

26.9.3 Editors - Properties Editor - Modifiers Properties Tab - Add Modifier menu - Edit modifiers

Table of content

Detailed table of content.....	1
Edit modifiers.....	6
Available content.....	6
Data Transfer.....	6
Mesh Cache.....	9
Mesh Sequence Cache.....	10
UV Project.....	13
UV Warp.....	13
Vertex Weight Edit.....	14
Vertex Weight Mix.....	17
Vertex Weight Proximity.....	20

Detailed table of content

Detailed table of content

Detailed table of content.....	1
Edit modifiers.....	6
Available content.....	6
Mesh object.....	6
Curve + Text object.....	6
Lattice Object.....	6
Data Transfer.....	6
Usage.....	6
Source Object.....	6
Object transform.....	7
Mix Mode.....	7
Mix Factor.....	7
Vertex Group.....	7
Generate Data Layers.....	7
Vertex data.....	7
Vertex Groups / Bevel Weight.....	7
Mapping.....	7
Vertex Groups.....	7
Layer Selection.....	7
Layer Mapping.....	7
Edge Data.....	7
Sharp, UV Seam, etc.....	8
Mapping.....	8
Face Corner Data.....	8
Custom normals, Vertex Colors, UV's.....	8
Mapping.....	8
Vertex Colors.....	8
Layer Selection.....	8

Layer Mapping.....	8
UV's.....	8
Layer Selection.....	8
Layer Mapping.....	8
Island Precision.....	8
Face Data.....	9
Smooth / Freestyle Mark.....	9
Mapping.....	9
Topology Mapping.....	9
Max Distance.....	9
Ray Radius.....	9
Mesh Cache.....	9
Format.....	9
File Path.....	9
Influence.....	9
Deform Mode.....	9
Interpolation.....	10
Vertex Group.....	10
Time Remapping.....	10
Frame / Time / Factor.....	10
Play Mode.....	10
Frame Start.....	10
Frame Scale.....	10
Axis Mapping.....	10
Forward/Up Axis.....	10
Flip Axis.....	10
Mesh Sequence Cache.....	10
Data property.....	11
Data browser.....	11
Name.....	11
Fake User.....	11
Open Cache File.....	11
Remove.....	11
File Path.....	11
Load File.....	11
Refresh Active.....	11
Object Path.....	11
Read Data.....	11
Vertex Interpolation.....	11
Time Subpanel.....	11
Sequence.....	12
Override Frame.....	12
Frame.....	12
Frame Offset.....	12
Render Procedural subpanel.....	12
Use Render Engine Procedural.....	12
Use Prefetch.....	12
Prefetch Cache Size.....	12
Velocity subpanel.....	12
Velocity Attribute.....	12
Velocity Unit.....	12
Velocity Scale.....	12
UV Project.....	13

UV Map.....	13
Aspect X/Y and Scale X/Y.....	13
Projectors.....	13
Objects.....	13
UV Warp.....	13
Usage.....	13
UV Layer.....	14
UV Center.....	14
Axis U / V.....	14
Object From, To.....	14
Vertex Group.....	14
Invert.....	14
Transform.....	14
Offset.....	14
Scale.....	14
Rotation.....	14
Vertex Weight Edit.....	14
Vertex Group.....	15
Default Weight.....	15
Group Add.....	15
Threshold.....	15
Group Remove.....	15
Threshold.....	15
Normalize Weights.....	15
Falloff subpanel.....	15
Type.....	15
Linear.....	15
Custom Curve.....	15
Sharp, Smooth, Root and Sphere.....	16
Random.....	16
Median Step.....	16
Invert.....	16
Influence.....	16
Global Influence.....	16
Mask Vertex Group.....	16
Invert.....	16
Mask Texture.....	16
Texture Property.....	16
Texture Browser.....	16
Name.....	16
Fake User.....	16
New Texture.....	16
Remove.....	17
Show Texture in Texture Tab.....	17
Channel.....	17
Texture Coordinates.....	17
Vertex Weight Mix.....	17
Vertex Group A.....	17
Vertex Group B.....	17
Default Weight A.....	17
Default Weight B.....	17
Vertex Set.....	17
All.....	18

Vgroup A.....	18
Vgroup B.....	18
Vgroup A or B.....	18
Vgroup and B.....	18
Mix Mode.....	18
Replace weights.....	18
Add to weights.....	18
Subtract from weights.....	18
Multiply weights.....	18
Divide weights.....	18
Difference.....	18
Average.....	18
Influence.....	19
Global Influence.....	19
Mask Vertex Group.....	19
Invert.....	19
Mask Texture.....	19
Texture Property.....	19
Texture Browser.....	19
Name.....	19
Fake User.....	19
New Texture.....	19
Remove.....	19
Show Texture in Texture Tab.....	19
Channel.....	19
Texture Coordinates.....	20
Vertex Weight Proximity.....	20
Vertex Group.....	20
Target Object.....	20
Proximity mode.....	20
Object.....	20
Geometry.....	20
Lowest.....	20
Highest.....	20
Normalize Weights.....	21
Falloff.....	21
Type.....	21
Linear.....	21
Custom Curve.....	21
Sharp, Smooth, Root and Sphere.....	21
Random.....	21
Median Step.....	21
Invert.....	21
Influence.....	21
Global Influence.....	21
Mask Vertex Group.....	21
Invert.....	21
Mask Texture.....	22
Texture Property.....	22
Texture Browser.....	22
Name.....	22
Fake User.....	22
New Texture.....	22

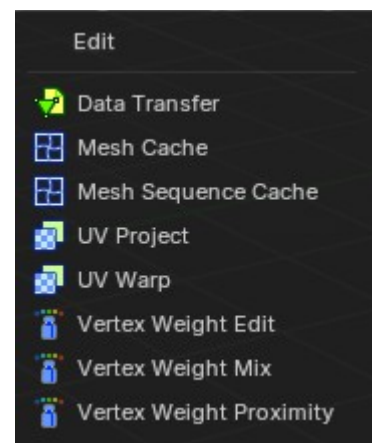
Remove.....	22
Show Texture in Texture Tab.....	22
Channel.....	22
Texture Coordinates.....	22

Edit modifiers

Available content

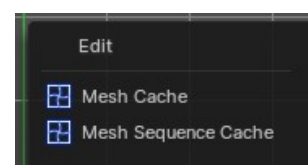
Mesh object

- Data Transfer
- Mesh Cache
- Mesh Sequencer Cache
- UV Project
- UV Warp
- Vertex Weight Edit
- Vertex Weight Mix
- Vertex Weight Proximity



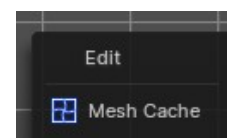
Curve + Text object

- Mesh Cache
- Mesh Sequencer Cache



Lattice Object

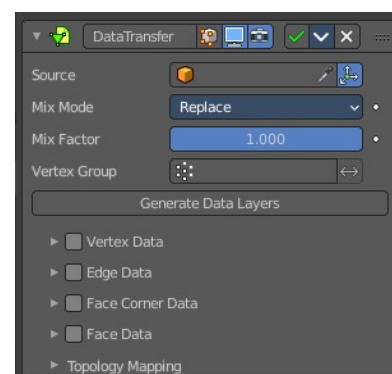
- Mesh Cache



Data Transfer

The Data Transfer modifier transfers several types of data from one mesh to another. Data types include vertex groups, UV maps, vertex colors, custom normals...

Transfer works by generating a mapping between source mesh's items (vertices, edges, etc.) and destination ones, either on a one-to-one basis, or mapping several source items to a single destination one, using interpolation.



Usage

Using this modifier will not create destination data layers. Use the Generate Data Layers button for this purpose when you are done with selecting the set of source data to transfer.

Creating those data layers on destination mesh is not part of the modifier stack. This means that they will remain. Even once the modifier is deleted, or if the source data selection is modified.

Source Object

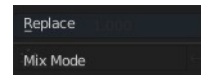
Mesh object to copy the data from.

Object transform

Evaluate the source and destination objects in global space instead of local space.

Mix Mode

How to mix the destination elements with the source elements.



Mix Factor

How much of the transferred data gets mixed into existing one (not supported by all data types).

Vertex Group

Allows per-item fine control of the mix factor. Vertex group influence can be reverted using the small “arrow” button to the right.

Generate Data Layers

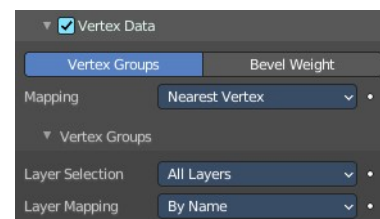
This modifier cannot generate needed data layers itself. Adjust the settings to your needs, then press this button to generate matching destination layers, if needed.

Vertex data

Activate this group when you want to transfer vertex data.

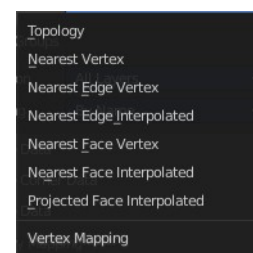
Vertex Groups / Bevel Weight

Which vertex data layers to transfer. Vertex groups or Bevel weight.



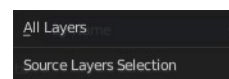
Mapping

The vertex mapping method to use.



Vertex Groups

Just active with data layer Vertex groups.

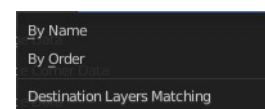


Layer Selection

What layer from the source object gets selected.

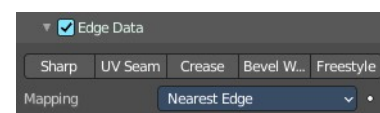
Layer Mapping

How to match the destination layer.



Edge Data

Activate this group when you want to transfer edge data.

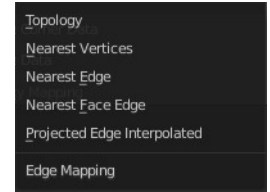


Sharp, UV Seam, etc.

Which edge data layers to transfer. You can just use one method.

Mapping

The edge mapping method to use.



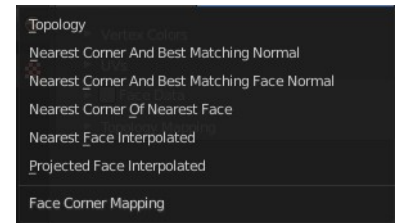
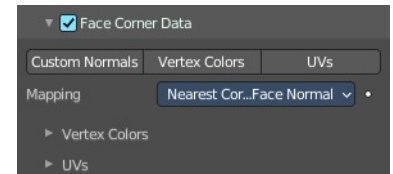
Face Corner Data

Custom normals, Vertex Colors, UV's

Which face corner data to transfer. You can just use one method.

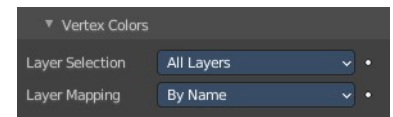
Mapping

The face corner data mapping method to use.



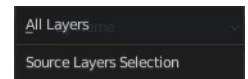
Vertex Colors

Further settings for when you choose Vertex colors.



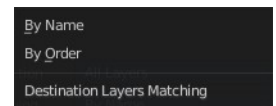
Layer Selection

Source Layer Selection.



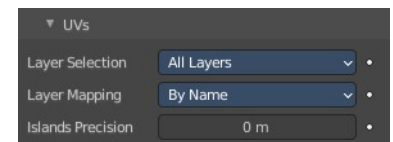
Layer Mapping

Destination layer mapping.



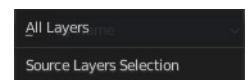
UV's

Further settings for when you choose UV's.



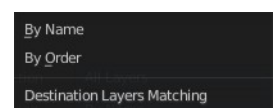
Layer Selection

Source Layer Selection.



Layer Mapping

Destination layer mapping.



Island Precision

The factor to control the island handling. A value of 0.0 means no island handling. A value of 0.02 is a good starting point.

Face Data

Smooth / Freestyle Mark

Which poly data layers to transfer.

Mapping

The face mapping method.

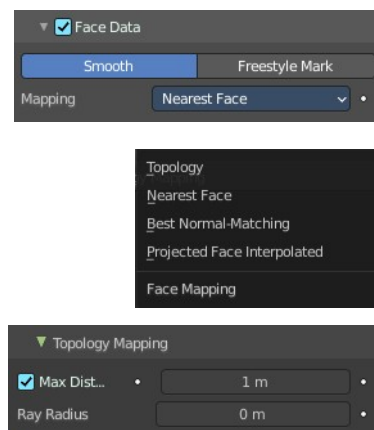
Topology Mapping

Max Distance

Only Neighbor Geometry. For non topology mapping, the source elements must be closer than the value in the edit box.

Ray Radius

The width of rays.

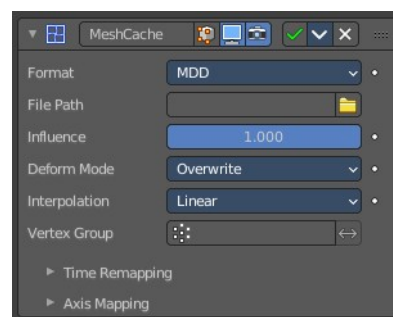


Mesh Cache

The Mesh Cache modifier allows you to apply animated mesh data to a mesh. And deform it when playing back.

This works in a similar way to shape keys. But uses external files, and allows to interchange between applications.

Tip! Both MDD and PC2 depend on the vertex order on the mesh remaining unchanged. This is a limitation of this method, so take care not to add/remove/reorder vertices once this modifier is used.



Format

The input file format (currently .mdd and .pc2 are supported).

File Path

Path to the cache file.

Influence

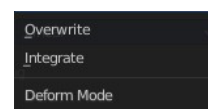
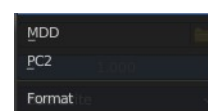
Factor to adjust the influence of the modifier's deformation.

Deform Mode

This setting defaults to Overwrite which will replace the vertex locations with those in the cache file.

When you want to mix a mesh cache file with shape keys, then you can select the Deform option which integrates deformations with the mesh cache result.

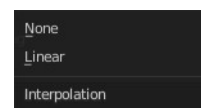
Note that this feature is limited to making smaller, isolated edits and will not work for larger changes such as



re-posing limbs.

Interpolation

The blend mode between frames. Use linear when the frames in the cache file do not match up exactly with the frames in the blend-file.



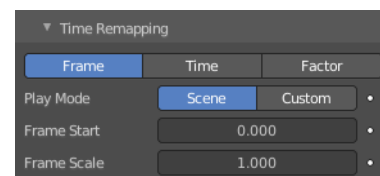
Vertex Group

Which vertex group determines the influence of the modifier per point.

Time Remapping

Frame / Time / Factor

How time is calculated.



Play Mode

How playback operates.

Frame Start

Play the cache starting from this frame.

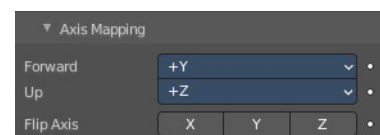
Frame Scale

Scale time by this factor (applied after the start value).

Axis Mapping

Forward/Up Axis

The axis for forward and up used in the source file.

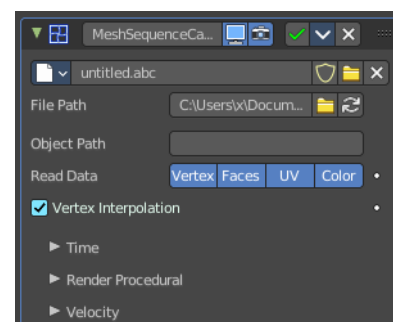
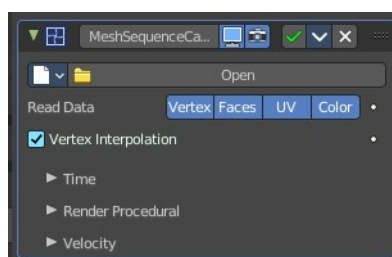


Flip Axis

Allows you to flip the coordinates on an axis.

Mesh Sequence Cache

The Mesh Sequence Cache modifier loads data from Alembic files. It supports static meshes, but is mostly used to load animated meshes. Despite its name, this modifier also supports curves. It also handles file sequences, as well as meshes and curves with varying topology (like the result of fluid simulations).



When importing an Alembic file, Mesh Sequence Cache modifiers are automatically added to time-varying

meshes. For time-varying object transforms (so animation of rotation, location, or scale), the Transform Cache Constraint is used.

Data property

Data browser

List of available Alembic files.



Name

The name of the current active alembic file.

Fake User

Keep this file in the scene even when it has no user anymore.

Open Cache File

Open an alembic file.

Remove

Remove the alembic file.

File Path

Path to the Alembic file.

Load File

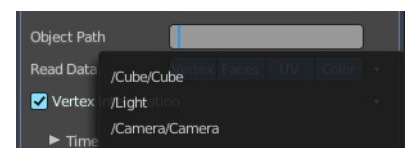
Open an alembic file.

Refresh Active

Update the files and paths.

Object Path

Path to the object in the alembic file used to lookup geometric data.



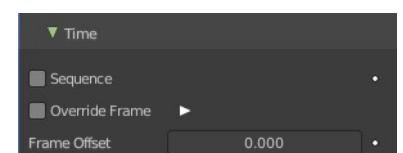
Read Data

Type of data to read for a mesh object. Vertices, polygons, UV maps and Vertex Color layers.

Vertex Interpolation

Allow interpolation of vertex positions.

Time Subpanel



Sequence

Whether or not the cache is separated in a series of files.

Override Frame

Whether to use a custom frame for looking up data in the cache file, instead of using the current scene frame.

Frame

The time to use for looking up the data in the cache file, or to determine which to use in a file sequence.

Frame Offset

Define a frame offset to the current frame.

Render Procedural subpanel

Use Render Engine Procedural

This feature is just available for Cycles, and just in an experimental state.

Display boxes as placeholders in the viewport.

Use Prefetch

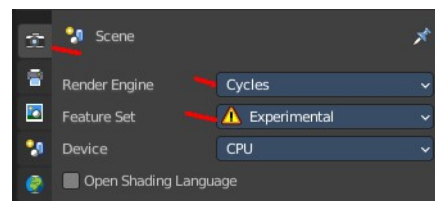
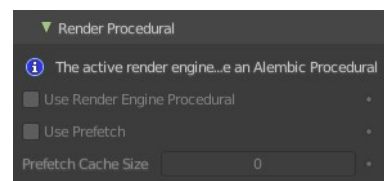
This feature is just available for Cycles, and just in an experimental state.

When enabled, the Cycles procedural will preload animation data for faster update.

Prefetch Cache Size

This feature is just available for Cycles, and just in an experimental state.

Memory usage limit for the cache. If the data size does not fit the renderer is aborted. 0 disables the feature.



Velocity subpanel

Velocity Attribute

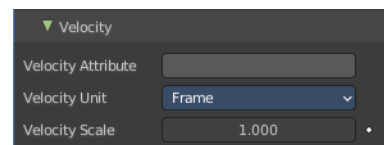
Name of the Alembic Attribute used for generating motion blur data.

Velocity Unit

Define if velocity vectors are interpreted in Frame or Second.

Velocity Scale

Multiplier used to control the magnitude of the velocity for time effects.

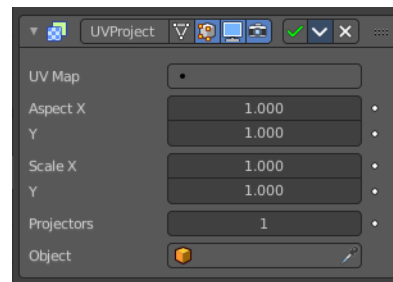


UV Project

The UV Project modifier acts like a slide projector. It emits a UV map from the negative Z axis of a controller object (such as an empty object), and applies it to the object as the “light” hits it.

UV Project is great for making spotlights more diverse, and also for creating decals to break up repetition.

Usually, an Image Texture node mapped to the UV map that the modifier targets is added to the object’s material.



UV Map

Which UV map to modify. Defaults to the active rendering layer.



Aspect X/Y and Scale X/Y

Aspect and scale manipulation of the image. Only apply when a camera is used as projector object.

Projectors

Up to ten projector objects are supported. Each face will choose the closest and aligned projector with its surface normal. Projections emit from the negative Z axis (i.e. straight down a camera or light). If the projector is a camera, the projection will adhere to its perspective/orthographic setting.

Objects

Specify the projector object(s).

UV Warp

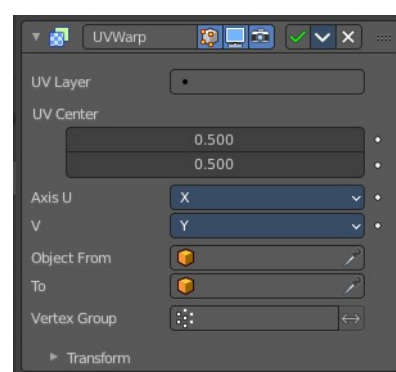
The UV Warp modifier transforms an object’s UV map based on values or two objects. Its purpose is to give you direct control over the object’s UV’s in the 3D Viewport, allowing you to directly move, rotate, and scale existing UV coordinates using defined values or a controller object or bone.

Usage

How the UV’s are warped is determined by the difference between the transforms (location, rotation and scale) of the from and to objects.

If the to object has the same transforms as the from object, the UV’s will not be changed.

Assuming the UV Axis of the modifier is X/Y and the scale of the objects is (1, 1, 1), if the to object is one unit away from the from object on the X axis, the UV’s will be transformed on the U axis (horizontally) by one full UV space (the entire width of the image).



UV Layer

Which UV map to modify. Defaults to the active rendering layer.



UV Center

The center point of the UV map to use when applying scale or rotation. With (0, 0) at the bottom left and (1, 1) at the top right.

Axis U / V

The axes to use when mapping the 3D coordinates into 2D.

Object From, To

The two objects used to define the transformation.

Vertex Group

The vertex group can be used to scale the influence of the transformation per vertex.

Invert

Invert the selection (only affect the vertices not in the vertex group).

Transform

Offset

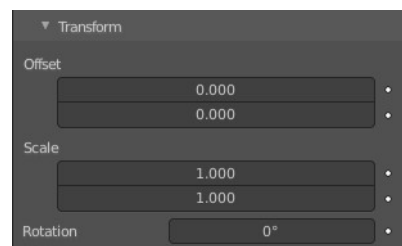
2D Offset for the warp.

Scale

2D Scale for the warp.

Rotation

2D Rotation for the warp.

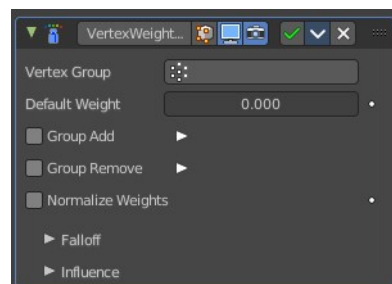


Vertex Weight Edit

This modifier is intended to edit the weights of a vertex group.

The general process is the following, for each vertex:

(Optional) It does the mapping, either through one of the predefined functions, or a custom mapping curve.



It applies the influence factor, and optionally the vertex group or texture mask (0.0 means original weight, 1.0 means fully mapped weight).

It applies back the weight to the vertex, and/or it might optionally remove the vertex from the group if its

weight is below a given threshold, or add it if it is above a given threshold.

Important! This modifier does implicit clamping of weight values in the standard (0.0 to 1.0) range. All values below 0.0 will be set to 0.0, and all values above 1.0 will be set to 1.0.

Note! You can view the modified weights in Weight Paint Mode. This also implies that you will have to disable the Vertex Weight Edit modifier if you want to see the original weights of the vertex group you are editing.

Vertex Group

The vertex group to affect.

Default Weight

The default weight to assign to all vertices not in the given vertex group.

Group Add

Adds vertices with a final weight over Add Threshold to the vertex group.



Threshold

The add threshold.

Group Remove

Removes vertices with a final weight below Remove Threshold from the vertex group.

Threshold

The remove threshold.

Normalize Weights

Normalize the resulting weights. Without normalizing the values are clamped between 0 and 1.

Falloff subpanel

Type

How weights are mapped to their new values.

Linear

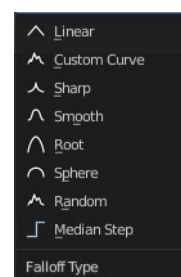
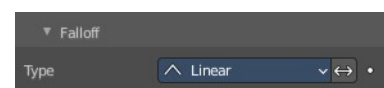
No mapping.

Custom Curve

Allows the user to manually define the mapping using a curve.

Sharp, Smooth, Root and Sphere

These are classical mapping functions, from spikiest to roundest.



Random

Uses a random value for each vertex.

Median Step

Creates binary weights (0.0 or 1.0), with 0.5 as cutting value.

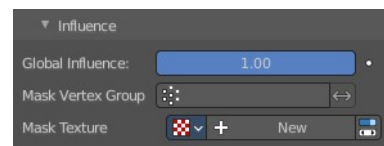
Invert

Inverts the falloff.

Influence

Global Influence

The overall influence of the modifier (0.0 will leave the vertex group's weights untouched, 1.0 is standard influence).



Important! Influence only affects weights, adding/removing of vertices to/from vertex group is not prevented by setting this value to 0.0. In addition, a per-vertex fine control of the effect is possible using either a vertex group or a texture (both are mutually exclusive). The per-vertex values from those will be multiplied with the Global Influence.

Mask Vertex Group

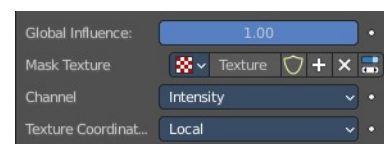
Choose a vertex group for masking.

Invert

Invert vertex group mask influence.

Mask Texture

Choose a texture for masking. Note that using a mask texture will remove the mask vertex group.



Texture Property

Texture Browser

A list of the available textures in the scene.

Name

The name of the currently active texture. You can rename the texture here by clicking at the edit box.

Fake User

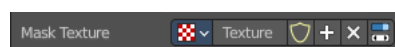
Keep this texture in the scene even if it has no user.

New Texture

Add a new texture.

Remove

Remove the texture.

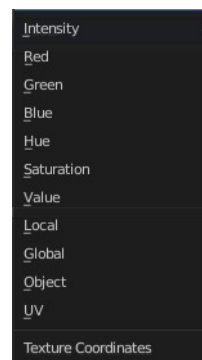


Show Texture in Texture Tab

Jumps to the texture tab where you can edit your texture.

Channel

Which channel of the texture to use for masking.



Texture Coordinates

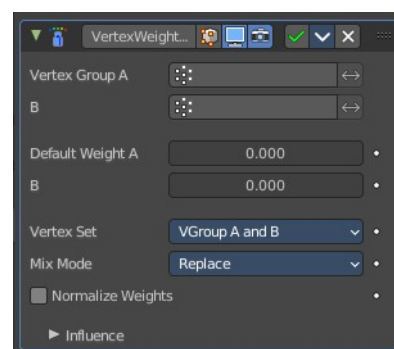
Which texture coordinates of the texture to use for masking.

Vertex Weight Mix

Vertex Weight Mix Modifier

This modifier mixes a second vertex group (or a simple value) into the affected vertex group, using different operations.

Important! This modifier does implicit clamping of weight values in the standard (0.0 to 1.0) range. All values below 0.0 will be set to 0.0, and all values above 1.0 will be set to 1.0.



Note! You can view the modified weights in Weight Paint Mode. This also implies that you will have to disable the Vertex Weight Mix modifier if you want to see the original weights of the vertex group you are editing.

Vertex Group A

The vertex group to affect.

Vertex Group B

The second vertex group to mix into the affected one. Leave it empty if you only want to mix in a simple value.

Default Weight A

The default weight to assign to all vertices not in the given vertex group.

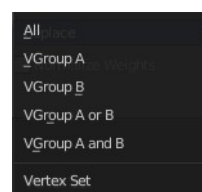
Default Weight B

The default weight to assign to all vertices not in the given second vertex group.

Vertex Set

Which vertices should be affected.

Important! When using All vertices, Vertices from group B or Vertices from one group, vertices might be added to the affected vertex group.



All

Affects all vertices, disregarding the vertex groups content.

Vgroup A

Affects only vertices belonging to the affected vertex group.

Vgroup B

Affects only vertices belonging to the second vertex group.

Vgroup A or B

Affects only vertices belonging to at least one of the vertex groups.

Vgroup and B

Affects only vertices belonging to both vertex groups.

Mix Mode

How the vertex group weights are affected by the other vertex group's weights.

Replace weights

Replaces affected weights with the second group's weights.

Add to weights

Adds the values of Group B to Group A.

Subtract from weights

Subtracts the values of Group B from Group A.

Multiply weights

Multiplies the values of Group B with Group A.

Divide weights

Divides the values of Group A by Group B.

Difference

Subtracts the smaller of the two values from the larger.

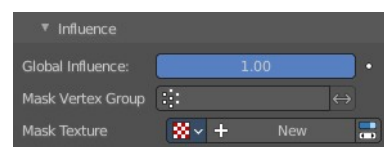
Average

Adds the values together, then divides by 2.

Influence

Global Influence

The overall influence of the modifier (0.0 will leave the vertex group's weights



untouched, 1.0 is standard influence).

Important! Influence only affects weights, adding/removing of vertices to/from vertex group is not prevented by setting this value to 0.0. In addition, a per-vertex fine control of the effect is possible using either a vertex group or a texture (both are mutually exclusive). The per-vertex values from those will be multiplied with the Global Influence.

Mask Vertex Group

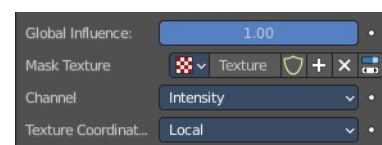
Choose a vertex group for masking.

Invert

Invert vertex group mask influence.

Mask Texture

Choose a texture for masking. Note that using a mask texture will remove the mask vertex group.



Texture Property

Texture Browser

A list of the available textures in the scene.

Name

The name of the currently active texture. You can rename the texture here by clicking at the edit box.

Fake User

Keep this texture in the scene even if it has no user.

New Texture

Add a new texture.

Remove

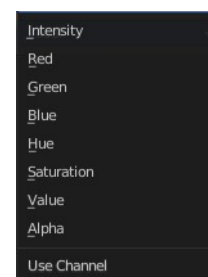
Remove the texture.

Show Texture in Texture Tab

Jumps to the texture tab where you can edit your texture.

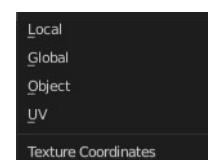
Channel

Which channel of the texture to use for masking.



Texture Coordinates

Which texture coordinates of the texture to use for masking.

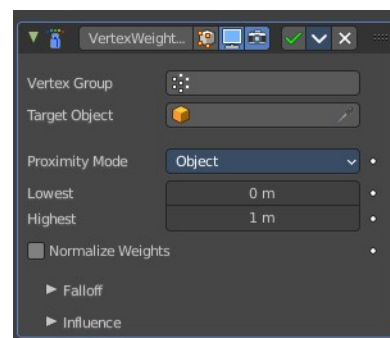


Vertex Weight Proximity

This modifier sets the weights of the given vertex group, based on the distance between the object (or its vertices), and another target object (or its geometry).

Warning1 This modifier does implicit clamping of weight values in the standard (0.0 to 1.0) range. All values below 0.0 will be set to 0.0, and all values above 1.0 will be set to 1.0.

Note! You can view the modified weights in Weight Paint Mode. This also implies that you will have to disable the Vertex Weight Proximity modifier if you want to see the original weights of the vertex group you are editing.



Vertex Group

The vertex group to affect.

Target Object

The object from which to compute distances.

Proximity mode

Object

Use the distance between the modified mesh object and the target object as weight for all vertices in the affected vertex group.

Geometry

Use the distance between each vertex and the target object, or its geometry.

Note! If you enable more than one of them, the shortest distance will be used. If the target object has no geometry (e.g. an empty or camera), it will use the location of the object itself.

Lowest

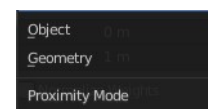
Distance mapping to 0.0 weight. Tip! Lowest can be set above Highest to reverse the mapping.

Highest

Distance mapping to 1.0 weight.

Normalize Weights

Normalize the resulting weights. Without this option they get only clamped within the 0.0 - 1.0 range.



Falloff

Type

How weights are mapped to their new values.

Linear

No mapping.

Custom Curve

Allows the user to manually define the mapping using a curve.

Sharp, Smooth, Root and Sphere

These are classical mapping functions, from spikiest to roundest.

Random

Uses a random value for each vertex.

Median Step

Creates binary weights (0.0 or 1.0), with 0.5 as cutting value.

Invert

Inverts the falloff.

Influence

Global Influence

The overall influence of the modifier (0.0 will leave the vertex group's weights untouched, 1.0 is standard influence).

Important! Influence only affects weights, adding/removing of vertices to/from vertex group is not prevented by setting this value to 0.0. In addition, a per-vertex fine control of the effect is possible using either a vertex group or a texture (both are mutually exclusive). The per-vertex values from those will be multiplied with the Global Influence.

Mask Vertex Group

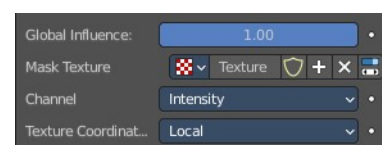
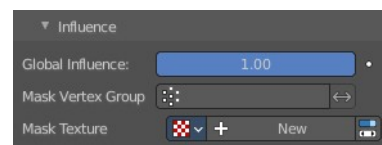
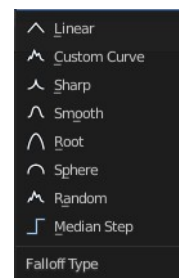
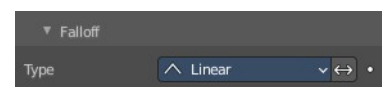
Choose a vertex group for masking.

Invert

Invert vertex group mask influence.

Mask Texture

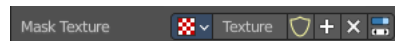
Choose a texture for masking. Note that using a mask texture will remove the mask vertex group.



Texture Property

Texture Browser

A list of the available textures in the scene.



Name

The name of the currently active texture. You can rename the texture here by clicking at the edit box.

Fake User

Keep this texture in the scene even if it has no user.

New Texture

Add a new texture.

Remove

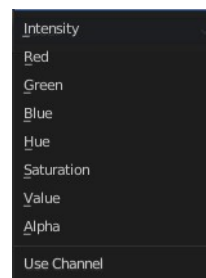
Remove the texture.

Show Texture in Texture Tab

Jumps to the texture tab where you can edit your texture.

Channel

Which channel of the texture to use for masking.



Texture Coordinates

Which texture coordinates of the texture to use for masking.

