



Ciconia Studio

# Shader Painter

[Online Documentation](#)

Version beta 1.5.3

# Table of contents

<b>1. Introduction</b>	<b>2</b>
<b>2. Release notes</b>	<b>3</b>
<b>3. How to use Shader Painter</b>	<b>4</b>
<b>4. Canvas UI</b>	<b>5</b>
4.1. Shader Mode	5
4.2. Paint Mode	5
4.3. Custom Brushes	6
4.4. Undo/Redo	6
4.4. Solo Mode	6
<b>5. The Shaders</b>	<b>7</b>
5.1. Shaders list	7
5.2. Options	8
5.3. Layers/UI	9
<b>6. Shortcuts</b>	<b>9</b>
<b>7. Coming Next</b>	<b>10</b>
<b>8. Known bugs</b>	<b>10</b>
<b>9. Frequently Asked Questions</b>	<b>11</b>
<b>10. Contact</b>	<b>12</b>

## 1. Introduction

Shader Painter is still under development. Not all features are available.  
Any suggestions ? Help us shape this tool to your needs! [forum thread](#)

Shader Painter is a painting tool which allows you to paint advanced shader effects. More than a simple vertex tool, with this extension you will be able to paint directly on pixels. This way, you can paint extremely complex details on a simple polygon.

## 2. Release notes

**Important** : Before upgrading Shader Painter make sure to close the Shader Painter Window. Otherwise, the shader of the model selected in Shade Painter will be reset to default.

You will not lose your painting but you will lose all chosen settings and maps!

### 1.5.3b

*By default, the package is set up to be compatible for Unity 2019.4 LTS Built-in Render Pipeline. In order to use URP Shaders you will need to manually unpack SP\_URP Shaders 2019.4 LTS.unzippackage (cf readme).*

- Shader window is now deactivated if no object is selected.
- Fixed a bug when switching between different lighting modes.
- Package size have been optimized.

### v1.5.3a :

- URP shaders Upgrade
- Transparent Cutout, Standard Multi Layers, Water Vertex Offset Dx11 and Wind Vertex Offset Dx11 shaders have been renamed.
- Snow Shaders Improvement.
- Fix UI Bug on Unity 2019.4 LTS.
- Fix painting issue on 2020.3 LTS.
- Fix warning messages.
- Fix Painting issues for URP Cutout and Wind Dx11 Shaders.
- Minor changes on properties values.

### v1.5.2 :

- Merge and Export : Tiling/Offset + Opacity support
- Shader painter dll
- Add Snow Shader
- Unity materials are now compiling in maps folder
- Fix albedo map not assigned in unity materials when compiling

#### v1.5.1 :

- Merge and Export : Color + Intensity support
- Now compiling create Unity materials
- Compile button is gray when there is no painting
- Change maps nomenclature when exporting
- Fix namespace bug

#### v1.5.0 :

- Added Merge and Export Tool (BETA - Standard Shader Only)  
(Only maps are supported for the moment. Sliders, colors and others will be supported soonly.)  
Compiling is slow. Optimization should speed up the process significantly.)
- Shader painter is now compatible with Unity Dark Theme
- Shaders upgrades
- Multi layers shaders now contains 3 layers to prevent build errors.
- Fix upscaling for the painting resolution property
- Bugs fix

#### v1.4.3 :

- Added double sided shaders
- Fix incompatibility with substance that break the mesh (Issue remains for Unity 2018 and higher)
- Fix regretion that prevent Shader Painter to work on Macs
- Fix a bug when switching between standard and multi layers
- Fix a bug where the brush appears on the mesh sometimes

#### v1.4.2 :

- Added new brush menu
- Added new brushes
- Now when staying at the same spot doesn't paint multiple time
- Fixed several bugs where some properties don't work correctly

#### v1.4.1 :

- SRP (LWRP) support
- Added Metallic/Rough Light mode
- Now you can create folder in sub object menu by adding "/" in custom name

#### v1.4 :

- Skinned meshes support
- Now you can switch from a shader to another one without losing the mask
- Now you can rename the multi ID materials
- Added shortcut "L" to switch between layers (Multi layers shader)
- Added Undo/Redo (Ctrl+Z/Ctrl+Y) support in Shader Mode
- Fixed naming issue with multi ID objects
- Fixed an error when selecting a new object in Shader Painter in some particular conditions

#### v1.3.1 :

- Compatibility with Unity 2018
- Added "Wrap Mode" feature (Choose the paint mode between Clamp or Repeat)
- Fix bug preventing build

#### v1.3 :

- Multi layers support (4 Layers)
- Added new layer features.
  - General Tiling : Control the tiling by layer
  - Opacity : Change the opacity by layer
  - Added Desaturation / Saturation / Brightness control
  - The heightmap constraint by the painted mask now can be selected by layers
  - Added paint mode button for each paintable layers
- Now you can choose the resolution for the custom cubemaps (for water/Dx11 shaders)
- Improve code robustness.
- Fixed a bug where the painting didn't save correctly on some multi ID materials
- And some minor bugs fixes.

#### v1.2.2 :

- Added resolution control. Now you can choose the painting resolution between Low, Medium, High and Very High (In Paint mode).
- Now you can create cubemaps directly in Shader Painter (for the Water/Dx11 shaders)
- Improve painting speed with multiple ID models
- The Blend2maps has been renamed Standard
- Fix a bug when importing a mesh with multiple ID having the same name.
- Fix a bug when activate play mode with solo mode enable
- Fix a bug when saving the scene with solo mode enable.

#### v1.2.1 :

- Added new Brush/Eraser/Ban cursors
- Added 6 new brushes

- Closing Unity will now disable SoloMode automatically
- The Shader Painter window remains open in Playmode
- Fix a bug when importing object without materials attached (Pink) generate an error

v1.2 :

- Added Multi Materials ID support
- Shader Painter window update automatically when you select an object in the scene.
- Now the Undo or Redo features affect the entire stroke.
- Added shortcut "R" to switch rotation angles (Make sure to disable Random Angle)
- Added shortcut "S" Enable/Disable SoloMode
- Improve code robustness.
- Fix bug when model is deleted with Solo Mode active.
- Fix a bug when deleted other objects in hierarchy when Solo mode active
- Fix a bug where shader painter reset mask on duplicated objects when Unity restart.
- Fix bug mouse over other objects error.
- Fix bug no renderer paint mode, disable Paint mode and Create shader button in that case.
- Fix bug Unity freeze (brush bug).
- Fix bug where materials were not correctly created in the materials folder
- Fix bug where Heightmap blend mask checkbox switch On/Off when object are (re)selected.
- And some minor bugs fixes.

v1.1 :

- Added Solo Mode (Isolate the mesh from the scene)
- Added rotation angle buttons (Rotate the brush in 4 different angles)
- Now you can visualize the brush rotation.
- New Buttons UI

v1.0.1 :

- Fix an error when reading the brushes on Mac OS
- Fix Warning message
- Add link to Twitter

v1.0 beta

- Initial release

### 3. How to use Shader Painter

To open shader painter go to windows/CiconiaStudio/ShaderPainter.

- Select an object in your scene, it will appear automatically in the select prefab slot
- Select a shader in shader type.
- Select the sub-object you want to modify (Only with multiple ID models)
- Choose a light mode between Metallic/Rough(Unity Standard) and Specular/Gloss (Unity Specular setup)
- Select the Cull Mode you need (One sided or double sided)
- Click on create.

***Important : Shader Painter is using a mesh collider to determine the paintable surfaces. When you import a mesh in Shader Painter a mesh collider is automatically created. To preserve any painting issues make sure that the surfaces you want to paint on your model have no contact with other meshes and colliders (cf 4.4 Solo Mode gif exemple)***

## 4. Canvas UI

### 4.1. Shader Mode

Depending on the shader selected the properties can change. However, every shaders are at least composed by the Layer 1 which is the main properties of a standard shader.  
(cf. 5.The shaders)

### 4.2. Paint Mode

Select Paint mode to enable the paint functionalities.

Painting Resolution : (Shader Painter v1.22)

First, select the paint resolution. If your model doesn't need precise painting you should stay in Medium quality to keep your painting experience as smooth as possible.

Brushes Panel :

Choose a brush included or import your own brushes (cf. 4.3. Custom brushes).

#### Pen size :

You can modify the size of the brushes (For the beta version depending on the polycount of your mesh, be careful with big brush size you may experience slow downs).

#### Rotation properties :

Activate “Random Angle” to enable random rotation in 4 different angles or choose manually by pressing on the right button.

#### Opacity :

The opacity lets you paint either the “Layer1” (opacity < 0) or “Layer2” (opacity > 0).

Shader Painter is just so cool that by simple passing the mouse over the model, you can visualize the result before applying it.

### **4.3. Custom Brushes**

(Video Tuto : [https://youtu.be/3X\\_IQJ8tyAc](https://youtu.be/3X_IQJ8tyAc) )

Before importing a brush in shader painter you will need to change few things in the texture inspector. Follow these steps :

- Import your brush as .png in your project. The shape of the brush need to be white and the rest should be transparent.
- Check Read/Whrite Enabled and select Clamp for the Wrap Mode in the import setting of the texture.
- You can now drag and drop the brush in the Brushes folder.  
(CiconiaStudio/EditorExtentions/Shader Painter/Ressources/Brushes).
- The new brush should be visible in Shader Painter.

*Cautions : Importing a brush in the brushes folder before modifying the import settings options can break the Shader Painter Window. You can fix that after the fact by enabling the Read/Whrite option.*

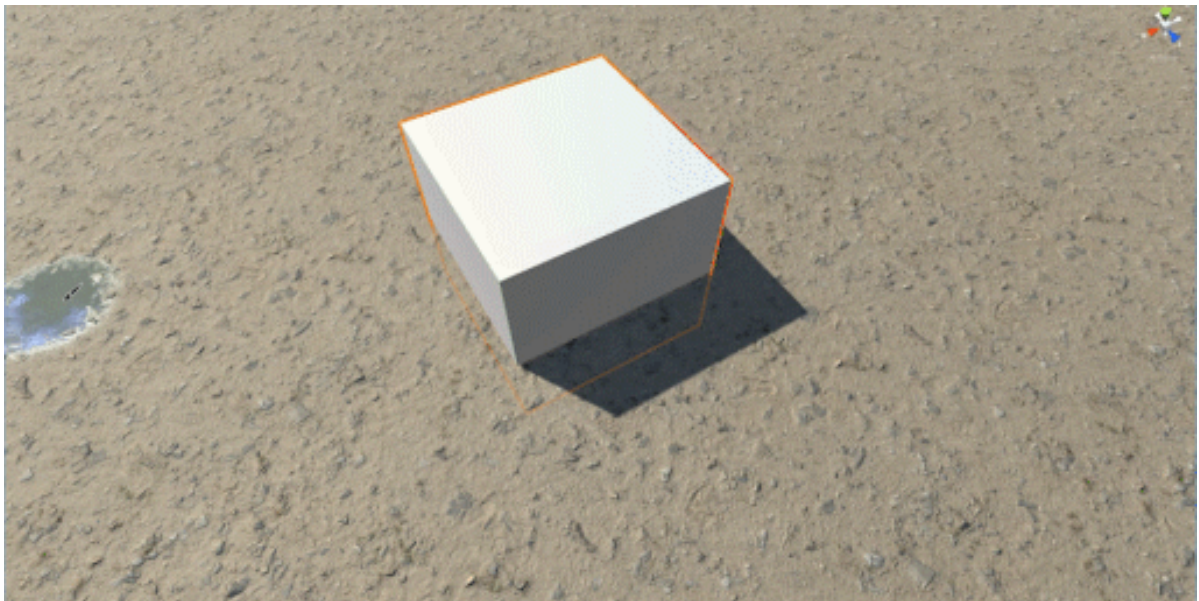


#### 4.4. Undo/Redo

You can undo or redo your strokes by clicking on these buttons or with the shortcuts (cf. 6. Shortcuts).

#### 4.4. Solo Mode

The Solo mode isolates the selected object by hiding all other objects in your scene. This option is very useful in scenes with a lot of objects which can cause conflict in the painting areas due to their colliders proximities (cf. gif below).



## 5. The Shaders

### 5.1. Shaders list

**- Standard** (Video Tuto : <https://youtu.be/aJmltTNoZUc> )

Blend 2 standard shaders together !

Composed by 2 layers and the general features. All layers are composed by an Albedo map, Height map, Normal map, Specular map(Metallic), Glossiness map (Roughness map), the Ambient Occlusion map and the emissive map

**- Standard Multi Layers**

This shader allows you to use 3 different layers to personalize your models as well as possible.

Due to the texture limitations per shaders in Unity, the multi layer gives you access to the albedo, the normal map and the heightmap (In the Albedo alpha channel) for the layer 2 and 3.

However you can also control per layers the Specular/Gloss or Metallic/Rough as well as the layers settings.

**- Water** (Video tuto coming soon)

Layer 2 : Only the Color, normal map properties, the specular color, intensity and glossiness are available. You can also darken the water by setting the Ambient Occlusion intensity value to 1.

Cubemap properties :

You can add your own cubemap or create one directly in Shader Painter by pressing the create button. You can modify the intensity and blur the reflection.

Water animations :

You can modify the speeds and angles of the Wave normal map set in Layer2.

**- Water Dx11**

Same options than the Water Shader. But with this one you will be able to paint Z or Y vertex deformations and increase the polycount with the tessellation value.

**- Wind Dx11**

#### Visualize wind :

By checking this options you can visualize the wind flow on your model.

#### Use World Coordinates :

Check this box to project the wind texture on world coordinates (UV coordinates by default)

#### Wind Texture :

Select a black and white texture here. You can invert it, change the general tiling in X and Y at the same time and smooth it. The smooth work pretty much like the spread option in the shaders above. This option will blur the wind texture until it remain only white pixels.

#### Wind Animations :

You can modify the deformation of the mesh, the rotation of the wind texture, invert the wind direction, increase or decrease the speed and the polygons amount.

The Tessellation is only applied where you paint.

### **- Cutout**

Paint tear and damages!

If your Albedo already has a cutout map in the Alpha Channel, you can choose to keep it and paint additional cutout informations. You can also choose to disable this map.

Use "Mask amount" to expand or decrease the cutout effect.

### **- Snow**

Paint snow with sparkling effects.

## **5.2. Options**

#### Heightmap by Mask :

By checking this option you can paint in cracks (tile joint, ect...) of the Albedo map all around your brush.

By disabling this option you will have the possibility to fill the texture depth proportionally.

This option need a heightmap on the Alpha channel of the Albedo map(Layer1).

*Tips : You will have a better result if you use a gradient brushes like Shape\_Circle 01 or Shape\_Circle 02. Using low value for the Opacity can also improve the final result.*

#### Spread and contrast :

This options let you control the heightmap influence on the Layer2.

Spread let you expand (or contract) the white until there is no more black pixels.

Contrast let you modify the light distribution of the heightmap.

#### Fresnel strength :

Control fresnel highlight intensity.

#### Ambient light :

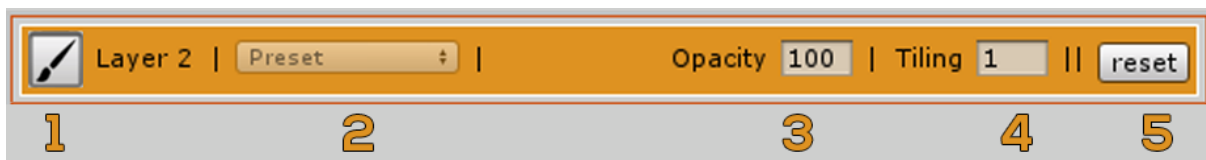
Control Ambient light Intensity.

#### Blend normal maps :

Merge the normal map of the Layer1 and Layer2.

### 5.3. Layers/UI

Each layers have specific properties allowing to modify the general appearance of the selected shader.



1. Paint button : This is a shortcut button to activate the paint functionalities for this particular layer.

2. Preset : *Coming Soon*

3. Opacity : Control the opacity of the painting. If there is one, this option is directly linked to the heightmap of the layer above it.

4. Tiling : Change at once the tiling of all the maps set in this layer.

5. Reset : Reset all settings to default.

Layer settings : This settings let you desaturate, saturate and increase or decrease the brightness of the layer and give to the model a completely different appearance.

## 6. Shortcuts

Crtl+Maj+Z	: Undo
Crtl+Maj+Y	: Redo
B+mouse drag	: Brush Size
X	: Switch Paint/Erase
R	: Switch Rotation Angles
S	: Enable/Disable SoloMode
L	: Switch painting layer in multilayer shader

## 7. Coming Next

- Brush size optimizations
- Maps Exporter
- Animation Editor Support
- High Definition Render Pipeline (HDRP) support
- Substance files support
- Runtime support
- Lots of optimizations
- And so much more....

Done :

- Support multiple Layers
- Roughness/Metallic workflow
- Universal RP support
- Skinned meshes support
- Multi ID Materials compatibility
- Rotation of the brush visible in paint mode
- Selecting objects will update the Shader Painter window automatically
- Solo mode (objects isolated)

Do you have questions or suggestions? Don't hesitate to post all of them in the [forum thread](#)

## 8. Known Bugs/Errors

- **ArgumentException: Getting control 7's position in a group with only 7 controls when doing repaint - Aborting**

When entering play mode, this error appears because an object is selected in the Shader Painter window.

### Solution :

Before enter in Game Mode, select none in Select Prefab or close the Shader Painter window.

- **Light Mode switch.**

Can't switch between Metallic and Specular mode anymore.

- **Lightmaps Issue.**

Selecting an object in Shader Painter when lightmaps are compiling at the reboot of Unity will reset the settings in Shader Painter window. (If lightmaps Auto Build is enable, when starting Unity you need to wait that Unity finish to bake the lighting before importing a model in Shader Painter)

- **Ban icon, always active in Paint Mode.**

When importing an object in shader painter for the first time, in paint mode before trying to paint, you need to pick another brush than the one selected by default.

## 9. Frequently Asked Questions

### **Did you plan to add more shaders ?**

Yes ! There is at least 3 more shaders coming before the final release.

### **I can't select others objects in my scene! What can be the problem ?**

*Make sure that the Shader mode is deselected by activate the shader button.*

*Or, if you have finished using shader painter, simply close the window.*

### **I can't paint on the mesh ?**

*First, try to enable SoloMode (the close eye icon in Shader painter window). If you can paint in SoloMode that means that you have multiple colliders attached to the same model (can be child). If so delete all colliders which are not needed or choose to keep painting on SoloMode.*

*If you still cannot paint on the model go to paint mode, select another brush and set the opacity value to +1, click on Clear button. You should be able to paint the layer2.*

*If the problem persists, please contact us at [contact@ciconia-studio.com](mailto:contact@ciconia-studio.com)*

### **When i increase the brush size, it's lagging. Do you plan to fix this?**

*Yes of course ! It's a problem we are also working on. It's on our priority list.*

## 10. Contact

If you have any questions, please feel free to contact us : [contact@ciconia-studio.com](mailto:contact@ciconia-studio.com)

More news on our work? Follow us on Twitter : [twitter.com/CiconiaStudio](https://twitter.com/CiconiaStudio)