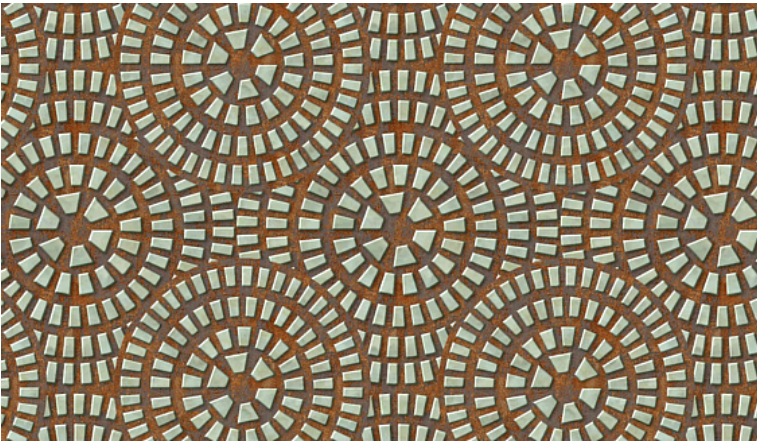


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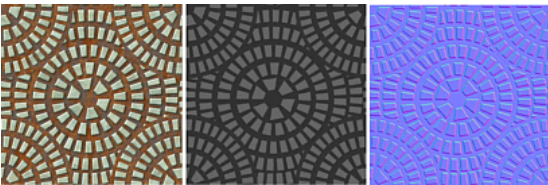
Seamless Mosaic Pattern

Served with perfectly cooked Bump and Normal Maps



[Pattern studio](#) is a great tool to create highly customized, professional grade seamless textures for 3D applications that do not suffer from the common problems of photographic textures like uneven shading, the emergence of unwanted repetition when viewed from distance or incorrect/bogus Bump/Normal map.

What we will produce in this tutorial is a great looking mosaic texture complemented with correct Bump and Normal map.

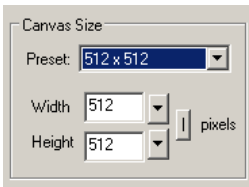


Here we go:

Step 1.

First we will use larger canvas: 512 x 512 is about right. Note that [Pattern studio](#) has a special Megarender export which allows us to export the texture many times larger than designed. However a correctly designed seamless texture actually doesn't have to be big to look great!

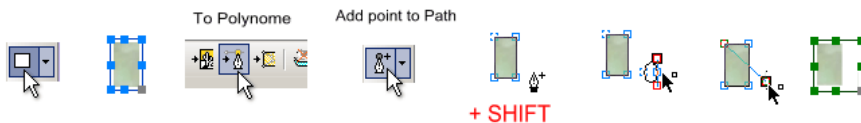
Menu project - Size & Color



Step 2.

It is crucial to follow the example. What we are about to do is prepare the single stone for the mosaic. To have control over the spacing between the stones we have to prepare (shim) our rectangle.

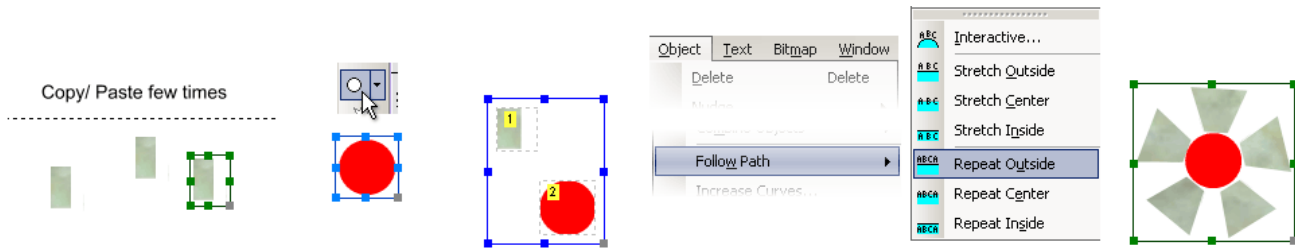
- With the rectangle tool draw a small stone. I used Misc - Smoke texture for it to give it sort of glassy look.
- Convert the Rectangle to Polynome
- With the rectangle selected and Add Point to Path tool, while holding SHIFT we will add and "island" which are points outside the rectangle.
- You will see 4 control points creating the island, with the shape tool move the points all over each other to minimize the shape of island.
- Now use arrow tool to select the object. It should have space on its right side.



Step 3

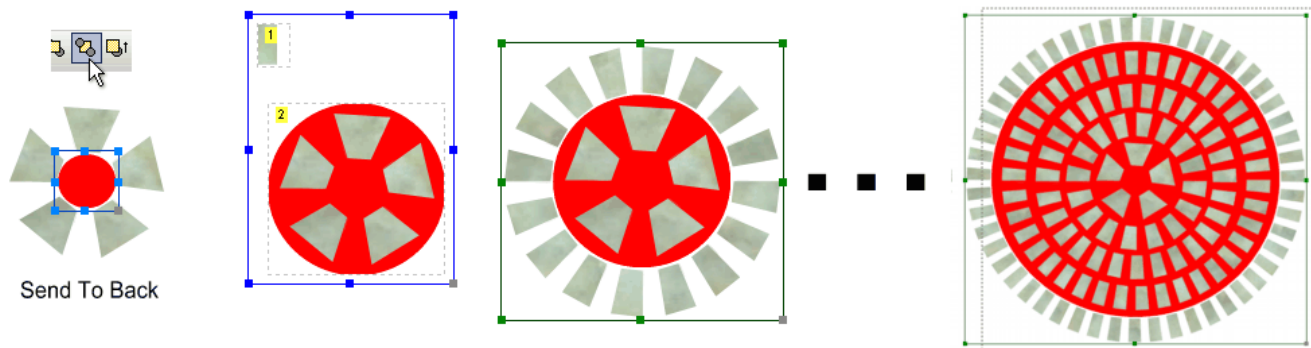
Now the stone is ready and we can have it repeat over the path

- Copy and Paste the stone few times (5 times to be exact). We will need each stone for a separate "ring"
- With a circle tool draw a small circle. Put the color to something visible (no texture and red). Place it in the middle of canvas
- Select first stone and then the circle using SHIFT and click with Arrow tool. The numbers in the selection should be 1 - stone 2 - circle.
- In the Object menu select Follow path and then Repeat Outside
- It will place the stone repeatedly around the circle.

**Step 4**

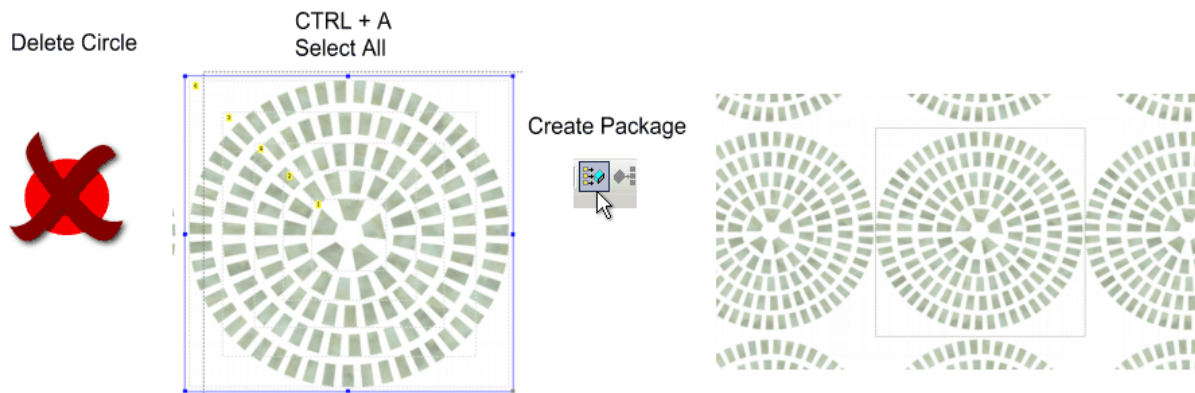
This step is mostly repeating the previous steps to create 5 rings of stones

- Select the circle and Send it to Back (so it is on the bottom of layer list)
- Select the circle and resize it so it is larger than the first stone ring
- Select the next free stone and the enlarged red circle with the SHIFT and click, make sure the stone is selected first.
- Follow the path again as in Step 3 - Object - Follow Path - Repeat outside
- This create the next ring
- Now repeat this Step 4 again to create in total 5 stone rings. Make sure you always have at least one free stone for the next ring!

**Step 5**

This step will create the first main pattern

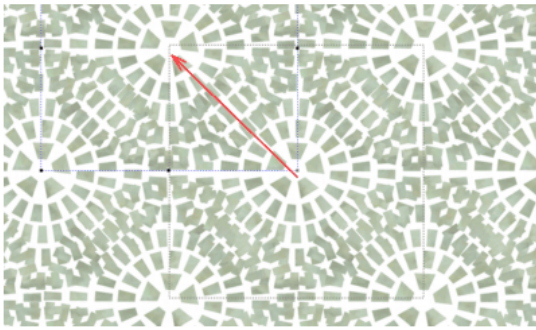
- Delete the red circle, we won't need it anymore.
- Select all the objects (CTRL+A)
- Resize the selection so it is just the size of the center tile (dashed area) (512 x512)
- Create Package (CTRL+E) or menu Object - Package - Create Package

**Step 6**

This step will copy the pattern

- Select the Package and Copy it (CTRL+C) then Paste it back (CTRL+V).
- Move the new copy up and left to fill the space. At this moment the whole pattern will look a bit messy
- Double click on the newly copied and moved package to open it in separate window to edit its content.
- Delete the last ring of the stones
- Close the package by clicking on the Green OK button in the left top corner.

Copy and Paste the Package



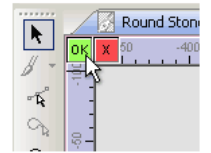
Double Click to Edit



Delete last ring



Update Package

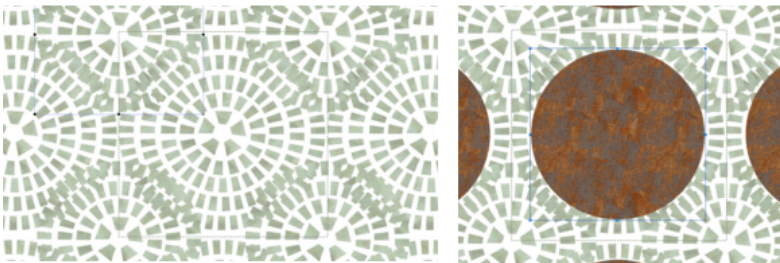


Step 7

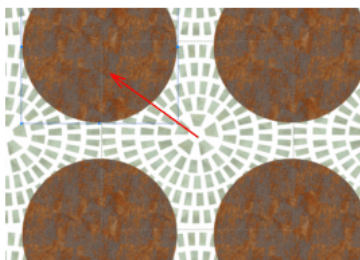
Making sense of the pattern and masking the unwanted parts

- The design still look a bit messy at this point, but we are close
- With the circle tool draw a circle so it covers the first 4 rings
- Set the texture to the circle, I used Metal Rust A2
- Move the circle over to the top left to cover the Second (copy) package where we removed the last ring
- Send the circle one layer down; Object - Arrange - Send Backwards
- Move and or resize the circle so it is aligned with the stones as on the 4th picture below.

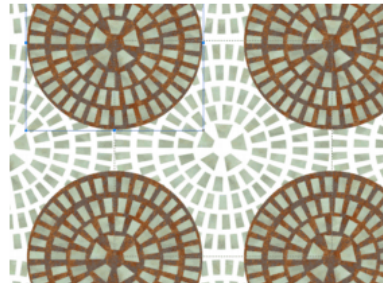
Circle



Move



Send One Layer Down

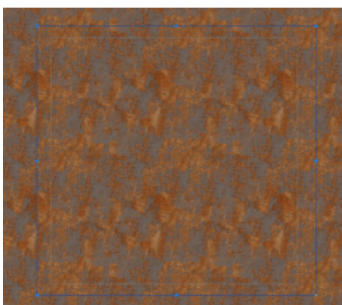


Step 8

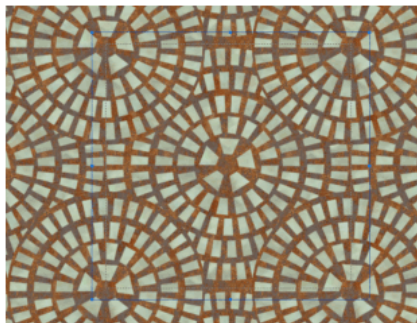
Adding final background

- With rectangle tool draw rectangle that is bigger than the central (512 x 512) tile.
- The Rusty texture should be selected, if not apply it to the rectangle
- Send the rectangle to Bottom (Object - Arrange - Send to Bottom)

Rectangle



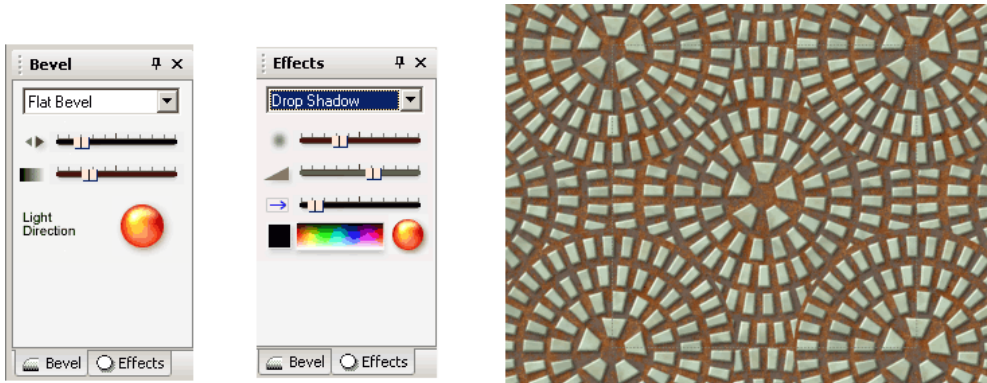
Send to Bottom



Step 9

Fine Tune the image and apply effects

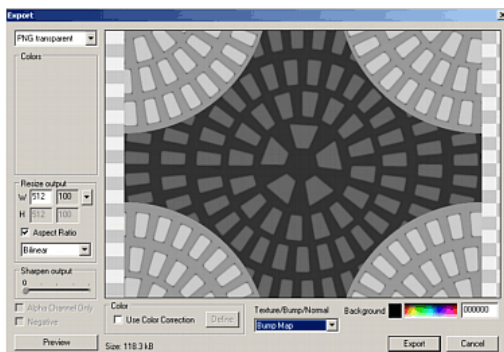
- Look at the whole pattern and resize either Package so the whole image looks even. If you look at the last image in previous step you can see that there is some uneven gap above and below.
- **Optional:** Baking the Shadow and Bevel to the texture. Apply very light Flat Bevel (move the second slider to left) and light Drop shadow to both Packages. This step is optional and depends on how we would use the texture at the end.
If we bake-in the shadows and bevels we then have to be careful how we use the texture in the 3D application so it correctly aligns with the light of the scene. Baking Shadows and Bevels to texture produce fast results but if we are not careful it may have the "3D video game" look. A good compromise would be to bake-in only light bevels and leave out shadows.
- The stones should now have some depth.



Step 10

The texture is now done at this point. But let's have look at the Bump map. (If you don't care about Bump map and Normal map, skip all the rest steps, you are done!)

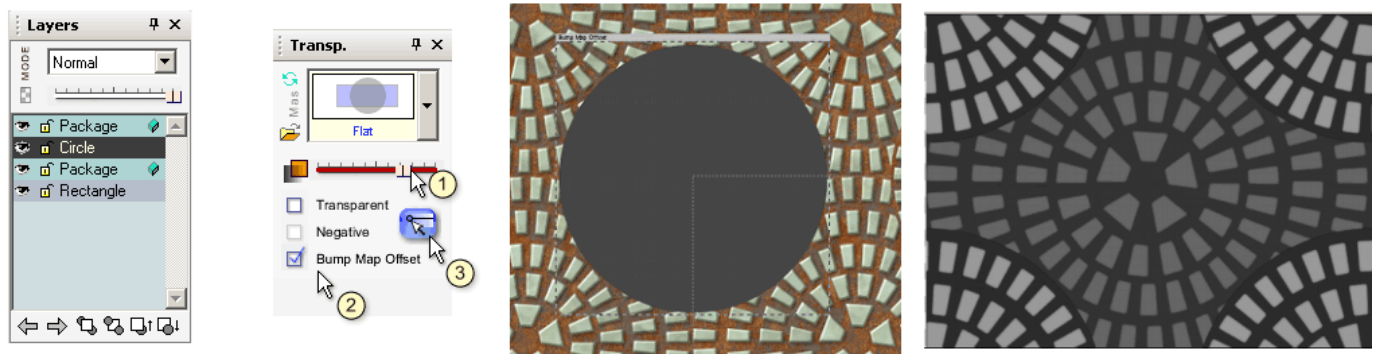
- Use Bitmap Export and select Bump Map.
- The Bump map is **not yet right** because it follows the objects in layers so the second Package with the circle are positioned higher than the background rectangle and first package.



Step 11

Fixing the Bump Map.

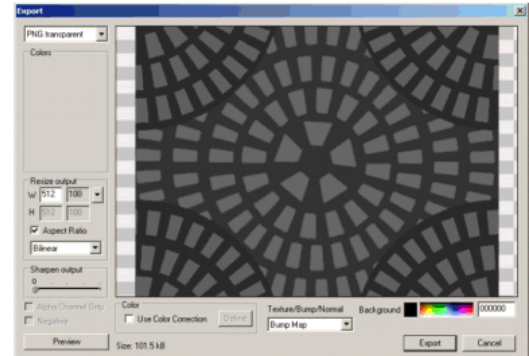
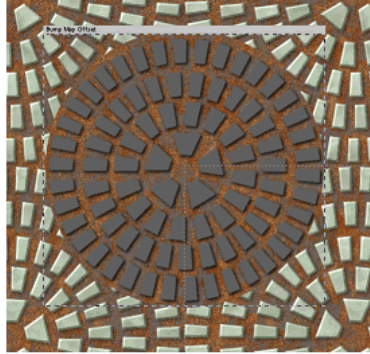
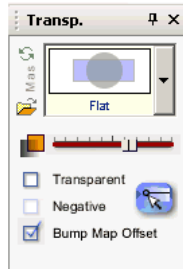
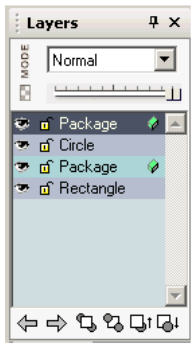
- There is a Bump map offset in the Transparency palette. What it does is that instead of transparency it applies whatever we select here (texture, gradient, flat) to the Bump Map (and Normal map)
- Select the Circle in the Layer palette. It should be second from top.
- Show the Transp. Palette. (It is docked together with the Color & texture palette, so use tab on the bottom of the palette)
- With the circle selected, first leave the texture on Flat, the (1) Move the slider to right, (2) Set the Bump Map Offset that become enabled (3) Click the Edit Transp Button so the Bump Map offset become visible on the screen
- Move the slider to make the Bump map offset to go darker
- Check the export and Bump map, the circle Bump map should now have darker color - the goal is to have it same darkness as the background under the first package. If not move the slider again to right (darker) or left (lighter)



Step 12

Fixing the Bump Map continue.

- When the Bump Map offset of the circle is fine, we will move the Package Bump Map offset..
- Select the top Package. This is the one that has one ring less and it shows much lighter on Bump map
- Again do the same, Move the slider under Flat, Select Bump Map Offset and then press the Edit Transp. button
- The pattern will become gray
- Check the Bump Map in Bitmap Export and go back and adjust the slider until the stones in the Bump map are same color shade as the other stones in the middle.
- If you look carefully at our Bump map image you may see that we put the circle bit too dark. It is not nearly that important because Bump Maps don't produce very exact effect and if we use Normal Map (which is a better way) then Normals uses only the angle of the normal vector, not the relative distance from the camera.



Step 13 Export.

- Now we can export the texture and the Bump or Normal maps
- Both Bump Map and Normal map have also Gaussian option that will make the bumps smoother. We can experiment with that and see which one would look better on the rendering.
- As an option we can have also look at the "Texted" choices for Bump map and Normal Map. this will merge the Bump/Normal with the generated Bump/Normal of a texture to give it a bit more grain. (However if we bake in shadows and bevels in the texture, then the "Texted" versions is not entirely correct, but that is not that much of a big deal with a busy texture)

Step 14 Rendering

Now we use any favorite 3D package to render the texture in a properly lit scene and have a good look. We can experiment with baked shadows and bevels (Step 9), we can use the Bump map for Reflection map etc..



What we just created here is an evenly distributed, natural looking, seamless texture with corresponding bump/normal maps that is just begging to be used in a 3D application.

To download a trial version or buy Pattern Studio, click [here](#).