

V-Ray Enmesh

This page provides information on the V-Ray GeomEnmesh node.

Overview

The V-Ray Enmesh (GeomEnmesh) node generates a render time patterned geometry over a mesh surface. The modifier can be used to create crochet fabric, chain mail, nets, and anything that requires inflex geometry tiling.

Multiple objects can be included in the node's Objects list to form a complex pattern sample and tile together over the mesh surface.

The node's gizmo encloses the sample to be tiled. You can adjust it to fit all the listed geometry or crop it conveniently by modifying the size and position of the gizmo. Therefore, the gizmo is also referred as cropbox.

Use a Material SOP to target the V-Ray Enmesh primitive for material assignments.

Learn more at [How to Add V-Ray Enmesh](#) tutorial.

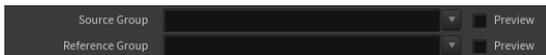


Main

There parameters are available when creating a V-Ray Enmesh node from the Digital Assets menu (*obj Net > Geometry node > Digital Assets > V-Ray Enmesh*).

Source Group – Shows the set containing the mesh used as a source. This is the base. Other geometries will be scattered on this object.

Reference Group – Shows the set containing the objects used as reference meshes. This is the object or objects that will be scattered on top of the Source.



Basic Parameters - Digital Assets

There parameters are available when creating a V-Ray Enmesh node from the Digital Assets menu (*obj Net > Geometry node > Digital Assets > V-Ray Enmesh*).

UV Channel – Specifies the mapping channel of the base surface to use for pattern tiling.

Tiling

Tiling U / V – Sets a tiling factor for the pattern. See the [Tiling example](#) below.

Flip U / V – Flips the U/V coordinates of the source mesh.

Translation

Offset U / V – Sets a pattern offset along the base surface local mapping.

Random Offset U / V – Sets a random offset along the base surface mapping to every pattern in its tile.

Rotation

Rotation – Sets pattern rotation around the base surface normal.

Use Random Rotation Steps – When enabled, the random rotation is snapped to distinct angles as formed by using the **Random rotation** value as steps count to cover the full 360 spectrum. 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 rotation – Sets random rotation up to the given angle to each pattern around the base surface normal. Rotation happens in positive and negative direction.

Height

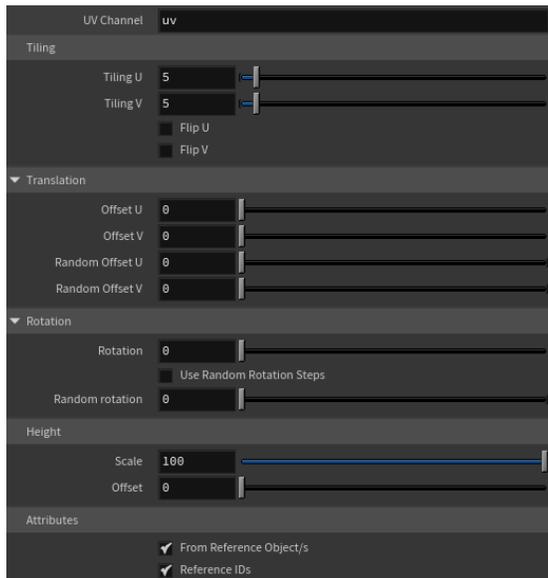
Scale – Specifies the height of the layer.

Offset – The offset along the surface normals based on the height in percent.

Attributes

From Reference Object/s – Uses the mapping of the listed objects for shading the result V-Ray Enmesh. This option is disabled by default and the mapping of the original base mesh object is used for shading.

Reference IDs – Shades the V-Ray Enmesh using the polygon materialIDs of the objects that form the pattern. This comes handy with shading setups that include V-Ray MultiID texture or Multi/Sub-Object material. If disabled, the polygon materialIDs of the base mesh object are used. *See the [Use Mesh IDs example below](#).*



Basic Parameters - V-Ray

These parameters are available when creating a V-Ray Enmesh node from the V-Ray menu (obj Net > Geometry node > V-Ray > V-Ray Enmesh).

UV Channel – Specifies the mapping channel of the base surface to use for pattern tiling.

Tiling U / V – Sets a tiling factor for the pattern. *See the [Tiling example below](#).*

Flip U / V – Flips the U/V coordinates of the source mesh.

Height – Sets the resulting V-Ray Enmesh height based on the **Cropbox Size Z**. 100% means using original cropbox height.

Rotation – Sets pattern rotation around the base surface normal.

Offset U / V – Sets a pattern offset along the base surface local mapping.

Height Offset – Sets the V-Ray Enmesh geometry offset along the surface normals based on the **Cropbox Size Z**. See the [Height Offset example](#) below.

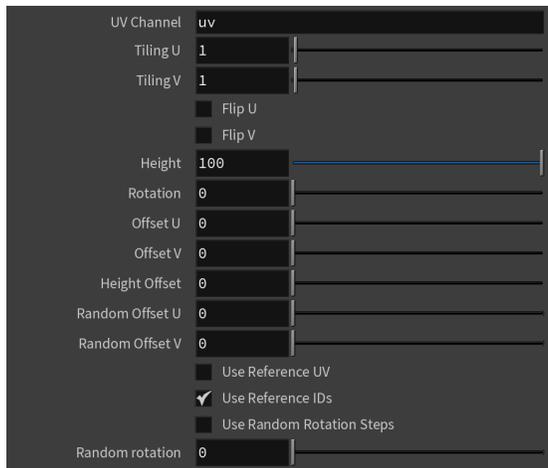
Random Offset U / V – Sets a random offset along the base surface mapping to every pattern in its tile.

Use Reference UV – Uses the mapping of the listed objects for shading the result V-Ray Enmesh. This option is disabled by default and the mapping of the original base mesh object is used for shading.

Use Reference IDs – Shades the V-Ray Enmesh using the polygon materialIDs of the objects that form the pattern. This comes handy with shading setups that include V-Ray MultiID texture or Multi/Sub-Object material. If disabled, the polygon materialIDs of the base mesh object are used. See the [Use Mesh IDs example](#) below.

Use Random Rotation Steps – When enabled, the random rotation is snapped to distinct angles as formed by using the **Random rotation** value as steps count to cover the full 360 spectrum. 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 rotation – Sets random rotation up to the given angle to each pattern around the base surface normal. Rotation happens in positive and negative direction.



Cropbox

Cropbox Size – Sets the cropbox size along X/Y/Z axis. Only reference mesh geometry inside the cropbox is used in the final render.

Cropbox Center – Sets the center of the cropbox. Only reference mesh geometry inside the cropbox is used in the final render.

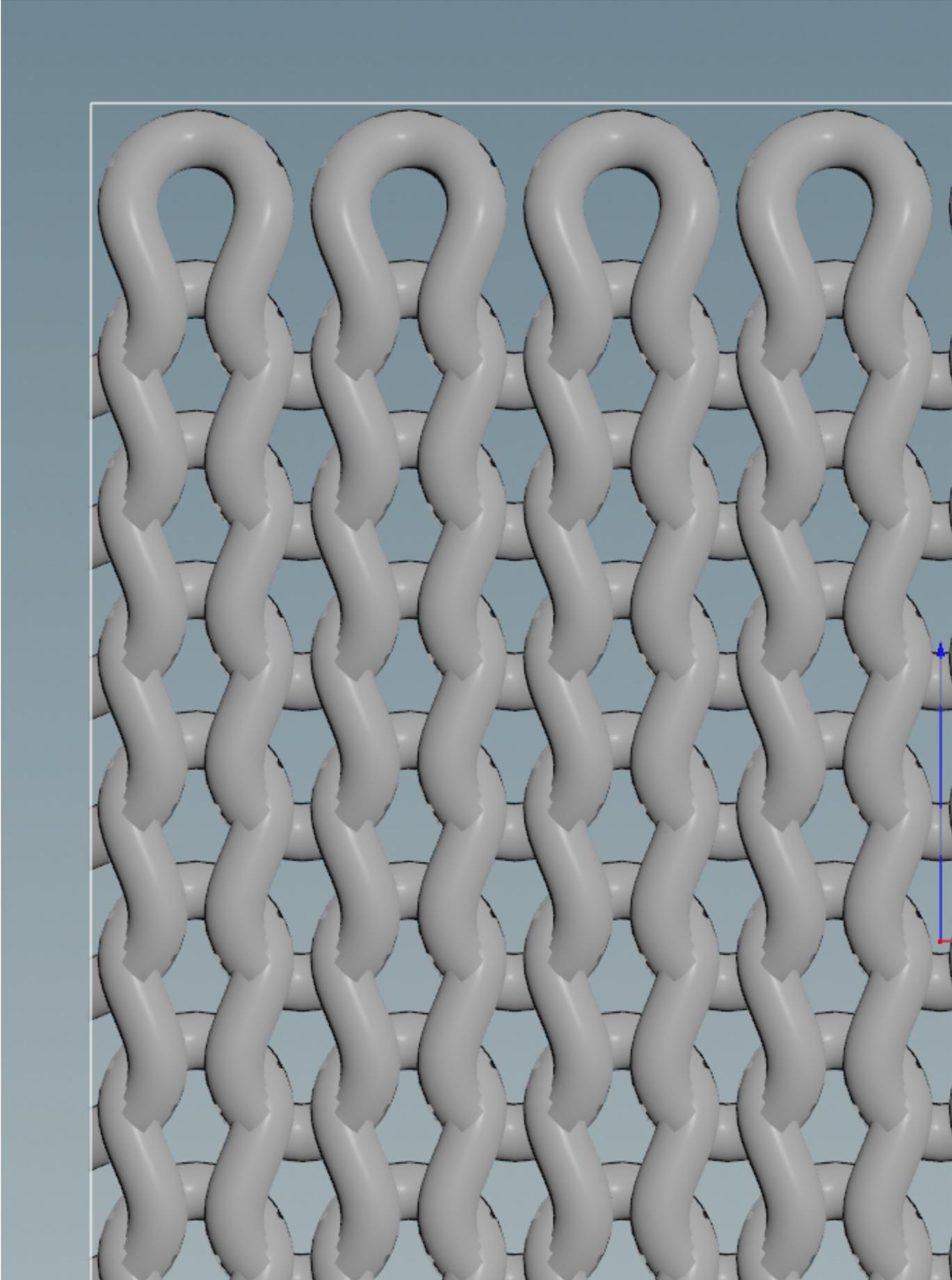
Fit Cropbox to Geometry – Adjusts the size and position of the cropbox to fit all listed objects. Note that when creating the V-Ray Enmesh from the Digital Assets menu, this parameter is named **Fit Cropbox**.

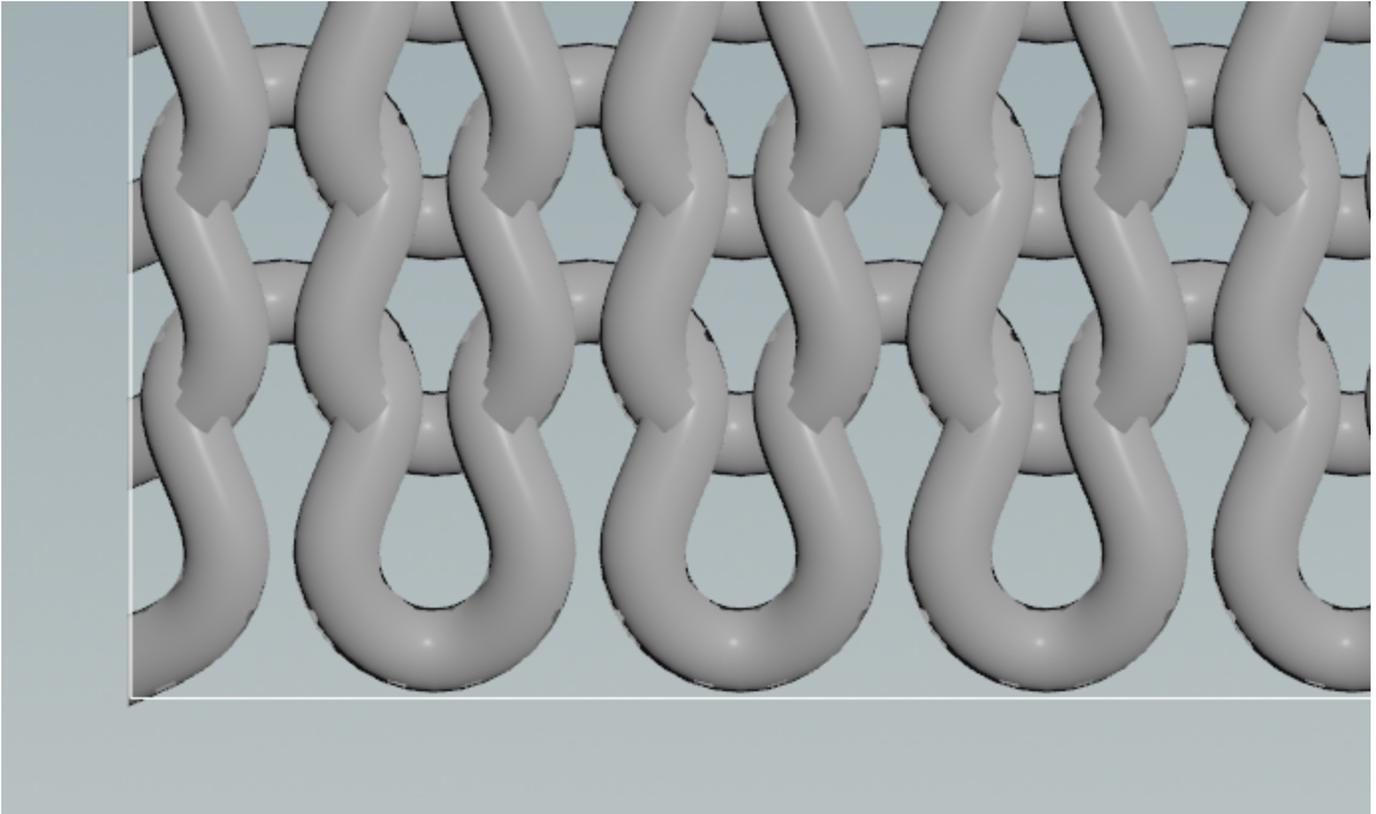


Examples

Example: Tiling

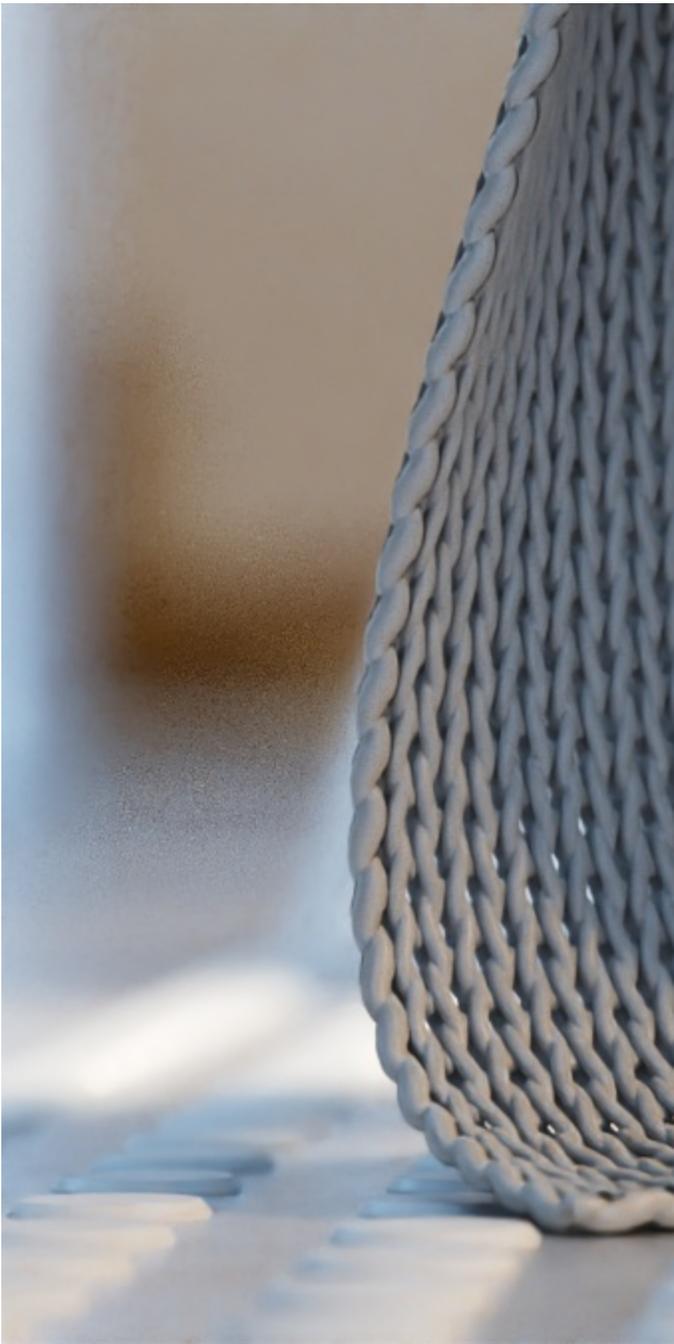
This example shows the effect of setting different tiling factors for a scarf pattern. Both Tiling U and Tiling V parameters are modified.



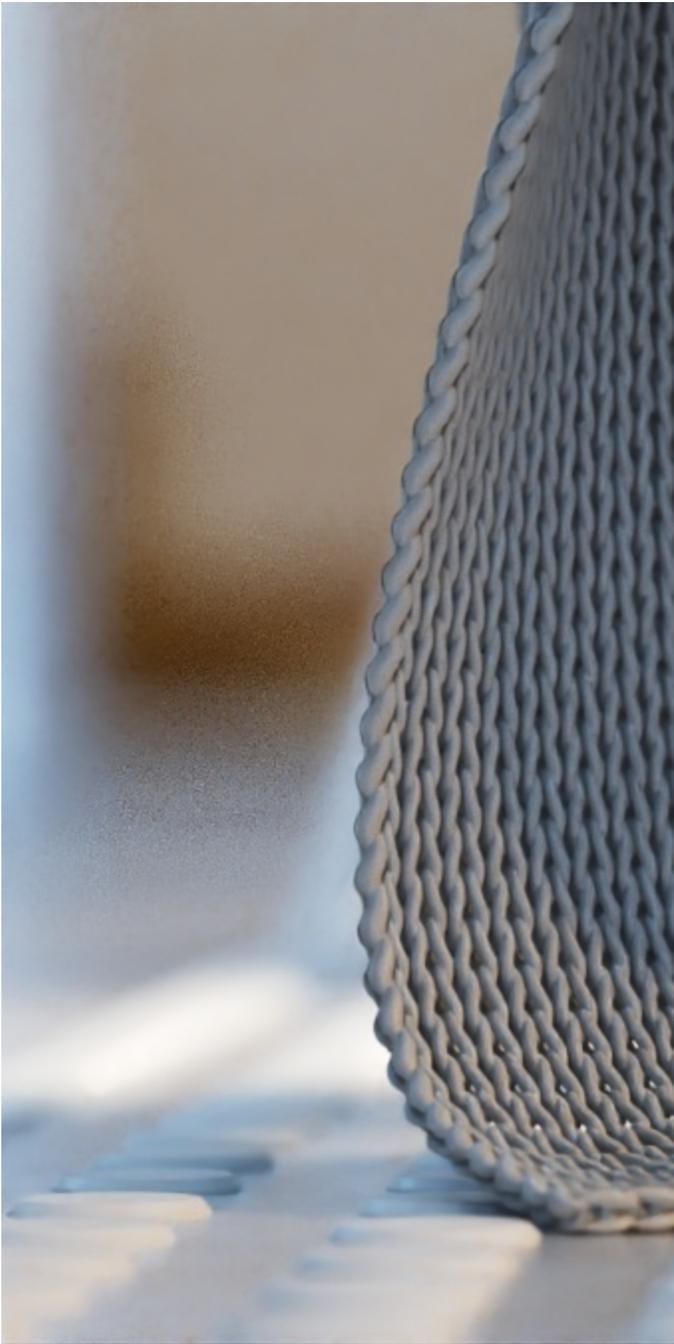


The V-Ray Enmesh gizmo box is set in such a way that its edges are in the center of the knit periphery. Thus, the knit tiles seamlessly.

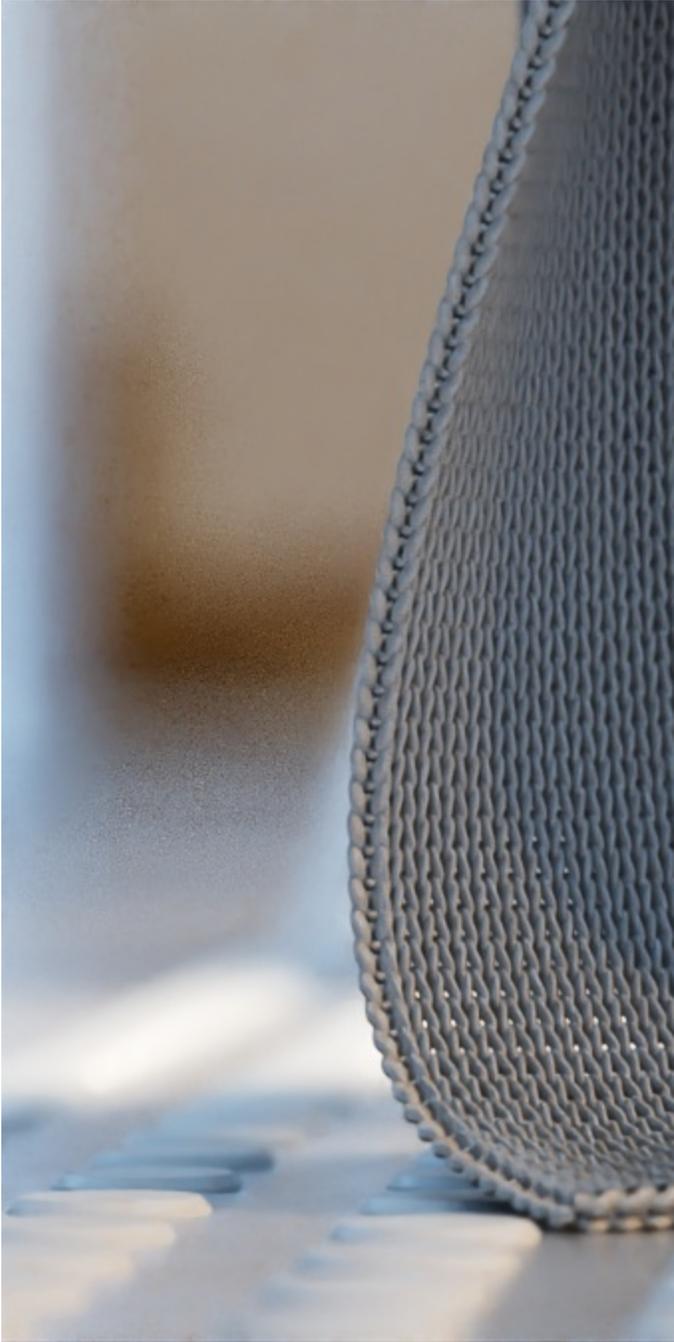
The tiling pattern changes considerably when Tiling values change:



Tiling U and tiling $V = 5$



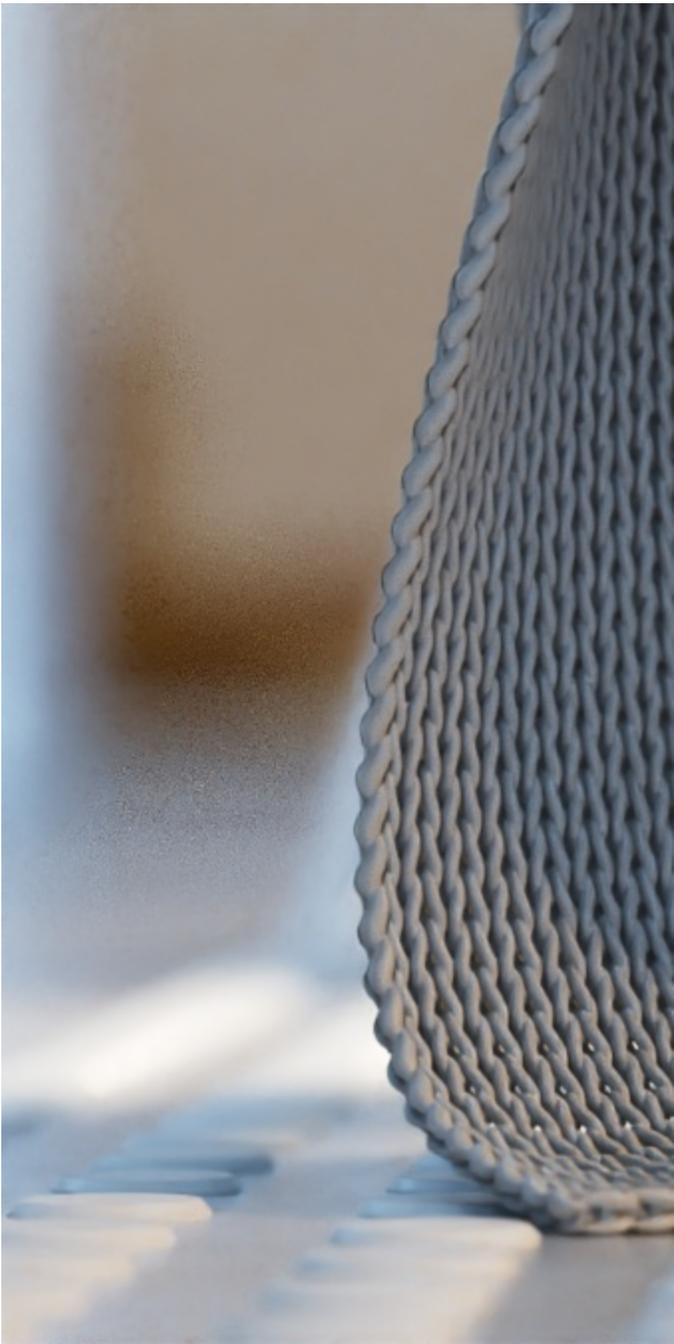
Tiling U and tiling $V = 7$



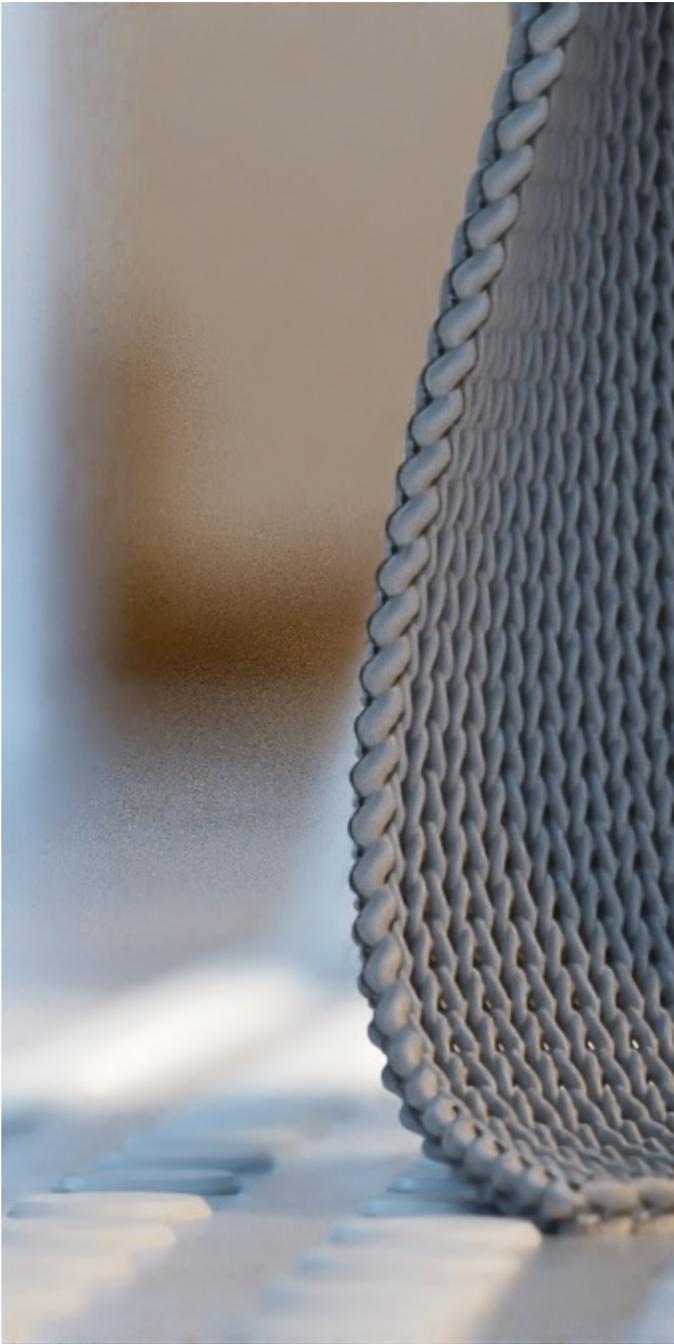
Tiling U and tiling V = 11

Example: Height Offset

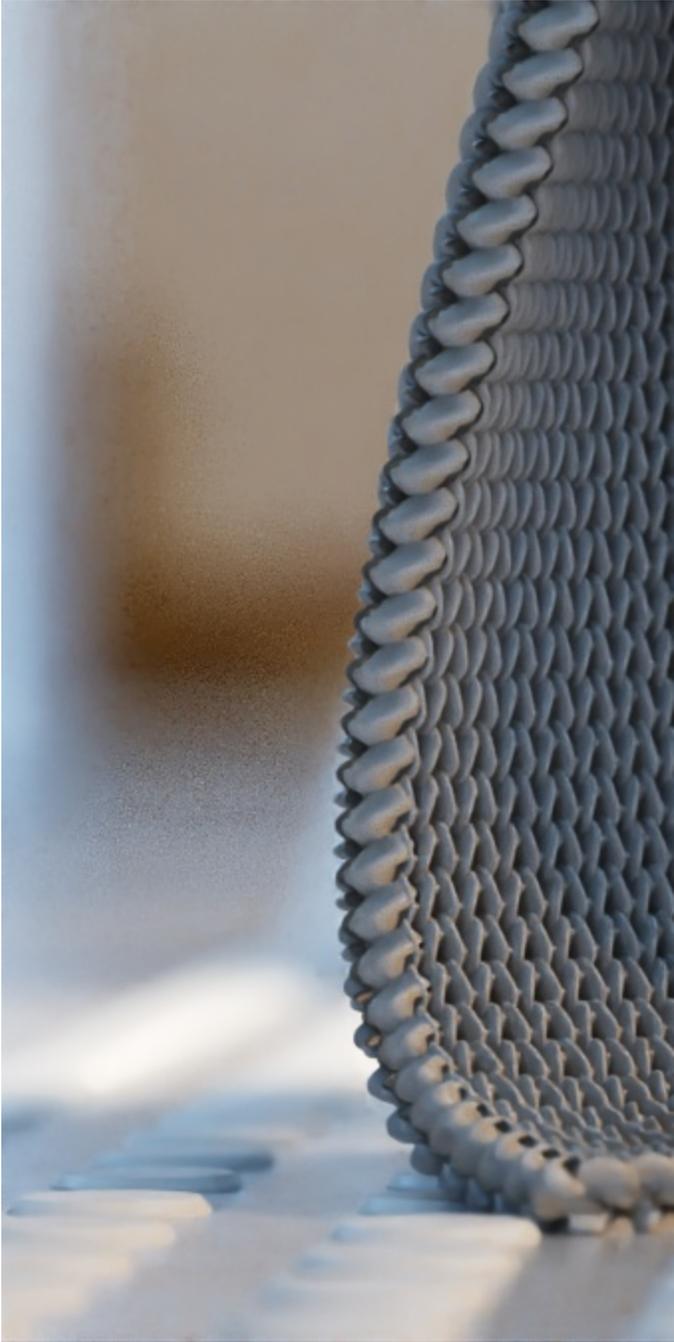
This examples shows the effect of the Height Offset parameter.



Height Offset = 35%



Height Offset = 55%



Height Offset = 100%

Example: Use Reference IDs

The following example shows the effect of Use Reference IDs.

off

on

