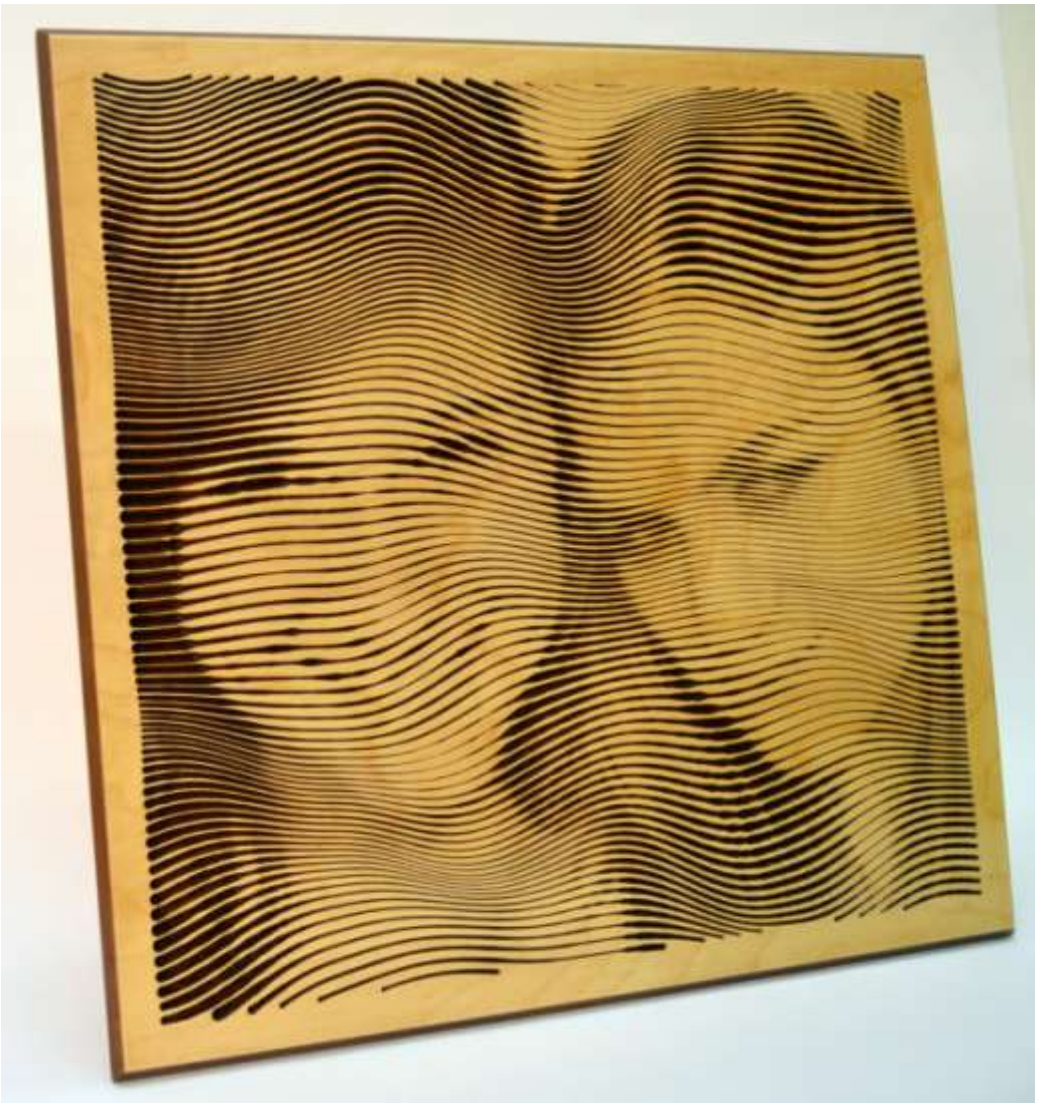
EnRoute

Rapid Picture

A Tutorial for Creating a Rapid Texture design



Artistic AUTOMATION

Rapid Picture Tool

A photograph can be used along with the Rapid Texture tool. In this tutorial we will demonstrate the use of photo images used to create a lasting remembrance using the rapid picture tool.

Selecting a Photo

In this example, a black a white photo was used. We have found that a color picture usually works best because the tone of the picture is not as uniform as a black and white photo. So some changes were made to the photo in Corel Photo Paint to enhance to quality of the original photo. Below the first picture is the original, the second picture is the one that was used in this example. We tried to create more of a contrast between the high lights and the low lights of the photograph.

1. Start with opening a new EnRoute file.

   To do this click on the New Icon.

   This will open the Define Plate Dialog.

   Enter the parameters.

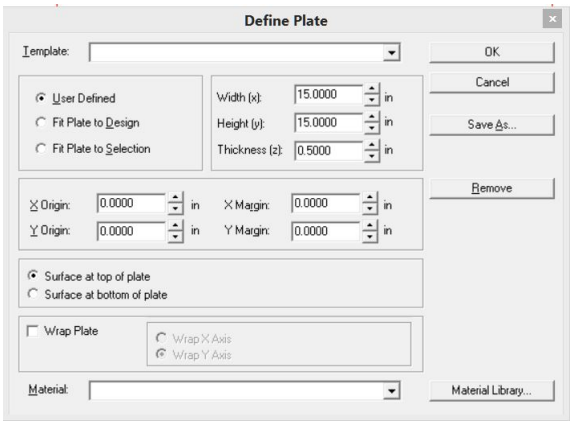
   Width = 15.00

   Height = 15.00

   Thickness = .50

   Click OK.

This will create the workspace for your design.



2. The plate will be shown in red.

3. Import the photo into the workspace using the Import tool.

   Click the Import icon. 

   Find the file that you wish to import.

   Click on OPEN.

   This will import the picture to your workspace. The imported picture will create another layer called “Imported”. Both of the layers will be turned on and you will be working in layer 1.

4. The next thing we did was size the photo.

   Select the Photo.

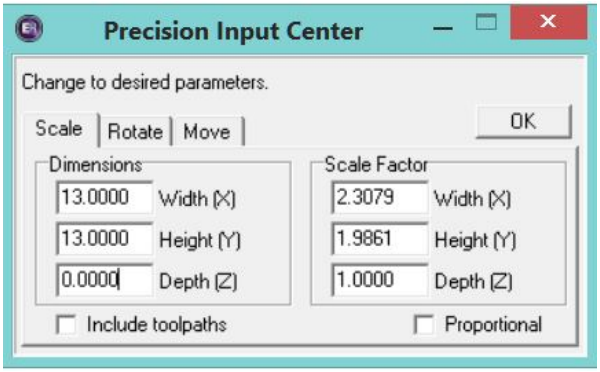
   Press the F2 button. This will open the Precision Input Dialog.

   Enter parameters:

   Width = 13.00

   Height = 13.00

   Click OK.

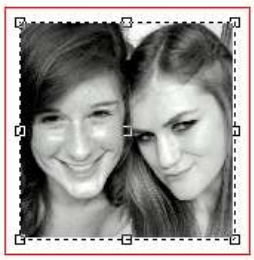


5. Notice the image is located at the bottom left of the plate. Move the image to the center of the plate.

   Click on the image.

   Note: Hold down the Ctrl and Alt Key and press the number 5 in the 10 key keyboard to move to the center of the plate.

   The image is now in the center of the plate.



6. Using the rectangle tool and the snap tool you can quickly place a contour at the edge of the plate.

   Click on the Snap to Grid icon. 

   Note: The settings for the grid have been set at 1 inch intervals.

   This will turn on the snap feature.

7. Click on the Rectangle icon. 

   This will open the rectangle tool. Make sure that the construct rectangle by corners is selected.

   Move the cursor to the top left corner of the plate, click to place the first corner. Drag the cursor to the bottom right corner of the plate and left click to place the opposite corner of the rectangle.

   This will place the contour needed to apply the Routing Offset toolpaths to cut out the design. (The toolpath will be applied later.)

   The next step is to create the contours for the photo image.

Creating the Seed Contour

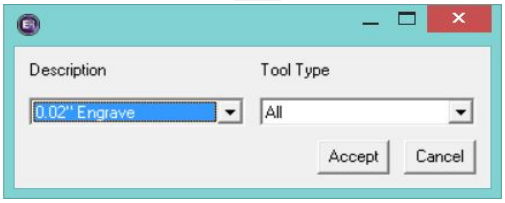
The drawing tools are used to create the "seed contours" for the rapid texture design. The seed contour is the starting point for the Rapid Texture process. When the Rapid Texture contours are created, they are first created as offsets from the seed contour based on the Offset parameter in the Rapid Texture dialog. The offsets are then distorted using the other Rapid Texture parameters, creating the finished Rapid Texture contours. Since the seed contour is the starting point, it is an important part of the design process. Seed contours can be virtually any shape desired; they can be open or closed contours; and, you may select more than one seed contour at a time. Whatever contours that are currently selected when the Rapid Texture process is started are used as the seed contours. With some experimentation you will find that even using all of the same parameters, you can change the end result of the Rapid Texture results quite dramatically simply by changing the shape and number of seed contours selected.

8. Draw a straight horizontal line across the plate. This is the contour that will be used as the "seed contour".

9. Click on the line and open the Rapid Texture tool.

10. Click on the photo image. This will open a dialog box that will allow you to select the tool that will be used to cut the toolpaths. In this example we have chosen to use a .02 Engrave tool.

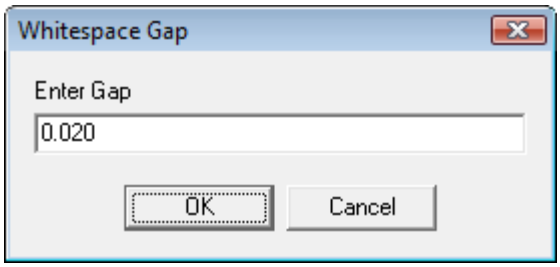
    Click Accept.



11. The whitespace gap parameter refers to the minimal space that will be between the contours in the dark portions of the photo. The surface of the material will reflect this parameter when it is cut.

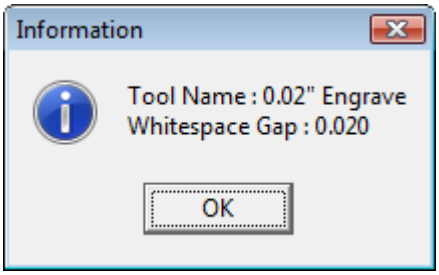
    Enter .020

    Click OK.



12. This information dialog box recaps the information that you have entered for this project.

    Review the information and Click OK.

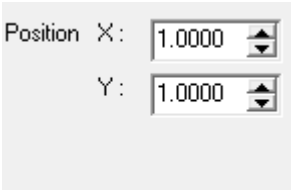


13. Set the parameters for the Rapid Texture.

    Position: X = 1.00

    Y = 1.00

    The position parameters refer to the start point of the panel that will be designated as the area where the rapid texture contours are created. We entered the start point at 1 inch because we want to have a 1 inch border around the rapid texture design.



14. Set the Size parameter:

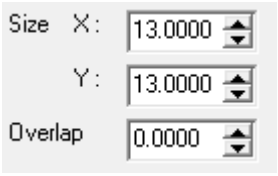
    Size X = 13.00

    Y = 13.00

    Overlap = 0.00

    The size parameter refers to the size of the panel that we wish to create for the rapid texture contours.

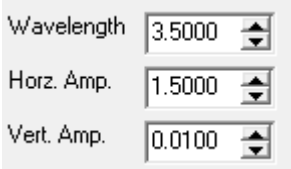
    The overlap parameter refers to the distance that the contours will continue outside of the panel.



15. Wavelength = 3.50

    Horz. Amp = 1.50

    Vert. Amp = .01



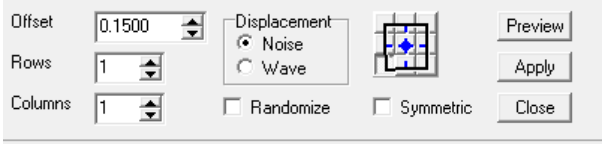
16. Offset = .15.

    This parameter refers to the distance between the contours.

    Displacement

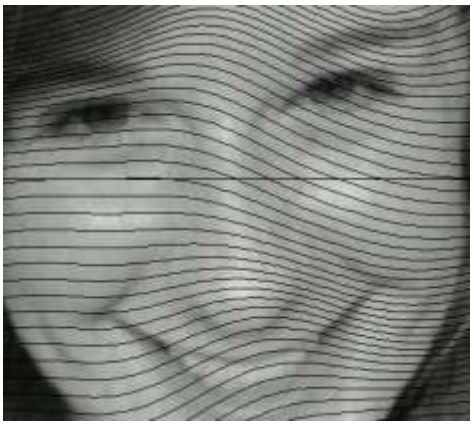
    Noise = Checked

    Click Apply.

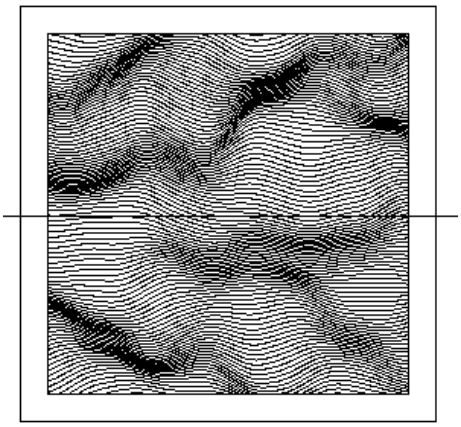


17. The contours will be created.

    This is a close up view of the contours that have been created.

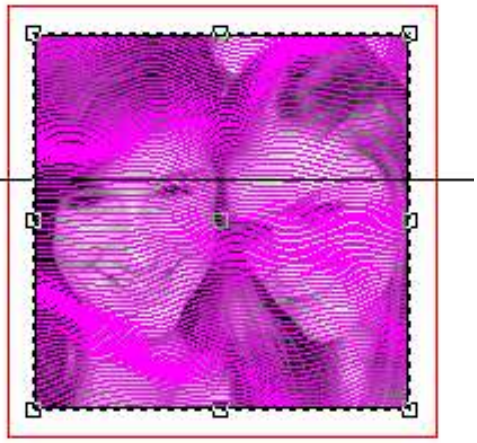


18. The contours are created within the area that you have set for the panel.



19. The next step is to apply the toolpaths to the contours. Select the contours.

    At this point the contours are grouped so you can just click on one of the contours and they will all be selected.



20. Click on the Engrave icon. 

    This will open the Engrave dialog.

    Enter the parameters:

    Select the .02 Engrave tool

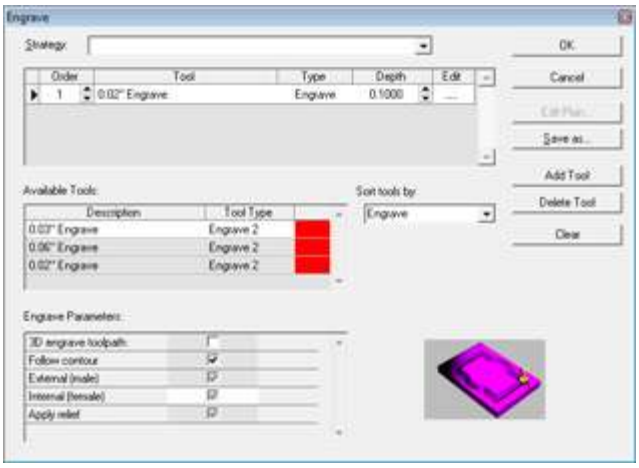
    Depth = .1

    Follow Contours = checked

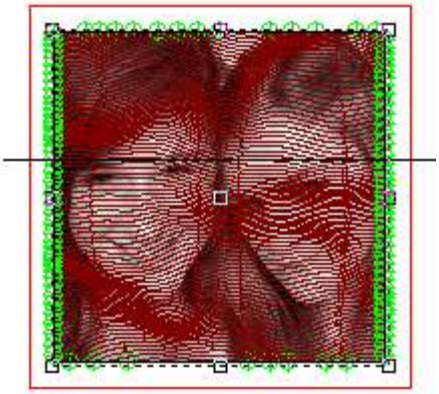
    Set the feed rate to 60 inch per minute

    Click OK.

    Note: The slow speed helps to eliminate chipping of the material.



21. This image shows the toolpaths that have been applied.

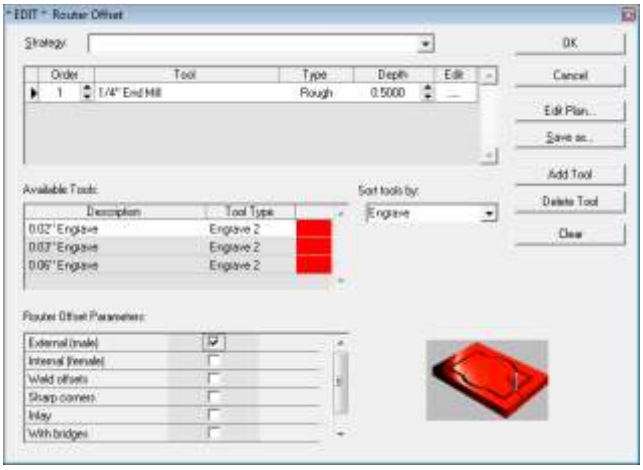


22. Next it is a good idea to group the toolpaths while they are selected. Click on the Group icon. 

24. The next step is to apply the Routing Offset toolpaths to the panel contour.

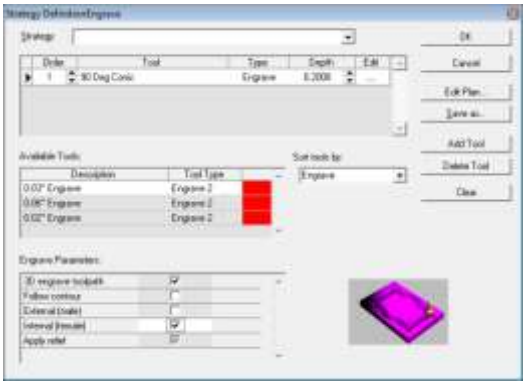
    Click on the Routing Offset icon. 

    Enter parameters:
    ¼" End Mill
    Depth = .50
    External = checked
    Click OK.

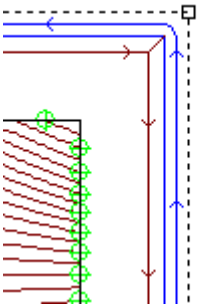


25. An Engrave toolpath is also added to this same contour in order to put a beveled edge on the design.

    Click on the Engrave icon. 
    Enter parameters:
    90 Conic Tool
    Depth .2o
    3D Engrave toolpath = checked
    Internal = checked
    Click OK.



26. This is a close up view of the toolpaths applied to the edge of the piece to cut it out and add the beveled edge.



27. Use the Simulate Ortho tool to create a rendered view of the toolpaths that you have created.

    Click on the Simulate Ortho icon. 

Choosing the material for the design

The material that is used in this example is maple veneer MDF core. The material received a polyurethane finish prior to cutting out the design. We have found that applying a finish to the material before cutting it is the key to a getting a nice finished design piece. The polyurethane helps to give the veneer a bit of strength. This helps to keep the veneer from chipping away during the milling process.

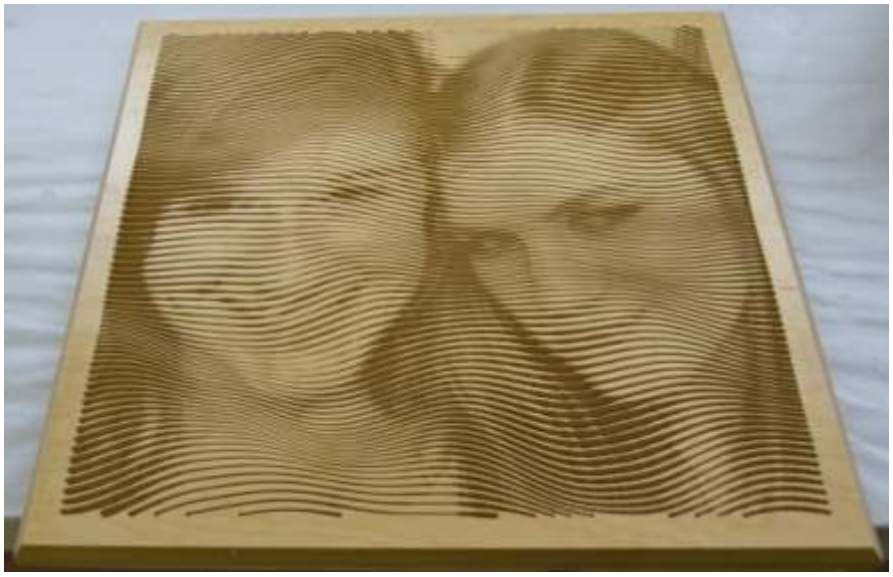
Finishing the Panels

Giving the panels a contrast makes the image stand out. The method that we chose for this example is described in detail in the following sections.

This is an image of the panel after the milling process. Notice that there are some areas of the panel that did not cut cleanly. Sometimes in the milling process there is a bit of fuzziness that remains. A good way to clean this up is to rerun the toolpaths a second time. The other option is to use sand paper or sometimes an exacto knife to remove the fuzzy edges.

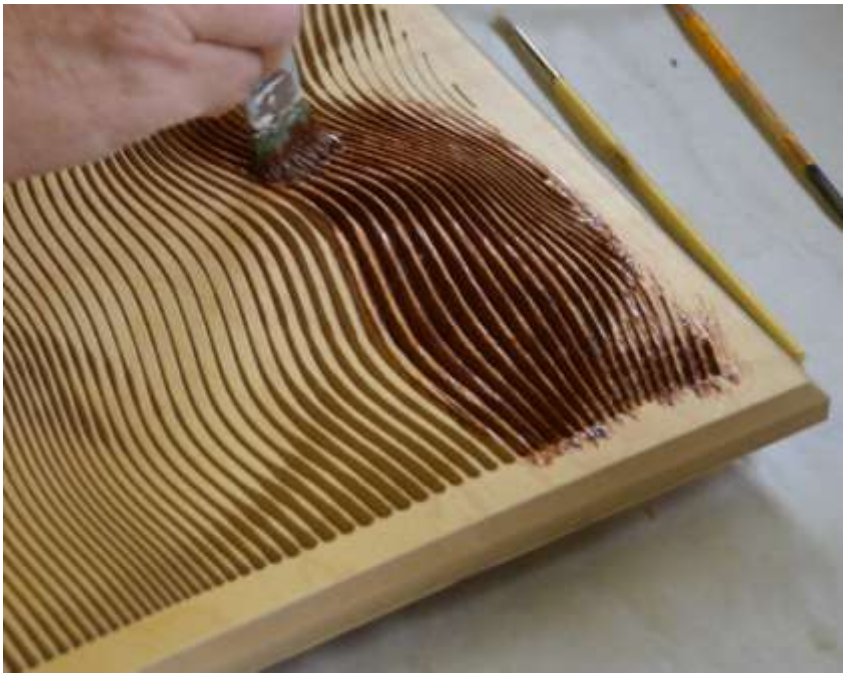
Here is a closeup view of the first pass.

We chose to rerun the toolpaths a second time. This is an image of the panel after the toolpaths were run. Most of the fuzziness has been removed. The edges of the panel were sanded by hand with a 220 sand paper to smooth the surface.

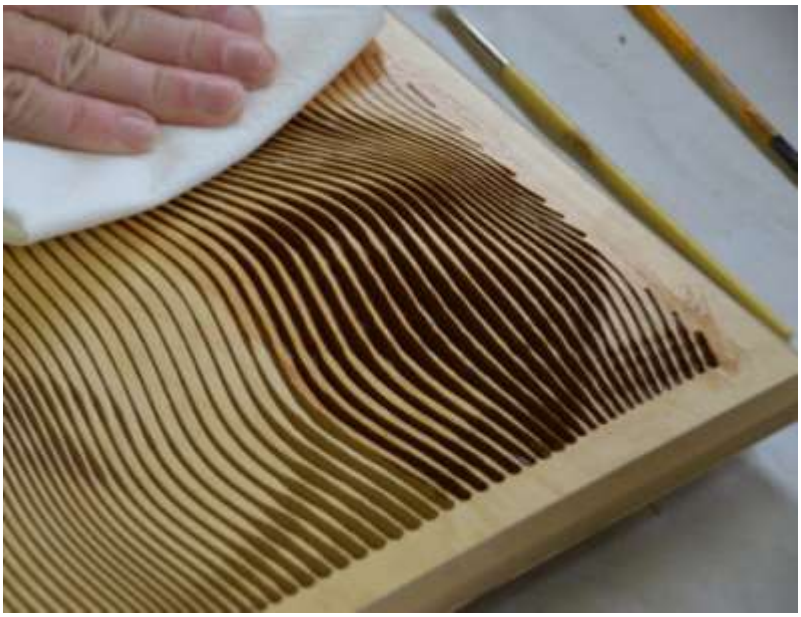


Once you have the piece sanded, you are ready to apply the glaze coat to the cut out areas. The glaze that we use is a Mocha colored pre-mixed glaze by American Tradition. Because we applied the polyurethane to the panel before it was cut, the glaze does not penetrate the surface area.

The glaze is applied with a 1 inch stiff brush. Take time to make sure that the glaze reaches all of the areas that have been cut. The success of the design depends on the contrast created between the surface area and the cut area.



Remove the glaze from the surface of the panel using paper towels. Fold the paper towel to create of flat area a wipe across the surface of the panel in the direction of the contours. The idea is to remove the glaze completely from the surface. It is helpful to use the brush to remove excess glaze if needed from the recessed areas. A damp paper towel will help to remove any glaze that may have started to dry on the surface areas.



Below is an image showing the panel after just one coat of the glaze.

After the glaze has dried, a second coat is applied. Once again be sure to get the glaze to all of the areas of the design. This second coat deepens the color of the glaze and creates a more defined contrast. Below is the panel after the second coat of glaze has been applied.

We also applied the glaze to the sides of the panel. Once the glaze has dried thoroughly polyurethane is applied to the back of the panel to give it a nice finish. The front of the panel is finished by spraying a coat of polyurethane on the surface.

Creating a Rapid Picture using MDF

We wanted to see how the MDF material would work with the Rapid Picture tool. Below is one of the examples that we produced. A color photo was used. In the first example you can see a background of some buildings. In the second example, the buildings were grayed out with the help a drawing program.

Before cutting the panel the material was primed and painted. After cutting the design, the glaze was applied in the same manner as the first example. The color of paint that was used in this example is a gray/green color. You can experiment with colors of paint to achieve the effect that you are looking for.

Although we feel that the best finish so far has been the first example, painting the MDF also created a nice finish.