

Materials



8 **Metal**

Making a great-looking metal is as simple as a click here. After applying a template you can change the color, shininess, reflection color, bump mapping, etc. to make it look however you like. Remember that metals will look great in Twilight, but require high render quality and may take a long time to render nicely. Using an Easy Render Setting with a "+" sign will bring nice results.

9 **Brushed Metal**

Looking for a brushed stainless steel? Look no further. Aluminum, or other brushed look metals can be based on these Templates. Remember that metals will look great in Twilight, but require high render quality and may take a long time to render nicely. Using an Easy Render Setting with a "+" sign will bring nice results. Look also to the "Alternative_AA" methods in the Express>Advanced Render Settings folder. Progressive render settings will bring best results.

The key with many Templates is to use the SketchUp texture only in the bump channel.

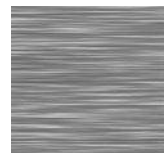


To do this after applying the Brushed Metal Template>Aluminum to the "Cladding_Siding_White" SketchUp Texture:

1. Click the Chain Link Button to break the link of the SketchUp Texture Image to the Material Color Channel.
2. Click the Chain Link Button to enable the link of the SketchUp Texture Image to the Bump Channel.
3. Click the Texture pull-down menu choice in the Material Color Channel and choose "Color" to remove the texture completely from the Color Channel.
4. Now the SketchUp image is driving the bump instead of the color.
5. Adjust the metal color further by changing it in the color channel, change the shininess to 20 to make it even more 'brushed' and matte-looking... maybe go even to 7. You can also add a color to the reflection channel to create other types of metal. This material will continue to remain physically accurate (obey the laws of physics).

For instance, use this method (without Click-3) to create ceramic tiles by combining a SketchUp Ceramic Tile Material with a Twilight Ceramic Template, or create concrete by combining SketchUp's Concrete material with the Rough Stone Template, or SketchUp's Wood Flooring by combining it with the Shiny Plastic Template.

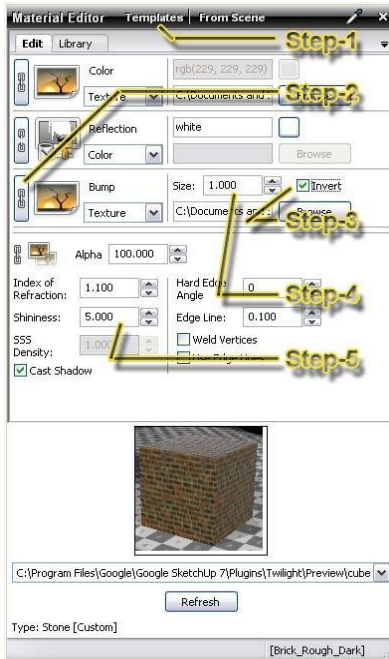
Be sure to add a scratch map to your bump texture (create a seamless scratch map using an external photo editor, or download a great one for free from the Twilight Render forum.) This will give a more realistic looking Brushed Metal because the scratch look is not added automatically. A scratch map looks something like this:



To create a Zinc metal using the Brushed Metal Template

Apply the Brushed Metal Template>Aluminum, set the Color to 90% grey, set Shininess to 15.

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To Create a Good Brick Material with Twilight Material Templates

For bricks, start for example by applying SketchUp's "Brick_Rough_Dark" brick material in the "Bricks and Cladding" SketchUp material category.

1. Apply Template "Stone>Natural" Template with Twilight's Material Tool.
2. Click the Chain Link Button next to the Bump Channel, this links the image of the brick to the Bump Channel, driving the "Bumpiness" with the image of the bricks.
3. Check the Invert box next to the Bump Channel. Inverting the image makes the joints appear darker than the brick which is essential for correct [Bump Mapping](#) in renderings.
4. To get a more 'bumpy' effect, increase the "Size" number of the bump from "1" to "2" if still not enough, increase it to "3". Bump over "3" usually becomes distorted, not attractive.
5. Change the "Shininess" from the default "20" to "7" to get a very subtle soft reflection. Shininess lower than 7 generally will not give good results.

10 Fast*

These materials may be the place to turn when lower quality settings are required for speed. If using "Medium" settings, but the Brushed Metal requires higher setting, try "Fast Aluminum" (modify color as desired). It will render much cleaner in that setting than the highest quality metals will.

*These material templates are by nature not physically "accurate" but are useful for many artistic applications. If you are experiencing strange lighting artifacts in your renderings, be sure to eliminate the use of any of these.

11 Light Emitter

Another way to create truly realistic light sources is with a Light Emitting Surface (LES). Paint your surface with a color (white), and apply the Light Emitter template to that color to make it shine. Remember that great light comes at a cost of render time and that higher quality render settings are required. It is recommended to use LES only with progressive indoor rendering methods. Each light emitting rectangle is considered as two (rectangles are divided into triangles during processing in order to be rendered with Twilight's engine. Therefore turning a sphere into a Light Emitting Surface could result in Twilight's engine thinking about hundreds of little "lights". Use Light Emitting surfaces wisely.

After applying the Light Emitter Template you can see a new parameter appear called "Emitter". "Fake" makes it 'look' lit, but it will not increase render times as it does not actually shine any light when rendered with a non-progressive rendering method. Fake Emit is great for making a quick-render TV screen material. Or good for inside of a light fixture where no actual light may be shining. Invisible makes it so that it will shine light, but not be visible in the rendering as the light source. You may also choose to load an [IES Data File](#) into a Light Emitting Material with this pull-down menu.



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12 SubSurface Scattering



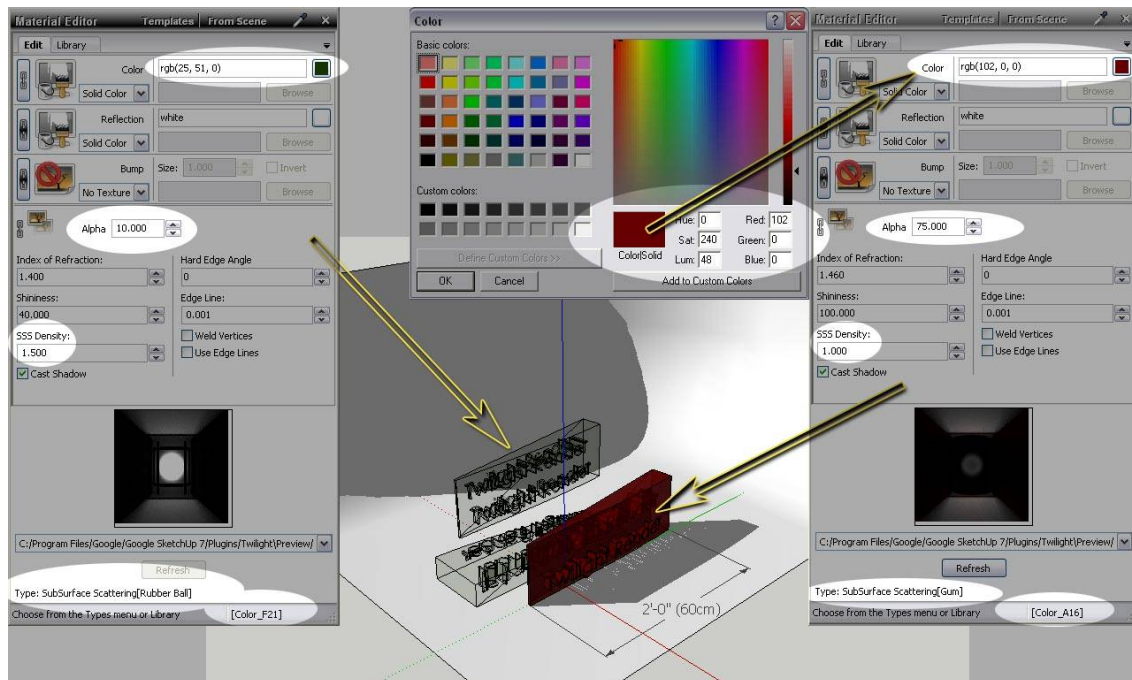
SubSurface Scattering is the phenomena of light “scattering” along/underneath the surface of a material causing a “glow” in some lighting conditions.

A good example is a piece of translucent plastic covering a light fixture, jade stone, or a wax candle.

SubSurface Scattering can require higher quality render settings to look satisfactory. They will not show up correctly at all in Easy 01 Prelim or Easy 02 Low. Using an Easy “+” setting will give better results. Using Progressive Rendering methods will guarantee good results. Easy 09 will give the best results only when using Light Emitting Surfaces or HDR lighting. Easy 10 will give the best results in all lighting conditions. SubSurface Scattering template will not typically render correctly on a single face. The model must have a real-world thickness and follow similar rules to modeling for using the [Realistic Glass Template](#). Most importantly, the model must be a valid solid that is water-tight, and be of accurate scale.

To use the SSS template:

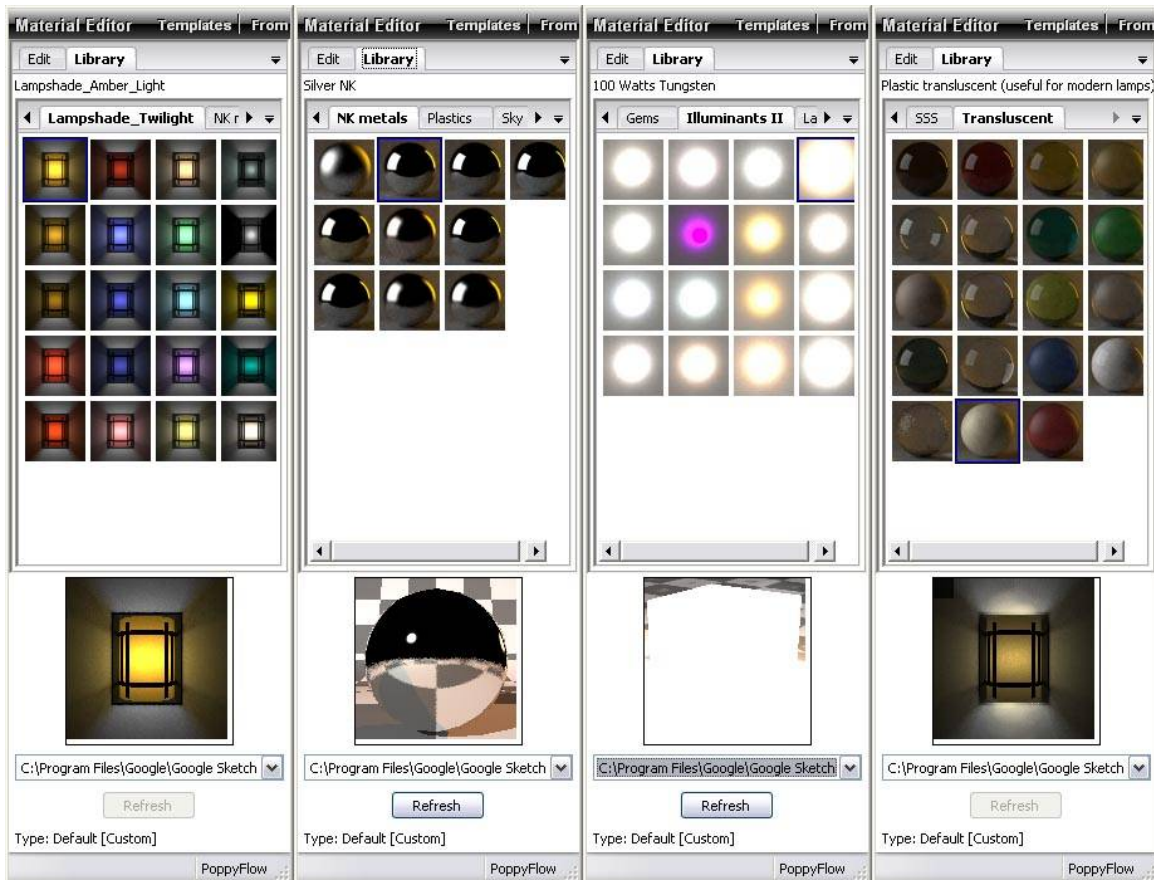
1. Apply a SketchUp Material Color to your model,
2. Apply an SSS Template to that material.
3. Set Alpha Opacity and SSS Density for the material as desired.
4. Change color of material as desired. (It is recommended to leave Reflection Color set to White)
5. Be sure lighting in the scene will display the SubSurface Scattering property of the material. Direct flat lighting of the object will not render this property well. Note the back-lighting in the examples to the left.



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Material Libraries



If you can not seem to get what you want from the Templates, the material libraries can be a huge help.

There are several useful libraries installed by default with Twilight. Gems, Translucents, SubSurface Scattering, Illuminants, and more. These are libraries of materials that may be difficult to achieve any other way. They were created and provided by various [contributing artists](#) and are used/distributed with permission for Twilight Render. **Additional content for Twilight such as Materials, Skies, and Components can be found by Licensed Users in the “Red Carpet Club” section of the Twilight Render User Forum.**

There are hundreds of high quality free materials available for free download from Kerkythea.net. Users of Kerkythea may also create their own material libraries using Kerkythea, then either point Twilight to the Kerkythea Material Libraries folder via the [Twilight Options Dialog](#), or copy a library folder from the Kerkythea Material Libraries folder into the “...SketchUp\Plugins\Twilight\Materials” directory.

To install a material pack

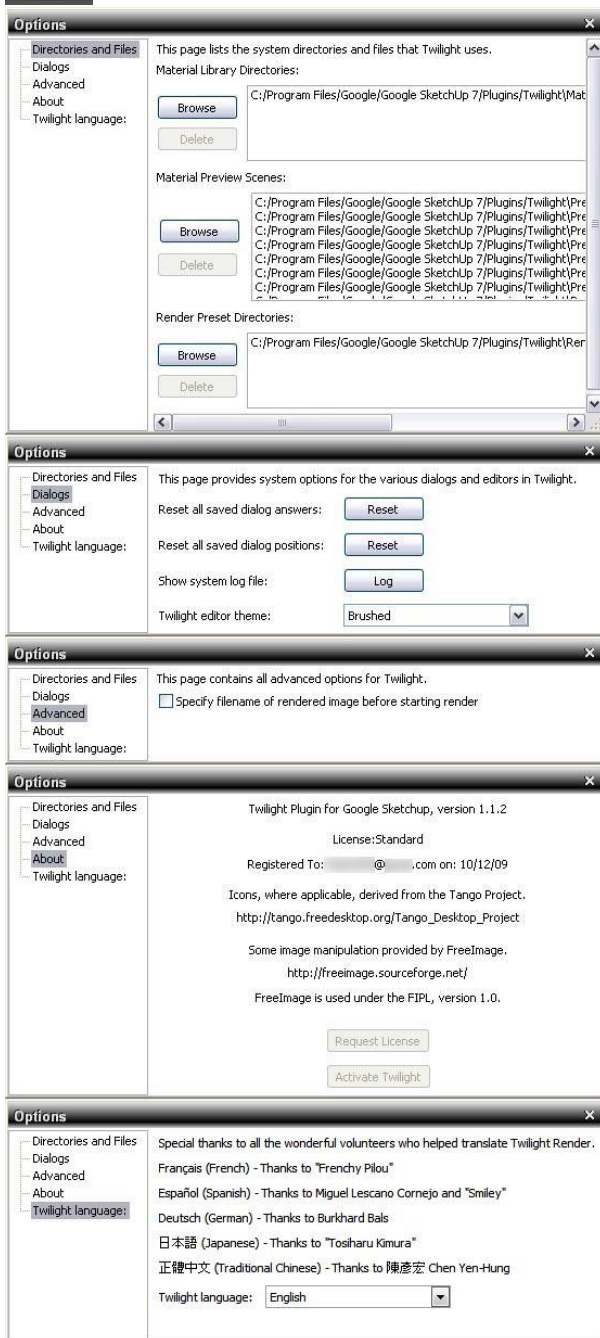
To install a material pack downloaded from Kerkythea.net for use only with Twilight Render:

1. Change the name of the file from “Example.mat.zip” to be “Example.zip”.
2. Unzip the file into your “...SketchUp\Plugins\Twilight\Materials” directory.
3. Re-open SketchUp to see it in your Library List.

Section 6: The Twilight Options Dialog



The Options For Twilight dialog allows you to set various default background parameters and file paths for Twilight.



Directories and Files

Specify here any directory (I.e. network directories) for Material Libraries, Material Preview Scenes, and Rendering Presets by clicking the Browse Button.

Dialogs

Reset all your dialog answers, or Restore or Reset all Dialogs to their Default Positions. Show the system log file (if having an issue with an error). You may Choose different [Themes for Twilight's User Interface](#).

Advanced

If you prefer to specify the filename for your image every time before you render, choose it here.

About

Gives information about specific version of Twilight being used, registered user information and other credits.

This is also where one may Request a License and Install a License.

In order to create a license request:

1. Push the Request License button.
2. Save the generated file.
3. Email the file to licensing@twilightrender.com.
4. Then someone from Twilight Render LLC. based in U.S. Mountain Time Zone will generate a license and email it back within 24 hours.
5. Copy the text of the license number from the email.
6. Push the Activate Twilight button.
7. Paste the text of the license number on line provided.
8. Copy the Activation Email address from the email.
9. Paste the text of the email address into the box.
10. Click Ok.

Twilight Language

Choose your language, close the dialog, close and re-open SketchUp. Refer to your operating system help for correct language pack installation.

Scene View

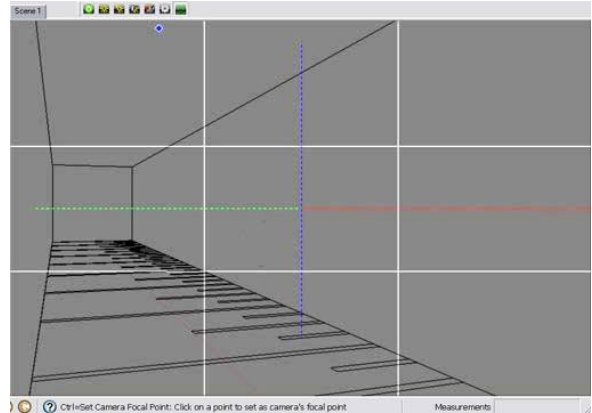


Section 7: Position Scene View Tool



The Position Scene View Frame

After clicking the Position Scene View Tool, a 9 square grid will appear. This helps with framing a view using the “rule of thirds”, typically putting the subject at or near the crossing of the third points adds interest to the scene. When the “The outer edges of the grid are the outer edges of precisely the view that will be rendered.



Focal Point Center Axis

A secondary Red/Green/Blue axis of dashed lines will also appear in the scene to represent the center for the position of the Focal Plane. The Focal Plane is an imaginary plane that is *perpendicular* to the camera and represents the distance of the camera's focal point from the camera's lens. A camera's focal point *will always be on the Focal Plane in the center of the view*. Now after choosing any point in the view as the focal point, this axis will update to show where that Focal Plane actually is in 3D space.

Rotation / Orbit of the View

After clicking the Position Scene View Tool, clicking on any point on any object in your scene and dragging the mouse will orbit the view about that chosen point.

Pan the View

After clicking the Position Scene View Tool, holding down the **Shift** key while clicking your mouse button and dragging will pan the view on that chosen point.

Look Around (Swivel the Camera)



After clicking the Position Scene View Tool, holding down the **Alt** key while clicking your mouse button and dragging will swivel the camera as if it were on a tripod. (Similar to SketchUp's native “Look Around” tool)

Focal Point



After clicking the Position Scene View Tool, holding down the **Ctrl** key while left clicking a point in the view will align the Focal Plane represented by the camera's Focal Point Center Axis with that object in the scene *without* visibly changing the camera's view in SketchUp. Holding down the **Alt + Ctrl** keys while clicking on any point in the scene will actually *swivel* the camera to focus on that point while setting that point as the new Focal Point for the camera.



Remember to create a new scene or update the current scene in order for SketchUp's scene tab to “remember” your new focal point.

Reference



Section 8: Reference

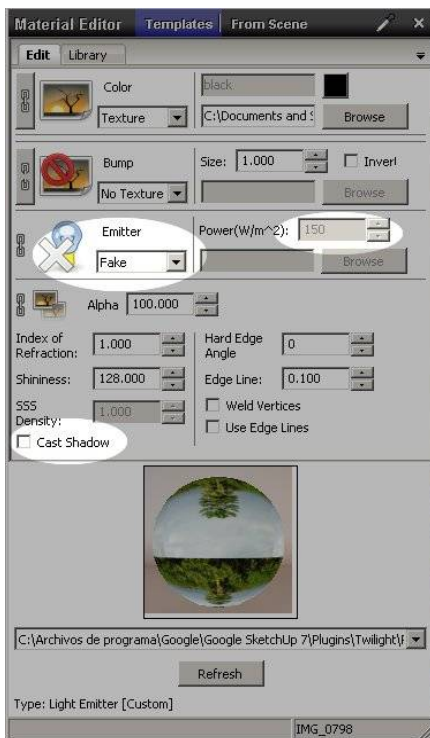
Batch Rendering

Batch Rendering is the process of Rendering Multiple Views but only clicking the Start Render button once.

To Batch Render with Twilight, utilize the Animation feature.

Example with 3 scenes to render, CamA, CamB, CamC.

1. Set SketchUp's Animation Transition Time in Seconds to (1). (Window>Model Info>Animation)
2. Set SketchUp's Animation Scene Delay Time in Seconds to (0). (Window>Model Info>Animation)
3. Specify these settings in Twilight's Render Dialog Animation Tab
Start=(0)
Stop=(2) (the easiest way to think of this number is "the number of transitions between scenes")
Set Frame Rate to (1)fps
4. Specify a Base Name for the rendered image files.
5. Twilight will render 3 frames: Frame000 = CamA Frame 001 = CamB Frame002 = CamC



Background Images On "Billboards" or a "Plane" (Face) In SketchUp

This tip contributed by Miguel Lescano Cornejo

Some people prefer to place a Background Image directly on a face inside SketchUp. Also, you might want to add images to TVs and computer screens. In all these cases, the inserted image needs to render exactly as it is, without being affected by the sun, sky, or lights in your scene.

The following setting works perfectly for Camera Tab Exposure Settings:

Exposure = 1.0, Gamma = 1.0:

- 1 - Explode your image so it becomes a texture applied on a plane.
- 2 - In the Twilight material editor, choose Templates > Light Emitter, any of them
- 3 - Set the Power (W/m2) to **150**.
- 4 - Next to the light bulb, Change Emitter > Normal to Emitter > Fake.
- 5 - Unmark the "Cast shadow" checkbox.

← Your material settings should now look like this example to the left.

If you're using a different Exposure value, use this simple formula to calculate the

power for your fake emitters: **Power for your fake emitter = $150/\text{exposure}^2$**

Examples:

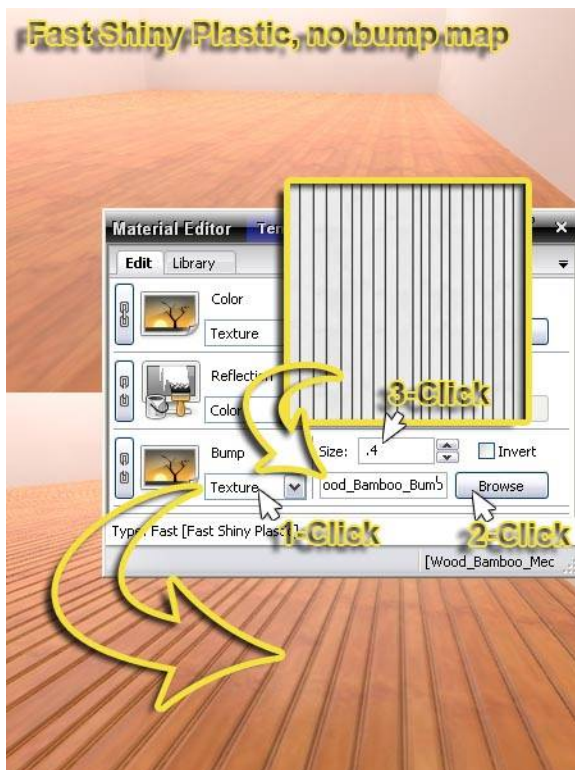
For an exposure value of 0.5, you must set your fake emitters to $150/(0.5)^2 = 600$.

For an exposure value of 1.2, you must set your fake emitters to $150/(1.2)^2 = 104.167$

For an exposure value of 2, you must set your fake emitters to $150/(2)^2 = 37.5$

In all cases, you need to keep a gamma of 1.0 if you want your images to render unaltered.

As a note, the "no shadows" and "fake" settings do not work when using render setting Easy 09 or Easy 10. These render methods do not allow the 'faking' of light effects.



Bump Mapping and Bump Maps

Using a Bump Map allows a render engine to use a Grey Scale Image to create an illusion of geometry that is not actually there. Bump Maps do not create geometry (i.e. displacement) Bump Maps only work on surfaces that have some measure of reflectivity. They will not really be noticeable on a flat colored surface.

Bump Maps work like this: 50% Grey = "no change" in appearance for the height of the surface. Darker = "in" or "down", Lighter = "out" or "up".

The easiest way to apply a Bump Map in Twilight is to first, apply a template similar to what you are trying to create. If it's painted metal, use a "paint" template. If there is no template applied, increase the IOR number from the default of "1" to be something higher, i.e. "1.1". If the IOR is not increased, the bumps will not appear. Second, click the Chain Link button next to the Bump Map slot. This links the image of the material into the Bump Map slot.

To assign a Bump Map in Twilight *after* assigning a Template:

1. Choose "Texture" in the Material's Bump Slot
2. Browse to and load the Bump Map texture image.
3. Set the "Size" or "Strength" of the bump. A size of "1" or Less is appropriate for a good bump map. When linking the bump texture to the SketchUp Material, it is suggested to keep this number to "3" or less.

In the case of a Brick Wall image, for example, if the bricks are light and the mortar lines are dark, it will work well as a Bump Map. The dark mortar will enhance the depth when in the Bump Map Channel. If the bricks are dark, and the mortar lines are light, using the 'invert' check box for the Bump Map Channel will allow you to quickly invert the lights and darks of the image in the Bump Map Channel, making the mortar lines recede "in" to the wall and the bricks bump "out". This method works well in most cases, but in some cases, will not give satisfactory results.

The best way to apply a Bump Map is to create a True Bump Map. A True Bump Map is actually made specifically with the Bump Map Channel characteristics in mind. (Dark = "in/down" Light = "out/up") Open the image file you want to use as a base for creating a Bump Map into your preferred image editing program, such as Adobe Photoshop. Duplicate the layer, turn it to grey scale, increase contrast, and paint areas 50% grey where you want no bump. Paint areas black where you want the deepest recesses, and vice versa. This was done for the bump map for the Wood_Bamboo_Medium flooring example in the image above.