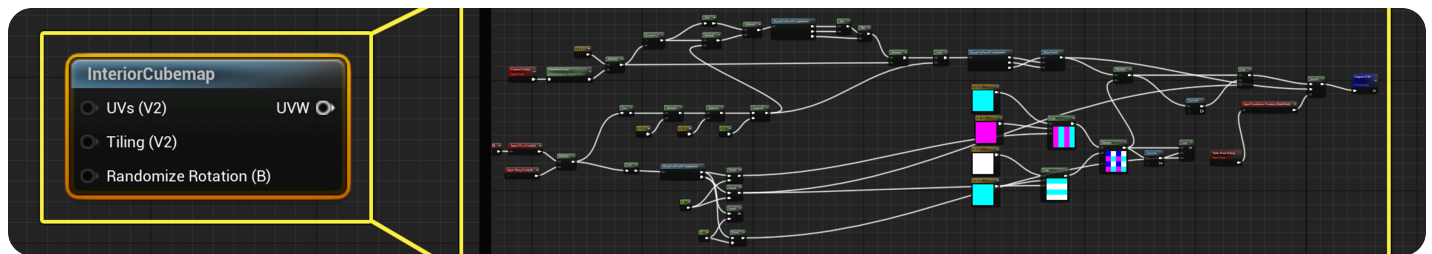


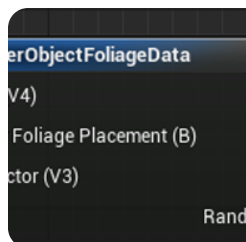
- Developer
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- / Materials
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- / Material Functions Reference

Material Functions Reference

Reference pages for each of the default Material Functions, organized by category.

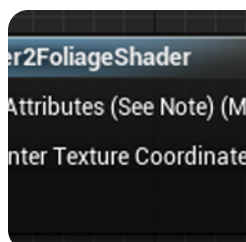


The reference pages below provide information and usage examples for all of the default **Material Functions** included with Unreal Engine. These are organized according to the categories in the [Material Editor](#) palette.



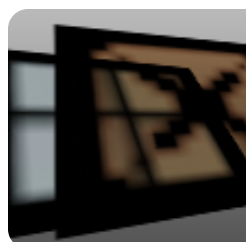
Pivot Painter Tool 1.0 Material Functions

Material Functions designed to allow utilization of the Pivot Painter MAXScript.



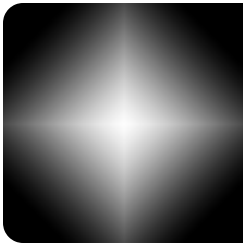
Pivot Painter Tool 2.0 Material Functions

Material Functions designed for use with the Pivot Painter 2 MAXScript in an Unreal shader network.



Blend Material Functions

Functions designed to blend one color with another, similar to blend modes in popular image editing applications.



Gradient Material Functions

Procedurally generated gradients to add to your materials, eliminating the need for textures and saving memory.

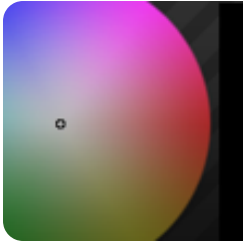
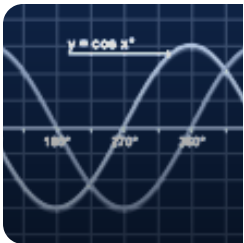


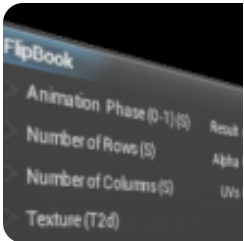
Image Adjustment Material Functions

Functions for making adjustments to existing image textures, such as shifting contrast or hue.



Math Material Functions

Material Functions which perform preconfigured mathematical operations such as the calculation of pi, addition of vector components, and others.



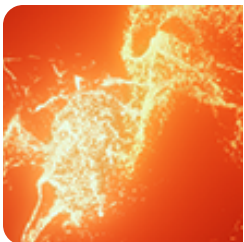
Misc Material Functions

Misc Material Functions that do not fall into existing categories.



Opacity Material Functions

Functions to handle opacity values within a Material network.



Particles Material Functions

Specialized functions designed to aid setting up the look of complex particle networks.



Procedurals Material Functions

Procedurally generated textures and operations, such as the creation of normal maps from existing height maps.



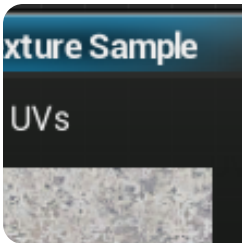
Reflections Material Functions

Functions for aiding in the calculation of values for a variety of reflection types.



Shading Material Functions

Functions for handling special shading types, such as Fuzzy Shading networks.



Texturing Material Functions

A wide variety of functions designed to aid in working with textures, such as reprojecting UVs, cropping, and many more.



Vector Ops Material Functions

Functions built to handle vector mathematics, such as calculating a Fresnel effect.



World Position Offset Material Functions

Functions for handling vertex manipulation using world position offset.