

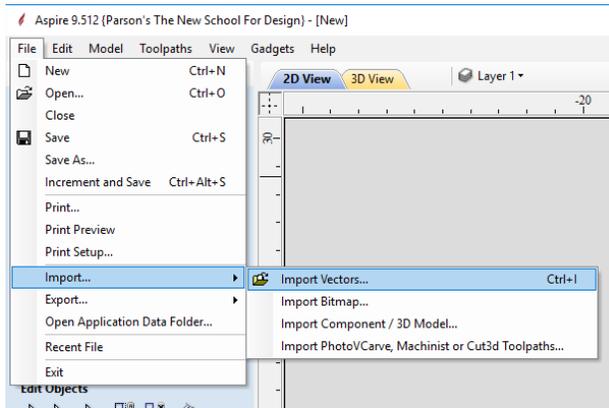
# HOW TO WRITE A PROFILE

A profile uses a closed vector to machine down at a fixed depth. This results in a cut-out piece from either the inside, outside, or on the defined path.

## Step 1: Import Vectors

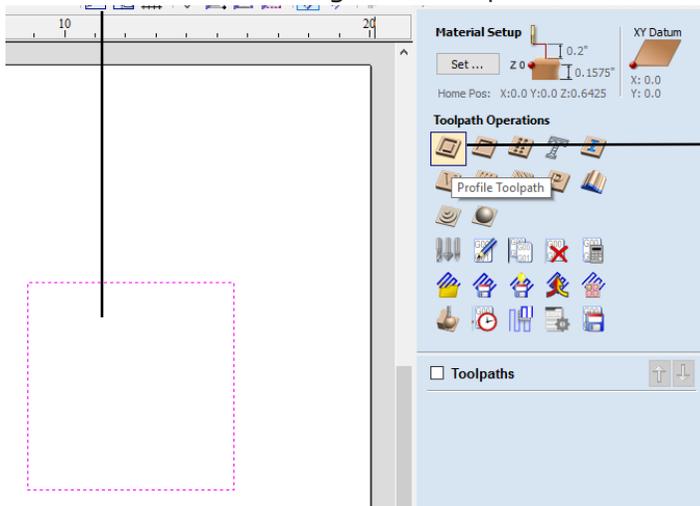
File -> Import...-> Import Vectors

Import the vectors into Aspire that were created inside your preferred program (ie. Rhino/Fusion/Illustrator)



## Select the Profile Toolpath on the right toolpath menu.

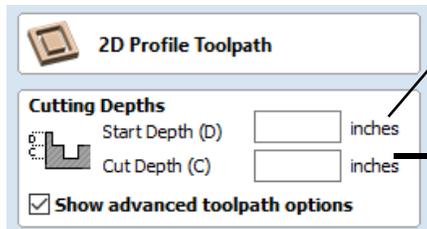
Make sure the vector you want to pocket is selected. (it will be a pink dashed line)



## Step 2: Configuring Profiles

This will open a menu with a series of options to configure. Start from the top and work your way down one section at a time.

### Cutting Depths

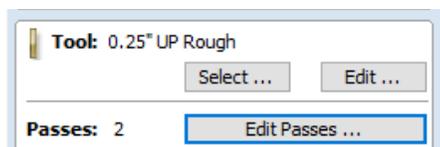


**Start Depth(D)** should always be set to 0.0 inches.

(the math is always calculated from the top of your material)

**Cut Depth (C)** this is set to how deep you want your profile to go.

### Tool Selection

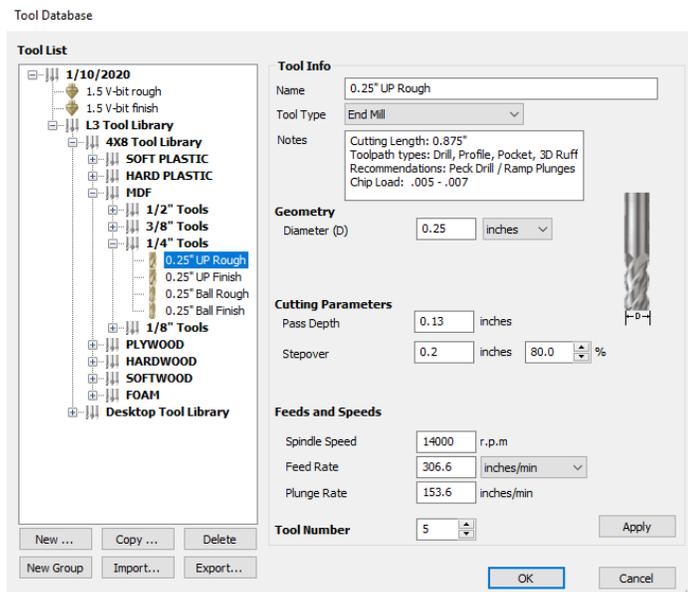


Press **Select** to open a new window.

You will want to pick the correct tool for the type of material you are using.

**Edit Passes** controls how aggressive the cut it. It is recommended to leave the default unless discussed with the technician.

### Tool Database



This is where you pick a tool for the active toolpath operation.

**\*\*note\*\*** Please make sure to select the correct Tool Library!!!

4x8 Tool Library vs. Desktop Tool Library  
Based on what machine you plan to use.

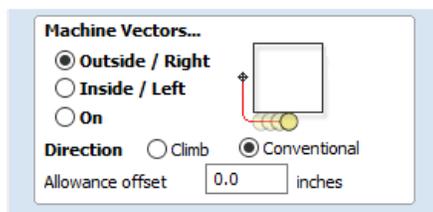
Up Rough tooling is used for most general purpose operations.

Ball Finish tooling is generally used for 3D finishing.

In this example, we have selected the 4x8 MDF 1/4\"/>

Click **OK** to continue.

### Machine Vectors...



This defines how the machine will follow the selected vector.

**Outside / Right** will have the tool follow the vector on the outside of the vector. This is generally used to cutout shapes/vectors.

**Inside / Left** will have the tool follow the vector on the inside of the vector. This is generally used to create windows/dropouts from main features.

**On** will have the tool follow the vector on top of the vector. This is generally used for text and will have the same width of the chosen tool's diameter.

## Tabs

**Do Separate Last Pass**  
Allowance (A)  inches  
 Reverse direction

**Add tabs to toolpath**  
Length  inches  
Thickness  inches  
 3D tabs

**DO NOT USE** “Do Seperate Last Pass.” This section can be skipped.

Check **Add tabs** to toolpath.

These are used to hold the loose part in place so it does not fly out and cause injury or damage to the machine or to your work.

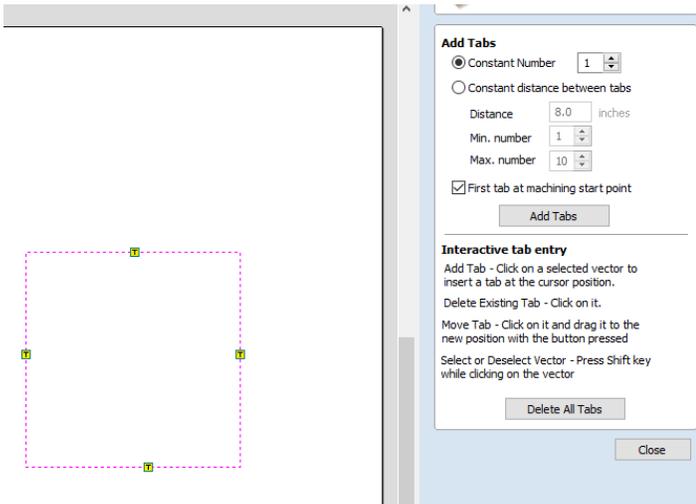
**Length** depends on how many tabs added 0.5 is a good average

**Thickness** should be around 50% of your total thickness

Check **3D tabs**

Click **Edit Tabs...**

## Tabs Menu



This will open a new window to add tabs to your vector.

There is an automated function that will generate tabs across your vector. This does not always place tabs in the best locations.

We recommend looking through and optimizing to make removing tabs easier.

Avoid corners and internal curves.

Make sure any long vectors have tabs attached.

You can manually edit curves by clicking the vector to add.

\*Tabs also prevent vibration & chatter and prevents tool breakage.

Clicking on the “T” to delete tabs or click and hold to move tabs.

## Ramp Plunge Moves

**Ramp** Leads Order Start At Corners  
 **Add ramps to toolpath**  
Type  Smooth  Zig Zag  Spiral  
Specify Ramp ...  
 Ramp on Lead In  
 Distance  inches  
 Angle  degrees  
Distance  inches

Safe Z  inches  
Home Position X:0.00 Y:0.00 Z:0.64  
 Project toolpath onto 3D model  
Vector Selection: Manual   
Name:

These are not required but can create a more gentle approach and can improve surface quality.

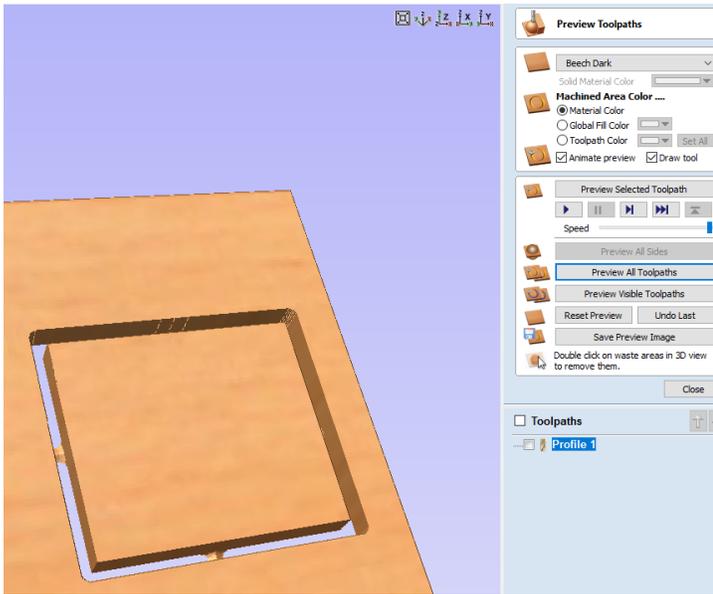
This will increase the cut time and is not supported on the desktops.

It is recommended to rename the operation to keep track of where you are in your file.

**Ex. “0.25 UP profile”**

Press **Calculate** to finish the operation.

## Simulate



After it finishes calculating, you can simulate & preview the results.

### Click **Preview Visible Toolpaths**

If you want to edit the pocket after viewing, right click the name of the operation and click **edit** or double click the name.

This will allow you to make changes to the operation and recalculate.

When finished, click **Close** to close the preview and click **2D view** to continue writing your operations.