Polybrush Shaders | Ciconia Studio

[Online Documentation]

Overview

Easy blend materials using vertex painting shaders and Polybrush.
This pack contains a set of shaders specially created for use with Polybrush.
If you want to use Polybrush to paint advanced shaders and increase the overall quality of your scenes, this pack is for you.

The package contains two versions of each shader : The lite and the standard shaders.
The Lite shaders are a simplified version of the standard shaders that contain a base layer and an effect layer (*That can be painted*).
The standard shader takes into account, in addition to the base layer and the effect layer, one or even two additional paintable layers.

Shaders :
Each shader comes with different versions (Basic, Lite or Pro)

- Basic
- Standard
- Flood
- Rainy and puddles

Coming Soon
- Snow
- Ice
- Ice and Snow

And more

Basic, Lite and Pro shaders :
The package contains 3 types of shaders

- Basic

The Basic are the lightest shaders. They include a main layer and the effect layer.

- Lite

The Lite versions might look slightly different depending on the shader, but in most cases they include the basic functions plus displacement and tessellation options.

- Pro

The Pro versions are the most advanced version. They include 3 paintable layers and the options of displacement and tessellation. Depending on the shaders, a wet layer can also be available.

Features :

- Built-In and URP support.
- Polybrush dependencies (Texture Blend)
- PBR Metallic Workflow.
- Metallic, Ao, Height map and Smoothness channel-packed Textures.
- Heightmap support for both RP.
- Easy blend up to 3 different materials on one mesh with their Base color, Normal, Metallic, Smoothness, Height map and Ambient occlusion.
- Paint Wet and puddles effects.
- Full control on blending layer using the height map values.
- Advanced displacement controls.
- Tessellation with min and max value to fade tessellation depending on camera distance.
- Additional reflection to enhance overall quality of the water effects.
- Height map with parallax control.
- Brightness and saturation control for each layer.
- Waves water normal map with intensity speed and direction controls
- Raindrop simulated with size and speed splashes
- Rain ripples using flipbook with atlas normal map. 2 different texture atlas are included. They come in 4k .png format, and they are divided in 8 columns and 8 rows.

URP Package :
Supported Unity versions
2019.4.x

HDRP Package :
Supported Unity versions
2019.4 LTS
2020.3 LTS

The package comes with demo scenes for each shader using 1k and 2k textures in .png format.

URP Setup

Support Unity versions
2019.4.x

First delete the Builtin folder and unpack the URP-Polybrush shaders.unitypackage.

Tutorials

Videos |

Importing Polybrush
Tutorial

URP set up
Tutorial

Standard Pro
Preview
Tutorial *(For Built-in)*

Flood
Preview
Tutorial *(cf Rainy Puddles tutorial)*

Rainy Puddles
Preview
Tutorial *(For URP)*

Shader Properties

Shaders Pro

Strandard :

Base Layer (R) | These properties use the red(R) channel from the vertex color

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel.
Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Source – Selects the smoothness map stored in the metallic alpha or base color alpha

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

Displacement Properties | Use the height map stored in the Mask map

Visualize Heightmap – Enables or disables the height map visualization.

Heightmap Spread – Controls the luminance of the height map.

Heightmap Contrast – Controls the amount of contrast of the height map.

Displacement – Controls the displacement of the vertices.

Layer1 (G) | These properties use the green(G) channel from the vertex color

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel.
Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Source – Selects the smoothness map stored in the metallic alpha or base color alpha

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

Displacement Properties | Use the height map stored in the Mask map

Visualize Heightmap – Enables or disables the height map visualization.

Heightmap Spread – Controls the luminance of the height map.

Heightmap Contrast – Controls the amount of contrast of the height map.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

Layer2 (B) | These properties use the blue(B) channel from the vertex color

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel.
Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Source – Selects the smoothness map stored in the metallic alpha or base color alpha

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

Displacement Properties | Use the height map stored in the Mask map

Visualize Heightmap – Enables or disables the height map visualization.

Heightmap Spread – Controls the luminance of the height map.

Heightmap Contrast – Controls the amount of contrast of the height map.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

Wet Properties (A) | These properties use the alpha(A) channel from the vertex color

Base Color – Specifies a base color visible in the wet surfaces. If "Color" is selected, no map will be displayed. Switch between the Base Color map from the Base Layer, the layer1 or the layer2. If "Wet map" is selected, a map must be chosen in the Wet map slot below.

Color – Specifies the RGB color of the wet areas.

Wet map – Selects a wet map (Only if "Wet map" is selected in the Base Color rollout menu above).

Metalness – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Ao Intensity – Controls the intensity of ambient occlusion. This parameter is linked to the layer selected in the Base Color rollout menu above.
For instance, if Base Layer is selected, this slider will multiply the Ao from the Base Layer. If the Base Layer has an Ao intensity value equal to zero, this slider will have no effects.

Additional Reflection | These properties control the additional reflections.

Color – Specifies the RGB color of the reflection.

Cubemap – Selects a cubemap.

Intensity – Controls the intensity of the reflection.

Blur – Specifies the amount of blur.

Displacement Properties | Use the height map stored in the Mask map from the layers above

Visualize Heightmap – Enables or disables the height map visualization.

Heightmap Spread – Controls the luminance of the height map.

Heightmap Contrast – Controls the amount of contrast of the height map.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

Tessellation Properties | These properties control the tessellation depending on camera distance

Enable – Enables or disables the tessellation.

Tessellation – Controls the amount of tessellation. Be careful with this value by progressively increasing it.

Distance Min – Control the distance from the camera where the tessellation starts to fade out.

Distance Max – Control the distance from the camera where the tessellation ends.

Flood :

Please refer to the standard shader, for Base layer (R), Layer1 (G) and Layer2 (B).

Wet Properties (A) | These properties use the alpha(A) channel from the vertex color

Base Color – Specifies a base color visible in the wet surfaces. If "Color" is selected, no map will be displayed. Switch between the Base Color map from the Base Layer and the Wet map. If "Wet map" is selected, a map must be chosen in the Wet map slot below.

Color – Specifies the RGB color of the wet areas.

Wet map → Ao(A) – Selects a wet map (Only if "Wet map" is selected in the Base Color rollout menu above). An ambient occlusion map can be stored in the alpha channel.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Metalness – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Ao Intensity – Controls the intensity of ambient occlusion. This parameter is linked to the layer selected in the Base Color rollout menu above.
For instance, if Base Layer is selected, this slider will multiply the Ao from the Base Layer. If the Base Layer has an Ao intensity value equal to zero, this slider will have no effects.

Additional Reflection | These properties control the additional reflections.

Color – Specifies the RGB color of the reflection.

Cubemap – Selects a cubemap.

Intensity – Controls the intensity of the reflection.

Blur – Specifies the amount of blur.

Puddles Animations | These properties control the look and the animation of the puddles

Wave Normal Map – Selects a wave normal map.

Main Wave – Enables or disables the main wave map.

Intensity – Controls the wave intensity.

Speed – Defines the speed offset of the main wave map.

Rotation – Determines the angle of rotation in degrees.

Tiling – Controls the texture repetition on the X and Y axis.

Detail Wave – Enables or disables the secondary detail wave map.

Intensity – Controls the wave intensity.

Speed – Defines the speed offset of the detail wave map.

Rotation – Determines the angle of rotation in degrees.

Tiling – Controls the texture repetition on the X and Y axis.

Displacement Properties | Use the height map stored in the Mask map from the layers above

Visualize Heightmap – Enables or disables the height map visualization.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

Tessellation Properties | These properties control the tessellation depending on camera distance

Tessellation – Controls the amount of tessellation. Be careful with this value by progressively increasing it.

Distance Min – Control the distance from the camera where the tessellation starts to fade out.

Distance Max – Control the distance from the camera where the tessellation ends.

Rainy Puddles :

Please refer to the standard shader, for Base layer (R), Layer1 (G) and Layer2 (B).

Rain Dots Properties | These properties control raindrops visible on dry surfaces

Gradient Tex – This texture controls the animation of the raindrops, from left to right. White value means that the water drops are 100% visible and gradually dissipate towards black(0%)

Intensity – Controls the intensity of the water drops.

Tiling – Controls the scale of the water drops. The larger this value, the smaller the water drops will be

Splash Speed – Defines the speed of appearance of water drops

Size – Controls the size of each water drops

Wet Properties (A) | These properties use the alpha(A) channel from the vertex color

Base Color – Specifies a base color visible in the wet surfaces. If "Color" is selected, no map will be displayed. Switch between the Base Color map from the Base Layer and the Wet map. If "Wet map" is selected, a map must be chosen in the Wet map slot below.

Color – Specifies the RGB color of the wet areas.

Wet map → Ao(A) – Selects a wet map (Only if "Wet map" is selected in the Base Color rollout menu above). An ambient occlusion map can be stored in the alpha channel.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Metalness – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Ao Intensity – Controls the intensity of ambient occlusion. This parameter is linked to the layer selected in the Base Color rollout menu above.
For instance, if Base Layer is selected, this slider will multiply the Ao from the Base Layer. If the Base Layer has an Ao intensity value equal to zero, this slider will have no effects.

Additional Reflection | These properties control the additional reflections.

Color – Specifies the RGB color of the reflection.

Cubemap – Selects a cubemap.

Intensity – Controls the intensity of the reflection.

Blur – Specifies the amount of blur.

Puddles Animations | These properties control the look and the animation of the puddles

Wave Normal Map – Selects a wave normal map.

Main Wave – Enables or disables the main wave map.

Intensity – Controls the wave intensity.

Speed – Defines the speed offset of the main wave map.

Rotation – Determines the angle of rotation in degrees.

Tiling – Controls the texture repetition on the X and Y axis.

Detail Wave – Enables or disables the secondary detail wave map.

Intensity – Controls the wave intensity.

Speed – Defines the speed offset of the detail wave map.

Rotation – Determines the angle of rotation in degrees.

Tiling – Controls the texture repetition on the X and Y axis.

Rain Ripples Properties | *These properties control the rain ripples effect*

X(Columns) - Y(Rows) - Z(Speed) - W(Strart Frame) – Specifies the numbers of columns and rows of the selected Texture Atlas Normal map.
- For exemple, the RainRipples 02_Atlas_Normal texture, which is used by default, is an atlas of 64 textures (64 cells = 8 columns x 8 rows).
The Z value modifies the flipbook animation speed.
The W value determines the frame where the animation starts. The first cell is always = 0.

- For exemple, the RainRipples 02_Atlas_Normal texture has 64 cells. If the first frame = 0, then the last frame = 63.

Texture Atlas Normal – Selects a texture atlas map. This can only be a normal map.

FlipBook Tiling – Specifies the number of tiling for the texture atlas.

Intensity – Controls the normal intensity.

Duplicate Texture Atlas – Enables a duplication of the texture atlas normal. This property let you easily break any visible tiling.

Intensity – Controls the normal intensity of the duplicated texture atlas.

Scale – Controls the scale of the duplicated texture atlas. This value is linked to the Flipbook Tiling value. So make sure to always set up the FlipBook Tiling value first.

Rotate Details – Specifies an angle(degree) of rotation of the duplicated texture atlas. The duplicated texture will have the same coordinate of the first texture atlas by default. Change the rotation value to move the new texture atlas from its point of origin.

OffsetXY – Controls the offset of the duplicated texture atlas.

Distortion – Controls the amount of distortion created by the ripples. This property is linked to the Wet map. If no Wet map is selected the distortion won't work.

Displacement Properties | Use the height map stored in the Mask map from the layers above

Visualize Heightmap – Enables or disables the height map visualization.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

Tessellation Properties | These properties control the tessellation depending on camera distance

Tessellation – Controls the amount of tessellation. Be careful with this value by progressively increasing it.

Distance Min – Control the distance from the camera where the tessellation starts to fade out.

Distance Max – Control the distance from the camera where the tessellation ends.

Snow:

Please refer to the standard shader, for Base layer (R) and Layer1 (G).

Layer2 (B)Snow Properties | Uses the blue(B) channel from the vertex color

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel.
Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Source – Selects the smoothness map stored in the metallic alpha or base color alpha

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

Use Emission From Main Properties – Enables the use of the emission map selected in the layer1(R).

Intensity – Controls the emission intensity.

Displacement Properties | Use the height map stored in the Mask map

Visualize Heightmap – Enables or disables the height map visualization.

Heightmap Spread – Controls the luminance of the height map.

Heightmap Contrast – Controls the amount of contrast of the height map.

Displacement – Controls the displacement of the vertices.

Blend Properties | An area is added around the painting which blend this layer with the one painted below using the height map depth

Use Heightmap Depth – Enables or disables the height map blend effect.

Constrain By Painted Mask – Enable this checkbox to constrain the blend effect depending on the painting. If disabled, it will expend the blending area uniformly to the entire texture below.

Mask Opacity – Controls the opacity of the layer. If set to 0, the layer will be invisible.

Amount – Controls the amount of luminance of the blending. The default value is 1. Decrease the value to blend this layer. This value will depend on the texture selected in the Mask map slot of the previous layer.

Contrast – Controls the amount of contrast of the blending. The default value is 3.5

___ *Sparkles Properties* ___ *Controls the glittering effect*

Source – Selects between Smoothness or Emissive mode. None, will disable the glitters.

Selecting smoothness, the glittering effect will only be visible depending on the light position. RGB map is in supported.

Emissve mode, will display the glittering everywhere. RGB map in supported.

Both mode use shadow masking property.

Blending Mode Additive – Enabled only if SmoothnessSparkles is selected above. By default, the blending mode is set to lighten.

The smoothness map from the snow properties and the sparkles map will blend smoothly. Thus, increasing the smoothness value from the smoothness map will gradually mask the white value of the sparkles until they are completely gone.

Enable this property, if you plan to use a smoothness value greater than 0.3.

Visualize Maps – Visualize the maps to configure them more easily.

Sparkle Mask – The Sparkle Map is stored in RGB channels. The Dot Mask is stored in the alpha (the white value will specify where the sparkle will be visible.).
The package comes with three Sparkle Mask.
Sparkle Mask_Crystals Color 01_DotMaskx3 A is selected by default.

Dot Mask – *Affects only the map contained in the alpha channel of the Sparkle Mask*

Tiling – Controls the XY Tiling of the Dot mask.

Intensity – Controls the intensity of the Dot mask.

Contrast – Controls the amount of contrast of the Dot mask.

Spread – Controls the diffusion amount of the Dot mask. For custom map, keeping a value between 0.4 and 0.6 should work in most cases.

Sparkle Map – *Affects the maps contained in the RGB channel of the Sparkle Mask*

Tiling – Controls the XY Tiling of the Sparkle map.

Intensity – Controls the intensity of the Sparkle map.

Contrast – Controls the amount of contrast of the Sparkle map.

Amount – Controls the amount of sparkle dots.

Custom Properties – *Affects the sparkle effect*

Tiling Instance – This value will multiply both of the DotMask and Sparkle Map Tiling values.

Sparkle Power – Increases the Intensity of the glitters. May cause an unexpected result in Smoothness mode (keep a value between 1 and 1.5).

Desaturate – Controls the amount of desaturation of the Sparkle map. If the sparkle source is set to Smoothness, the sparkle are automatically desaturated, since smoothness only takes into account grayscale values.

Shadow Mask – Use this property to hide the sparkles in contact with all the shadows cast by the directional light.

Ao Mask – Mask the sparkles using the Ao map stored in the Mask map. The Mask intensity depends on the Ao Intensity slider.

Tessellation Properties | These properties control the tessellation depending on camera distance

Tessellation – Controls the amount of tessellation. Be careful with this value by progressively increasing it.

Distance Min – Control the distance from the camera where the tessellation starts to fade out.

Distance Max – Control the distance from the camera where the tessellation ends.

Ice : *Coming soon*

Shaders Lite

Please refer to the Pro versions. The Lite shaders are a simplified version that contain the base layer and the effect layer.