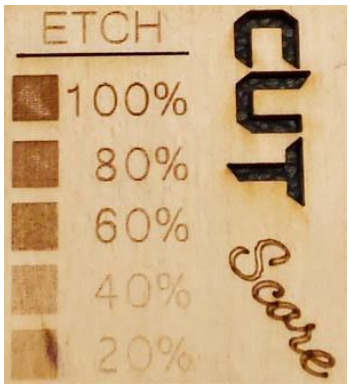
DIY cave
BEND/OREGON

glowforge

Proficiency Test



Using this document you will learn about various action settings for the Glowforge and then you will print a test square like the one displayed above to show your completion.

updated 02/02/25

1. **Turn on room ventilation** Small black remote lives on table next to Boss laser. Use it to turn on the fan outside black double doors to the right/North on extension cord. You will hear if the fan turns on outside.
2. **Start Glowforge** (there is a toggle switch on the back lower right corner of the machine). It takes several minutes for it to run through its start-up cycle.
3. **Open the Glowforge software** by opening an icon labeled Glowforge on the desktop. (Image 1)

Image 1

4. **Load a Glowforge file.** The Glowforge uses .svg, .jpg, and .png files. We'll be using a .svg file. Image 1a
   a. Click "Create a new design" in the upper left corner for the drop down menu in the web browser.
   b. Select "Upload a file" (Image 2)
   c. Navigate to the .svg test file on the desktop named Proficiency Test File.svg" and select it. Click to open.

Image 1a

5. **Load material into the machine.** Choose a piece of 1/8" Baltic Birch from the scrap bin above the Glowforge with a blank space **at least about 3**" square where your test graphic will print. Baltic Birch is a light in color, lightweight plywood. If you aren't sure, ask a steward.

   a. Measure thickness of wood using digital calipers (may be located on wall to your left above soldering station) in black plastic box 1/8" = 0.125 in (Image 3) *check to see calipers are set for inches. **Don't forget to turn off.**

   b. Place the scrap birch into the glowforge and close the lid. The software will scan it and upload an image of the project area. It may be out of place. Don't worry.

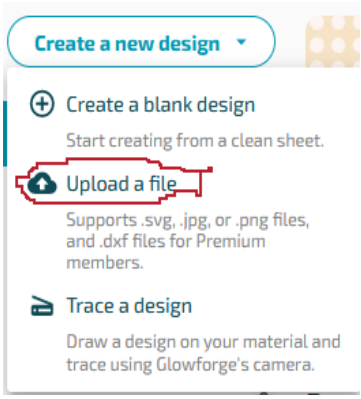


Image 2

6. Tell software what kind of material you are using. Although we know we are using Baltic Birch, this exercise will show you how to change all settings as if you didn't know the type of wood.

   a. Choose "unknown" on the upper left and then "use uncertified material".

   b. Enter material thickness. Enter number gathered in **step 5.** (Should be approx. .125 in)

Image 3

7. Move the test graphic to the desired printing location.

a. Click on the test graphic (upper left-hand corner) to activate then drag it over to the print area aligning it onto the birch, leaving approximately 1/8" of room or more around the edges. The image location highlights in light blue on the rulers along the outside of the work so you can see how far away the test graphic is from the edges of your material.

8. Adjust order of print actions.

a. The items in the left column are the actions the Glowforge takes during printing, starting at the top of the list. Each action is separated by a horizontal line. (Image 4)

b. Try resorting: using this "vertical action list", drag the rectangle cut line to the bottom of the stack.

Take your time during the following steps

9. Adjusting print settings. In a personal project, you can adjust settings for each element as desired, but for this test square, follow directions below.

a. Select the top element of the design in the vertical action list: Single click on the top item labeled "ETCH". Along the top of the menu that appears, you can select the associated action. In this case, select **engrave**. Then select "manual" at the bottom of the page. This opens settings for that action. Notice you can adjust speed, power, lines per inch, and number of passes.

b. Leave speed at 1000. Set "Precision Power" to 60 (this represents 60% power) and Lines per inch at 225. Notice the setting is now listed in the 60% box. Move your cursor to the next box (image 4). The yellow "*Enter Settings*" has changed to black 60%.

c. For each element in the action list, you will modify the settings. For this test, each element that you adjust you must first choose the type of laser action (engrave, cut, score, ignore) and then **choose "manual" at the bottom** to reach the settings page.

   i. If an element has a % in it, change the laser action to engrave with power set to match the % listed on that element and speed set to 1000. This will show how **power** settings can affect a change in the output sample. When you have changed the settings, move your cursor to the next box.

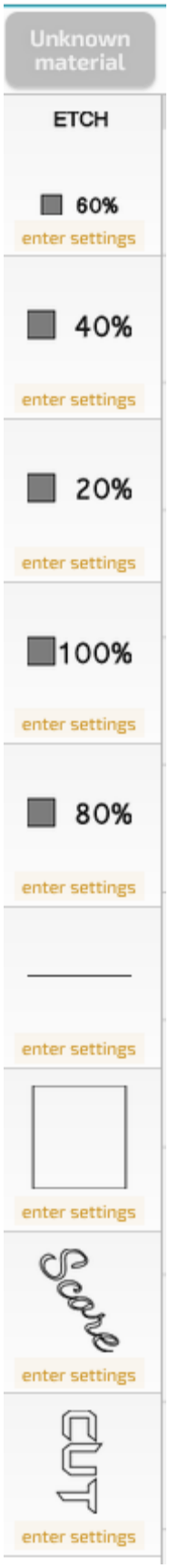


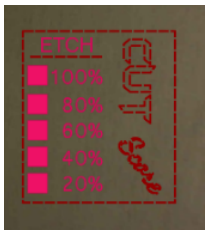
Image 4

ii. Change the 40% engrave element to a Lines Per Inch setting of 125.
iii. Change remaining % elements (20%, 100%, 80%) to associated precision power and to a Lines Per inch setting of 195.
iv. If an element has a name ("Score" and "Cut") rather than a percent, change it to that matching function. Change the manual settings to match the "Glowforge Material Common Settings" (located in the binder near the computer) for the *Baltic Birch ¼"* settings for all functions. For score reference engrave settings.
v. Change the rest of the elements (those without names) to **Cut** functions and set the speed and power appropriately using the "Glowforge Material Common Settings" sheet in the binder.

NOTE: When you have changed the last setting (image 4) just move your cursor over to the screenshot of your sample piece.

vi. As elements are changed they turn from "enter setting" (pale yellow image 4) to the new settings you have entered. If they are still yellow, go back to that setting, make the changes and then move the cursor to the screenshot of your material.

10. How to know if the design is ready to print. Once you have chosen settings for each element, it changes from red to a solid and brighter color (pink, orange, purple). You know your design is in the active printing area when it changes colors. See below it goes from red only to red, yellow, and purple. If you haven't edited a setting, that is in the list this will not happen. For example, see image below where the 80% action is a lighter red color and the corresponding action in the list shows yellow "enter settings"



11. Print! . Press the print button in the upper right corner of the screen. If you cannot click the print button, your design may not be in the printable area, or you may have failed to correctly set one of the elements. The program will show you the number of minutes and seconds needed to make your print. Write this entry onto your Glowforge log with "Proficiency Test" and your name.

For a personal project, you will need to keep a record of the time on your Glowforge log. The charge on top of your hourly shop rate is per minute of Glowforge print time.

Press the blinking white button on the right side of the Glowforge to start the printing process. **Remember: you need to stay with the Glowforge until your print is completed.** When your project is finished, turn off the fan with the wireless remote.

12. Get certified: Show the completed sample chip to the steward who will change your certification status if you pass.

13. When finished, click "back" on the browser to find and delete your test project listed under "recent designs" so the next person starts from scratch. Be sure to close the browser window and turn off Glowforge and fan when finished. Don’t forget your USB stick if you are using one.