

Creating a Luxrender Mix Material with Reality for DAZ Studio

Introduction

This document will hopefully tell you how to create a mix material using Reality and some manual manipulation.

Prerequisites

You will need to know or have the following:

How to Export and Import OBJ files, if creating an object from scratch.

A UV Template of the object or know how to create one using a UV Mapping program.

A Text editor capable of editing Lux lxm files.

A basic knowledge of Lux Material definitions.

Stage 1 – Object & UV Map

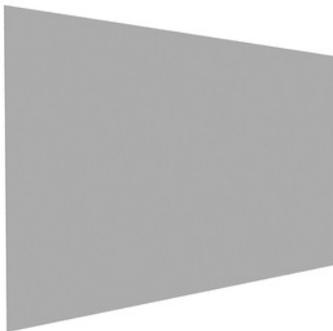


Illustration 1: Initial Wall Object

Firstly we need an object. For this example we will be injecting a gold material into a plain glossy wall primitive.

Generate a primitive cube with a dimension of 1cm and a suitable number of divisions. For this exercise 10 was used.

More may be needed if you intend to apply displacement or dforms to the object.

Scale the object to a reasonable size, the cube was resized to a wall measuring 5m (50000%) wide by 2.5m (25000%) high and 1cm (100%) in depth. (See Illustration 1)

The wall was then exported as an OBJ file. Load the OBJ into your UV Mapping program and generate a UV Template. In this

case each side of the object was given its own area of the template.

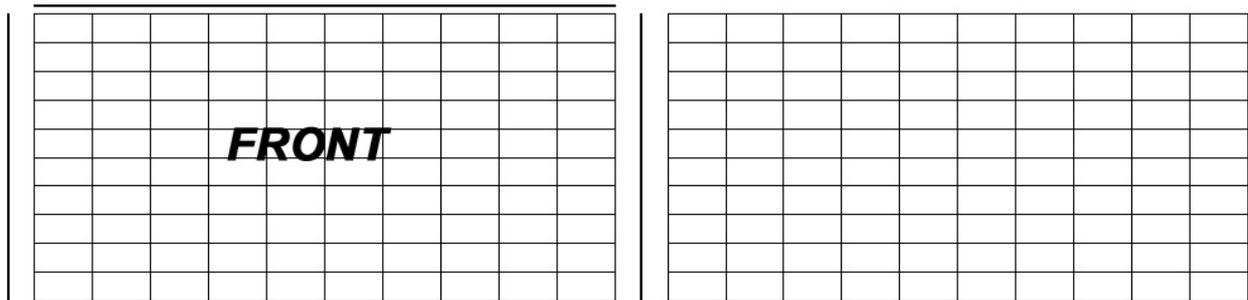


Illustration 2: UV Template

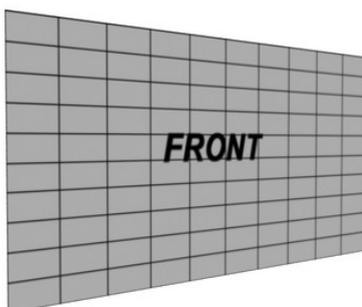


Illustration 3: UV Map applied as Diffuse texture

Stage 2 – Diffuse and Trans Maps

You will need at least two maps for this tutorial. A diffuse map and a trans map. The diffuse map is a regular colour texture as used by any textured surface. The trans map is used to indicate which material is to be rendered in which area of the object.

In this example the diffuse map is generated so the rear surface of the object is red in colour. The trans map is generated so that the gold material will be inserted into the front of the wall. The transmap is applied to the opacity channel of the DAZ wall surface.



FRONT

Illustration 4: Diffuse Map

Illustration 5: Trans Map

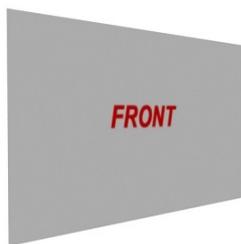


Illustration 6: DAZ Render with Diffuse & Trans Maps

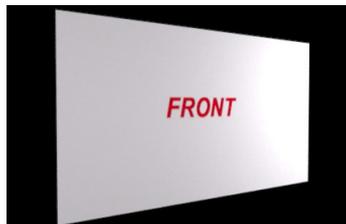


Illustration 7: Lux Render of DAZ Object before editing

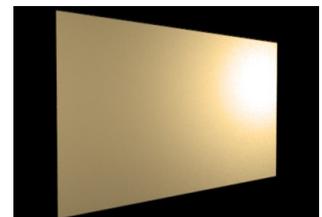


Illustration 8: Gold Material Wall

Illustration 6 shows the object rendered in DAZ. You can see where the applied trans map has made the front of the wall invisible in the required places.

The scene can now be exported to Reality with the wall object material defined as required and then a set of Lux scene files can be generated.

We also need to export the secondary material, we remove the trans map, change the material in Reality to Gold and use the export function to create a different set of files.

Stage 3 - LUX Scene File Manipulation

If we now render the scene in Lux we will get the same as the DAZ render, see Illustration 7. If we render the Gold material scene, we get a solid Gold wall, see Illustration 8.

We now need to combine the materials. Luckily, Reality has done most of the hard work for us. When you apply a trans map to a surface, Reality creates a mixed surface definition using a Null material to generate the invisible areas. If we use this definition and replace the Null with a gold material setting, we will get our desired result.

We open the lxm file for the **gold wall scene** and look for the material definition for the gold, in this case it is as follows

```
# Default_4
MakeNamedMaterial "Default_4" "string type" ["metal"] "string name" ["gold"]
  "float oughness" [0.5] "float vroughness" [0.5]
```

Text 1: Gold Definition

We can make a minor edit to the **Gold definition** by changing the Material name from "Default4" to "Default4.mat1".

If we open the initial wall scene and look for the wall material we will see a much more intricate material. The material is divided into two distinct materials, the glossy and the mix material.

Luckily we don't have to worry about the structure of this material. All we need to do is replace the Null material with our gold material definition.

```

# Material "Default_4.mat2"
Texture "Default_4.mat2.Kd" "color" "imagemap" "string filename"
["C:/Users/XXXXXXXX/Mat_Mix/Wall2.jpg"] "string mapping" ["uv"] "string wrap"
["repeat"] "string filtertype" ["bilinear"] "float uscale" [1] "float vscale" [1]
"float gain" [1] "float gamma" [2.2]
Texture "Default_4.mat2.Kd.scale" "color" "scale" "texture tex1" ["Default_4.mat2.Kd"]
"color tex2" [1.000 1.000 1.000]
MakeNamedMaterial "Default_4.mat2" "string type" ["glossy"]
"texture Kd" ["Default_4.mat2.Kd.scale"]
"color Ks" [0.002 0.002 0.002] "float index" [0.0] "float oughness" [0.175200]
"float vroughness" [0.175200]

Texture "Default_4.map" "float" "imagemap" "string filename"
["C:/Users/XXXXXXXX/Mat_Mix/Wall_Trans.jpg"] "string mapping" ["uv"] "string wrap"
["repeat"] "string filtertype" ["bilinear"] "float uscale" [1] "float vscale" [1]
"float gain" [1] "float gamma" [1]
# Default_4
MakeNamedMaterial "Default_4" "string type" ["mix"]
"texture amount" ["Default_4.map"] "string namedmaterial1" ["RealityNull_9999"]
"string namedmaterial2" ["Default_4.mat2"]

```

Text 2: Initial Glossy Definition

Insert the gold definition into the lxm file for the final scene before the # Material "Default_4.mat2". Now to inject the gold we need to change the section ["RealityNull_9999"] so, we change that to ["Default_4.mat1"] giving us the final material definition as shown in Text 3.

```

# Default_4.mat1
MakeNamedMaterial "Default_4.mat1" "string type" ["metal"] "string name" ["gold"]
"float oughness" [0.5] "float vroughness" [0.5]

# Material "Default_4.mat2"
Texture "Default_4.mat2.Kd" "color" "imagemap" "string filename"
["C:/Users/XXXXXXXX/Mat_Mix/Wall2.jpg"] "string mapping" ["uv"] "string wrap"
["repeat"] "string filtertype" ["bilinear"] "float uscale" [1] "float vscale" [1]
"float gain" [1] "float gamma" [2.2]
Texture "Default_4.mat2.Kd.scale" "color" "scale" "texture tex1" ["Default_4.mat2.Kd"]
"color tex2" [1.000 1.000 1.000]
MakeNamedMaterial "Default_4.mat2" "string type" ["glossy"]
"texture Kd" ["Default_4.mat2.Kd.scale"]
"color Ks" [0.002 0.002 0.002] "float index" [0.0] "float oughness" [0.175200]
"float vroughness" [0.175200]

Texture "Default_4.map" "float" "imagemap" "string filename"
["C:/Users/XXXXXXXX/Mat_Mix/Wall_Trans.jpg"] "string mapping" ["uv"] "string wrap"
["repeat"] "string filtertype" ["bilinear"] "float uscale" [1] "float vscale" [1]
"float gain" [1] "float gamma" [1]
# Default_4
MakeNamedMaterial "Default_4" "string type" ["mix"]
"texture amount" ["Default_4.map"] "string namedmaterial1" ["Default_4.mat1"] "string
namedmaterial2" ["Default_4.mat2"]

```

Text 3: Final Material Definition

If we now render the scene we get a wall with a gold inlay. Simple!



Illustration 9: Final Wall Render