

Material Tutorial: Car Paint

Modern materials of the Product & Industrial design field

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Car paint is one of the favorite materials of the industrial design students of the Florence Design Academy (www.FlorenceDesignAcademy.com). You can use it for any product design, especially for mobile phones, mp3 players, bikes...or simply for a concept car. There are many different types of car paints. The most trendy one is the metalized car paint with **two specular highlights**.

(This tutorial will not teach the metalized car paint with the random aluminum flakes, and in order to have this kind of particles you must use Max 9 materials which are explained in other tutorials).

The two specular highlights will give an optimal light reflection to your object in order to show in a very soft and for the human eye pleasurable way the shapes of your objects.

To create two specular highlights you must change the BLINN shader to **MULTI-LAYER**. This allows you to have 2 independent specular highlights (in Multy-Layer they are called First Specular Layer and Second Specular Layer). One must be very soft the other very hard/strong.

Go to the first specular highlight slot (it is called specular layer) and adjust it until you have a large shape (glossiness) which is not too bright (level).

Then do the opposite with the second specular layer: small shape and very bright.

After this step go to Maps and add to the reflection map **Raytrace**. Set the reflection amount to more or less 20 (like on image 1).

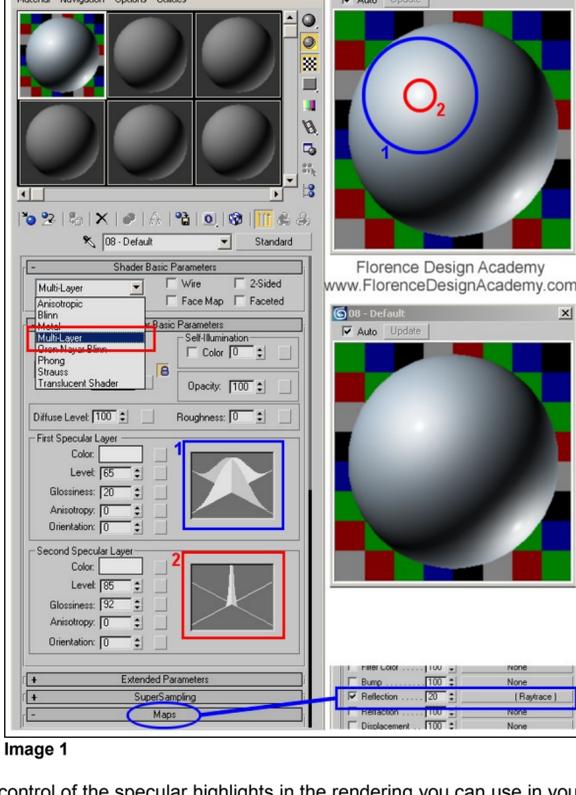
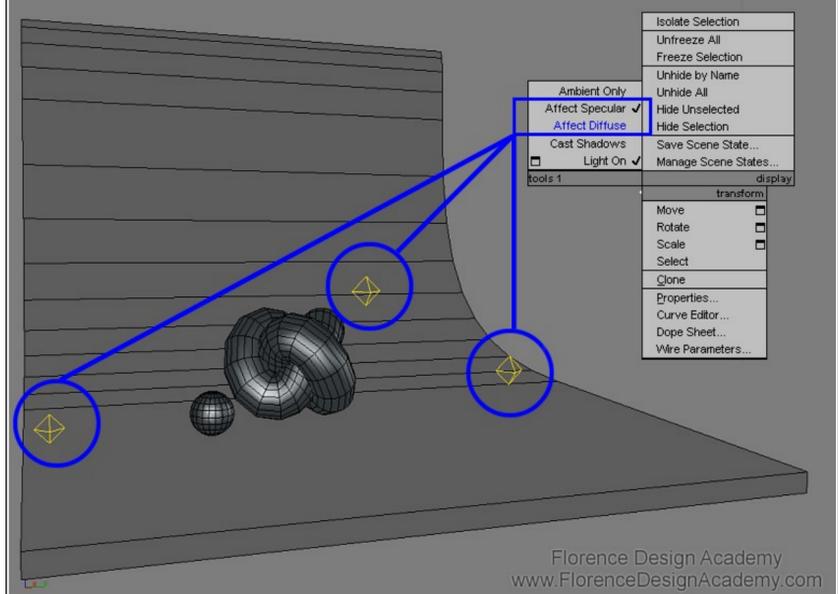


Image 1

To have more control of the specular highlights in the rendering you can use in your scene a SPECIAL "MR.Area Omni" light (normally it is better to use MR.Area Omni if you use **Mental Ray** to make your rendering, but in this case you can use also a normal Omni light). After you have placed the light in the correct location make a right mouse button click on the MR Area Omni and disable "AFFECT DIFFUSE" (like on image 2).



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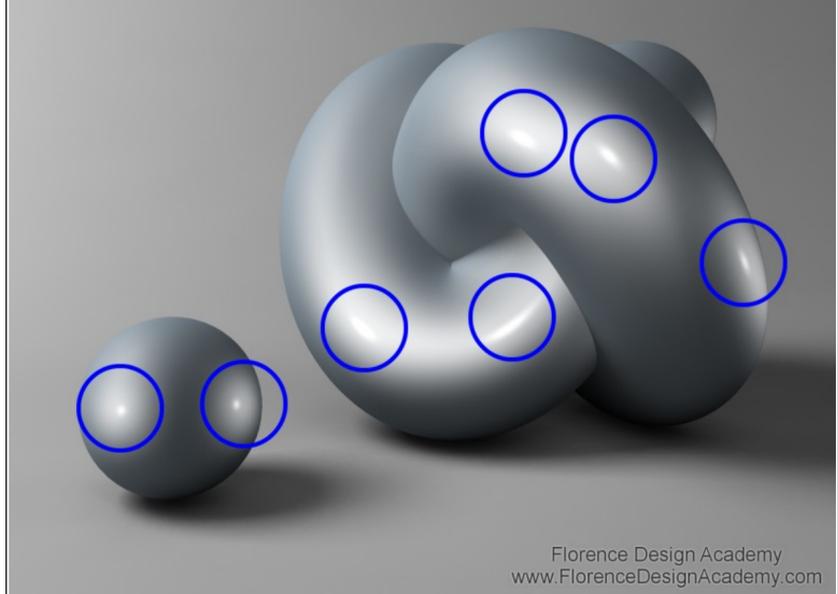


Image 2

After this step this MR.Area Omni will create **only** specular highlights on the materials. We will use that MR.Area Omni to create these specular effects that, normally, is better to use MR.Area Omni if you use **Mental Ray** to make your rendering, but in this case you can use also a normal Omni light). After you have placed the light in the correct location make a right mouse button click on the MR Area Omni and disable "AFFECT DIFFUSE" (like on image 2).

This technique is very helpful if you need a higher number of specular highlights than the existing light material.

It is also possible to create a specular color which is different than white. With changing the specular color you can simulate the classical car paints that you can see in the car-tuning environment where often we have a mix of two different colors (diffuse color + specular color).

This makes the material more interesting.

Here below you have a sample of a mix of more colors. In this case we have a red diffuse color, a blue first specular layer color and a white second specular layer color (image 3)



Image 3

Here below we have exactly the same scene, but without the EXTRA omni lights. The difference is strongly visible. In this sample you can understand how important it can be to use the technique described in this tutorial (image 4).



Image 4

Tip 1: If you go to use many Mr Omnies for an object because you want to create many different specular highlights, you will risk to create a less visible shadow of an object. In this case it is necessary to use Ambient/Occlusion to avoid this problem.

Tip 2: If you have other objects in the scene that have normal materials and have NOT to be affected by the Omnies, remember to exclude them from the Omnies with the exclude button from the modify panel.

You can find the informations for the illumination&render settings in other Florence Design Academy tutorials.

I hope you have enjoyed this tutorial.

Best Regards

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