Enmesh

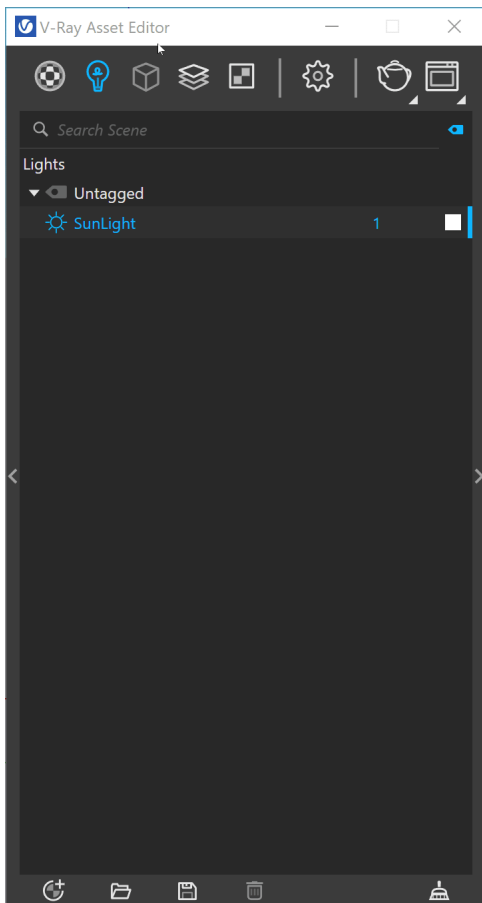This page provides information on V-Ray Enmesh.

Overview

The V-Ray Enmesh modifier 'coats' an object's surface with a repeating pattern of a rendered geometry that follows the UVW space of that geometry.

UI Paths

||V-Ray Asset Editor|| > **Geometries** (right-click) > **Enmesh**

||V-Ray Asset Editor|| > **Create Asset** (left-click) > **Geometries** > **Enmesh**

||V-Ray Objects Toolbar|| > **Add Enmesh to Selection**

SketchUp Menus Ribbon

Creating V-Ray Enmesh

V-Ray Enmesh is created with two types of objects – Base objects and Reference objects (Patterns), which are used to replace the Base object's surface.

You can also create Enmesh from the **Asset Editor** > **Geometry** > **Enmesh** and use the **Apply to Selection** context option.

Parameters

Add objects – Add scene objects that will replace the base object's surface.

Only one scene object (Group/Component) can be added as a Reference geometry in SketchUp.

Spacing X – Determines the distance between the items along X axis measured in project units.

Spacing Y – Determines the distance between the items along Y axis measured in project units.

Spacing Z – Determines the distance between the items along Z axis measured in project units.

Negative values can be used for clipping the items.

Tiling U – Determines how many times the element is repeated in U direction.

Tiling V – Determines how many times the element is repeated in V direction.

Height (%) – Scales the height of the replicated element.

Height offset (%) – Determines the elements' offset from the Base surface in relation to the element's height.

Offset U – Offsets the elements in the U direction.

Offset V – Offsets the elements in the V direction.

Random Offset U – Applies a random offset of the elements in the U direction.

Random Offset V – Applies a random offset of the elements in the U direction.

The offset values are in relation to the reference object's size

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Rotation – Determines the rotation of the pattern elements.

Random Rotation – Rotates each element with a random angle ranging between 0 and the +/- Random Rotation value.

Use Rotation Step – When enabled, Random rotation is based on a 360/X where X is Steps count. For example, if Random rotation is set to 4, the pattern mesh is randomly rotated on a 90 degrees step (360/4) - 0, 90, 180, 270, 360 (0). If there is also a Rotation set, for example to 30 degrees, there is a 30 degrees offset - 30, 120, 210, 300, 390 (30).

Random Offset and Random Rotation are not compatible with U and V Tiling values less than 1.

Options

Map Channel – Determines the mapping channel to be used when positioning the elements.

Use Items UVs – When disabled the base mesh UV mapping (texture placement) overrides the UVs of the items. Each item (pattern object) will inherit the UV coordinates of the point of the base mesh that lies below.
When enabled the original item UVs are used instead.

Use Items Mtl IDs – When enabled the original item material IDs are used. When disabled the base mesh IDs override the IDs of the items. Each item will inherit the ID of the face of the base mesh that lies below.

Enmesh

▼ Parameters

Add Objects

Spacing X	0	
Spacing Y	0	
Spacing Z	0	
Tiling U	5	
Tiling V	5	
Height (%)	100	
Height Offset (%)	50	
Offset U	0	
Offset V	0	
Random Offset U	0	
Random Offset V	0	
Rotation	0	
Random Rotation	0	
Use Rotation Step	☐	

▼ Options

Map Channel	1	
Use Items UVs	☐	
Use Items Mtl IDs	☑	

Examples

Reference Object used for building a pattern:

The geometries which are repeated are the parts of the Reference Object which are inside of the **Bounding Box**. By default the Bounding Box encloses all the Reference Objects added.
The Bounding box can be changed with the Spacing X, Spacing X and Spacing Z parameters. Positive values for Spacing increases the Bounding Box of the Reference Objects
and this way creates distance between the items. Negative values clip away parts of the Reference objects.
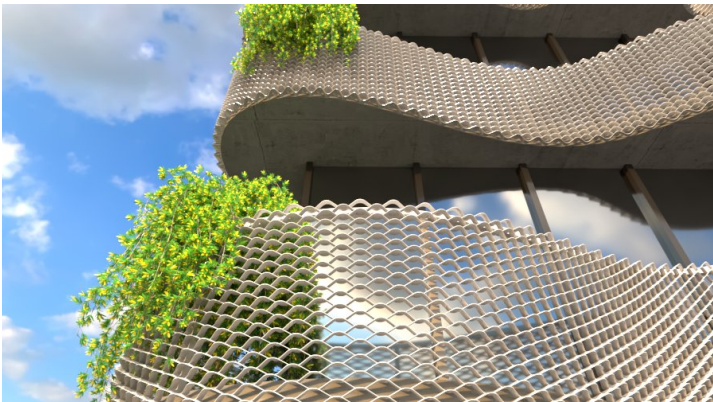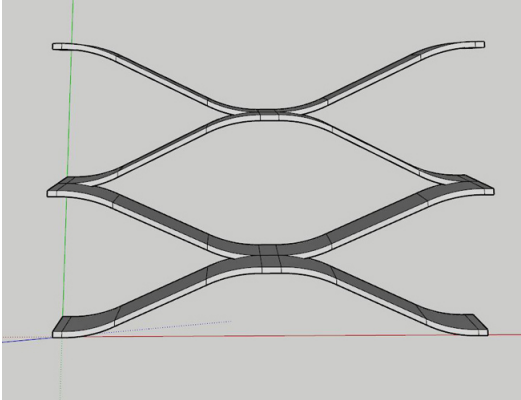
Tiling

Tiling = 5, Height = 100%, Height Offset = 80%

Tiling = 10, Height = 50%, Height Offset = 80%

Tiling = 15, Height = 50%, Height Offset = 80%

Spacing
Rotation

Spacing X and Y = 0

Spacing X and Y = 0.5

Spacing X and Y = 3

Rotation = 0

Rotation = 90

Rotation = 90, Use Rotation Step = on, Random Rotation = 4

Randomization with Multi-Sub Texture: Get ID from set to Random by Instance ID

A material with a Multi-Sub texture in the Diffuse slot is assigned to the Enmesh Host geometry. The Gamma Variation of the texture is randomly changed on each Enmesh Instance.

Randomization with Multi-Sub Texture: Get ID from set to Random by Face Material ID

A material with a Multi-Sub texture in the Diffuse slot is assigned to the Enmesh Host geometry. The Gamma Variation of the texture is randomly changed on each Face material ID of the Reference object. Use "Items Mtl IDs" of the Enmesh needs to be enabled for this option

Gamma Variation = 0

Gamma Variation = 0.05, Seed = 4

Gamma Variation = 0.05, Seed = 1

Gamma Variation = 0

Gamma Variation = 0.05, Seed = 4

Gamma Variation = 0.05, Seed = 5

Randomization with UVW Placement

The Enmesh Use Items UVs needs to be enabled in this case.

Use Items UVs

UVW Placement = Stochastic Tiling

UVW Placement = By Instance, Seed = 3

UVW Placement = By Instance, Seed = 4

Use Items UVs = On

Use Items UVs = off, Repeat U/V (of the texture) = 1

Use Items UVs = off, Repeat U/V (of the texture) = 3

Footnotes

- VRayEnmesh is incompatible with render-time created geometry like Displacement, Fur and Scatter.
- Scene units in SketchUp are always calculated in inches.