set it before you do any estimating, otherwise it will not work properly.

The final command in the Estimate menu is **Match-Panels**, which we will ignore.

This completes the estimating tutorial.