

# Bricks'n'Tiles

Easy Creation of Architectural Textures

[www.bricksntiles.com](http://www.bricksntiles.com)

## Tutorial

Creating a brick file and texturing a medieval tower



# 1 Introduction

Welcome to this Bricks'n'Tiles Tutorial. Brick'n'Tiles is a software which creates seamlessly tileable brick textures of any kind by using any digital photo as source images. This tutorial shows how to create a brick texture using Bricks'n'Tiles to texture a 3d model.

We are using this 3d model of a medieval tower as an example object where you need to have perfectly seamless texture maps. The tower has a cylindrical UV Mapping which is provided by most of the 3d applications like Cinema4D, Autodesk 3ds max, Alias Maya, SoftImage XSI or Blender. Using this type of UV Mapping will wrap your texture virtually around the object. If you want to have no visible seams between the joined texture borders, the left and the right border of your textures have to fit perfectly together. Brick'n'Tiles will create natural looking brick textures which are seamless tileable. This allows you to repeat a texture map over huge surfaces without any visible artifacts.



**Example 1:** This brick texture is *not seamless*. You can notice color differences in the bricks meeting at the texture border marked with the black line.



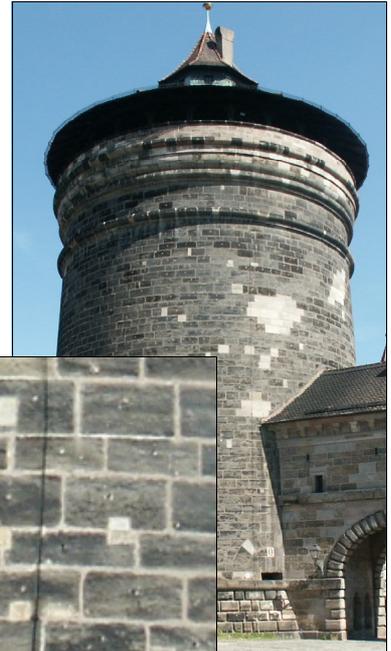
**Example 2:** This brick texture is *seamless* so it can be wrapped around an object without any visible seams.

## 2 Source Images

At first, you need a source image which could be any kind of a digital photo that shows some brick faces. Next you need to cut out some of the bricks in your photo using a Paint Software like Adobe Photoshop, Corel Paint or Jasc PaintShop Pro. Save each brick in a own image file on your hard disc then load each brick file into Brick'n'Tiles. (This image files do *not* have to be at the same size or resolution.)

How many bricks you need to cut out depends on the number of bricks you want to have in your final texture. The more single bricks you have, the more variation can be created by Bricks'n'Tiles. In most cases you can increase this variability by using the Random Hue / Saturation / Luminance options.

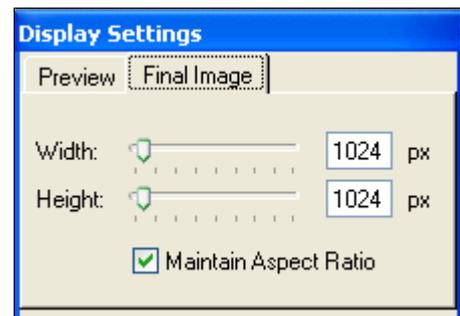
*The source image shows only a few brick faces which have no destructions or shadows on it or are occluded by other objects. You need to select adequate brick faces, copy them and past them in a new file.*



## 3 Creating Brick Texture

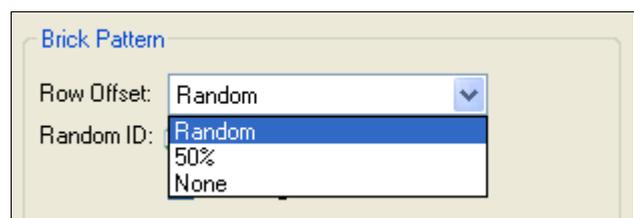
### 3.1 Texture Width and Height

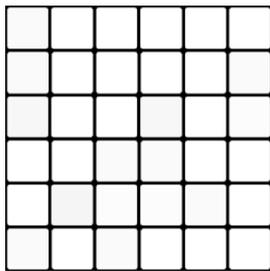
First start Brick'n'Tiles and set the final Texture Width and Height in the Display Panel on the right side of the main window. High values will give better resolution but slow down the texture generation process. Most of the brick parameters in the Option Panel depends on these values so be sure to set the Texture Width and Height before fine-tuning your texture results. To generate a quick preview switch to the Preview Tab in the Display Panel, decrease the image size and press the Update Button.



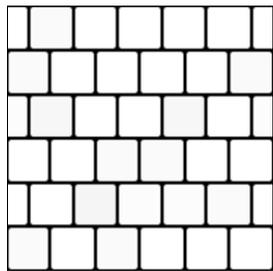
### 3.2 Row Offset Type

By selecting the Row Offset Type in the Options Panel on the bottom of the Main Window (General Tab) you can define the brick patterns. To see how to achieve a certain pattern please refer the user documentation of Brick'n'Tiles. Some examples are shown in the following pictures:

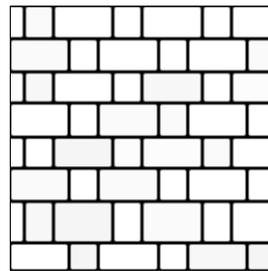




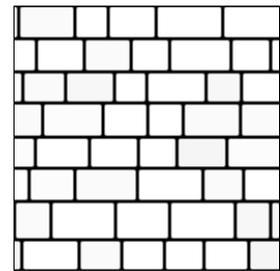
No Row Offset



50% Row Offset



50% Row Offset  
with different Min and Max  
Brick Widths



Random Offset  
with different Min and Max  
Brick Widths

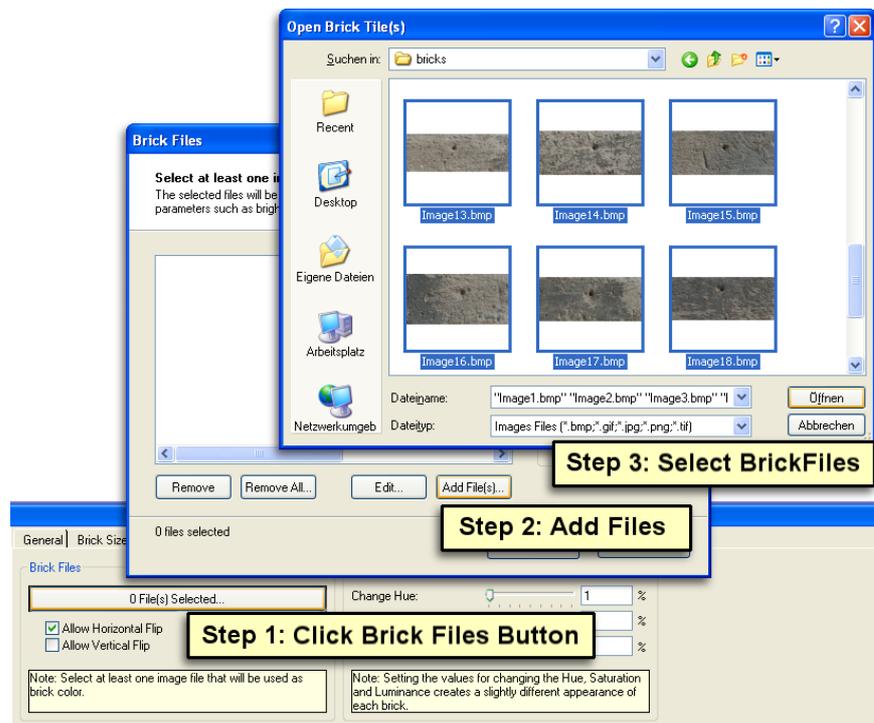
### 3.3 Brick Width and Height

The next step is to set the Brick Width and Height parameters in the Brick Size Tab in the Options Panel. You can enter these values either in Pixel or Percentage (related to the overall texture size).

### 3.4 Open Brick Files

To load your source images select the Brick Files button in the Brick Files Tab and select your files using the "Add File(s)..." Button. You can select any number of files by holding down the Ctrl key while selecting each file. To get a small preview of the files just select Thumbnails of the Dialog's View options. To see how it is working see the Brick'n'Tiles user documentation.

Then you can generate the texture which can take some minutes depending of the selected output size. To start the texture generation click the **Update** button in the Display Panel.



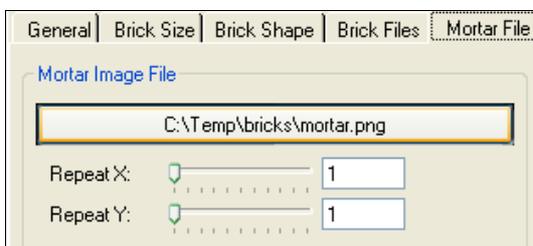
### 3.5 More Options

Now you can adjust the final look of your texture by setting the following parameters:

- To change the **distance between the bricks** use the Distance parameter in the Brick Shape Tab.
- To change from rectangular to **rounded brick borders** use the Rounded parameter in the same tab. This Parameter sets the radius of the rounded borders in Pixels or Percent (relating to the brick size). Zero means rectangular brick borders.

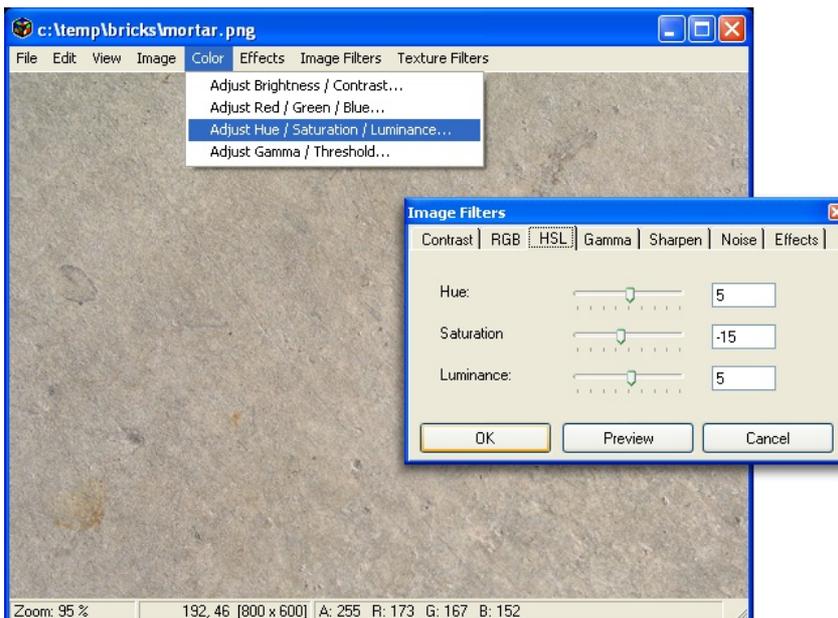
- To define how smooth the brick texture should be blended with the background (e.g. the mortar texture) use the **Smoothness** parameters. Zero means no Antialiasing. If you use rounded borders or the turbulence effect it is recommended to set the Smoothness parameters at least to 1 Pixel to avoid the aliasing effect which could produce artifacts at the rounded borders.
- To achieve some **irregularity in the brick pattern**, use the Strength and the Frequency parameter in the Irregularity section of the Brick Shape tab. This will create a turbulence effect based on the noise frequency defined with the Frequency parameters and the radius of the affected region defined with the Strength parameter.
- In the Brick Files section you have different possibilities to slightly change the appearance of each brick: Add more diversity by checking the **random horizontally or vertically flip** or the random brick color by increasing the **Change Hue, Change Saturation or Change Luminance** parameters. Values around 5% are recommended, higher values could produce natural colors.

### 3.6 Mortar File



To add a mortar file which will be visible in the gaps between the bricks (if the Distance parameter is not zero) go to the Mortar File Tab and select a image file. You can use any plaster, concrete or cement textures made with a digital camera (or found in the internet, e.g. <http://www.mayang.com>). Then select how often the texture should be repeated to fit to the brick files (**Repeat X and Repeat Y**).

If the texture is not seamless use the options in the **Make Seamless** section. To find out if a texture is seamlessly tileable, click the Mortar File Button then click the Edit Button and in the Preview Window press Ctrl-T to display texture tiling. If there are smooth transitions at the image borders the image is seamless, otherwise click "Create Seamless Texture" in the Texture Filters Menu or use the Make Seamless Options in the Mortar File Tab. If you want to know more about the Create Seamless Texture Filter please refer to the Bricks'n'Tiles user documentation.



If you need to **adjust the color of the mortar file**, you can use the image filters in the Preview Window. Open the Mortar File Dialog, select an image file and click on the Edit Button. You can edit the image's brightness, contrast, hue, saturation, luminance etc. by selecting the corresponding image filter in the Color Menu of the Preview Window.

To close the Preview Window select Close in the File Menu and confirm that you want to save the changes to the current mortar file.

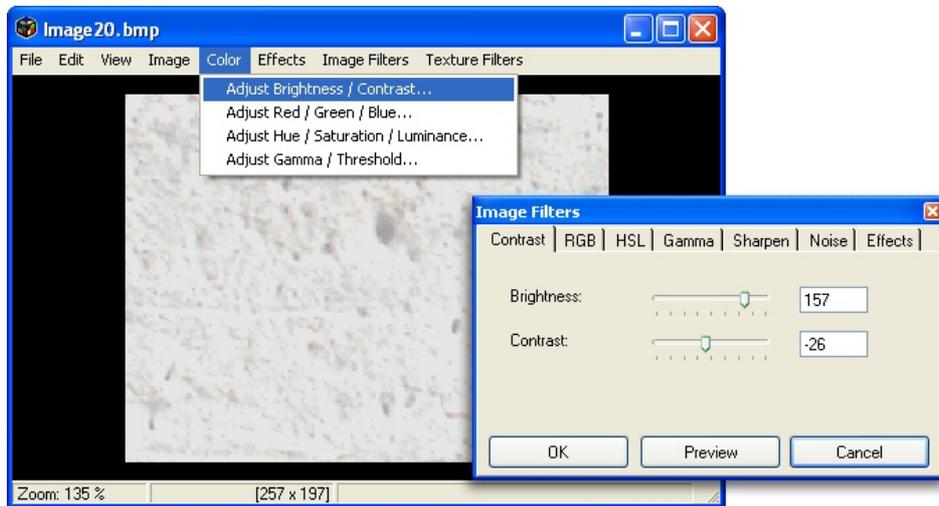
### 3.7 Save File and Export Texture

Now you can save your work in an .bricks file which contains all of your parameters and settings together with the brick and mortar images. The images are saved by compressing them without losing quality but the files can be very large depending on how many images you included. You can save you date by clicking “Save As...” in the File Menu. You can now open the File by clicking “Open” in the same menu or by double-clicking the file in the Windows Explorer.

To save the brick texture as an image file click “Export Image...” in the File Menu. Then select an image format like Windows Bitmap (\*.bmp), Tagged Image File (\*.tif, .tiff), **JPEG (.jpg, .jpeg)**, **PNG (\*.png)** or GIF files (\*.gif). In your 3d application load this image as a material or a texture map and apply it to your 3d model.

## 4 Creating Bump Map

We use the same settings to create a corresponding Bump Map. We just have to replace the brick files by a white image and the mortar file by a black image. To do this click the Brick Files Button in the Brick Files Tab and remove all brick files except one by clicking the Remove Button. Then select the last brick file and click the Edit Button.

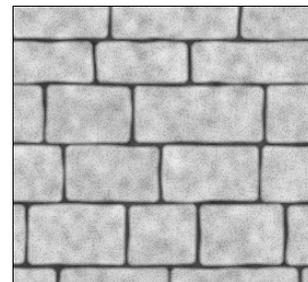


To achieve a rough surface we don't want to have a plain white image, so we preserve some of the texture's structure by clicking “Adjust Brightness / Contrast...” in the Color Menu and adjusting the texture's brightness and contrast as shown in the picture above.

Change the mortar file's brightness and contrast in the same way to have a very dark by slightly structured image, then save your Settings to another file and press the Update button. The result should look like this:



Brick Texture (Color Map)



Brick Texture (Bump Map)

In your 3d Application load this image and load it in the Bump Map Channel of your model's material. The result may look like in right picture:



Brick Wall **without** Bump Mapping



Brick Wall **with** Bump Mapping

## 5 Texturing the 3d Model

As already mentioned the 3d model has a cylindrical UV Mapping which can be created in Alias Maya with the 2D Texture Placement Node and in Autodesk 3ds max with the UVW Map modifier. If you have other models you may need another type of UV Mapping. To find the best way to Map your 3d model refer to your 3d application's user documentation. (The best way to Map an architectural 3d model is to use the "Real World Mapping" in Autodesk 3ds max 8 which let you define the "real" size of your brick textures in feet, inches and meters.)



Texture tiling

All you have to do to create a brick material in your 3d application is to create a new material and assign it to the 3d model. Then you have to load the brick texture created with Brick'n'Tiles in the Color (or Diffuse) Channel and – if available – load the bump texture in the Bump Channel of your material.

If the bricks are too small or too large in proportion to your model you can change the repetitions of the texture because the brick textures are fully tileable. Note that you have to set the repetitions in whole numbers (e.g. "2.0" instead of "1.75").

In the left picture you can see how "seamless" the texture is repeated four times in horizontal and seven times in vertical direction.



The tower with assigned texture

## 6 Conclusion

This tutorial showed you a way to create brick textures with Brick'n'Tiles. Later tutorials will describe extended s like create textures for brick borders, arches, vaults and columns. For a detailed description of the Brick'n'Tiles user interface read the user documentation which is available at the Brick'n'Tiles homepage at <http://www.bricksntiles.com/>

If you have any comments, questions or remarks relating Bricks'n'Tiles or this tutorial visit our Brick'n'Tiles Online Forum: <http://www.bricksntiles.com/community/>