



The Blender Material Preview Scenes is a big effort to allow the creation and testing of materials in a controlled environment.

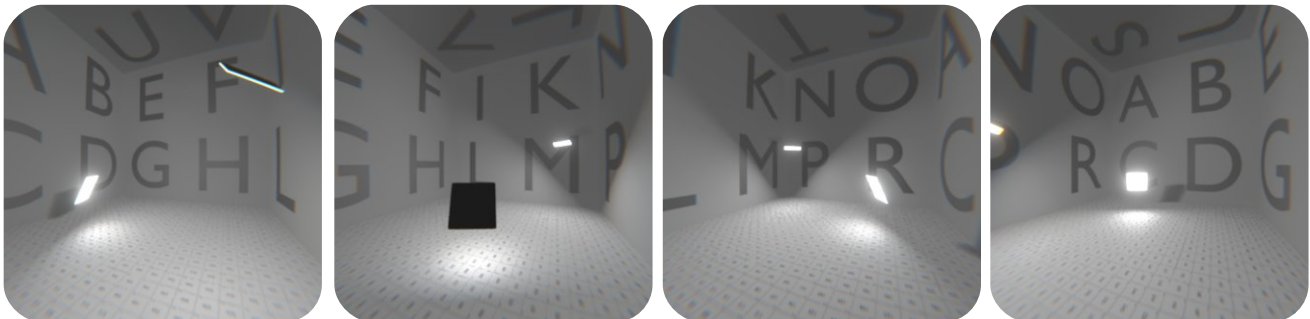
The main idea is to establish a common ground where the artists could show and share their work, having this in mind, the Blender Material Preview Scenes (b.m.p.s.) could be implemented in any activity involving those tasks, from regular users sharing their material creations or even learning material setups from other users, to more professional artists or studios creating material libraries and catalogs for future use in different projects.

### Summary:

The scenes consists in a box room that contains the Blender Material Preview Object in each case. The Box Room is set with a grid floor numbered from 001 to 625; the "walls" and top face are filled with four letters each one. All this elements are carefully studied to establish a good environment for the test objects.

The Blender Material Preview Objects are the most important models in the scenes; they have a custom shape and a lot of features to allow testing a variety of factors.

The whole room has a total three light emitters, the first, is an area light at the left of the room which provides the main lighting source of the scene; the second emitter provides a more precise and small lighting source which illuminates the front of the Material Preview and could provide a good source of caustics. The third light source comes from Ambient Occlusion (Approximated) to provide the final overall lighting in the scene.



The Blender Material Preview Objects have a lot of features and elements to let the user evaluate a number of factors...

There are no maps in the scenes, every object is a geometric model placed carefully, removing the need for any map and giving the big benefit to test other Blender features like raytracer efficiency and OSA sampling. Also, this file should be easy to export to other render engines giving another dimension to the uses of this tool.



note: Right now this lighting setup is not physically "correct" or "realistic" compared with GI render engines, but it provides a really good testbed for general purposes. The idea and purpose is to maintain this scene as updated as possible with Blender's new developments to be as realistic or physically correct as possible.

**The Environment Room:**

This is the place where everything is placed. Consists in a gray box room with four different capital letters in each side and top wall; the main purpose of this setup is to grant an ideal environment for testing mainly reflections and refractions in materials. Once you get familiar with the room, you even can notice which wall is reflected or refracted in some parts of the model given the fact that every wall has different letters on it.

Colors are carefully prepared and tested to get the best results in every case.



**The Floor:**

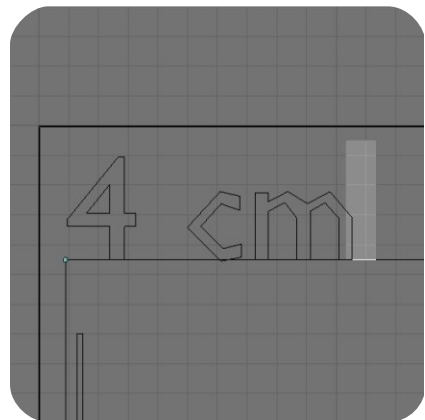
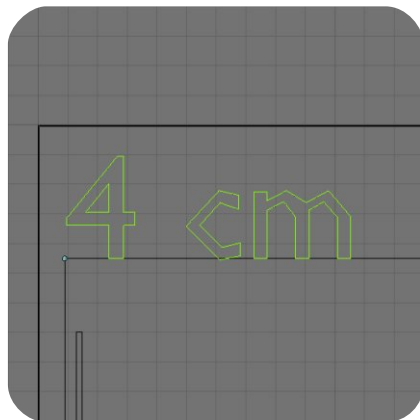
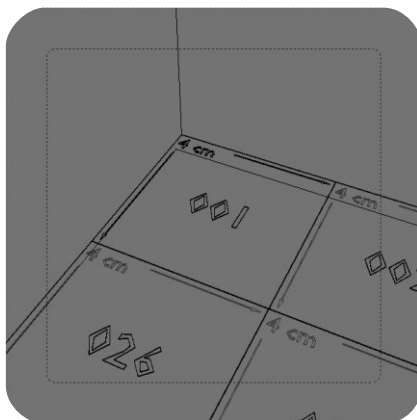
This area is also carefully filled with a numbered grid, suitable to test reflections and refractions.

Colors are also studied and applied to balance the scene and allow the best testing on materials possible.

**Measurement:**

A cool feature of the b.m.p.s. is the possibility of changing unit displaying on the floor.

You can change the grid floor to measure any size you want, you only have to select the first unit measurement number on the floor (the one above "001" called "MeasurementText") and enter a different data into the Text options of Blender.



 note: Measurement feature is a simple DupliVert rig. Please, do not change anything else than the data on the object "MeasurementText" to avoid problems.

**Colors, Exposure and Gamma:**

This is a very very important thing to bear in mind when you are working with the b.m.p.s. Since this scenes are made to be as realistic as possible, everything is set so behave as in real live, specially lighting and exposure. So you have to assume the next method of working...

















First, know that lights in the scene are very carefully set (as averything else) to get the most correct exposure as possible for the camera point of view. That means you shouldn't get too-bright or too-dark materials than the expected. If that happens, probably you are not setting your material properties correctly. You have to adjust material settings and nothing else in the scene.

Second, Gamma is set to 2.2 meaning you have to work every aspect on your materials taking that fact into account. I strongly recomend you to read the Tone and Gamma article written by Yves Poissant here: <http://www.ypoart.com/tutorials/toner/index.php>

Third, is a reiteration of the second aspect about the Gamma issue. You have to set every colour in your scene (images included) to work for the 2.2 Gamma. That's why is so important to read the article recommended above.

In any case, the very short version of the story is that you have to apply a 0.45 Gamma correction to every color or image used for materials (for images you could use Gimp/Photoshop), otherwise they will look "washed out". On the other hand, applying correctly the Gamma correction, your final renders and materials will look very realisc.

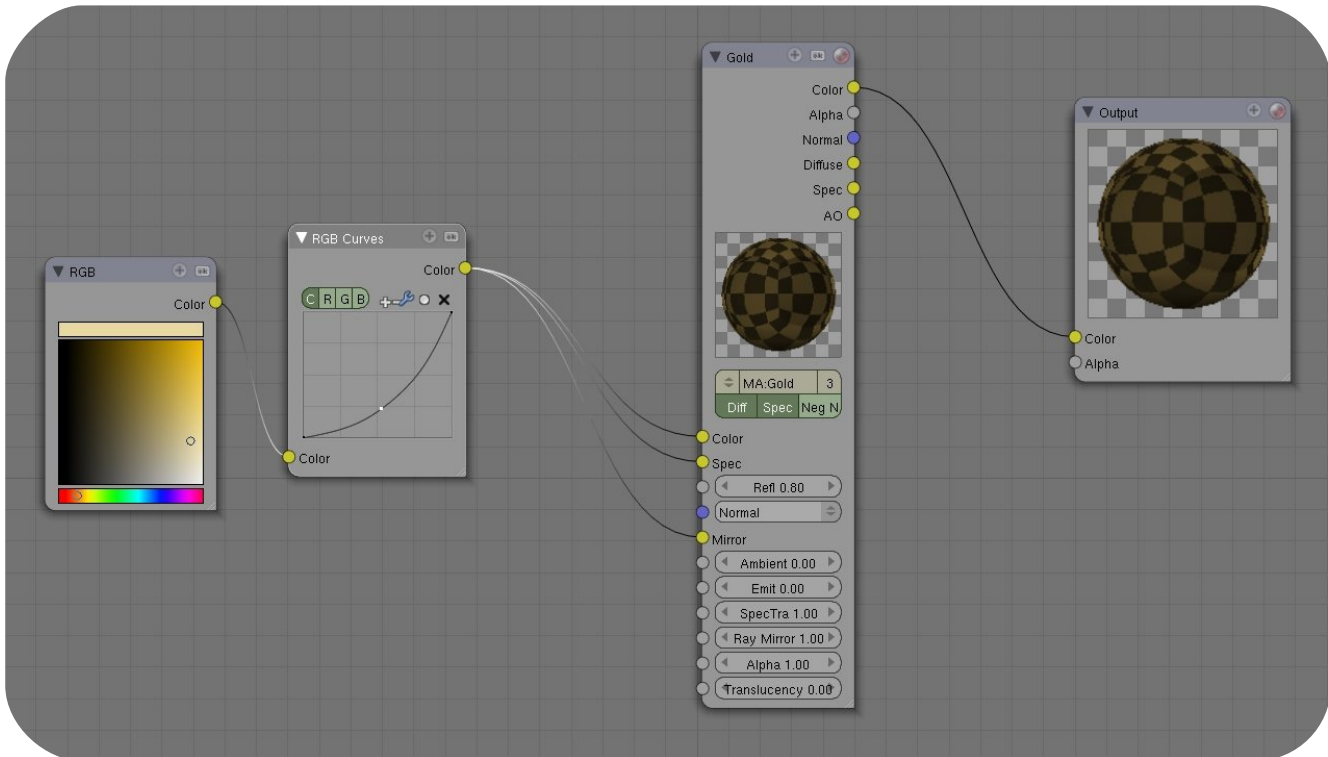
Since this issue is a little complex to bring into Blender's materials setup, numerous material examples have been included in the b.m.p.s. to understand better this workflow. ('hope you like them :)).

Original	NO Gamma correction	+	Blender's Gamma 2.2	=	Final Render
		+		=	 ❌
		+		=	 ❌
Original	0.45 Gamma corrected	+	Blender's Gamma 2.2	=	Final Render
		+		=	 ✅
		+		=	 ✅

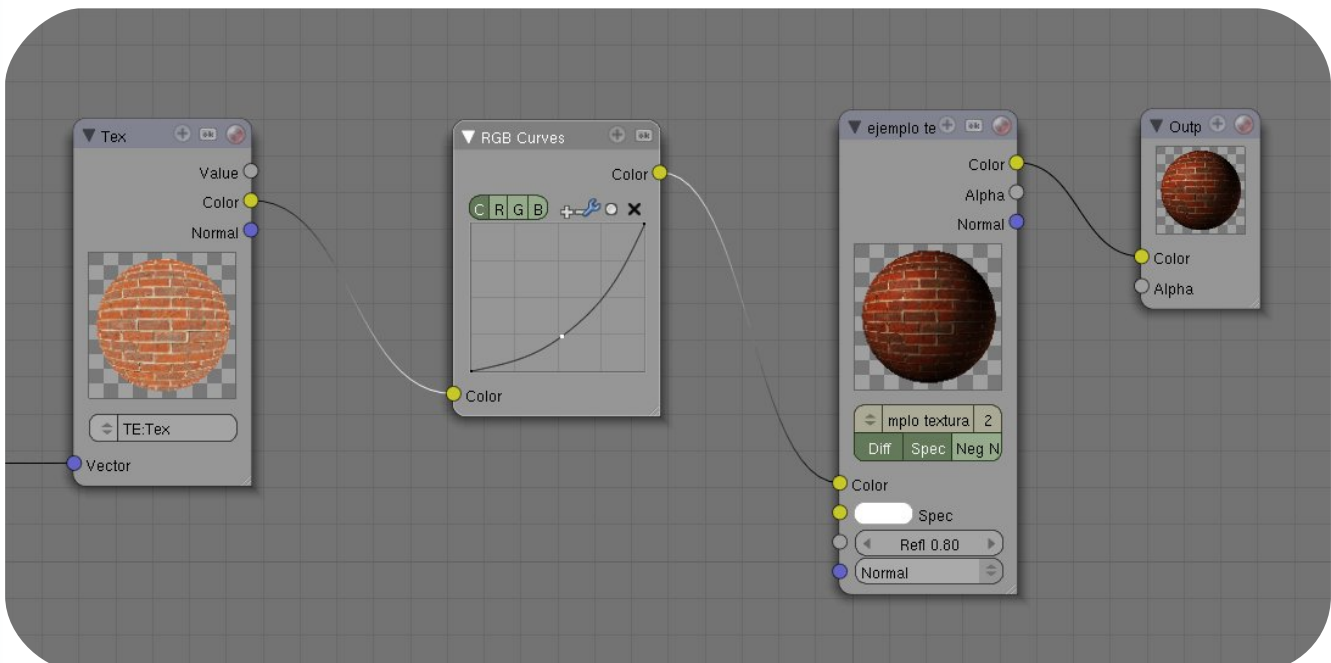
Another method of Gamma correcting materials is by using Blender's material Nodes.

Using a rather simple node rig you can correct Colors and even textures (images included)...

RGB Curves Node setup for color Gamma correction



RGB Curves Node setup for texture Gamma correction

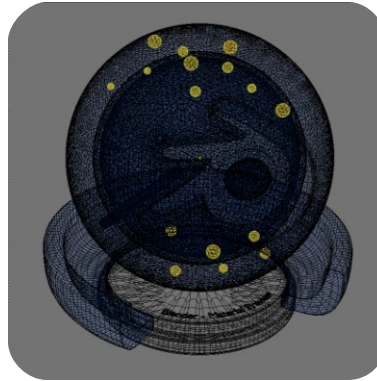


**Solid Material Scene:**

This is the scene created for solid or "rigid" material evaluations. Is probably the most versatile scene in the b.m.p.s. suite.

It has:

- A well balanced face count and topology.
- Air bubbles inside for transparent - Sub-Surface evaluations.
- Sub-Surface Bar inside also for transparent - Sub-Surface evaluations.

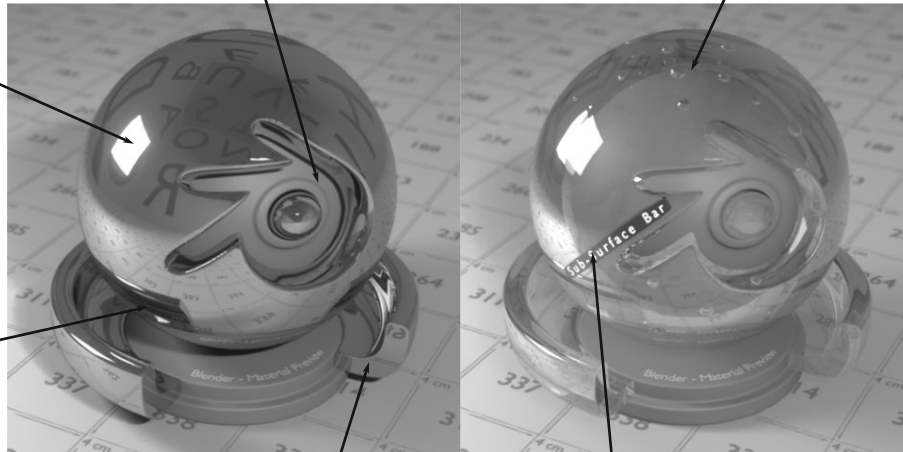


Cutout section

Air Bubbles

Highlights area

Multiple self-reflection area



Flat cut section

Sub-Surface Bar



note: Only "Solid Model" object material should be changed. Any material with "X-" prefix should remain always untouched.

**Cloth Material Scene:**

This is the scene created for general Cloth material evaluations. It has a carefully prepared shape and realistic look.

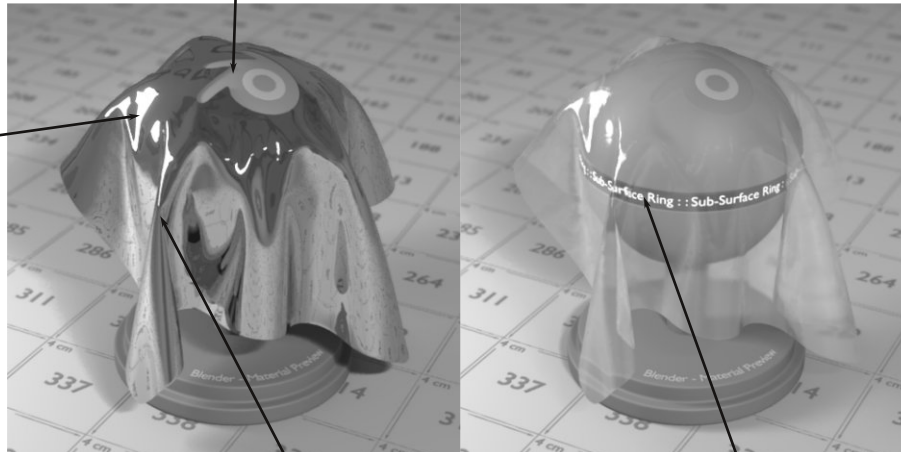
Exhibits:

- A well balanced face count and topology.
- An irregular shape with different surface conditions.
- Sub-Surface Ring inside for transparent - Sub-Surface evaluations.



Cutout section

Highlights area



pronounced wrinkles

Sub-Surface Ring



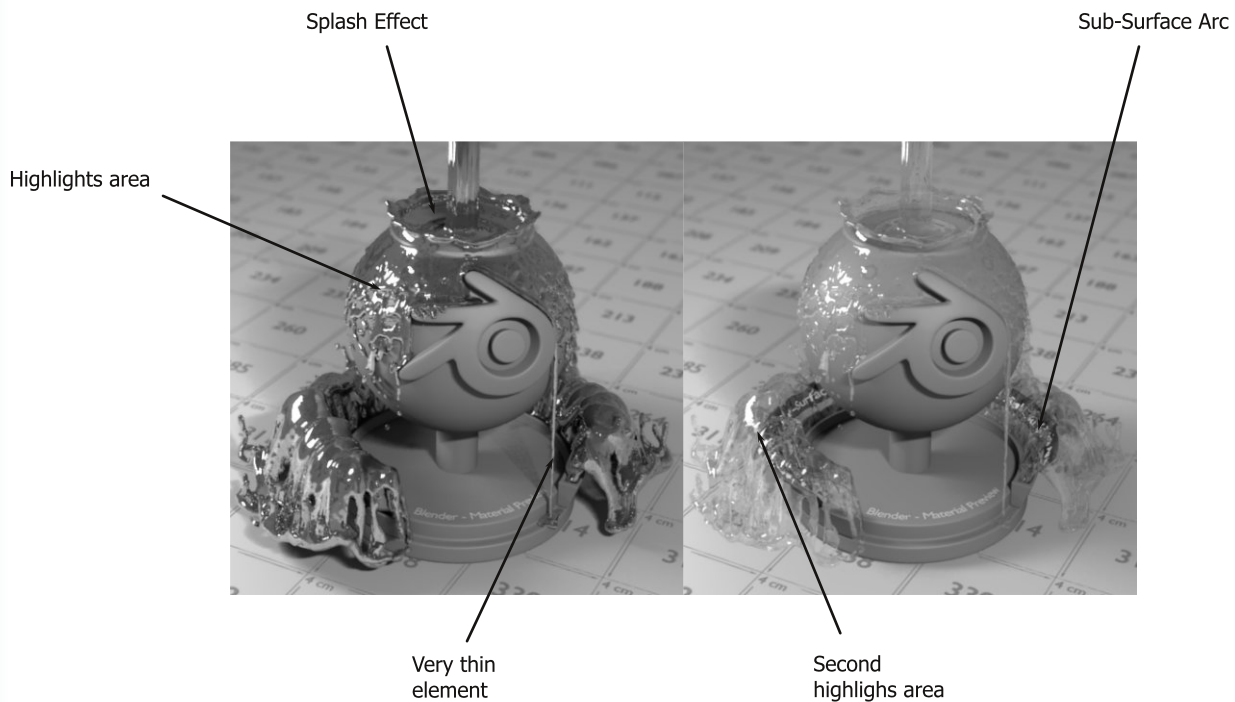
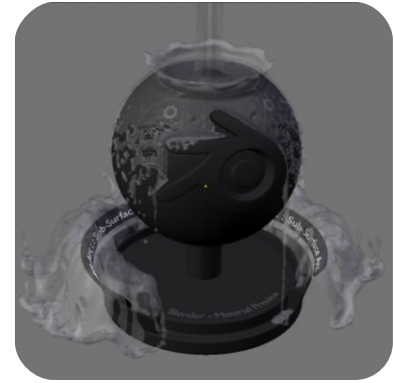
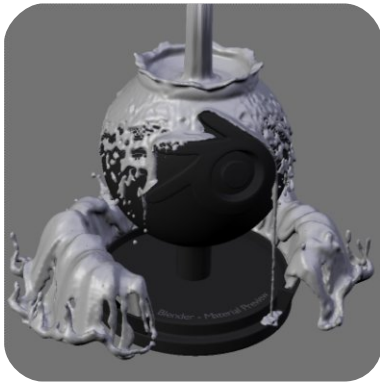
note: Only "Cloth Model" object material should be changed. Any material with "X-" prefix should remain always untouched.


**Fluids Material Scene:**

This is the scene created for Liquid-Fluids material evaluations. Is a high quality scene with a complex and interesting model.

It has:

- A high but well balanced face count and topology.
- Very organic surface with different thickness and features.
- Sub-Surface Arc inside for transparent - Sub-Surface evaluations.



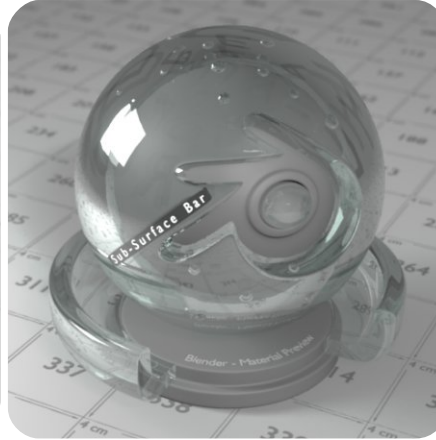
 note: Only "Fluids Model" object material should be changed. Any material with "X-" prefix should remain always untouched.

### Solid Model Materials

Gold (Ray mirror)



Glass (Ray mirror + Ray transparency)



Rubber (Ray transparency + SSS)

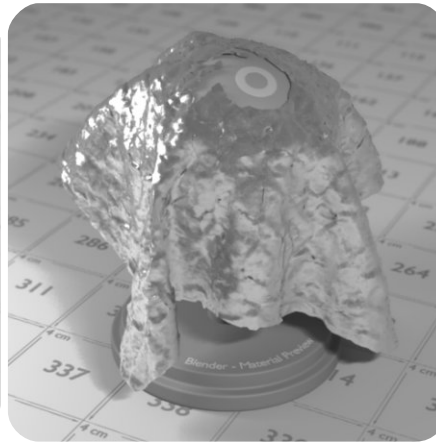


### Cloth Model Materials

Silk (Ramps + Fresnel Shader)



Aluminum Foil (Ray mirror + Displacement)



Plastic Foil (Ray mirror + Ray transparency)



### Fluids Model Materials

Water (Ray mirror + Ray transparency)



Oil (Ray mirror + Ray transparency)



Wax (Ray transparency + SSS)

