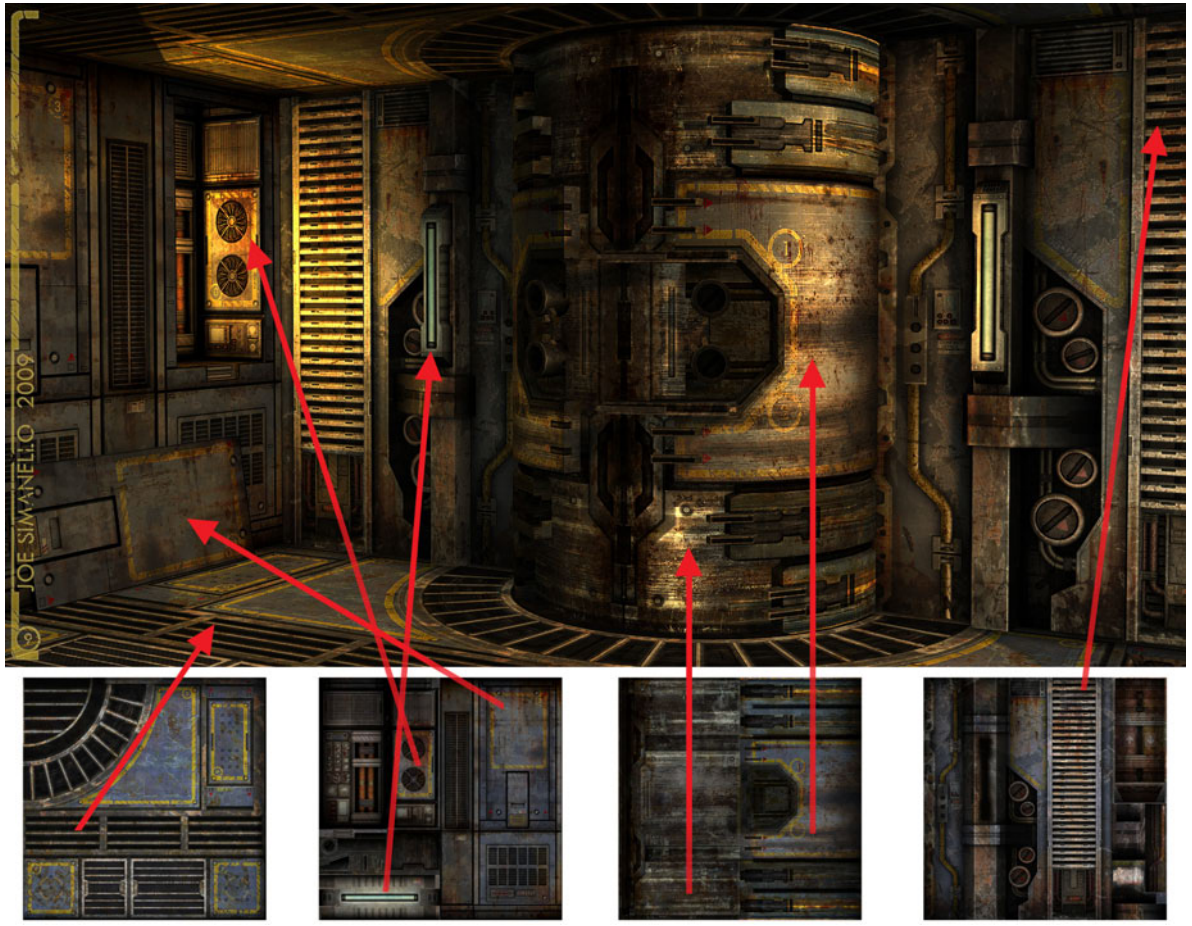
Common Usages

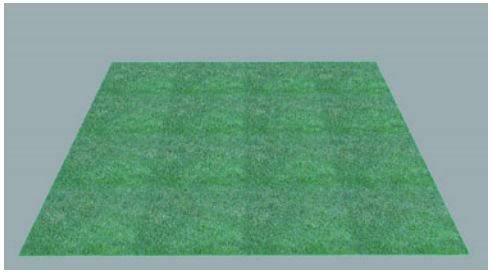
There are many hard surface and organic types of textures with multiple uses. When creating a texture for film or games, never assume that it has one purpose. An artist applies a wall texture on the floor or ceiling. It is good to create textures for use on multiple types of architecture. You use hard surfaces such as concrete, metal, and wood on almost every type of surface.

In the image, the textures point to their location on the model.



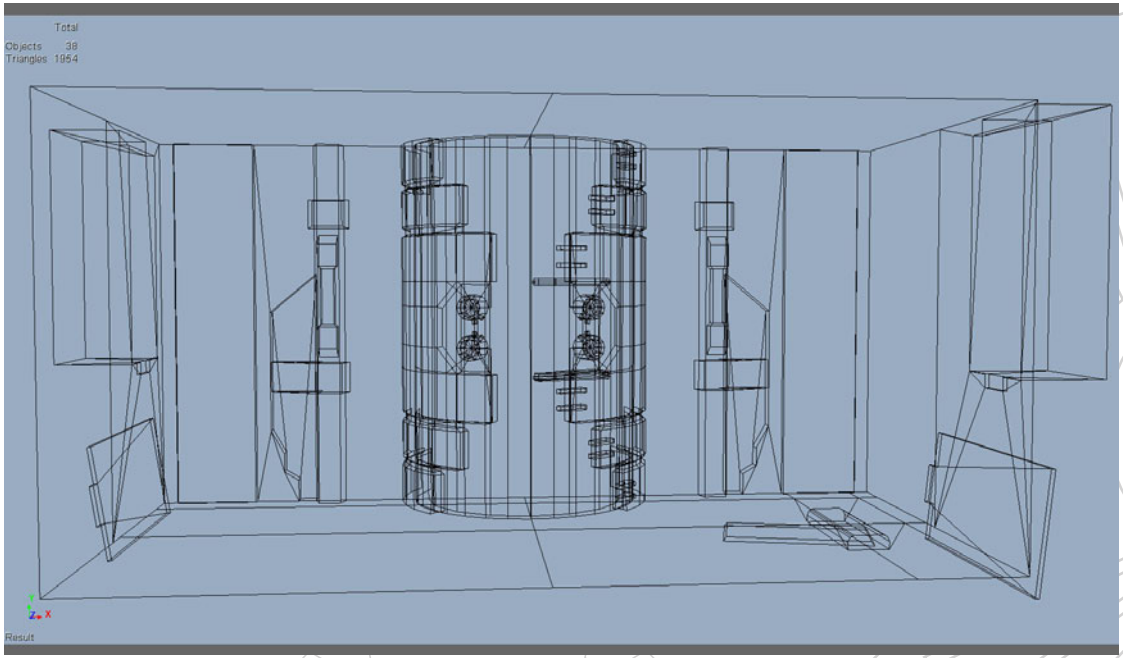
Do not build surfaces such as grass and dirt on the grid unless they have incorporated trim pieces. Organic textures are commonly used on ground surfaces. Architectural pieces such as floors, walls, ceilings, and trim are similarly made. These pieces are grouped in texture sets. Create doors, windows, and detail pieces to accent the environment.

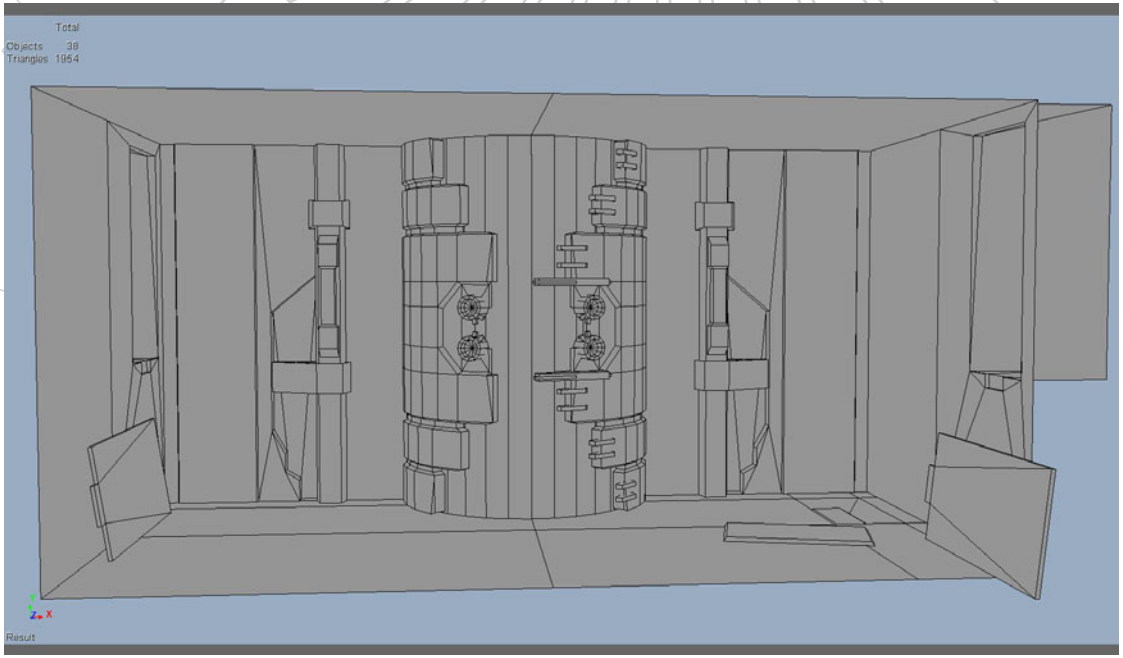
The image is a tiled grass texture applied to a polygon plane.



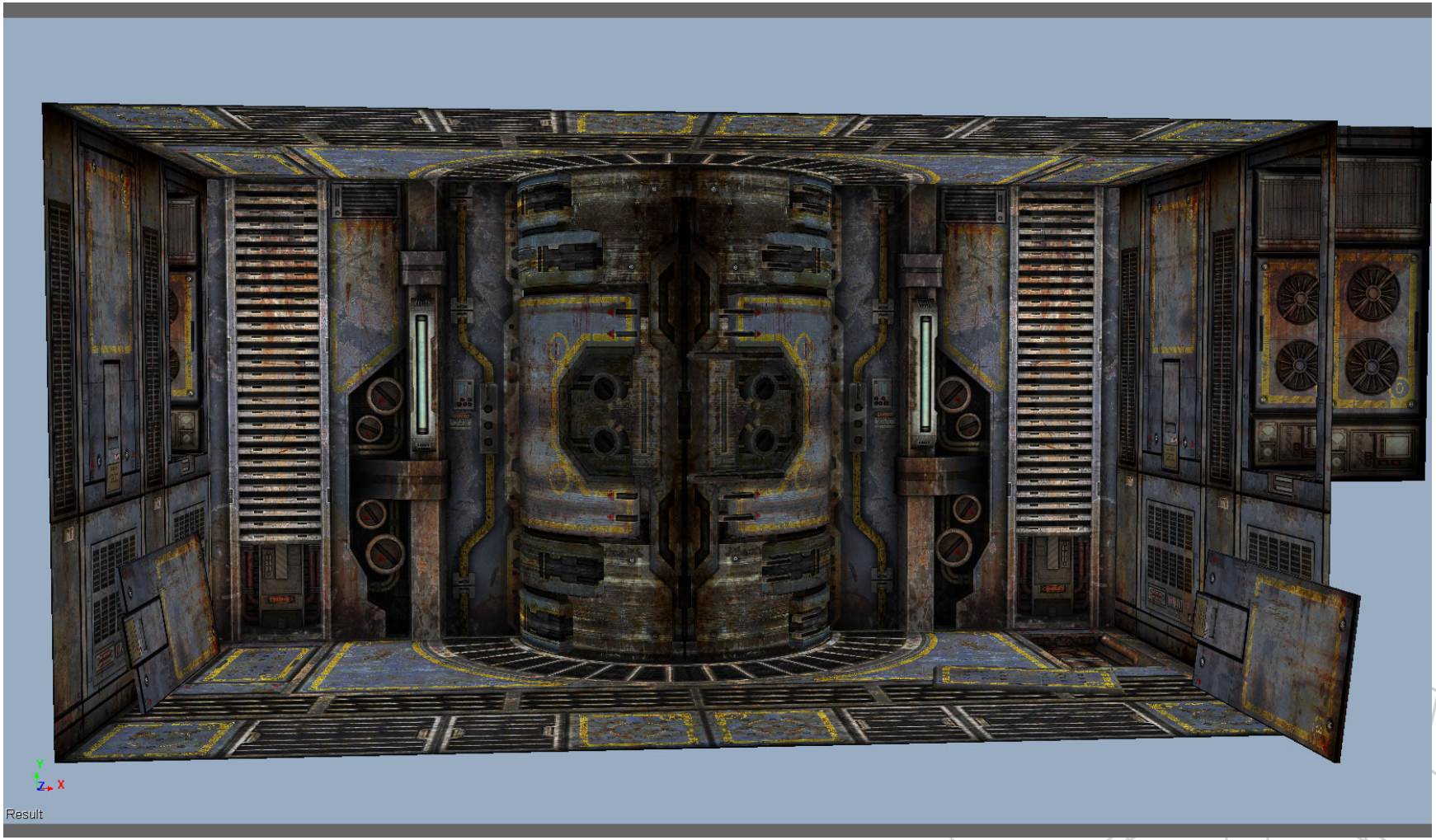
The polygons are best to texture if the geometry is flush, without overlapping areas. Without lights, the wireframe and shaded views display the geometry lines and hard edges. If the model is built in quads, the video game converts it to triangles. This is done to optimize performance of the render engine. When rendering for film, keep the geometry in quads.

Pictured are the Bio Chamber scene in wireframe and shaded wireframe.





The image is the Bio Chamber scene with textures applied.

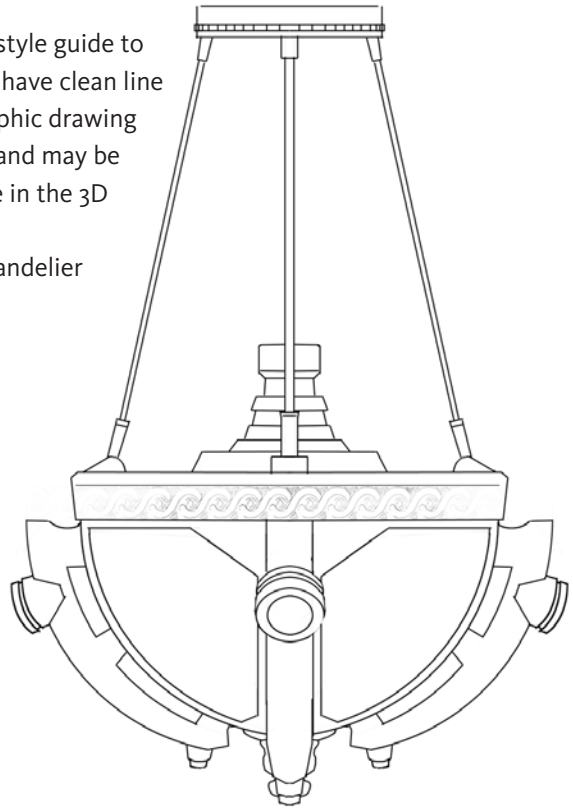


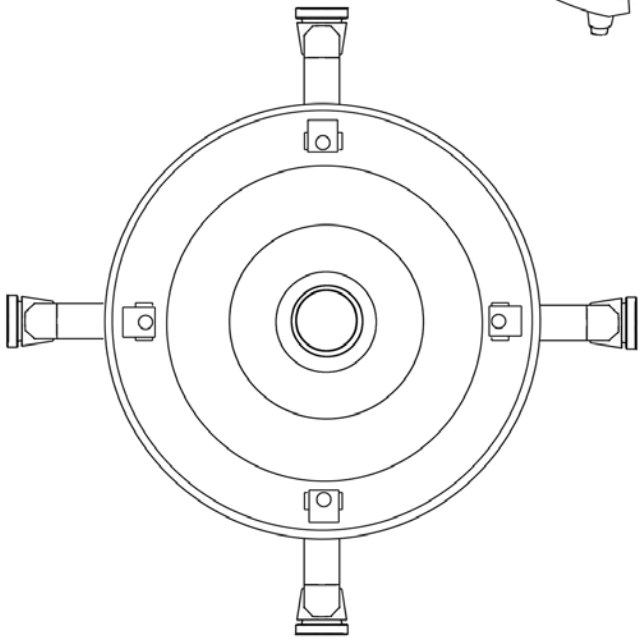
Reference Images

You use reference images as visual guides to create the details of the texture. It is difficult to create details from memory. When designing a texture, use photographs or references. Apply the reference photos directly on the texture and blend into the surrounding elements. Using realistic textures creates a good sense of urban reality. Many films and video games are themed to an urban style.

The images are references of a cargo container, concrete cracks, broken glass, and rust.

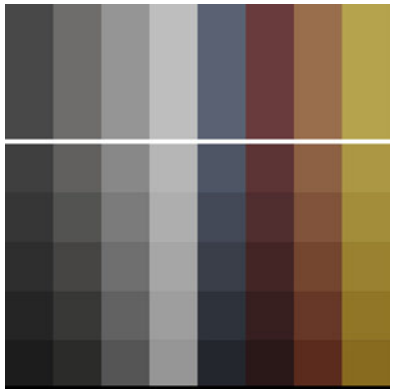
Concept art is often used as a style guide to create 3D models. It is best to have clean line art to work from. An orthographic drawing is made by the concept artist, and may be modeled from as a visual guide in the 3D viewports.
The image is a drawing of a chandelier prop.





It is a good idea to use a color scheme when building a texture set. Try different color schemes before settling on a specific one. Complimentary colors often work well. Use low saturation pantone colors to create a color scheme. Sometimes, one color needs the slightest adjustment, either in the hue or saturation, to make it perfect. Using a color scheme ensures that textures maintain visual consistency. The colors of a palletized color scheme were placed in vertical strips, and gradients of grey were overlaid horizontally to create different hues.

Pictured is the color scheme used for the Bio Chamber.



The image is an example of a palletized color scheme.

Base Textures and Detail Templates

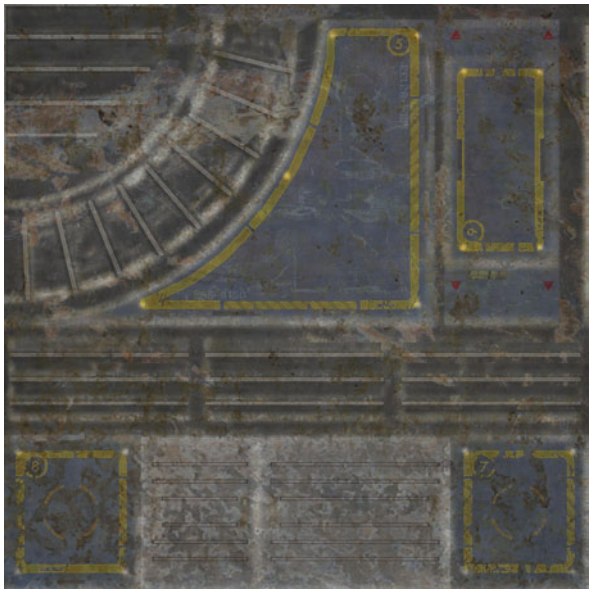
It may take a production artist several hours to create a single texture. To save time, create a base set of Photoshop layers to use for a texture set. You use these layers as a starting point, and then add the details needed to build the final texture. This system enables the textures to have a uniform look.

A metal base texture is built by taking a series of metal photographs, and setting them to Overlay Layer Style. Set the Opacity 20%. Use five to ten images to create a metal base texture. Below is an image of four side by side examples of textures used for the metal base. The same process is used for concrete, organic, and custom layout textures. Similar textures are used on organic textures, not necessarily metal photos. You use this process to create a consistent look in film and games.
The following image is four metal base texture examples

Positioned under the metal base layers are localized Color Areas. This is an easy way to block in the color, and change it any time. You use the Marquee Selection tools to select areas, using the UV map as a guide. You employ the Paint Bucket tool to fill in areas with color.

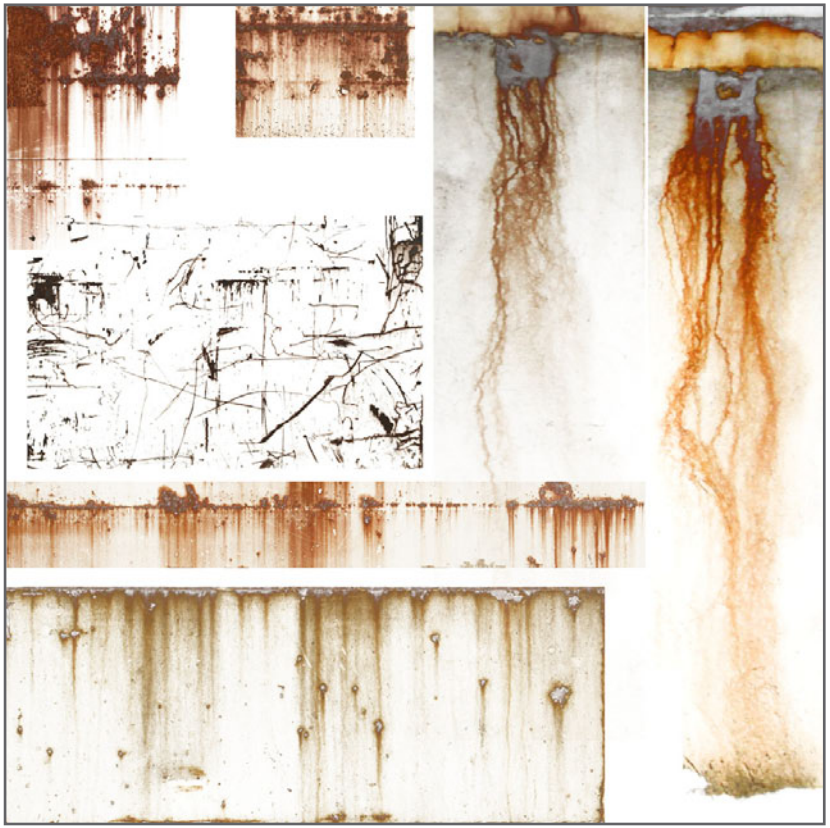
The black, gray, and blue colors display areas where this process has been applied. Once the base texture is built up to a good point, it is easy to place the base metal layers into a folder and reuse to other files.

The images display the color base map and the color with metal overlays.

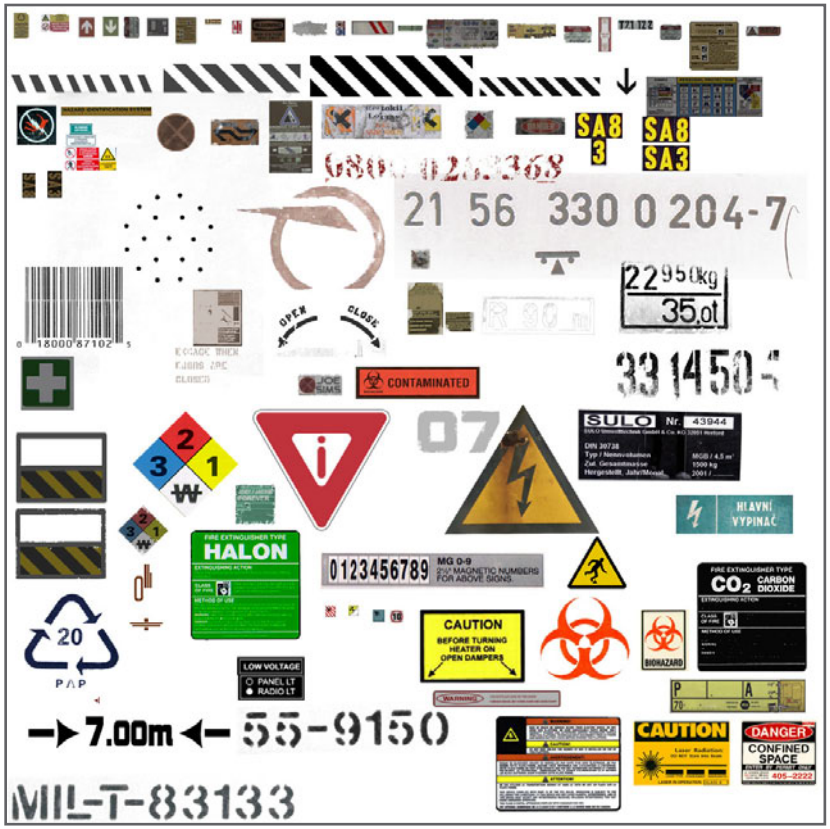


Pictured below is a common layer tab in Photoshop.

Detail templates are similar to metal base layers because they are a collection of details that may be reused on many textures. For example, a rust dripping texture may take several minutes to find and extract using the Color Selection tool. You copy and paste it to the new layers, and tweak it to the desired parameters. Multiply this task by 20, and it may take several hours. The trick is to save your handpicked, cleaned up details to a new file or separate folder. When a rust texture is needed, go to the folder, pull out a layer, and flip it or erase a bit to make it look different. Create detail templates for bolts, cracks, stickers, and color variations. The image is a detail layer set of rust that may be used for overlays.



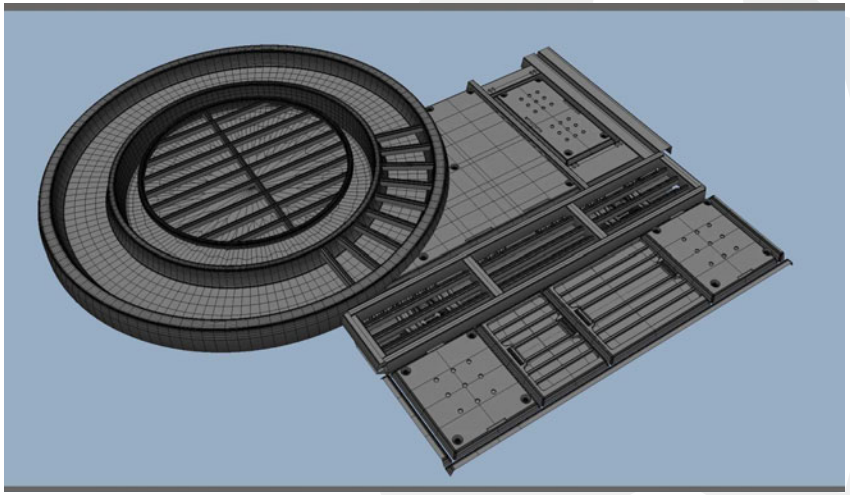
The image is a collection of stickers and logos used to detail the textures.



High Resolution Models

You use primitive and complex models to design a tileable or custom texture. Details do not always have to be created in 2D. You may use high resolution 3D models to design all the texture. High resolution models add great realism and depth to the texture. A 3D model enables you to bake a normal map and a matching ambient occlusion map.

The image below is a picture of a high resolution model used to create the Bio Chamber textures.



The process for constructing a normal map begins by creating a high resolution model and a low resolution model. The high resolution model is created by using polygons and a collection of detail pieces. Establishing a library of detail pieces makes it easier to design complex models. Once the high resolution model is finished, it is baked down to the low resolution model. The low resolution model may be a primitive plane or fitted to the high resolution model. Creating textures that have detail baked in will save on the polygon count and improve performance.

The image is the normal map rendered on the low resolution geometry.