

Roof Wizard

Advanced Software for Roof Modeling and Estimating

Tutorial for Curved Metal Roofs - Safintra Method

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Table of Contents

TABLE OF CONTENTS	2
INTRODUCTION	3
Using this manual	.3
OVERVIEW	3
"Standard Shapes"	.3
DRAWING THE PROFILE	4
Use Q-Roof to Draw the Profile	.4
PROJECTING THE SECTION	6
Perspective View	.6
SELECT THE MATERIAL	7
Output Sample	.9
DRAW YOUR ROOF	10

Introduction

Using this manual

This tutorial is designed to explain, step by step, the process of estimating a curved metal roof and producing the fabrication work order for the roll forming shop.

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.

Overview

Gen-Roof Roof-Defaults Dig-Outline Track-Outline Recover Section Curved Gable Bellcast Dig-Plane Track-Plane Porch Multi-hip 2nd-Storey The software will automatically recognise any of the following base shapes and complete the fabrication table for you, with dimensions. Any other profile may also be created and dimensioned, but as the shape is not pre-determined, the dimensions may end up in an awkward location on the drawing.

"Standard Shapes"



Once the roof profile is defined, we use the Gen-Roof | Section command to "extrude" the section drawing along the 'ridge' line (although strictly speaking, there may not be a ridge).

The material is selected that is to cover the roof. The material must be curved quality material, so you may have to select flat roof material as well as curved quality if you haven't selected a default material at the start.



Once complete, the software will then cost the job and generate the workshop fabrication details, automatically.

We will create a simple bullnose roof shape as shown here.



NAME OF CUSTOMER						ORDER No.		
JOB	DESCRIPT	ION DE	TAIL					
				SPL	CIFICATIONS	5		
A	607	mm		NARROW FLUTE	BROAD FLUTE		(Tick one only)	Caulfield Green
B	2457	mm	TOTAL LEN	GTH OF SH	IEET (A+B+C)	3551	mm	
с	489	mm	QUANTITY R	EQUIRED		- 20	ea	
	80	Deg.	1 x (CRANKS	Please mark critics	al dimen	sion	

Fig: Example of the production details table, and below, the sketch that is automatically generated on the production report.



Drawing The Profile

Q-Roof

Roof-Defaults Zoom-Scale

Draw-Lines Track-Lines

Trim-Line Trim-Corner

Before you can estimate a curved metal roof, first you must create the roof profile – the dark line in the sketch above. This may be done using any of the standard CAD drawing commands. It may also be done using the drawing commands in **Q-Roof**. For this exercise, since we are already familiar with the process of drawing a roof outline using Track-Outline, we will use the **Q-Roof | Track Line** command.

Use

Q-Roof to Draw the Profile

Select Q-Roof from the main menu, and as always, type 0,0 as our start point. The direction will be up or 0, and the distance will be 900mm; then select insert.

Track lines				X
Direction Distance Pitch	0.00 900 0.00	▼ mm	Up / Left Right / Down	
Insert Step	Close	Bay Cancel	Hor-Vert Finish Stepforward	

Then add the next line segment, direction 80 (degrees) remembering that we measure direction relative to the bearings of a compass – up is zero, down is 180, right is 90 etc. Using 80° , results in a pitch of 10° (90° - 80°).

The distance, well, let's use 2750mm.

Track lines				
Direction	80	-	V Up	7
Distance	2750	mm	Left	Right
Pitch	0.00		/ Down	<u></u>
Insert	Close	Bay	Hor-Vert	Finish
Stept	back	Cancel	Stepfor	ward

Now we add the bullnose, or curved section. To add this we use a new command under Q-Roof, Arc-Fillet. This command adds a filleting arc between the two lines, using a radius you define, and automatically trims the lines back to be a tangent to the arc.



We will use an arc radius of 350mm. You should now have this shape drawn.



Projecting the Section

Gen-Roof
Roof-Defaults
Dig-Outline
Track-Outline
Recover
Section
Curved
Gable
Bellcast
Dig-Plane
Track-Plane
Porch
Multi-hip
2nd-Storey

To actually create the roof using this profile, we use the Gen-Roof Section option from the main menu. You are prompted to indicate the entities that define the section, and you will select the line and the arc and the line in our drawing. You are then prompted for the roof Section Defaults. We need to select metal, select a storey (so the correct pay scale is used) and the length of the roof – as below.

Section defaults	
Roof type	Metal 💌
Storey	1 ÷
Length	15000
Cancel	Ok

The section is then projected along the length, and this may best be seen by selecting the ISO (isometric) view. You may also find that the perspective view is helpful – Main Menu | View | Select | Perspective. You can choose between four predefined perspective views.

Perspective View



Select the Material

Once satisfied that the roof shape is correct, you must select your material. Because roll formed curved roofing material is usually a heavier gauge or higher tensile strength, we must have previously defined a curve quality material. As well as selecting regular material, you must now select curving metal – main menu | cover | select metal. The dialogue box below shows the material we selected, the curving metal on the right hand side.

Roof metal panel ma	aterial				×
Straight metal			Curving metal		
Manufacturer	внр		Manufacturer	Supplier	
Profile	Corrugated 0.42		Profile	Curve Quality 2	
Product code	BHP-2		Product code	CQ602	
Finish	Galvanised		Colour	Green	
Change			Change		
Fastener	BHFP1265HT		Fastener	FP1265HT17	
Fasteners per sqm	6.00		Fasteners per sqm	6.00	
Clip			Clip		
Clips per m	0.00		Clips per m	0.00	
Coverage width	762.00	mm	Coverage width	762.00 mm	
Seam screw					
Screws per m	0.00				
Seam tape/sealant					
Application rate	1.00	litre p	er m		
Pay rate schedule	Use Metal-rates 💽				
Sarking	None				
Fall protection	None				
FP Pitch break	90.00				
_	Cancel			Ok	

To quantify the panels, simply select from the main menu, **Estimate | Tally Panels**. Answer the question do you wish to tally panels, YES. And you're nearly done.

Gen-Panels-Al	
Gen-Panels-O	
Split-Panels	Message 🛛 🔀
Del-Panels	
Tally-Panels	Do you really want to nest the sheets from the blocks?
View-PanelLis	Yes No Cancel

 Panel cutting list summary Page 1 of 1

 Supplier, C060-2, Curve Quality 2, Green, 0.60, 762.0

 20 / 3920,

 Total sheet length : 78.400m

 Sheet area : 60 m2

 CurvedJob.dab : m3

The panel list will be displayed as shown below.

The quotation is completed as for a regular roof, **Main menu | Costing** and select either Supply Only or Supply and Install. The print the fabrication report, select **Main menu | drawings** and at the item at the bottom, **Arc Roof Production Dwgs**.

Cover Estimate	Supply-Only	Estimate	Select drawings to prin	t 🛛 🛛
	Supply+Install	Conting	Roof drawing	Do not print
Costing	Nett-Only	Costing	Purlin drawing	Do not print
	Fascia-Gutter	Drawings	Block layout	Do not print
Drawings			Offcut layout	Do not print
	Multi-GRIM	View	Panel layout	Do not print
View			Panel sequence	Do not print
			Panel cutting details	Do not print
			Flashing drawing	Do not print
			Flashing profiles	Do not print
			Single-Ply Layout	Do not print
			Wall plan	Do not print
			Wall elevations	Do not print
			Arc Roof Production Drgs	Print
			Cancel	Ok

Output Sample



Example of a Fabrication Report for Safintra. The report may be edited just like a regular template, except that it is in a file called CRANKING.Dab in the User folder. There are two templates, one for the 'standard' curved shapes and the other for custom shapes that the software determines doesn't fit the constraints of a 'standard'

shape.

Draw Your Roof

There is no real constraint to the shape either. If you can make it, then draw it!



The software will still determine the number of sheets and how they're to be formed.

This ends the tutorial.