

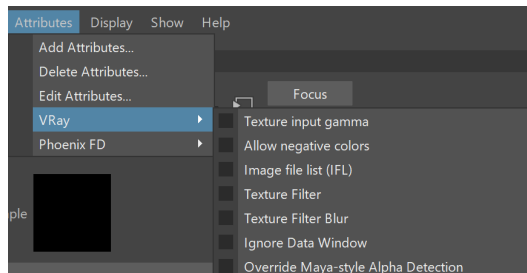
# Texture Attributes

This page provides information on V-Ray Attributes that can be added to standard Maya textures.

## Overview

Additional V-Ray attributes can be added to texture(s) to specify additional properties through the **Attributes > VRay** menu of the Attribute Editor while the texture is selected.

**UI Path:** ||Select texture|| > **Attribute Editor** > **Attributes** menu > **VRay** > (select attribute set)



## Texture Input Gamma

This group of attributes specifies additional color conversions when the bitmap is read from disk in order to bring its color data to linear color space (linear in the physical sense, not perceptual). It can be added to File, VRayPTex, and Substance textures.

**Enable input texture correction** – When enabled, the input bitmap data will be modified according to the rest of the settings in this group.

**Color Space** – Specifies the color space for the input bitmap data:

**Linear** – The bitmap data is already in physical linear space, so no correction required and none is performed.

**Gamma** – The bitmap data is gamma corrected with the specified gamma value specified by the Texture input gamma attribute, so V-Ray has to remove this gamma correction for rendering.

**sRGB** – The bitmap data is in the sRGB color space, so V-Ray has to convert it to linear physical space for rendering.

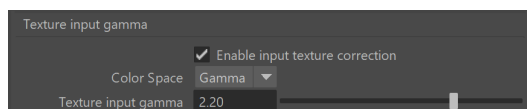
**Texture Input Gamma** – Specifies a custom gamma value for the bitmap data when the color space is set to **Gamma**.

### Add to node:

```
vray addAttributesFromGroup "file1" "vray_file_gamma" 1;
```

### Attributes:

```
vrayFileGammaEnable  
vrayFileColorSpace  
vrayFileGammaValue
```



## Allow Negative Colors

This attribute tells V-Ray that the texture may contain negative colors. Normally V-Ray clips negative texture values as they are invalid for most shading operations. However in some cases (e.g. for displacement), negative values are useful. Note that you can also control negative shader colors globally from the Materials section of the Overrides tab in the V-Ray settings. It can be added to File and Substance textures.

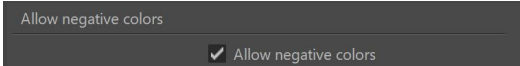
**Allow negative colors** – When enabled, V-Ray does not clip the texture values.

**Add to node:**

```
vray addAttributesFromGroup "file1" "vray_file_allow_neg_colors" 1;
```

**Attributes:**

```
vrayFileAllowNegColors
```



## Texture Filter

This group of attributes can be added to File and Substance textures to control their filtering.

**Override Texture Filter** – Override the default texture filter that V-Ray chooses based on the Maya attributes of the particular texture node. *For more details, please see the [V-Ray Filter Interpretation](#) table below.*

**Texture Filter** – The V-Ray internal texture filter. *See the [texture filters examples](#) below for a visual representation of the differences.*

**Nearest** – The nearest texel from the map is taken, without any interpolation.

**Smooth** – The colors are computed with bilinear interpolation from the texels.

**Smooth with mipmaps** – Pyramidal MIP map filtering is used to compute the texture color.

**SAT** – A summed area table is used to compute the texture color.

**Elliptical** – High quality anisotropic MIP map texture filtering that reduces blurring and aliasing artifacts.

**Sharp mip-map filtering** – Sharper and more accurate version of the **Smooth with mipmaps**. Produces results that are closer to the results with disabled filtering but with less AA samples required.

**Smooth Method** – The V-Ray internal texture smooth method.

**Bilinear** – The image values are interpolated from four pixels in the bitmap. This is the fastest interpolation method, but the result is not continuous (non-smooth) and may produce artifacts when the map is used for displacement or bump mapping.

**Bicubic** – The image values are interpolated from sixteen pixels in the bitmap. This is the slowest method, but the results are smooth without too much blur.

**Biquadratic** – The image values are interpolated from nine pixels in the bitmap. This method is faster than the Bicubic interpolation, but may smooth the image too much.

**Add to node:**

```
vray addAttributesFromGroup "file1" "vray_texture_filter" 1;
```

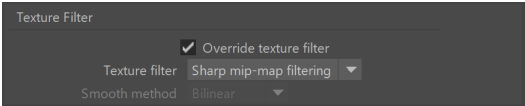
**Attributes:**

```
vrayOverrideTextureFilter  
vrayTextureFilter  
vrayTextureSmoothType
```

## V-Ray Filter Interpretation

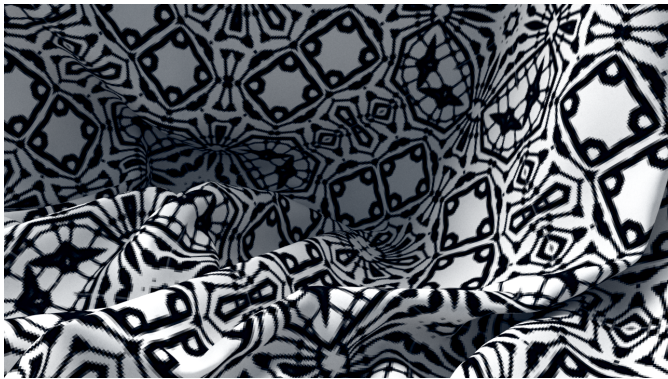
For example, if a **File** node is used and **Override Texture Filter** is off or not added, V-Ray looks at the Maya **Filter Type** attribute. Here's how V-Ray translates the Maya filters to V-Ray filters:

Maya Filter Type	V-Ray Filter	Support for tiled images
Off	Smooth	Uses tiles only from the largest mipmap level
Mipmap, Box, Quadratic	Sharp mip-map filtering	Supports tiled mipmapped images
Quartic, Gaussian	SAT	Loads the whole image in memory like a normal scanline image

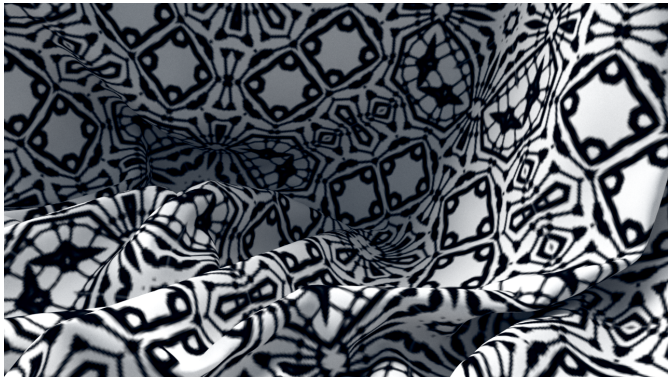


### Example: Texture Filters

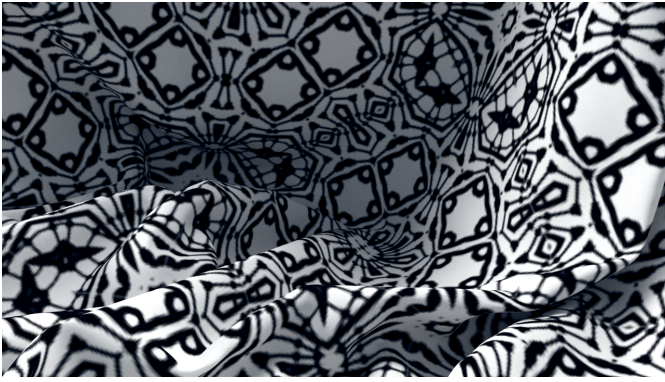
The texture used here is a black and white texture map with resolution of 1024x1024 pixels. For the purpose of the example, it is zoomed to a great extend.



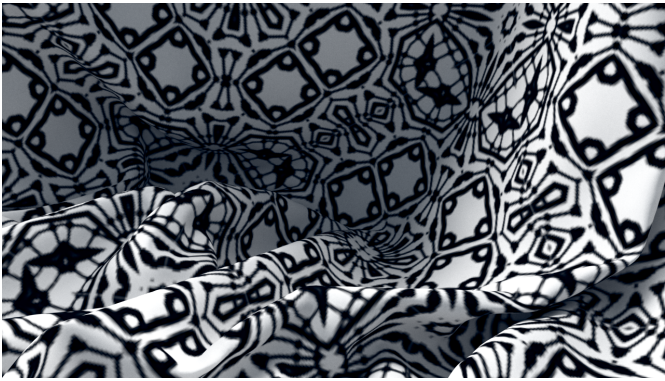
Nearest



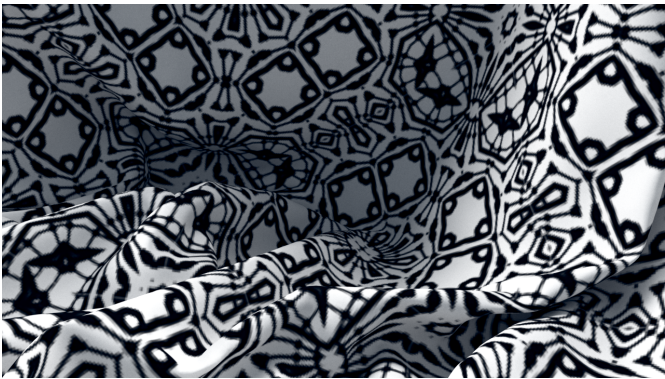
Smooth



Smooth with mipmaps

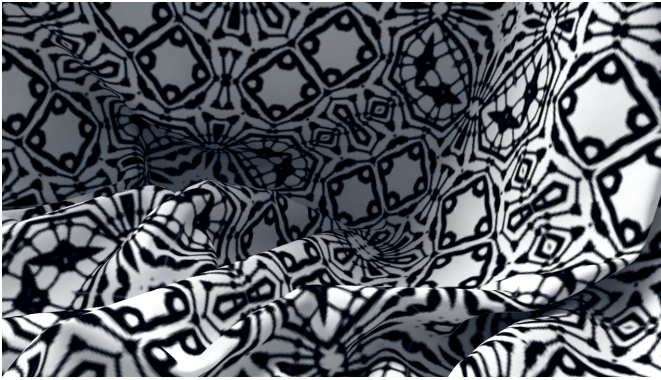


SAT



Elliptical





Sharp with mipmaps

## Texture Filter Blur

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This attribute group can be added to **File** nodes only. This is V-Ray's native filter blur without any other filter blur calculations.

**Filter Blur** – Specifies the level of filter blurring of the texture. A value of 0 means no filtering and higher values result in blurrier filtering.

### Add to node:

```
vray addAttributesFromGroup "file1" "vray_texture_filter_blur" 1;
```

### Attributes:

vrayTextureFilterBlur



## Texture Format

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This group of attributes can be added to Substance textures to control the internal bitmap storage when rendered with V-Ray. Note that this feature depends largely on the ability of the Substance engine itself to provide the data with the required precision. This extra attribute is added only using scripting.

**Override texture format** – When enabled, you can specify the internal texture storage format when rendered with V-Ray.

**Texture format** – Specifies the internal texture storage format:

**8-bit RGBA** – The texture is stored with 8 bits per red, green, blue and alpha channels (32 bits per texel).

**32-bit float** – The texture is stored with 32-bit floating point values for the red, green, blue and alpha channels (128 bits per texel).

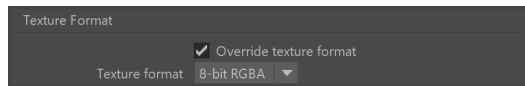
**8-bit RGBE** – The texture is stored in "real pixel" format with 8 bits for red, green and blue components and an 8 bit exponent for representing high dynamic range values. Alpha values are not stored in this format.

### Add to node:

```
vray addAttributesFromGroup "file1" "vray_texture_format" 1;
```

#### Attributes:

vrayOverrideTextureFormat  
vrayTextureFormat



## Image File List

This group of attributes can be added to **File** and **VRayPtex** textures and specifies additional options for **.ifl** files.

**IFL start frame** – The starting frame for the sequence.

**IFL end condition** – Specifies what happens when the sequence end is reached:

**Loop** – The texture is looped to start from the beginning.

**Ping Pong** – The texture is looped alternatively forward and backward.

**Hold** – The last image in the sequence is used for all subsequent frames.

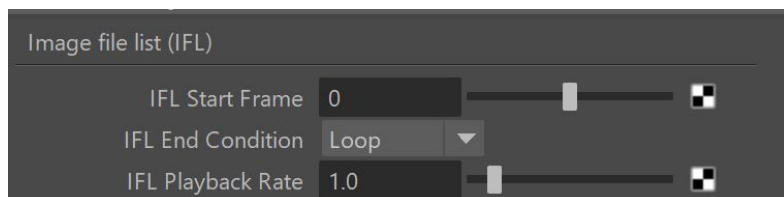
**IFL playback rate** – The playback rate.

#### Add to node:

```
vray addAttributesFromGroup "file1" "vray_file_ifl" 1;
```

#### Attributes:

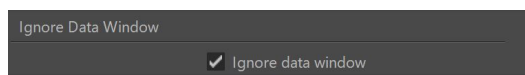
vrayFileIFLStartFrame  
vrayFileIFLEndCondition  
vrayFileIFLPlaybackRate



## Ignore Data Window

This attribute group can be added to **File** nodes only. When using an **.exr** with the File node as Projection, make sure to enable this option, otherwise the overscanned pixels will not be included in the projection.

**Ignore data window** – When enabled, it ignores the data window information, e.g. in OpenEXR files.



## Projection Options

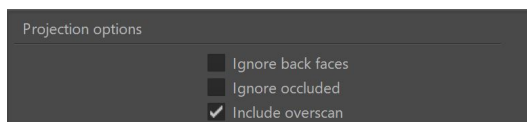
When a texture is assigned as **Projection**, additional V-Ray attributes become available for the Projection node through the Attributes > VRay menu of the Attribute Editor.

**Ignore back faces** – When disabled, it projects on back faces of polygons when in perspective mode. Enable to ignore back faces projection.

**Ignore occluded** – Determines whether to project on occluded points when in perspective mode.

**Include overscan** – Enable this option to include the camera overscan in perspective mode.

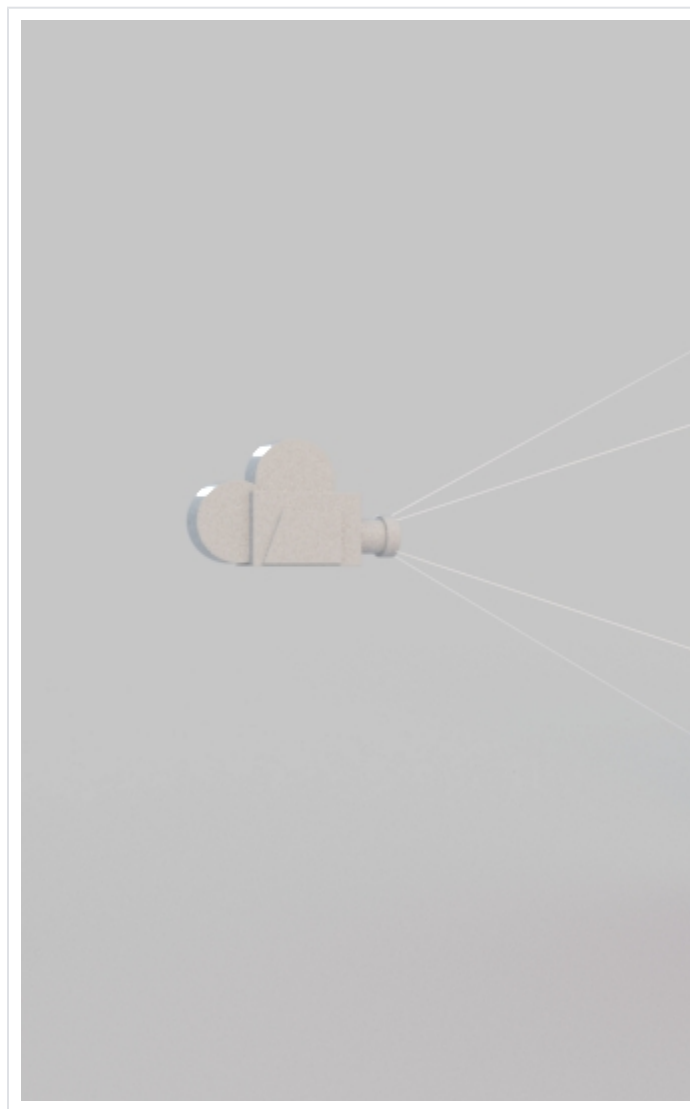
The overscan option is limited to 10% in V-Ray PLE for Maya.

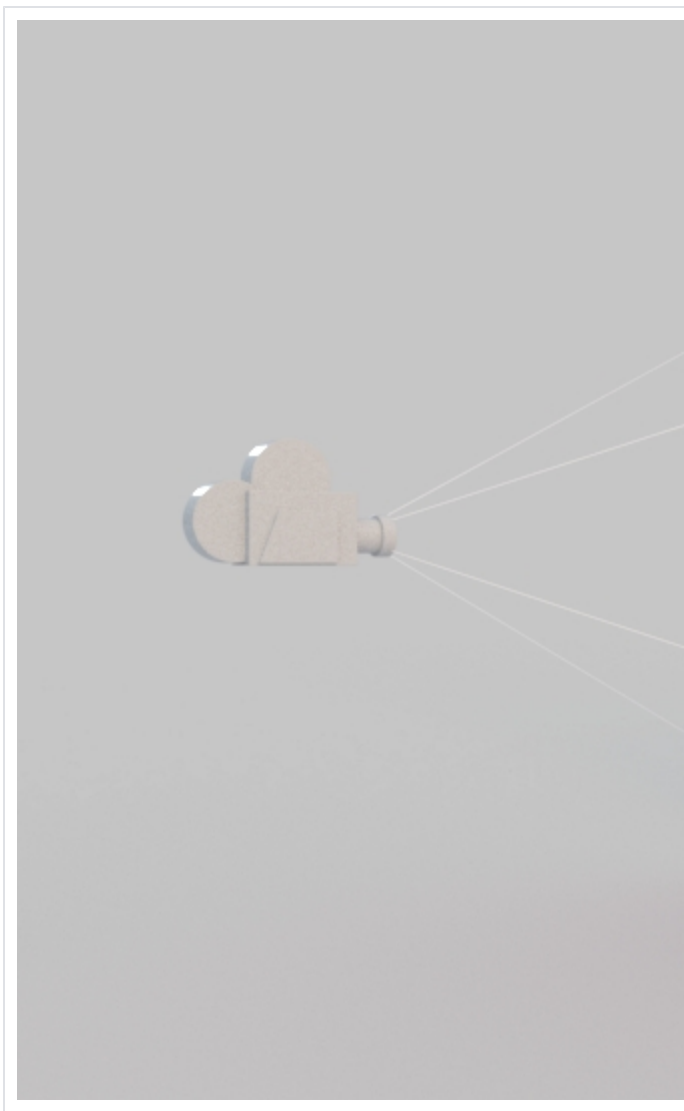


## Example: Include Overscan

This example shows a projection that has the **Include overscan** option switched on compared to the same projection with the option switched off.

Off  
On





## Additional Outputs

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This group of attributes can be added to `samplerInfo` nodes to make available several additional outputs. See the [Maya Sampler Info Node with Additional V-Ray Outputs](#) page for examples and additional information.

**Normal Obj** – The smooth surface normal in object space.

**Normal World** – The smooth surface normal in world space.

**Geom Normal World** – The geometric (non-smooth) surface normal in world space.

**Point World Reference** – The shading point in reference space.

**Normal World Reference** – The smooth normal in reference space.

**Bump Normal World** – The bump normal in world space.

**Bump Normal Camera** – The bump normal in camera space.

**Bump Normal Object** – The bump normal in object space.

**Ray Depth** – The traced ray depth.

**Path Length** – The traced ray path length.



- Surface Material ID** – The surface material ID of the hit object.
- Object ID** – The object ID of the hit object.
- Parent Object ID** – The object ID of the parent object.
- Velocity World** – The velocity in world space.
- Speed** – The speed as the magnitude of the velocity.
- Random by ID** – The render ID of the scene object.
- Random by Polygon Shell** – The different polygon shells of the scene object.

**Add to node:**

```
vray addAttributesFromGroup "samplerInfo1" "vray_samplerinfo_extra_tex" 1;
```

**Attributes:**

- vrayNormalObj
- vrayNormalWorld
- vrayGNormalWorld
- vrayPointWorldReference
- vrayNormalWorldReference
- vrayBumpNormalWorld
- vrayBumpNormalCamera
- vrayBumpNormalObject
- vrayRayDepth
- vrayPathLength
- vrayMtlIDTex
- vrayObjIDTex
- vrayParentObjIDTex
- vrayVelocityWorld
- vraySpeed
- vrayRandomByID
- vrayRandomByPolyShell

Additional outputs				
Normal Obj	0.000	0.000	0.000	
Normal World	0.000	0.000	0.000	
Geom Normal World	0.000	0.000	0.000	
Point World Reference	0.000	0.000	0.000	
Normal World Reference	0.000	0.000	0.000	
Bump Normal World	0.000	0.000	0.000	
Bump Normal Camera	0.000	0.000	0.000	
Bump Normal Object	0.000	0.000	0.000	
Ray Depth	0.000			
Path Length	0.000			
Surface Material ID	0			
Object ID	0			
Parent Object ID	0			
Velocity World	0.000	0.000	0.000	
Speed	0.000			
Random by ID	0.000			
Random by Polygon Shell	0.000			
Random by name	0.000			