26.4 Editors - Properties Editor - View Layer Properties Tab

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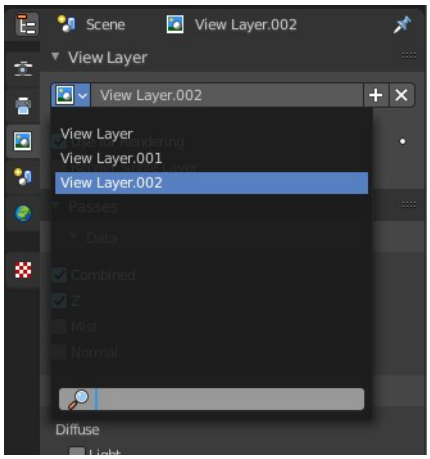
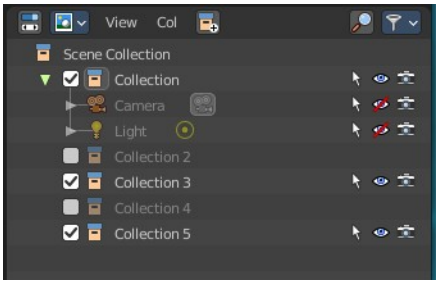
View Layer

View Layers reference to Scene collections. They allow to set their visibility, selectability and other options. Each View Layer can use any collection you wish, and multiple View Layers can use the same collections or different collections.

Usually you have just one View layer for the whole scene. But you can create more View layers in the header, and rename them there.



View layers are by default active for all collections. You can exclude them for specific layers in the Outliner. Select the view layer, and turn off the collections that you don't want to have active in this view layer.

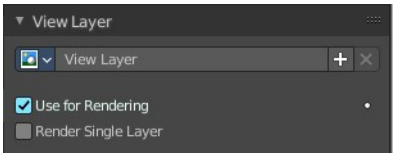


Note. The different render engines uses different view layer functionality. And so the panels and available options differs.

Render Engine

Shows the active render engine. Specific renderer does have other settings. And you can also switch to another renderer. But note that this is more a visual guide. It misses the Cycles render settings.

View Layer Panel - All Renderers



View Layer Prop

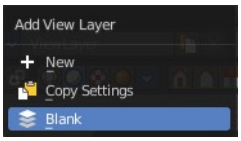
View Layer list

The list of available view layers

View Layer edit box

Set the active view layer, and view and edit the name of the current active view layer. Click into the edit box to edit the name.

Add View Layer



Adds a new view layer.

New

Adds a new view layer with the default content.

Copy Settings

Adds a new view layer with the content of the current active layer.

Blank

Adds a new view layer and deactivates all collections.

Remove View Layer

Removes the selected view layer.

Use for Rendering

Disable or enable the render layer.

Animate Property

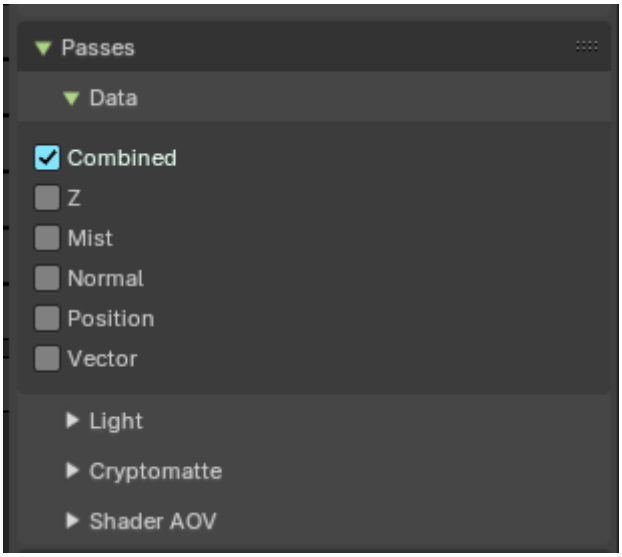
This property can be animated. Activating this button sets a keyframe at the current frame.

Render Single Layer

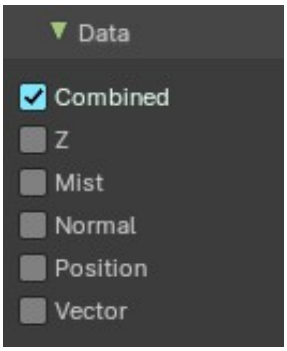
Only render the active layer. This just works for rendering from the interface. Rendering from command line ignores this setting.

Passes panel - EEVEE

Here you enable or disable passes for single features.



Data subpanel



Combined

Deliver full combined RGBA Buffer.

Z

Deliver Z Value pass.

Mist

Deliver Mist factor pass. 0.0 to 1.0

Normal

Deliver Normal pass.

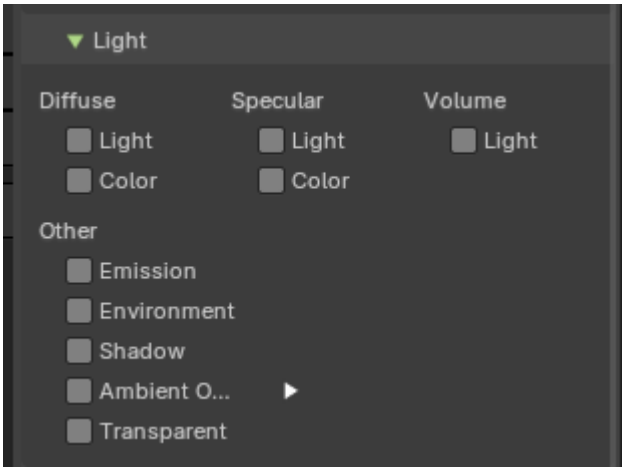
Position

Deliver Position pass.

Vector

Deliver Vector pass.

Light subpanel



Diffuse

Light

Deliver diffuse direct pass.

Color

Deliver diffuse color pass.

Specular

Light

Deliver specular direct pass.

Color

Deliver specular color pass.

Volume

Light

Deliver volume direct light pass.

Other

Emission

Deliver emission pass.

Environment

Deliver environment lighting pass.

Shadow

Deliver shadow pass.

Ambient Occlusion

Deliver Ambient Occlusion pass. Ambient Occlusion needs to be enabled in the Render Properties.

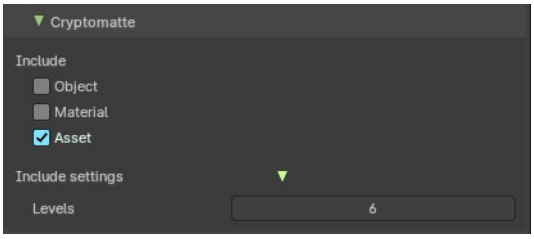
Occlusion Distance

Distance of object that contribute to the ambient occlusion effct.

Transparent

Deliver alpha blended surfaces in a separate pass.

Cryptomatte subpanel



Cryptomatte passes can be used to isolate objects or materials or assets in compositing.

Include

Object

Render Cryptomatte Object Pass.

Materials

Render Cryptomatte Materials Pass.

Asset

Render Cryptomatte Asset Pass.

Include Settings

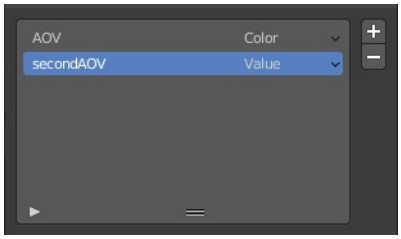
These settings appears when you tick one of the above includes.

Levels

How many unique objects can be distinguished per pixel.

Note: *Only active when you have something to include activated.*

Shader AOV subpanel



AOV stands for Arbitrary Output Variables. Here you can add custom render passes for arbitrary shader node components. These values can then be used in the post processing in the node editor.

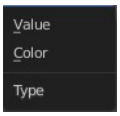
To use Shader AOVs create the pass in the Shader AOV panel then reference this pass with the AOV Output shading node. Each AOV in the list consists of a Name and Data Type.

List of AOV

Name

The name of the render pass. This is the Name that is referenced in the AOV Output node. You can name it as you like as long as the name does not conflict with enabled built-in passes.

Data Type



Right clicking at the black triangle at the end will refveal the type menu.

Shader AOVs can either express a Color or a Value variable. The Color variable as the name suggest can be used for a color but also a normal value. A Value variable can be used for any single numerical value.

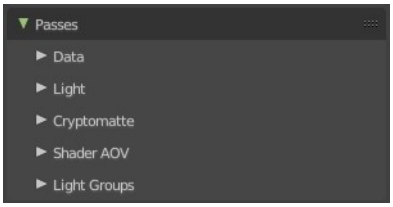
Add AOV

Adds an AOV to the list.

Remove AOV

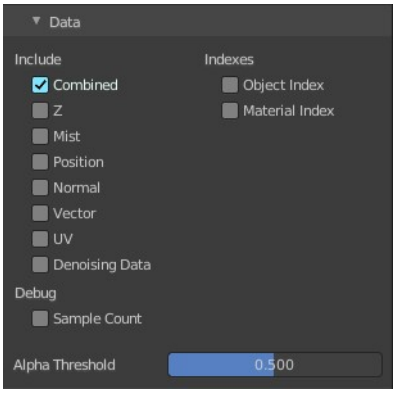
Removes the selected AOV from the list.

Passes Panel - Cycles



Here you enable or disable render passes for single features.

Data subpanel



Include

Combined

Deliver full combined RGBA Buffer.

Z

Deliver Z Value pass.

Mist

Deliver Mist factor pass. 0.0 - 1.0.

Normal

Deliver Normal pass.

Vector

Deliver Speed Vector pass.

UV

Deliver UV pass.

Denoising Data

Store the denoising feature passes and the noisy image.

Indexes

Object Index

Deliver Object Index pass.

Material Index

Deliver Material Index pass.

Debug

Sample Count

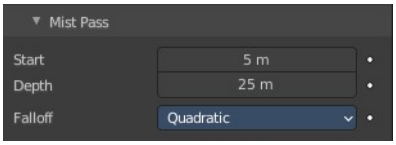
Number of samples/camera rays per pixel.

Alpha Threshold

Z, Index, Normal, UV and Vector passes are just affected by surfaces with alpha transparency equal or higher this threshold.

Mist subpanel

When you activate Mist pass, then the Mist Pass subpanel shows.



Start

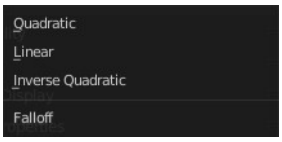
The starting distance of the mist, measured from the camera.

Depth

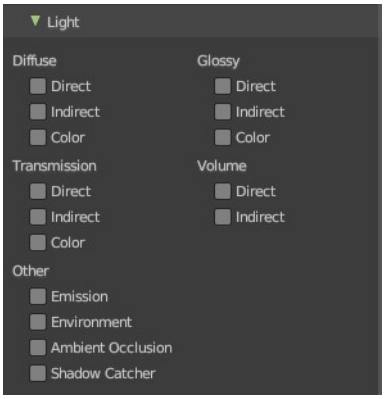
The distance over which the mist effect fades in.

Falloff

The falloff progression of the mist.



Light subpanel



Diffuse

Direct

Deliver direct pass.

Indirect

Deliver indirect pass.

Color

Deliver color pass.

Glossy

Direct

Deliver direct pass.

Indirect

Deliver indirect pass.

Color

Deliver color pass.

Transmission

Direct

Deliver direct pass.

Indirect

Deliver indirect pass.

Color

Deliver color pass.

Volume

Direct

Deliver direct pass.

Indirect

Deliver indirect pass.

Color

Deliver color pass.

Other

Emission

Deliver Emission pass.

Environment

Deliver Environment pass.

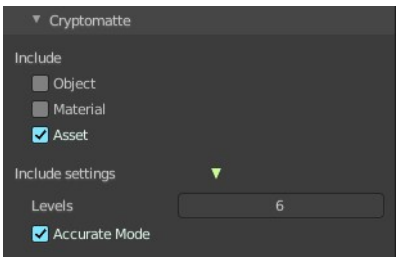
Ambient Occlusion

Deliver Ambient Occlusion pass.

Shadow Catcher

Pass containing light and shadows that you want to multiply into the background image.

Cryptomatte subpanel



Cryptomatte passes can be used to isolate objects or materials or assets in compositing.

Include

Object

Render Cryptomatte Object Pass.

Materials

Render Cryptomatte Materials Pass.

Asset

Render Cryptomatte Asset Pass.

Include Settings

These settings appears when you tick one of the above includes.

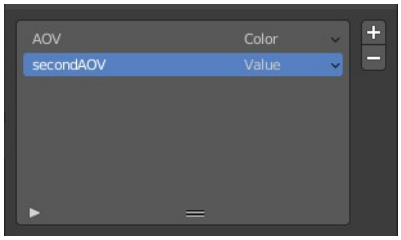
Levels

How many unique objects can be distinguished per pixel.

Accurate Mode

Generate a more accurate cryptomatte pass. This feature renders at the CPU only, and consumes more memory.

Shader AOV subpanel



AOV stands for Arbitrary Output Variables. Here you can add custom render passes for arbitrary shader node components. These values can then be used in the post processing in the node editor.

To use Shader AOVs create the pass in the Shader AOV panel then reference this pass with the AOV Output shading node. Each AOV in the list consists of a Name and Data Type.

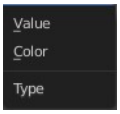
List of AOV

Name

The name of the render pass. This is the Name that is referenced in the AOV Output node. You can name it as you like as long as the name does not conflict with enabled built-in passes.

Data Type

Right clicking at the black triangle at the end will refveal the type menu.



Shader AOVs can either express a Color or a Value variable. The Color variable as the name suggest can be used for a color but also a normal value. A Value variable can be used for any single numerical value.

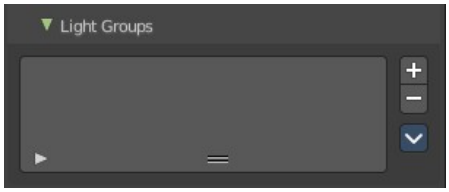
Add AOV

Adds an AOV to the list.

Remove AOV

Removes the selected AOV from the list.

Light Groups sub panel



Light groups are a type of pass that only contains light render data from a subset of light sources and their influences. This is useful to set light sources to affect only specific objects in a scene.

Light Groups passes are created in the View Layer tab then light sources and influences are assigned to individual passes in the Object tab in the Light Option panel of the light source and objects.

Any light source (lamps, objects with emission materials and/or the environment) can be assigned to light groups.

To assign a light source to a Light Pass, use the Light Options panel in the Object tab of the light source.

Note: *Light groups are identified by name - therefore the name of the Light Group in the View Layer and the name that in set in and Light Source Light Options must match for them to to be included in the Light Group pass.*

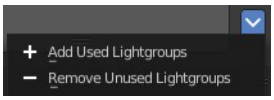
Add Light Group

Adds a new light group to the list.

Remove Light Group

Removes the selected lightgroup from the list.

Lightgroup Sync menu



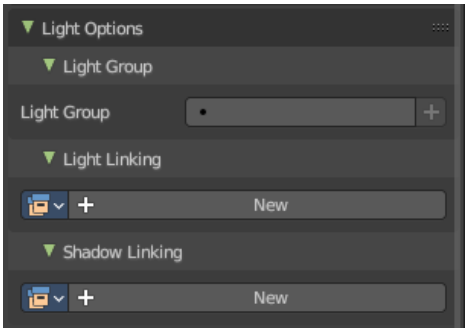
Add used Light groups

Add all assigned light sources with light groups to the list. Sometimes there are objects that are assigned to a light group which are not in the list yet – typical when appended objects from another file, as an example.

Remove unused light groups

Removes all light groups from the list that has no user.

Light Options – Object Properties Tab



With light linking and Light Group passes, light sources can be set to affect only specific objects in the scene in the Object tab > Light Options panel.

Note: *Objects must be have an emission material to have an influence in the Light Group.*

Light Group

Here you assign the light source to a Light Group.

Light Linking

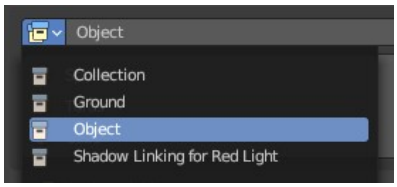
Here you create and assign a Light Linking group to objects and collections. This assists in including or excluding objects from a lights influence. Default assignment of a Light Group will influence everything in the scene.

Note: *Consider this as an exclusive override object and collection influence of an emission object or light source.*

New Light Linking Collection

Creates a new empty Light Linking collection. Here you can drag and drop objects and collections for object and collection overrides.

Collection Drop Down Selector

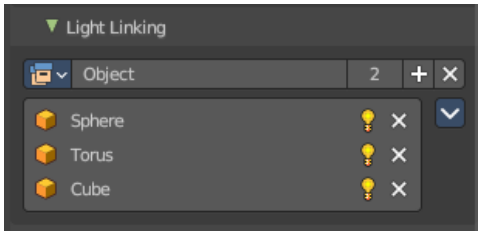


Selects an existing collection as the Light Linking influence of the Light Group.

Remove Collection

Removes the collection from the Light Group

Light Linking List



This list shows the objects and collections in the assigned Light Linking influence collection.

Toggle object Light Influence

Toggles the object influence or exclusion from the listed light group light

sources.

Remove object from Collection

Removes the object from the listed light group collection. Keep in mind this will change collection order in the View Layer mode of the Outliner Editor.

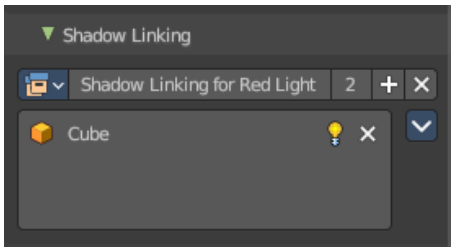
Note: *You can drag and drop any object or collection from the Outliner Editor into the light group list at any time. Keep in mind this changes collection order in the Outliner.*

Light Linking Sync Menu

Select Light Linking Receivers

Selects all object light influences in the Light Linking list.

Shadow Linking

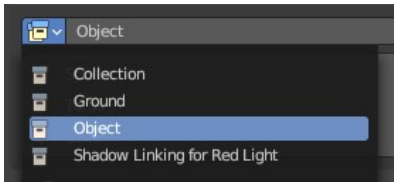


Here you create and assign a Shadow Linking group with objects and collections. Shadow linking additionally gives control over which objects acts as a shadow blocker or shadow exception for the light sources of a light group.

New Shadow Linking Collection

Creates a new empty collection. Here you can drag and drop objects and collections.

Collection Drop Down Selector



Selects an existing collection as the influence of the Light Group.

Remove Collection

Removes the collection from the Light Group

Shadow Linking List

This list shows the objects and collections in the assigned Shadow Linking influence collection.

Toggle object Light Influence

Toggles the object influence or exclusion from the listed light group light sources.

Remove object from Collection

Removes the object from the listed light group collection. Keep in mind this will change collection order in the View Layer mode of the Outliner Editor.

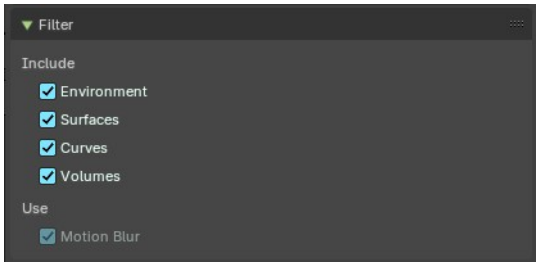
Note: *You can drag and drop any object or collection from the Outliner Editor into the light group list at any time. Keep in mind this changes collection order in the Outliner.*

Shadow Linking Sync Menu

Select Light Linking Blockers

Selects all object shadow blockers in the Shadow Linking list.

Filter Panel - EEVEE



Include

Environment

Render Sky in this layer.

Surfaces

Render solid surfaces in this layer.

Curves

Render Hair in this layer.

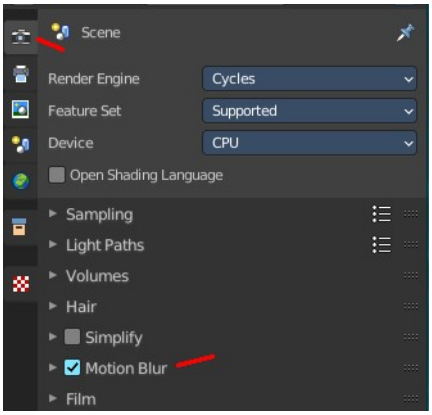
Volume

Render volumes in this layer.

Use

Motion Blur

Render Motion Blur, if enabled in the scene.



Filter Panel - Cycles

Include

Environment

Render Sky in this layer.

Ambient Occlusion

Render Ambient Occlusion in this layer.

Surfaces

Render solid surfaces in this layer.

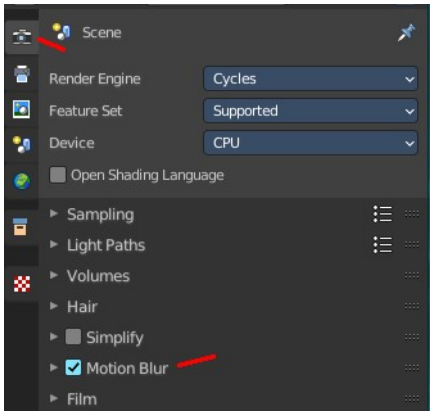
Curves

Render Hair in this layer.

Volume

Render volumes in this layer.

Use

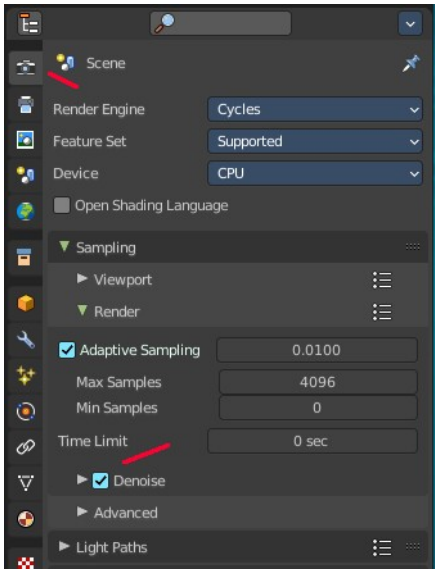


Motion Blur

Render Motion Blur, if enabled in the scene.

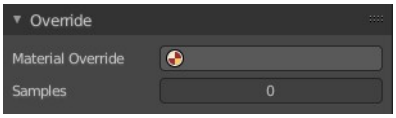
Denoising

Use Denoising, if enabled in the scene.

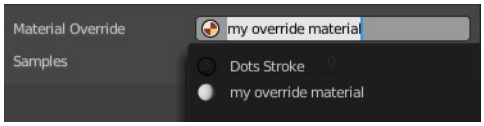


Override Panel - Cycles

Here you can add a material that overrides all other materials in this layer. This allows clay renderings.



Material Override

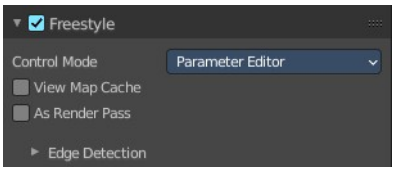


Pick a material in the scene that should override all other materials.

Samples

Override number of render samples for this view layer. A value of 0 will use the scene setting values.

Freestyle Panel

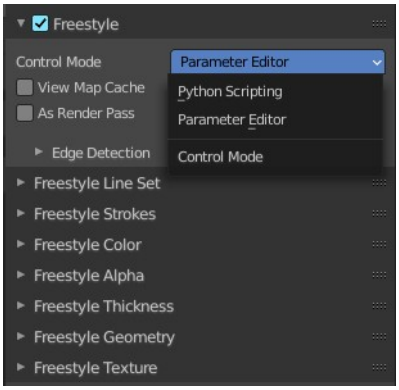


This panel and all further freestyle panels just shows when you have Freestyle activated in the Render Properties!

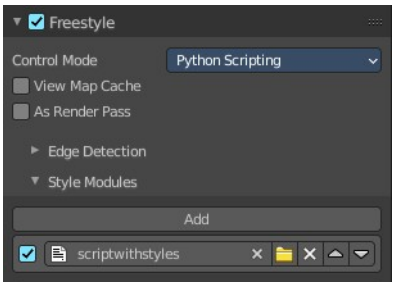
Enable

Enables or disables the freestyle layer in the current view layer.

Control Mode



You can either control the freestyle shapes by the settings in the panels. Or you can use a python script to define all the shapes. In this case the panels vanishes, and you can add your style script below.



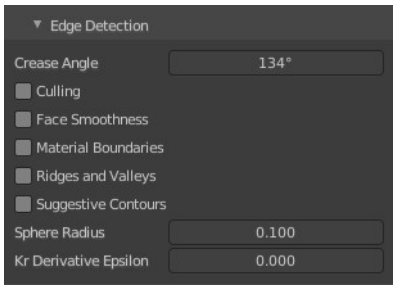
View Map Cache

Keep the computed Key Map. And avoid recalculation if mesh geometry is unchanged.

As Render Pass

Renders the freestyle pass as a separate pass instead of adding it as an overlay to the Combined pass.

Edge detection subpanel



How the edge detection happens.

Crease Angle

Angular Threshold for detecting crease angles.

Culling

Ignore edges that are out of view.

Face Smoothness

Take the face smoothness into account for the view map calculation.

Material Boundaries

Use Material Boundaries.

Ridges and Valleys

Use ridges and valleys for the view map calculation.

Suggestive Contours

Use suggestive contours.

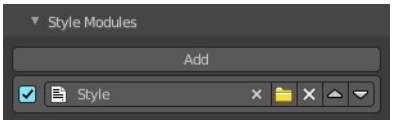
Sphere Radius

The sphere radius for calculating curvatures

Kr Derivate Epsilon

The Ki Derivate Epsilon radius for calculating suggestive contours.

Style Module subpanel

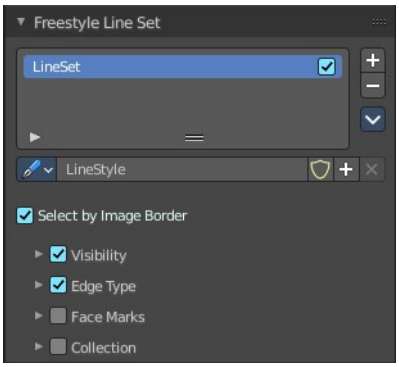


This panel appears with Control Mode Python Scripting. Add a python script that defines the style.

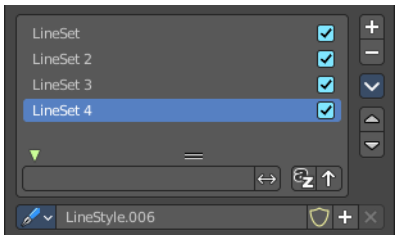
The structure of such a style is not defined nor described. Please ask the Blender developers.

Freestyle Line Set Panel

The line set settings.



List of Line Sets



A line set holds the line style. You can have more than one line set. But just one LineStyle per set.

The line sets can be activated or deactivated with the checkbox at the end.

Drag Handler

Allows to resize the list.

Search field

When you click at the triangle button then you can reveal a search field.

Edit Box

Tpye in the search term and hit enter.

Invert

Inverts the search.

Sort by Name

Sorts the list by name

Reverse

Reverts the list content.

Add Line Set

Adds a new line set. Adding a new line set also adds a new LineStyle.

Remove Line Set

Removes the selected line set.

Lineset Specials menu

Copy Line Set

Copies the currently selected line set and all its settings.

Paste Line Set

Pastes the copied line set and all its settings into the currently selected line set.

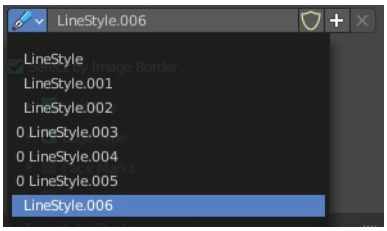
Move Line Set up or down

Moves the selected up or down in the list.

Line style data property

Data Browser

A list of available LineStyles.



Edit Box

Displays the name of the currently active LineStyle. It also allows you to rename the LineStyle. Click into the edit box, change the name, hit enter.

Fake User

Save this LineStyle with the scene even when it has no user. Fake User is an old Blender concept to keep data in the scene that has no user. Data without an user gets usually deleted with saving the scene.

Add new LineStyle

Adds a new LineStyle.

Remove LineStyle

This button is dysfunctional and permanently greyed out. Once added LineStyles are permanent by Blender design since every line set needs at least one linestyle. You can only remove unused linestyles by purging unused Data in the outliner.

Select by Image Border

Select feature edges by image border.

Visibility Subpanel

Determine how to use visibility for feature edge detection.

Type

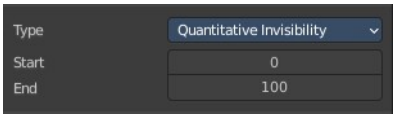
Visible

Select visible feature edges.

Hidden

Select hidden feature edges.

Quantitative invisibility



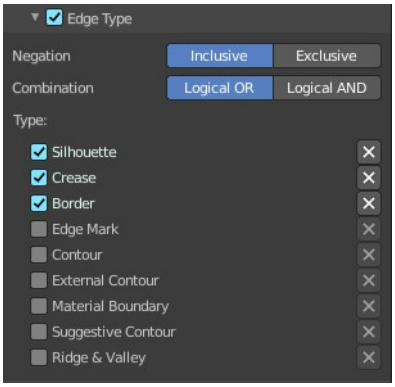
Select feature edges within a range of quantitative invisibility values. The

value is called QI.

Start
The first value.

End
The last value.

Edge Type subpanel



Selection by Edge Types

The checkbox in the header activates or deactivates the feature. Select feature edges based on Edge Types.

Negation

Inclusive

Select edges by satisfying the selected options.

Exclusive

Select edges by satisfying the exact opposite of the selected options.

Combination

Logical Or

Select edges by satisfying at least of the selected options.

Logical And

Select edges by satisfying all of the selected options.

Type

What type to use. The names should be self explaining. The X Button at the end is to exclude this type instead of including it.

Face Masks Subpanel

Selection by Face Marks

Select Feature Edges by Face Marks.

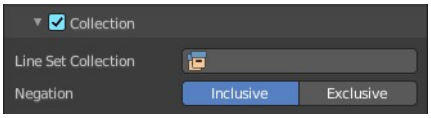
Negation

Include or exclude the edges selected by face marks.

Condition

Select a feature edge if one face is marked. Or select a feature edge if the two adjacent faces are marked.

Collection Subpanel



Selection by Collection

Select feature edges based on a collection of objects.

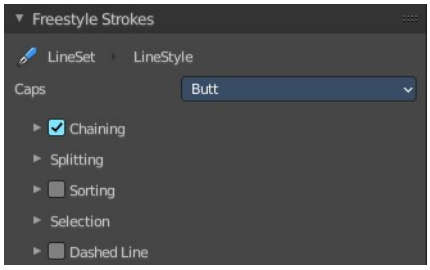
Line Set Collection

Pick the collection that you want to use.

Negation

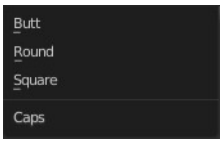
Select feature edges by including or excluding the selected collection.

Freestyle Strokes Panel



Caps

Select the shape of both ends of the stroke. Butt, Round or Square.



Chaining Subpanel

Chaining

Enable chaining of feature edges.

Method

How feature edges are jointed to form chains.

Plain

Feature edges are jointed plain.

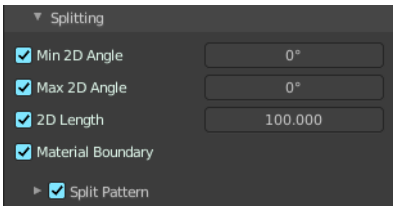
Sketchy

Feature edges are jointed sketchy.

Rounds

Number of rounds in a sketchy multiple touch.

Splitting subpanel



Min 2D Angle

Minimum 2d angle for splitting chains.

Max 2D Angle

Maximum 2d angle for splitting chains.

2D Length

Curvilinear length for 2d splitting

Material Boundary

Split chains of feature edges at material boundaries.

Split Pattern sub subpanel

Use Split Pattern

Enable chain splitting by dashed line patterns.

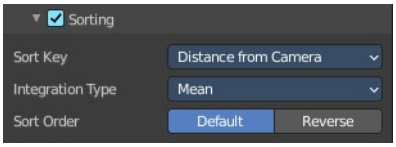
Dash 1, 2, 3

Length of the dashes for splitting.

Gap 1, 2, 3

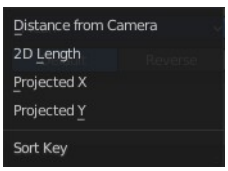
Length of the gaps for splitting.

Sorting subpanel

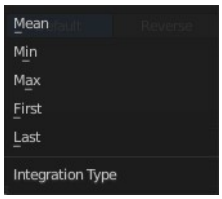


Sort Key

How to determine the stacking order of chains.



Integration Type

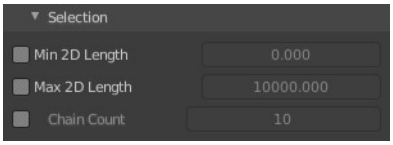


How the sort key is computed for each chain.

Sort order

Sort by default or inverse.

Selection Subpanel



Min 2D Length

The selection of chains by a minimum 2D length.

Max 2D Length

The selection of chains by a maximum 2D length.

Chain Count

Select first N chains. N stands for a variable, and is defined in the edit box.

Dashed Line subpanel

Dashed Line

Enable dashed line. A line is then displayed as dashes.

Dash 1, 2, 3

Length of the dash for the dashed lines.

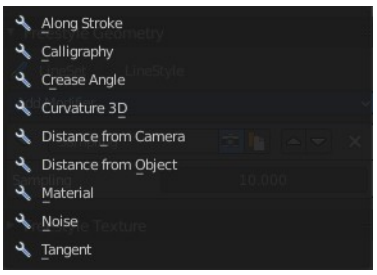
Gap 1, 2, 3

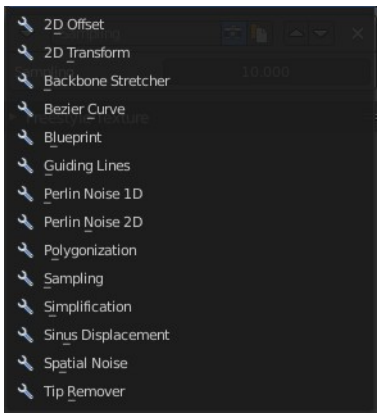
Length of the gap for the dashed lines.

Freestyle Modifiers

The Freestyle panels Freestyle Color, Freestyle Alpha, Freestyle Thickness and Freestyle Geometry allows you to use so called modifiers. Modifiers allows you to modify these settings in several aspects.

Some modifier, like the along stroke modifier, does have the same name. But has here and there different functionality.





Color, Alpha and Thickness Modifier

Header

From left to right.

Triangle button

Open or close the modifier panel.

Edit Box

Displays the name of the modifier. You can also rename it. Click into the edit box, change name and hit enter.

Use

Enable the modifier.

Copy Modifier

Copies the Modifier.

Move Modifier

Moves the modifier up or down the list.

Remove Modifier

Removes the modifier from the list.

Color Ramp

The color, alpha and thickness modifiers all have a color ramp.

Controls

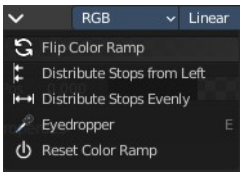
+

Add a stop to your color ramp. The stop will be added after the selected one, in the middle to the next one.

-

Deletes the selected color stop from the list.

Tools menu



Flip Color Ramp

Flips the gradient, inverting the values of the color ramp.

Distribute Stops from Left

Rearrange the stops so that every step has the same space to the right.

Distribute Stops Evenly

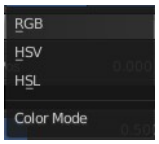
Space between all neighboring stops becomes equal.

Eyedropper (pipette icon) E

An Eyedropper to sample a color or gradient from the interface to be used in the color ramp.

Reset Color Ramp

Resets the color ramp to its default state.



Color Mode

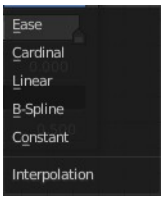
RGB

Blends color by mixing each color channel and combining.

HSV/HSL

Blends colors by first converting to HSV or HSL, mixing, then combining again. This has the advantage of maintaining saturation between different hues, where RGB would de-saturate, this allows for a richer gradient.

Interpolation



Ease

Uses an Ease Interpolation for the color stops.

Cardinal

Uses a Cardinal Interpolation for the color stops.

Linear

Uses a Linear Interpolation for the color stops.

B-Spline

Uses a B-Spline Interpolation for the color stops.

Constant

Uses a Constant Interpolation for the color stops.

Color Ramp

The color band. A click at one of the color stops makes it the active one. You can move the color stops by clicking at them and dragging them around.

Active Color Stop elements

Adjust the active color stop.

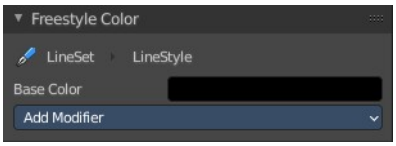
Choose active color stop
Choose the color stop by index.

Number of Stop
The active color stop.

Pos


The position and color of the active color stop. The range goes from 0.000 to 1.000.

Freestyle Color panel



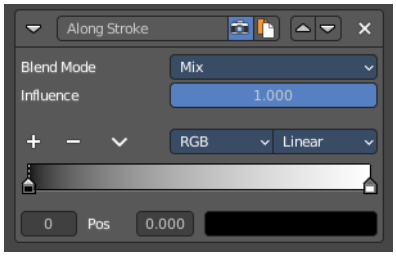
Modify the color of the stroke.

Base Color

Here you can choose the base color that needs to be modified.

Freestyle Color modifiers

Along Stroke



Add a colorband along the stroke.

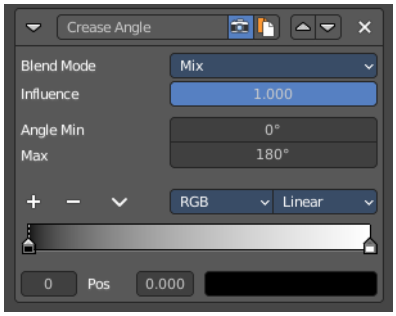
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Crease Angle



Add a color band along a crease angle. Which is the angle between two adjacent faces) If a stroke segment does not lie on a crease , then its properties are not touched by the modifier.

Blend Mode

The color blend mode.

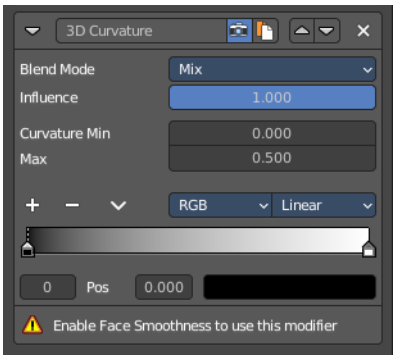
Influence

The influence of the modifier.

Angle Min / Max

The minimum and maximum crease angle to modify thickness.

Curvature 3D



This modifier is based on the radial curvatures of the underlying 3D surface. The curvature of a 2D curve at a point is a measure of how quickly the curve turns at the point. The quicker the turn is, the larger the curvature is at the point. The curvature is zero if the curve is a straight line. Radial curvatures are those computed for a 2D curve that appears at the cross section between the 3D surface and a plane defined by the view point (camera location) and the normal direction of the surface at the point.

This modifier requires to have the Face Smoothness option on and the object needs to have Smooth Shading.

Blend Mode

The color blend mode.

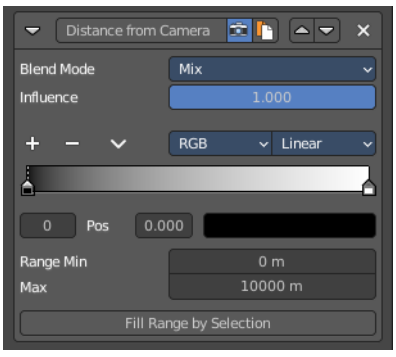
Influence

The influence of the modifier.

Curvature Min and Max

The limits of the mapping. If the current point of the stroke is at Min Curvature or less from the target, it will take the start point of the mapping. If it is at Max Curvature or more from the target, it will take the end-point value of the mapping.

Distance from Camera



Recalculates the base property by the distance to the camera.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

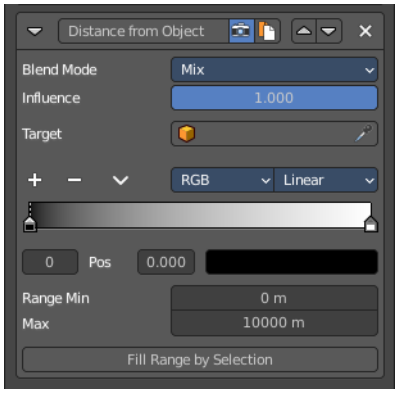
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Fill Range by Selection

Sets the minimum and maximum range values from the distances between the current selected mesh vertices and the camera or the target.

Distance from Object



Recalculates the base property by the distance to a chosen object.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Target

Pick the target object.

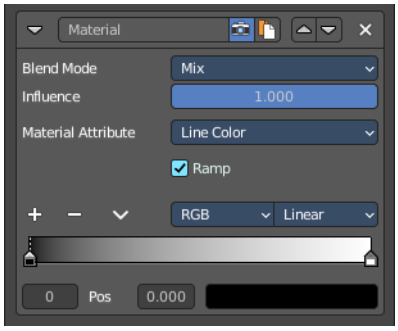
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Fill Range by Selection

Sets the minimum and maximum range values from the distances between the current selected mesh vertices and the camera or the target.

Material



Alters the base property on the current material under the stroke.

Blend Mode

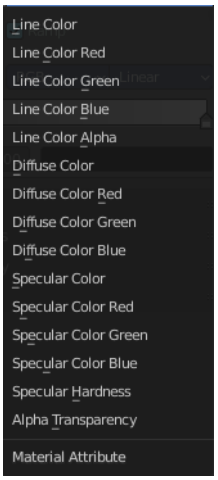
The color blend mode.

Influence

The influence of the modifier.

Material Attribute

What attribute of the material under the stroke to alter.

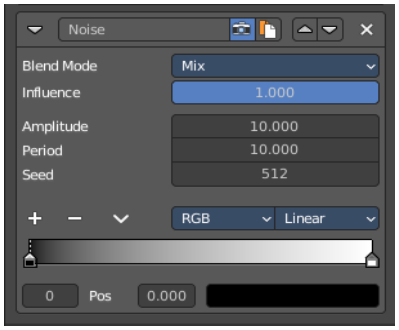


Ramp

Shows and activates the color ramp.

Noise

Uses a noise based pseudo random number generator to add some variation along the stroke.



Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Amplitude

The maximum value of the noise. A higher amplitude means a less transparent (more solid) stroke.

Period

The period of the noise. This means how quickly the property value can change. A higher value means a more smoothly changing color along the stroke.

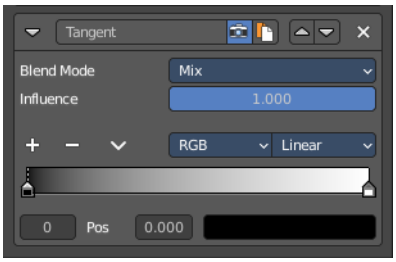
Seed

Seed used by the pseudo-random number generator.

Asymmetric

Thickness only – Allows the thickness to be distributed unevenly at every point.

Tangent



Modifies the base value on the traveling direction of the stroke, evaluated at the stroke's vertices.

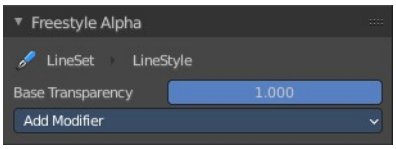
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Freestyle Alpha panel



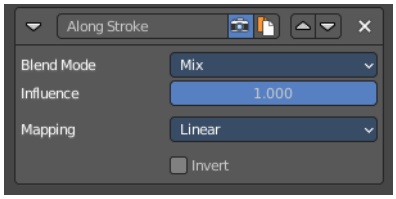
Modify the transparency of the stroke.

Base Transparency

The base transparency that you want to modify.

Freestyle Alpha modifiers

Along Stroke



Add a gradient along the stroke.

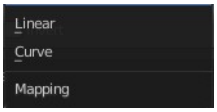
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping

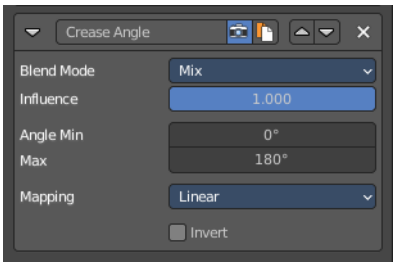


The mapping type. Linear or Curve.

Invert

Inverts the values.

Crease Angle



Add a gradientalong a crease angle. Which is the angle between two adjacent faces) If a stroke segment does not lie on a crease , then its properties are not touched by the modifier.

Blend Mode

The color blend mode.

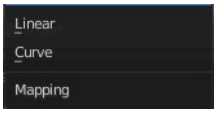
Influence

The influence of the modifier.

Angle Min / Max

The minimum and maximum crease angle to modify thickness.

Mapping

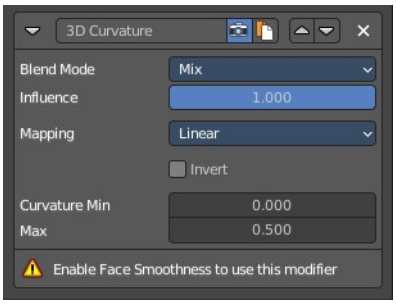


The mapping type. Linear or Curve.

Invert

Inverts the values.

Curvature 3D



This modifier is based on the radial curvatures of the underlying 3D surface. The curvature of a 2D curve at a point is a measure of how quickly the curve turns at the point. The quicker the turn is, the larger the curvature is at the point. The curvature is zero if the curve is a straight line. Radial curvatures are those computed for a 2D curve that appears at the cross section between the 3D surface and a plane defined by the view point (camera location) and the normal direction of the surface at the point.

This modifier requires to have the Face Smoothness option on and the object needs to have Smooth Shading.

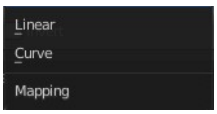
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping



The mapping type. Linear or Curve.

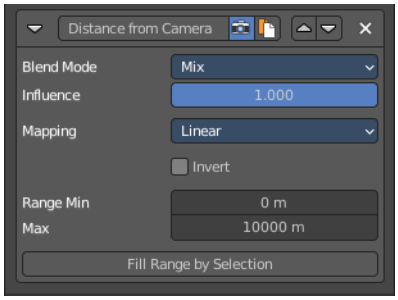
Invert

Inverts the values.

Curvature Min and Max

The limits of the mapping. If the current point of the stroke is at Min Curvature or less from the target, it will take the start point of the mapping. If it is at Max Curvature or more from the target, it will take the end-point value of the mapping.

Distance from Camera



Recalculates the base property by the distance to the camera.

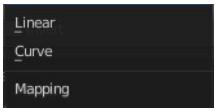
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping



The mapping type. Linear or Curve.

Invert

Inverts the values.

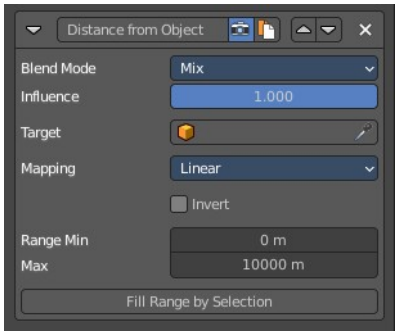
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Fill Range by Selection

Sets the minimum and maximum range values from the distances between the current selected mesh vertices and the camera or the target.

Distance from Object



Recalculates the base property by the distance to a chosen object.

Blend Mode

The color blend mode.

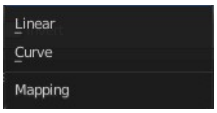
Influence

The influence of the modifier.

Target

Pick the target object.

Mapping



The mapping type. Linear or Curve.

Invert

Inverts the values.

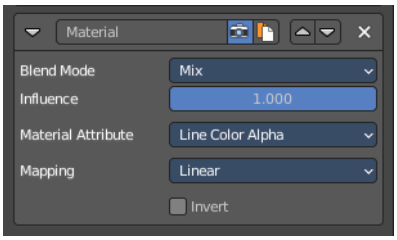
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Fill Range by Selection

Sets the minimum and maximum range values from the distances between the current selected mesh vertices and the camera or the target.

Material



Alters the base property on the current material under the stroke.

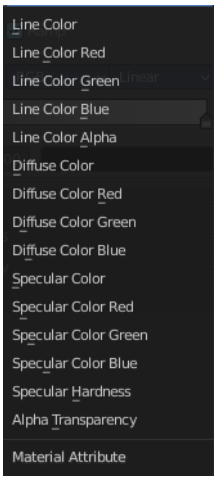
Blend Mode

The color blend mode.

Influence

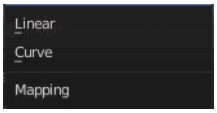
The influence of the modifier.

Material Attribute



What attribute of the material under the stroke to alter.

Mapping

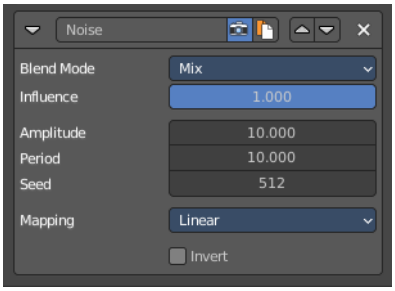


The mapping type. Linear or Curve.

Invert

Inverts the values.

Noise



Uses a noise based pseudo random number generator to add some variation along the stroke.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Amplitude

The maximum value of the noise. A higher amplitude means a less transparent (more solid) stroke.

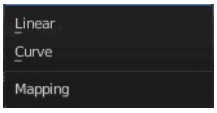
Period

The period of the noise. This means how quickly the property value can change. A higher value means a more smoothly changing color along the stroke.

Seed

Seed used by the pseudo-random number generator.

Mapping

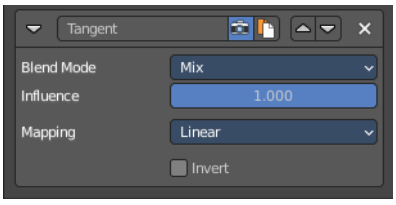


The mapping type. Linear or Curve.

Invert

Inverts the values.

Tangent



Modifies the base value on the traveling direction of the stroke, evaluated at the stroke’s vertices.

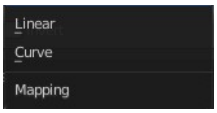
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping

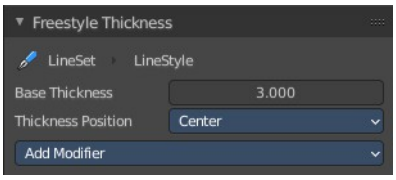


The mapping type. Linear or Curve.

Invert

Inverts the values.

Freestyle Thickness panel



Modify the thickness of the stroke.

Base Thickness

The base thickness that you want to modify.

Thickness Position

The thickness position of silhouettes and border edges.

Center

Silhouettes and border edges are centered along the stroke.

Inside

Silhouettes and border edges are drawn inside of the stroke.

Outside

Silhouettes and border edges are drawn outside of the stroke.

Relative

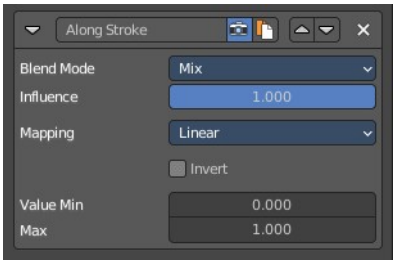
Silhouettes and border edges are shifted by a user defined thickness ratio.

Thickness Ratio

The thickness ratio to shift the silhouettes and border edges.

Freestyle Thickness modifiers

Along Stroke



Add a gradient along the stroke.

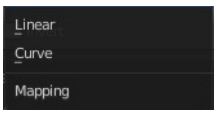
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping



The mapping type. Linear or Curve.

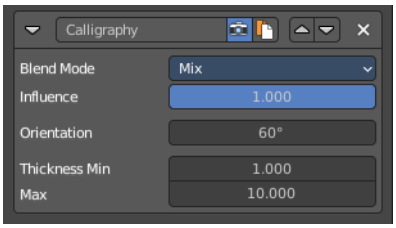
Invert

Inverts the values.

Value Min / Max

Minimum and maximum output value.

Calligraphy



Generates different thickness, based on the orientation of the stroke. The result is a stroke thickness that orients at calligraphy.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

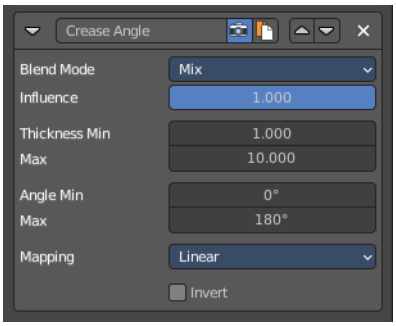
Orientation

The angle of the virtual drawing tool, based at the vertical axis of the image. The thickest strokes will align with this angle.

Thickness Min / Max

Minimum and maximum output value.

Crease Angle



Add a gradientalong a crease angle. Which is the angle between two adjacent faces) If a stroke segment does not lie on a crease , then its properties are not touched by the modifier.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

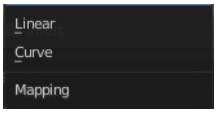
Thickness Min / Max

The minimum and maximum thickness.

Angle Min / Max

The minimum and maximum crease angle to modify thickness.

Mapping

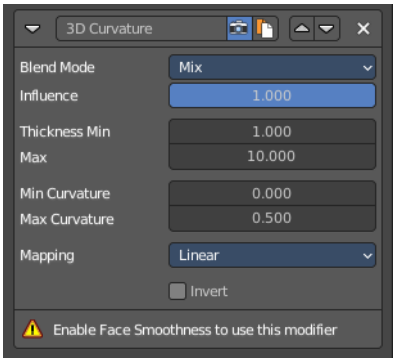


The mapping type. Linear or Curve.

Invert

Inverts the values.

Curvature 3D



This modifier is based on the radial curvatures of the underlying 3D surface. The curvature of a 2D curve at a point is a measure of how quickly the curve turns at the point. The quicker the turn is, the larger the curvature is at the point. The curvature is zero if the curve is a straight line. Radial curvatures are those computed for a 2D curve that appears at the cross section between the 3D surface and a plane defined by the view point (camera location) and the normal direction of the surface at the point.

This modifier requires to have the Face Smoothness option on and the object needs to have Smooth Shading.

Blend Mode

The color blend mode.

Influence

The influence of the modifier.

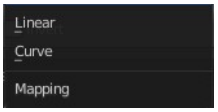
Thickness Min / Max

The minimum and maximum thickness.

Curvature Min and Max

The limits of the mapping. If the current point of the stroke is at Min Curvature or less from the target, it will take the start point of the mapping. If it is at Max Curvature or more from the target, it will take the end-point value of the mapping.

Mapping

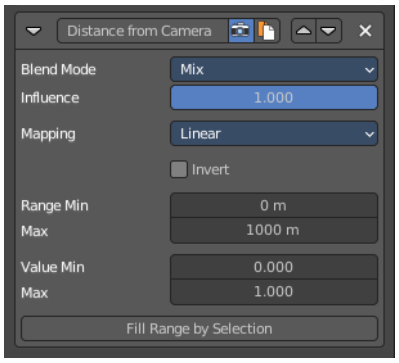


The mapping type. Linear or Curve.

Invert

Inverts the values.

Distance from Camera



Recalculates the base property by the distance to the camera.

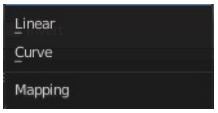
Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Mapping



The mapping type. Linear or Curve.

Invert

Inverts the values.

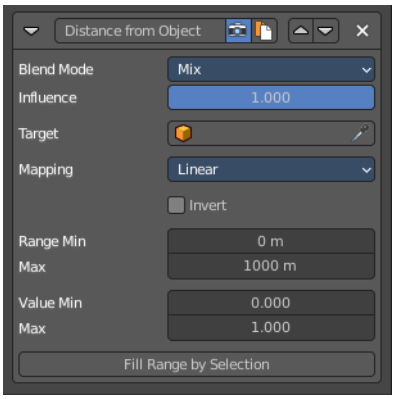
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Value Min and Value Max

The minimum and maximum output value of the mapping. These values are in scene units.

Distance from Object



Recalculates the base property by the distance to a chosen object.

Blend Mode

The color blend mode.

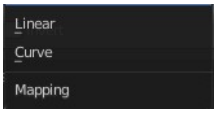
Influence

The influence of the modifier.

Target

Pick the target object.

Mapping



The mapping type. Linear or Curve.

Invert

Inverts the values.

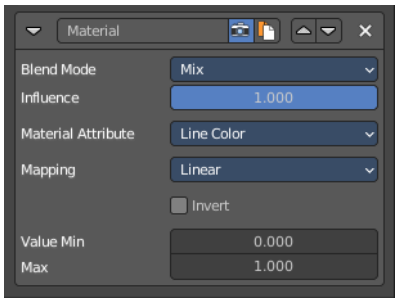
Range Min and Range Max

The minimum and maximum range. These values are in scene units.

Value Min and Value Max

The minimum and maximum output value of the mapping. These values are in scene units.

Material



Alters the thickness of the stroke based on the current material under the stroke.

Blend Mode

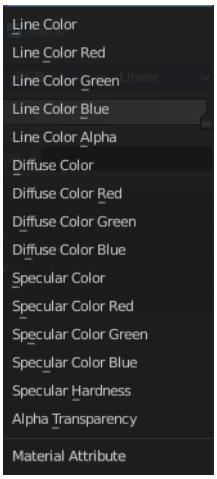
The color blend mode.

Influence

The influence of the modifier.

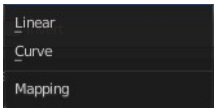
Material Attribute

What attribute of the material under the stroke to alter.



Mapping

The mapping type. Linear or Curve.



Invert

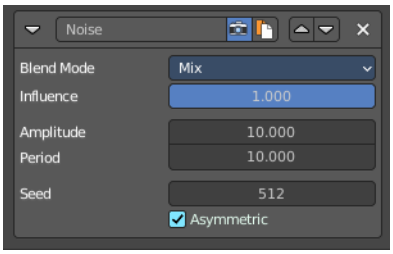
Inverts the values.

Value Min and Value Max

The minimum and maximum output value of the mapping. These values are in scene units.

Noise

Uses a noise based pseudo random number generator to add some variation along the stroke.



Blend Mode

The color blend mode.

Influence

The influence of the modifier.

Amplitude

The maximum value of the noise. A higher amplitude means a less transparent (more solid) stroke.

Period

The period of the noise. This means how quickly the property value can change. A higher value means a more smoothly changing color along the stroke.

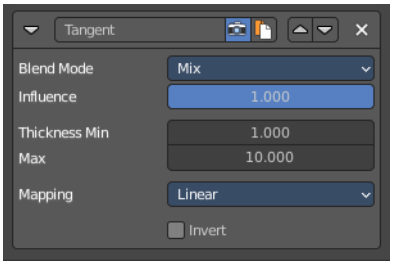
Seed

Seed used by the pseudo-random number generator.

Asymetric

Assign the thickness asymetrical at both sides of the stroke.

Tangent



Modifies the base value on the traveling direction of the stroke, evaluated at the stroke's vertices.

Blend Mode

The color blend mode.

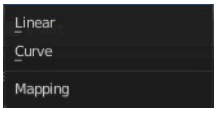
Influence

The influence of the modifier.

Thickness Min / Max

The minimum and maximum thickness.

Mapping

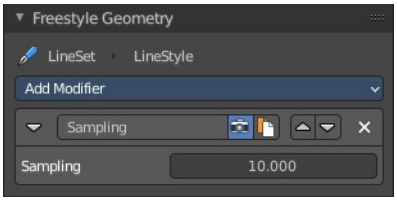


The mapping type. Linear or Curve.

Invert

Inverts the values.

Freestyle Geometry

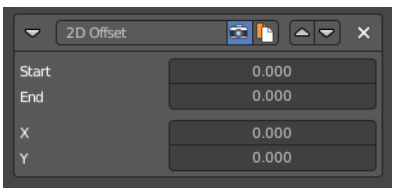


Modify the geometry of the freestyle strokes.

The modifier Sampling is on by default.

Freestyle Geometry Modifiers

2D Offset



Offset the stroke vertices from its original position.

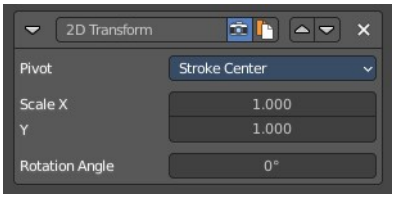
Start / End

The start and end of the offset relative to the stroke.

X / Y

The offset amount along X and Y axis of the stroke vertices.

2D Transform



Scale the stroke.

Pivot

What center point to use for the scaling.

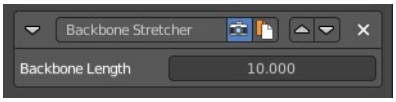
Scale X / Y

The scale amount along X and Y.

Rotation Angle

Rotate the stroke

Backbone Stretcher



Stretch the stroke.

Backbone Length

Amount of backbone stretching.

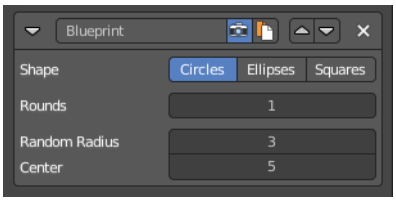
Bezier Curve

Turn the stroke into a bezier curve.

Error

The maximal allowed distance between the new bezier curve and the original backbone geometry.

Blueprint



Turn the strokes into a blueprint/cad like style stroke.

Shape

The shape of the blueprint contour strokes.

Rounds

Number of rounds in contour strokes.

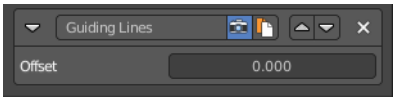
Random Radius

Randomness of the radius.

Center

Randomness of the center.

Guiding Lines

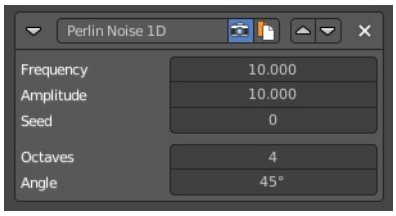


Replaces a stroke by straight lines that connects both of its ends.

Offset

Add an offset to the the start and end points along the original stroke, before generating the new straight one.

Perlin Noise 1D



Adds one-dimensional Perlin noise to the stroke. This modifier will give an identical result for two strokes with the same length and sampling interval.

Frequency

How dense the noise is (kind of a scale factor along the stroke).

Amplitude

How much the noise distorts the stroke in the Angle direction.

Seed

The seed of the random generator (the same seed over a stroke will always give the same result).

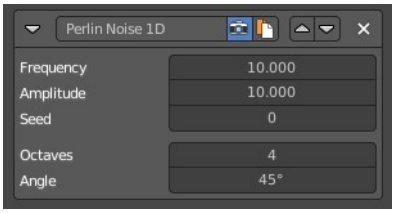
Octaves

The “level of detail” of the noise.

Angle

In which direction the noise is applied (0.0 is fully horizontal).

Perlin Noise 2D



Adds one-dimensional Perlin noise to the stroke. Different to the Perlin Noise 1D modifier the modifier generates noisy displacements using 2D coordinates of stroke vertices as the input of the noise generator.

Frequency

How dense the noise is (kind of a scale factor along the stroke).

Amplitude

How much the noise distorts the stroke in the Angle direction.

Seed

The seed of the random generator (the same seed over a stroke will always give the same result).

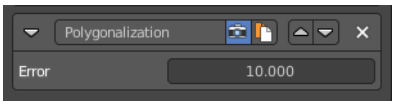
Octaves

The “level of detail” of the noise.

Angle

In which direction the noise is applied (0.0 is fully horizontal).

Polygonization



Simplify the stroke.

Error

The maximum distance allowed between the new simplified stroke and the orginal stroke.

Sampling

Changes the definition and precision of the stroke for hte following modifiers.

Sampling

The smaller this value, the more precise are the strokes. The computation of smaller values needs more memory and time.

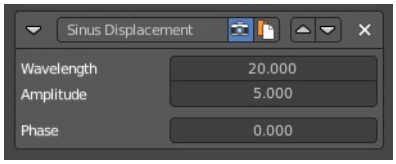
Simplification

Simplify the stroke by merging stroke vertices that are close to each other.

Tolerance

How close the vertices nees to be to each other to be merged.

Sinus Displacement



Adds a sinusoidal displacement to the stroke.

Wavelength

How wide the undulations are along the stroke.

Amplitude

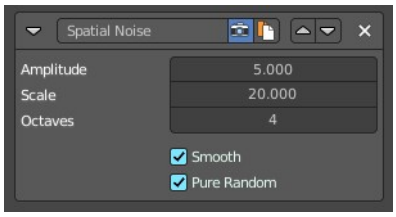
How high the undulations are across the stroke.

Phase

Allows “offsetting” (“moving”) the undulations along the stroke.

Tip! With a phase of 0 the undulations this modifier produces look exactly the same at a Phase of 0. Same goes for any positive or negative multiple of the Wavelength set on the modifier. This allows you to render short video sequences with wavy lines that can then be seamlessly looped without any visual jumps in the undulations along the line.

Spatial Noise



Adds some spatial noise to the stroke. Spatial noise displacements are added in the normal direction of each stroke vertex.

Amplitude

How much the noise distorts the stroke.

Scale

How wide the noise is along the stroke.

Octaves

The level of detail of the noise.

Smooth

When enabled, apply some smoothing over the generated noise.

Pure Random

The usual noise is not really random. Each value depends of the value before. So as a result is more a series of

values. Which can lead to patterns. Pure random adds much more randomness to the strokes.

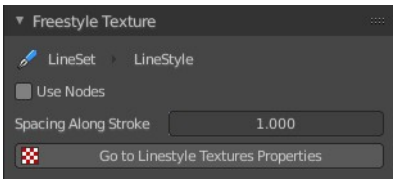
Tip remover

Removes a part of the stroke at the start and the end of a stroke

Tip Length

The length of the stroke that you want to remove.

Freestyle Texture



You can use a texture for the freestyle lines. The texture is created and managed in the texture tab. The material is created and managed in the Shader editor.

In this panel you just manage some settings for it

Use Nodes

Use shader nodes for the line style.

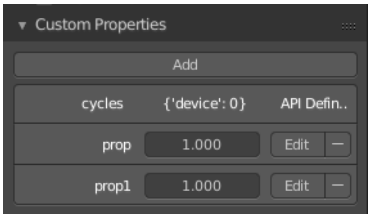
Spacing along Stroke

The spacing for textures along stroke length

Go to Linestyle Texture Properties

Switch to the Texture Properties tab to create and manage the texture.

Custom Properties Panel



Here you can define custom properties that can be used for scripting.

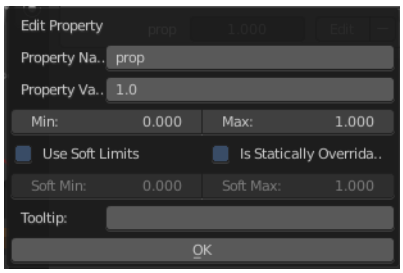
Here you might also find custom properties from addons or scripts.

Add

Adds a new property.

Edit

Opens a panel where you can adjust the settings for the custom property.



Remove

Removes the property.