

PBR Lighting model plugin for Carrara

Second beta manual 20180409

Source: [DAZ3D forum thread](#)

Downloads: [Philemo's SourceForge page for Carrara plugins](#)

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1 Introduction

It's for Carrara.

It's fully integrated in Carrara.

I have implemented the Disney Principle BSDF as a lighting model. I've chosen it because it (or a modified version of it) is widely implemented (Blender/Cycles, Appleseed, Renderman and many others including countless game engines like Unreal). So, it was just time Carrara got its own version :-). You can see [the Renderman documentation](#) on this model (it's the best one I've found so far). On top of PBR, Disney Principle add (a not convincing) subsurface, anisotropy, sheen for cloth, glossy clearcoat.

Some more info is available in the [Blender documentation here](#).

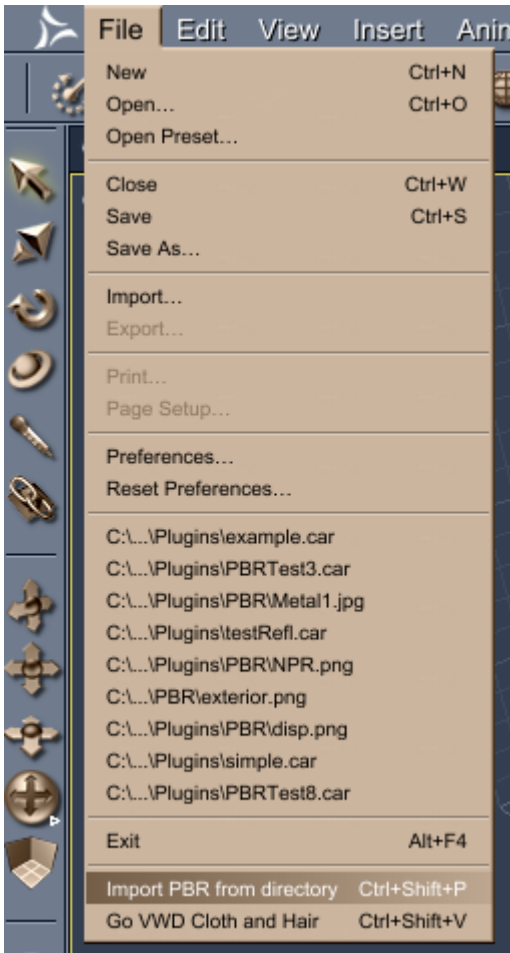
2 Examples

Quick test renders of PBR materials in Carrara:

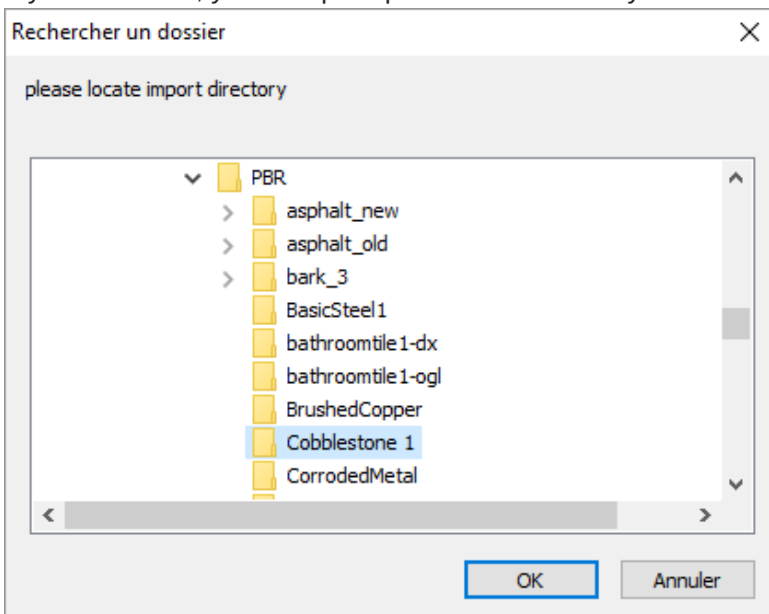


3 Automatic shader creation

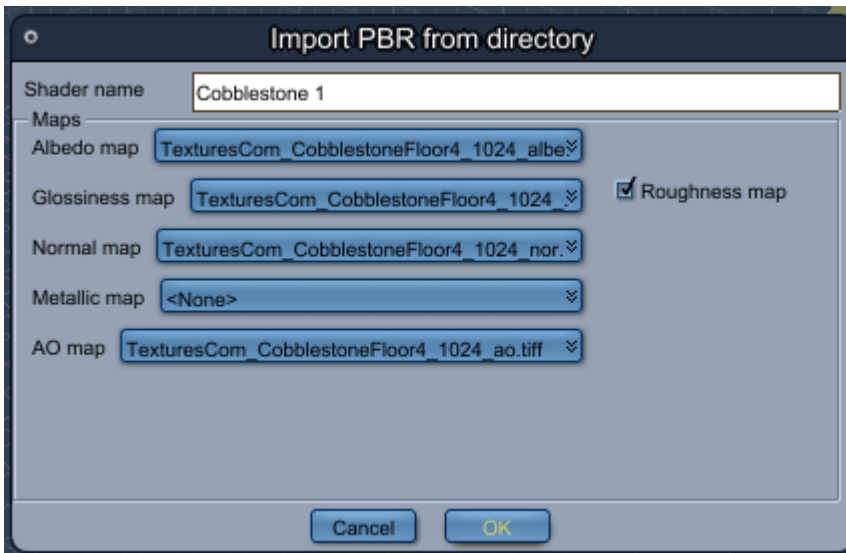
The importer is necessary because the metallic workflow add a lot of subshaders in Carrara. There is a new entry in the file menu: "Import PBR from directory"



If you click on it, you'll be prompted for the directory where the maps are located:



If you choose one and Click OK, a new window appears:



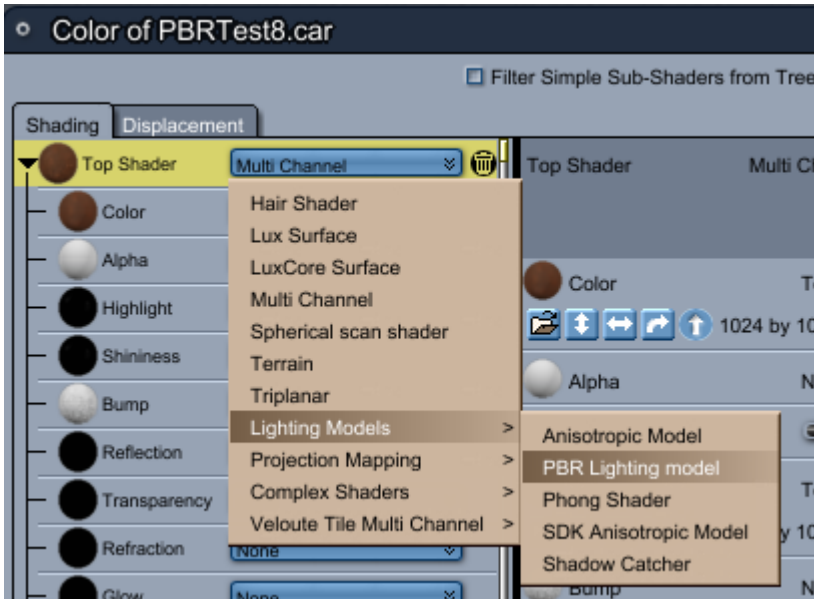
The program will make an educated guess for the files names using common naming convention. You can of course check and change the file (each line contains the list of all images in the directory). If you have a roughness map and not a glossiness map, select the roughness map in the glossiness list and click on the "Roughness map" checkbox near to it. The program does it automatically if it recognize the file name.

As a default, the name of the directory will be the name of the shader, but you can of course change it. If you click on "OK", the shader is created and is available in the scene shader list:



4 Manual shader creation – non metallic materials

On your multi-channel shader, choose a PBR lighting model:



It will create a new level with your multi channel as the first shader :

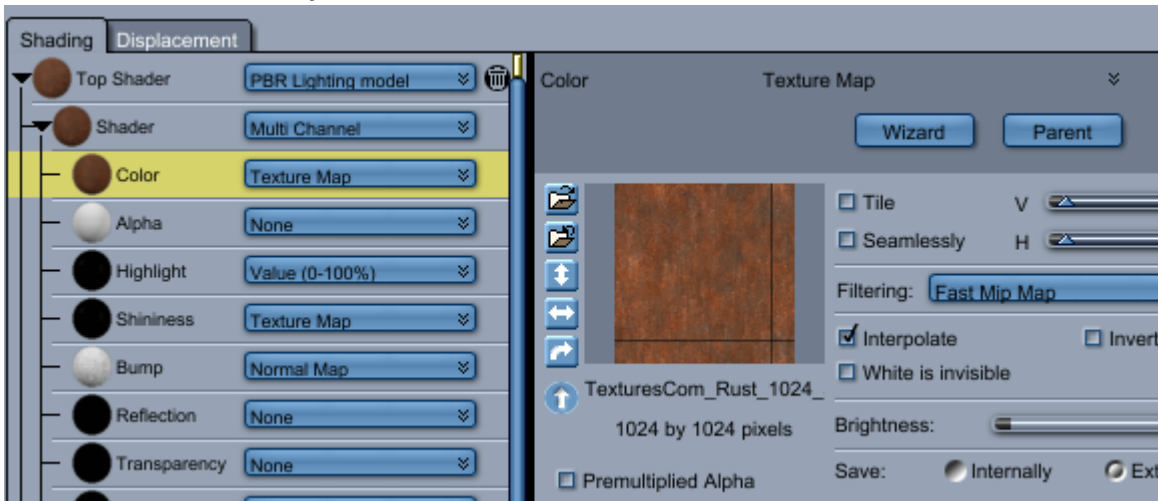


Usually, PBR texture sets come with at least 4 files:

- Albedo (or base color)
- Glossiness or roughness map
- normal map
- ambient occlusion map

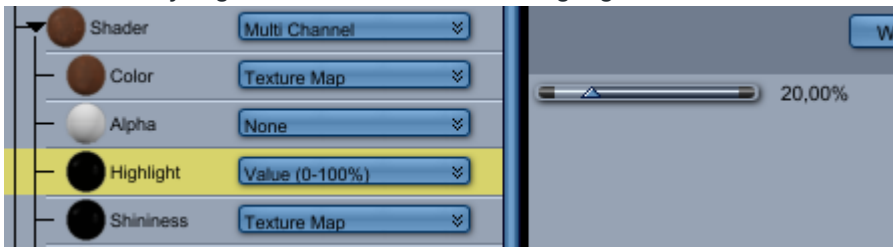
Albedo

Load in color channel of your multi channel shader



Specular

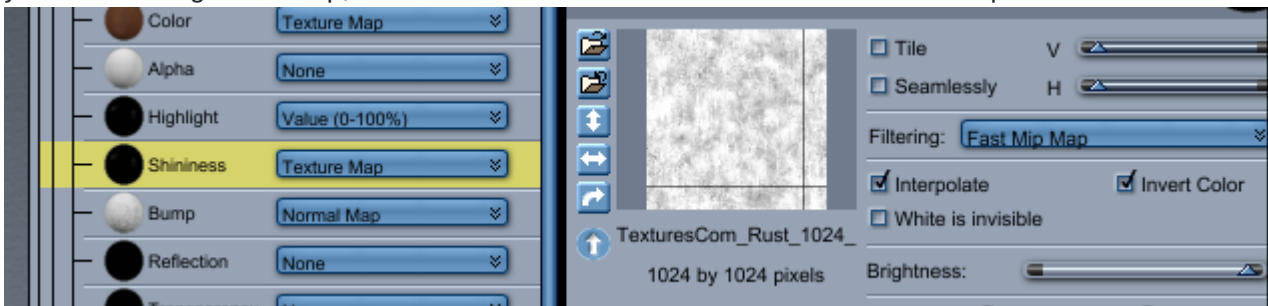
PBR model accepts value ranging usually from 15% to 40% depending on the material IOR. 20% is usually a good start. Goes into the Highlight slot



Glossiness/roughness map

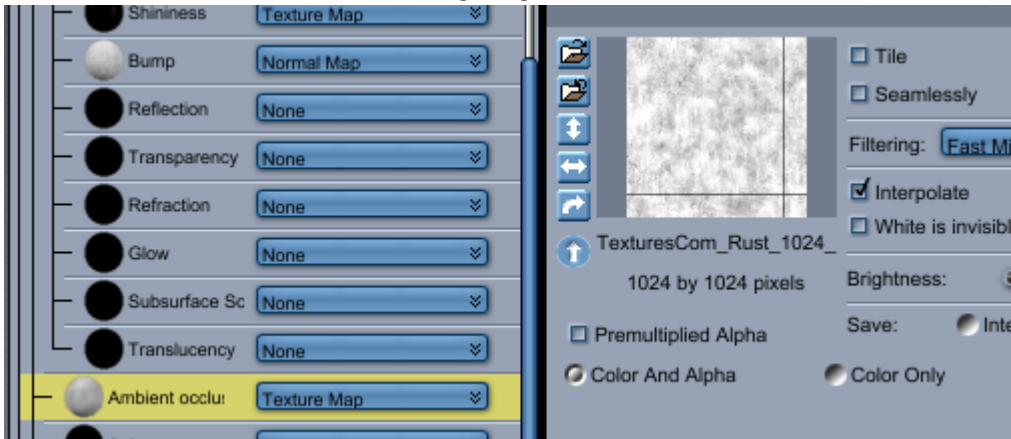
It goes into shininess slot.

Glossiness and roughness map are two side of the same notion. a Roughness map has value 0 for very smooth and 1 for very rough. A glossiness map is just the opposite (0 for rough, 1 for smooth). So, if you have a roughness map, must tick the "invert color" tick box in the texture map



Ambient occlusion

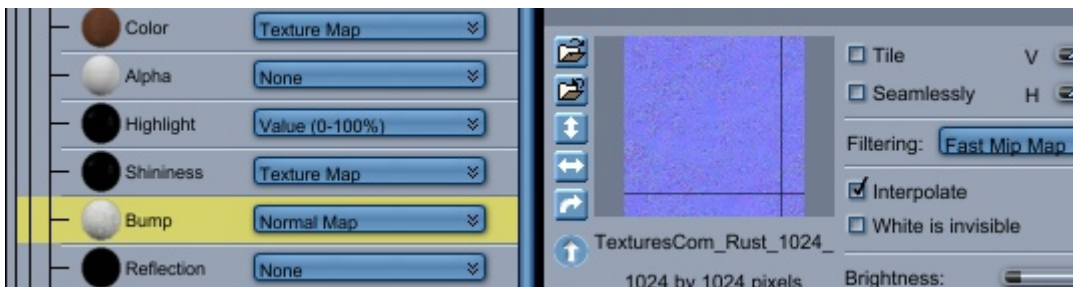
In the ambient occlusion slot of the lighting model



And that's all for the basis.

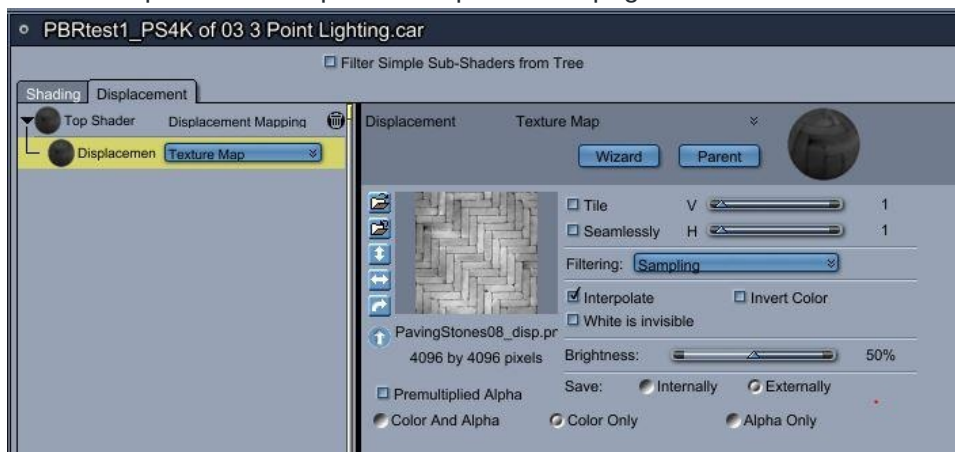
Normal map

Add the normal map in the bump channel, to get a bumpy surface that renders quick.

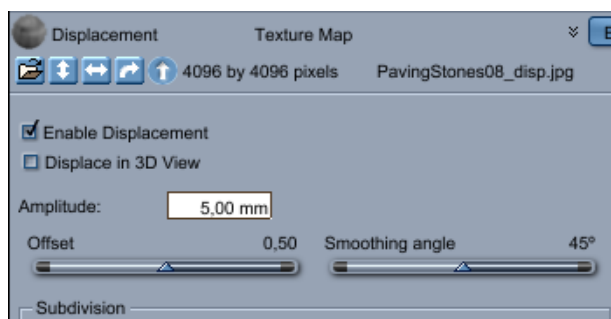


Displacement map -

Add the displacement map in the displacement page of the shader as a texture map:



You may need to tone down the displacement, depending on the texture and material, for example by using an Amplitude of 5 mm:



5 Free textures resources

Ready-made textures can be downloaded from these sites.

Check the licenses on each site, depending on what you want to do with the texture.

Textures.com

FreePBR.com

3d-wolf.com

<http://www.cc0textures.com/home>

6 Substance Player

Substance Player by allegorithmic is a free material viewer and can export the needed maps up to 4k resolution.

Some changes of the materials are also possible in Player, making it possible to use unique Substance materials in Carrara.

Comes with 8 materials to test and tweak..

Supports the Substance Share site that has about 1000 materials that can be downloaded, you need an email adress to register.

7 Next version

Starting to experiment how to convert Studio shaders to PBR

First test:

Render time 5mn (mostly on transmapped hair with light through transparency, nothing new there), no postwork

Used Disney Subsurface scattering with Stéphanie SSS map (visible on the knees, the fingers and the nose).

Used Disney Sheen effect on shirt.



8 Release notes

Release note 20180328:

Beta version is out here (Windows 64 only, sorry for Mac user, I'll try to provide an OSX version later this week).

This is only the specular workflow. Metallic map are ignored for now. Next version will have it.

Release note 20180408

A new beta is available. It adds the metallic workflow and an importer.