

What is Substance 3D Painter



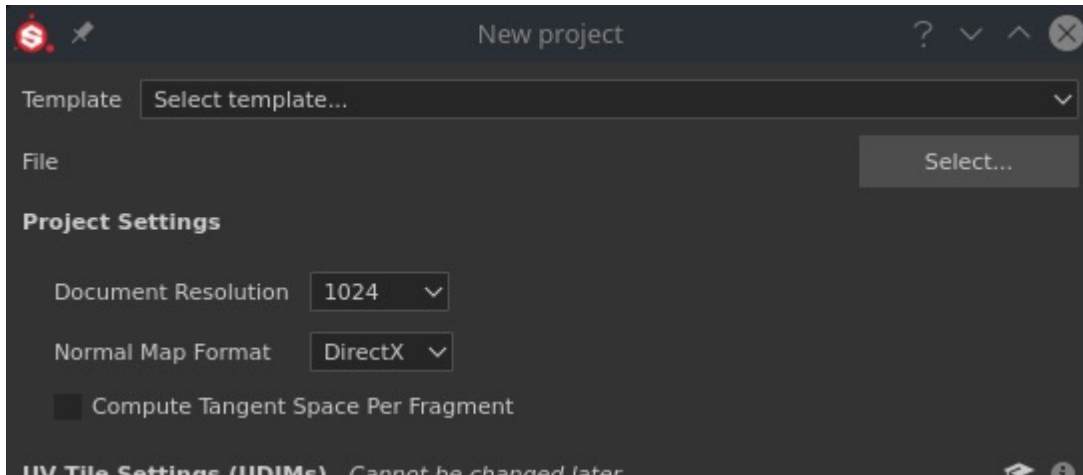
WHAT IS SUBSTANCE PAINTER



System Requirements

<i>Platform</i>	<i>Minimum</i>	<i>Recommended</i>	<i>Optimal</i>
Windows	• OS: Windows 10 (64bit, version 1909) • CPU: • Intel Core i3 • AMD Ryzen 3 • GPU: • Nvidia Geforce GTX 1060 • Nvidia Quadro M2000 • AMD Radeon RX 580 • VRAM: 4GB • RAM: 8GB • Hard drive: 20 GB HDD	• OS: Windows 10 (64bit) • CPU: • Intel Core i7 • AMD Ryzen 7 • GPU: • Nvidia Geforce GTX 2080 • Nvidia Quadro RTX 4000 • AMD Radeon RX 6700 XT • VRAM: 8GB • RAM: 16GB • Hard drive: 30 GB SSD	• OS: Windows 10 (64bit) • CPU: • Intel Core i9 • AMD Ryzen 9 • GPU: • Nvidia Geforce RTX 3080 • Nvidia Quadro RTX 6000 • AMD Radeon RX 6800 XT • VRAM: 16GB • RAM: 32GB • Hard drive: 50 GB SSD
Mac OS	• Model: MacBook Pro 2019 • OS: Mac OS 10.14 (Mojave) • CPU: • Intel Core i7 • GPU: • MD Radeon Pro 5300M • RAM: 8GB • Hard drive: 10 GB HDD	• Model: • MacBook Pro 2020 • iMac Pro 2020 • OS: Mac OS 11 (Big Sur) • CPU: • Intel Core i9 • GPU: • AMD Radeon Pro 5600M • AMD Radeon Pro Vega 56 • RAM: 16GB • Hard drive: 25 GB SSD	• Model: Mac Pro • OS: Mac OS 11 (Big Sur) • CPU: • Intel Xeon W9 • GPU: • AMD Radeon Pro W5700X • RAM: 32GB • Hard drive: 50 GB SSD
Linux	• OS: • CentOS 7.0 • Ubuntu 18.04 (Steam only)	• OS: • CentOS 7.6 • Ubuntu 20.04 (Steam only)	• OS: • CentOS 7.6 • Ubuntu 20.04 (Steam only)

Project Creation



The new project creation window allows to create a project file to store the 3D model and its texturing information.

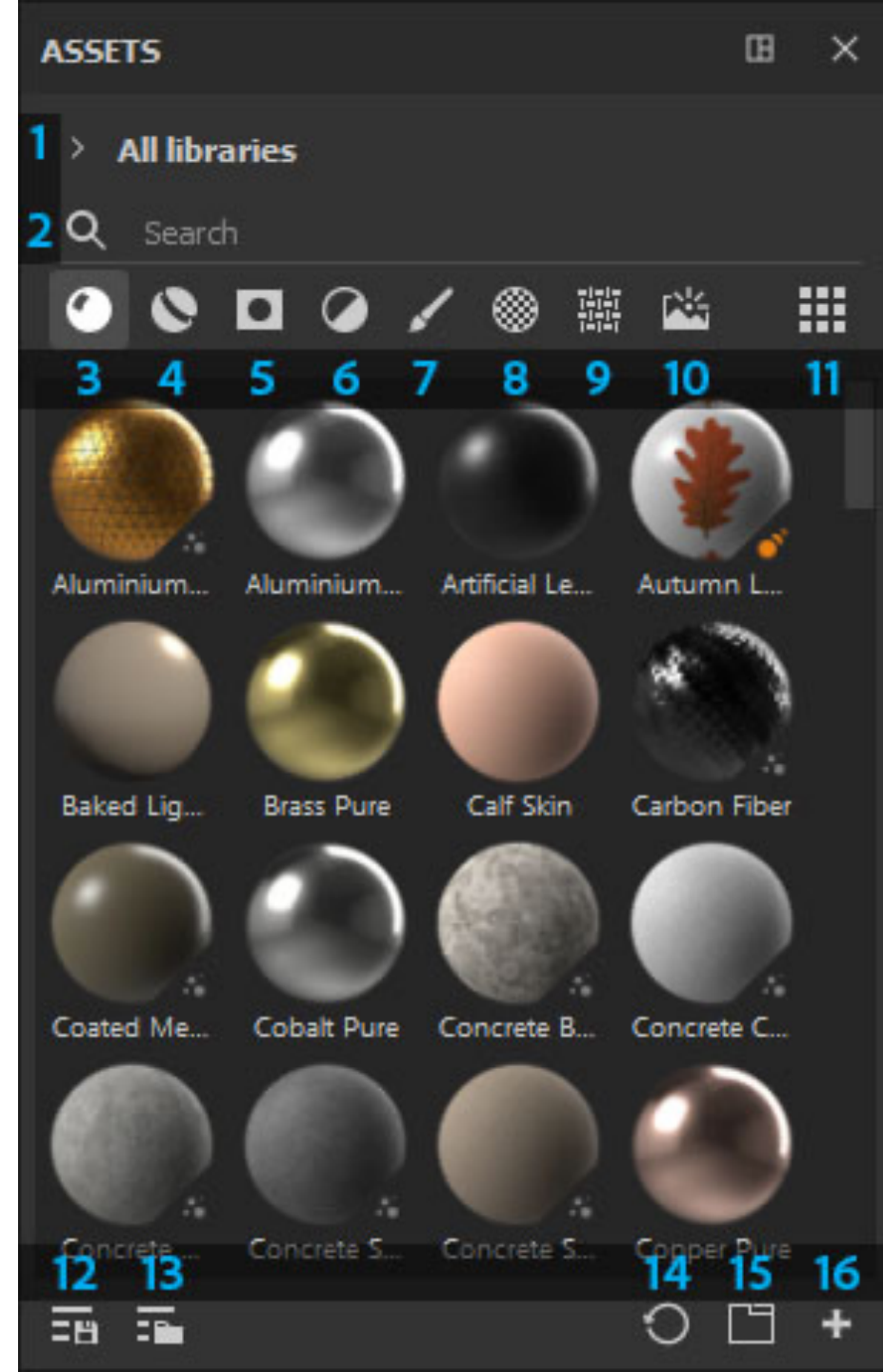
Template	Allows to specify a template that will define the default settings of the project. A template contains the follow parameters: • Texture Set settings • Display settings • Baking settings • Shader resources (including attached textures) • Environment Map file i Templates are *.spt files that are created from an existing project via the File menu and saved inside the Assets folder to be easily shared with team members.
File	Click on the "Select" button to specify a 3D model file to load. List of supported file formats: • .abc (Alembic) • .dae (Collada) • .fbx (Autodesk FBX) • .gltf (GL Transmission Format) • .obj (Wavefront OBJ) • .ply (Stanford Triangle Format)

<i>Parameter</i>	<i>Description</i>
Document Resolution	Defines the default texture resolution of the project for each Texture Sets. The resolution can go up to 4K (4096x4096 pixels) when working inside the application and 8K (8192x8192 pixels) when exporting. The resolution can be changed at anytime later on via the Texture Set settings. <i>i</i> 8K export requires at least 2.5GB of VRam on the GPU to be available.
Normal Map Format	Defines the Normal map format for the project, can be either • DirectX (X+, Y-, Z+) • OpenGL (X+, Y+, Z+) <i>i</i> As a reminder: • Unreal Engine use DirectX by default. • Unity use OpenGL by default.
Compute Tangent Space per Fragment	If enabled, the Bitangents are computed in the fragment (pixel) shader instead of the vertex shader. This parameter impacts the way the Normal map is decoded by the Shader in the viewport. Changing this settings will require to rebake the Normal map. <i>i</i> As a reminder: • Unreal Engine needs this setting to be Enabled. • Unity needs this setting to be Disabled (or enabled if you are using the HDRP workflow). For more information see the Tangent Space page in the Bakers documentation.

Interface

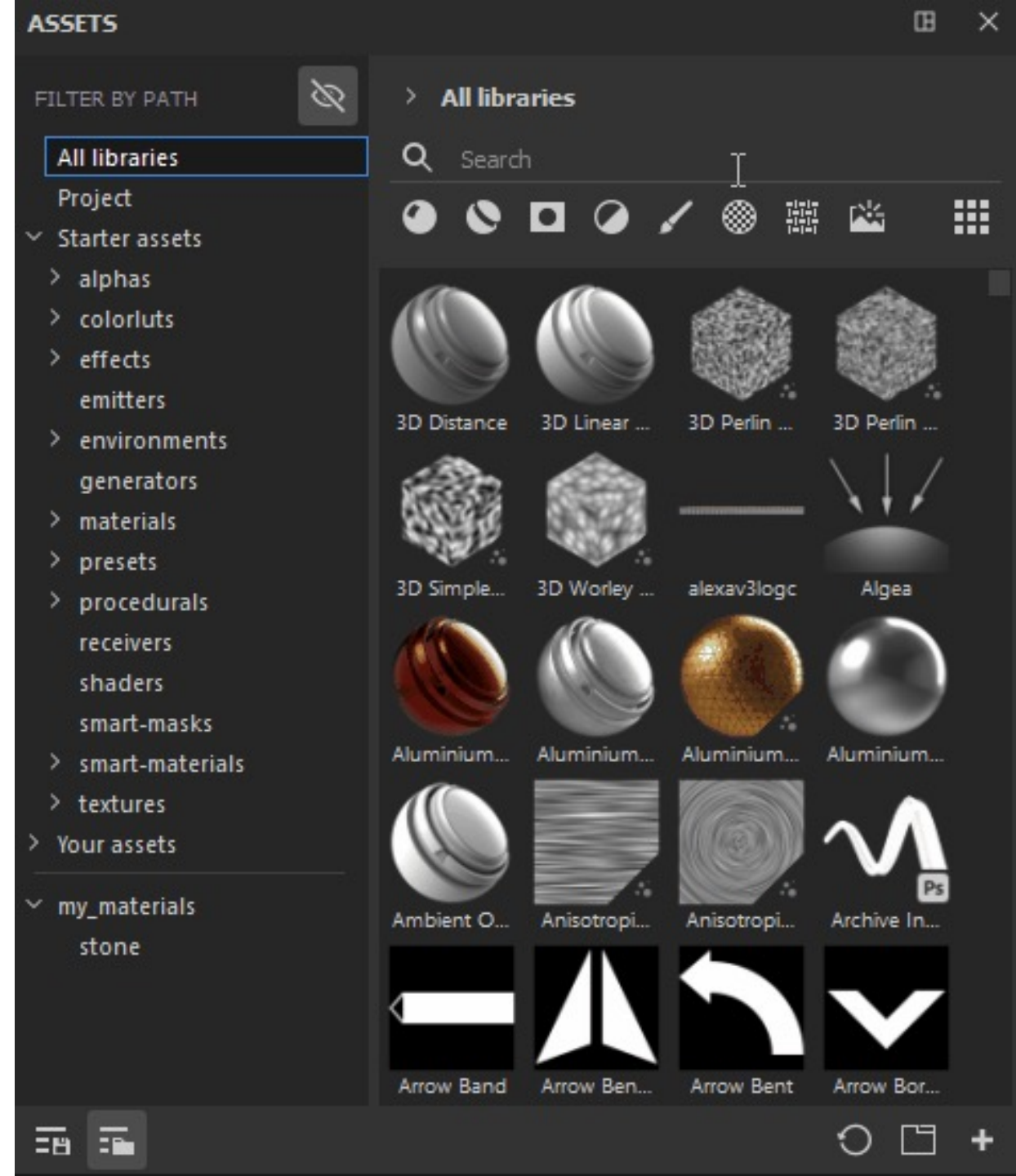
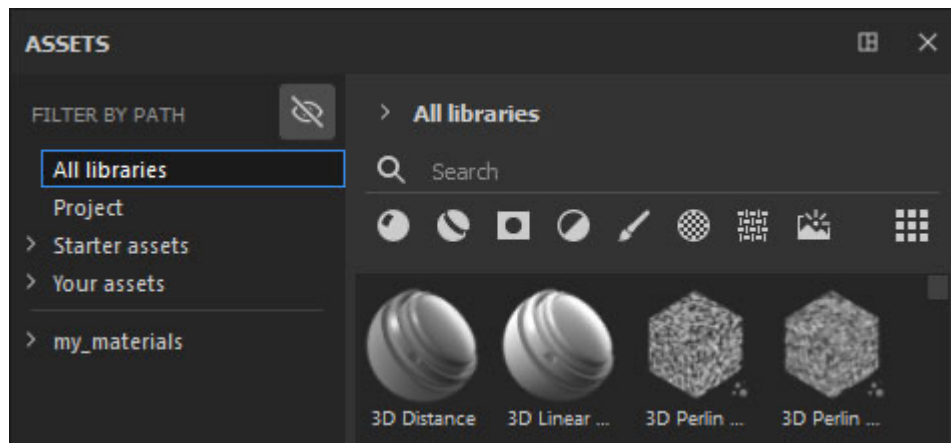
Assets

The Asset window allows you to access the default resources that come with the application (referred to as Starter assets), as well as any imported resources (which can be then found under Your assets).



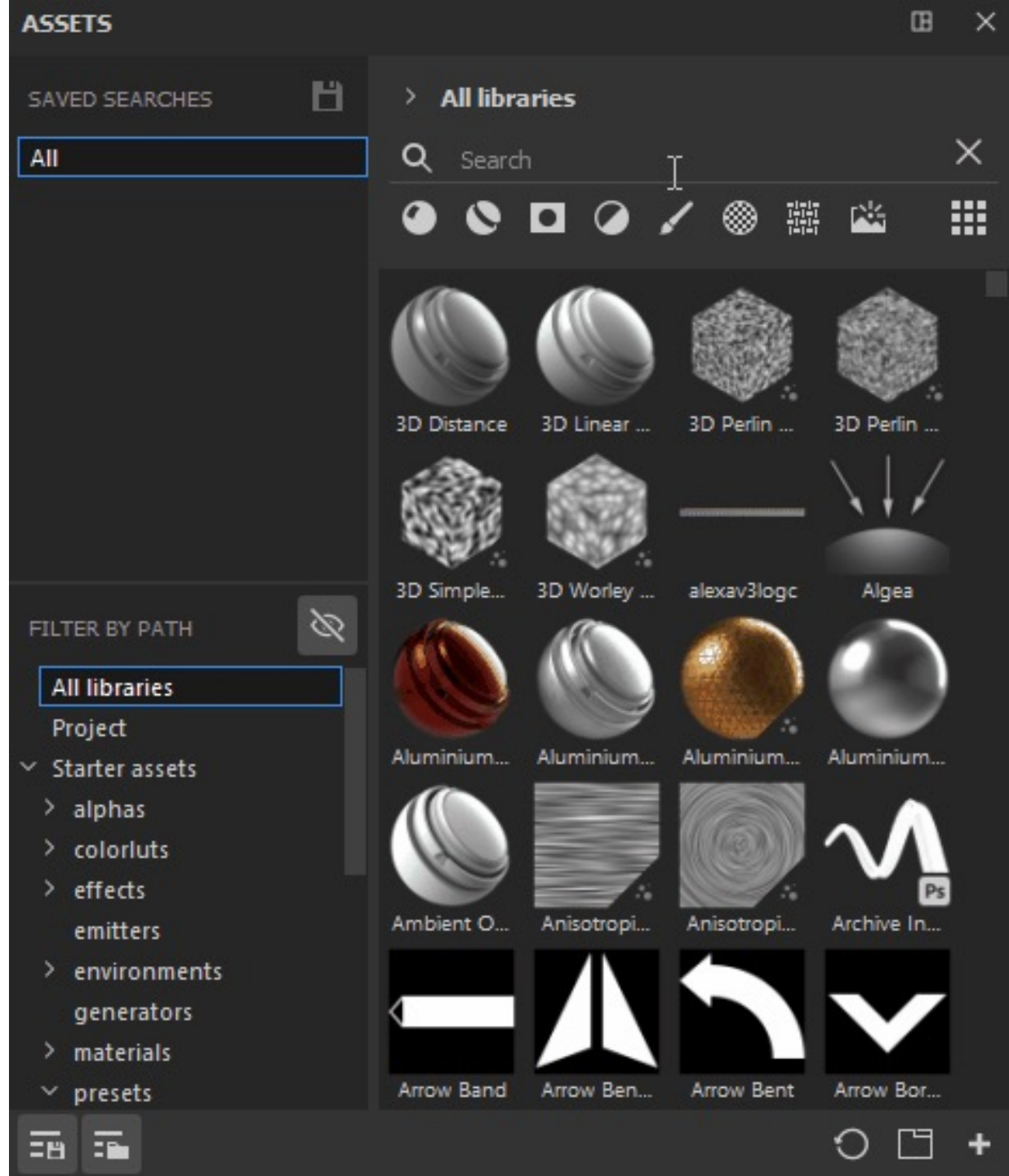
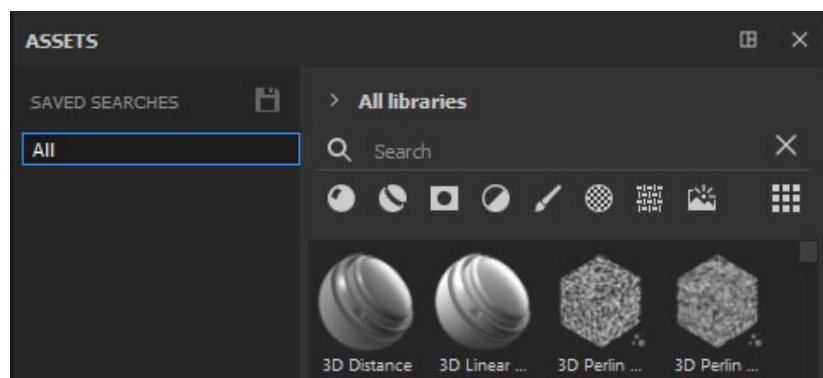
Filter by path

Filter by path is additional section that can be used to navigate through your assets. It has the same structure as the breadcrumbs, which means it allows you to see the path/location of your assets.



Saved searches

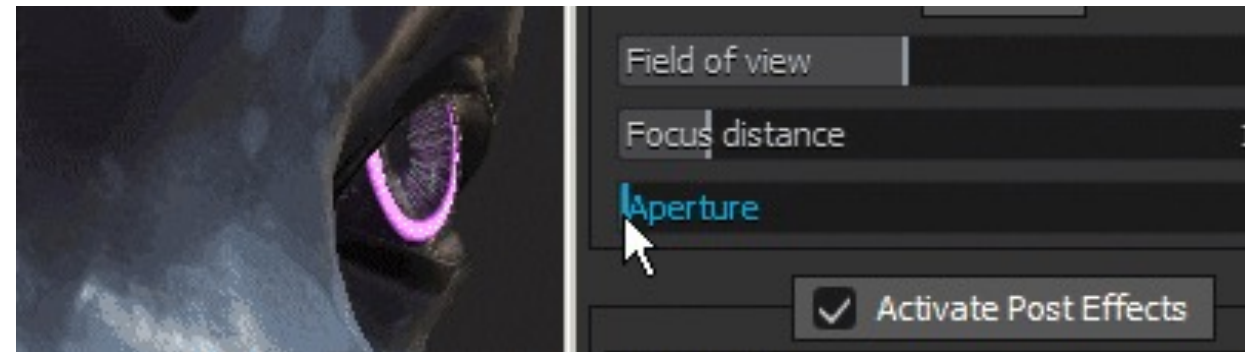
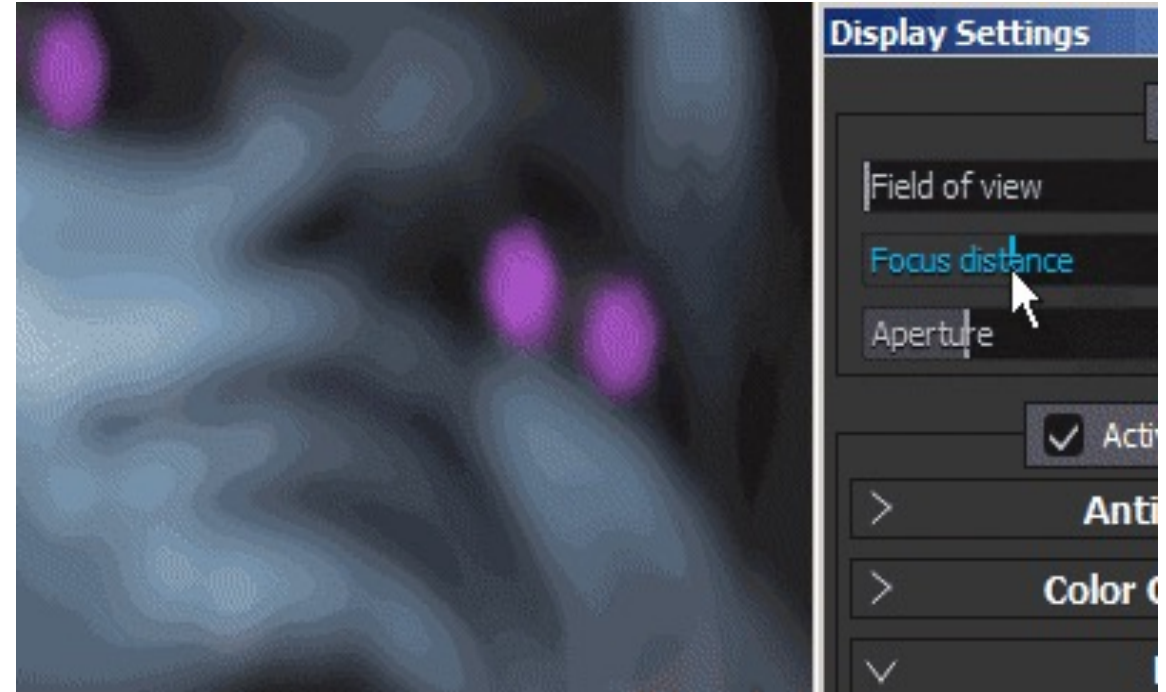
Saved searches, alongside Filter by path, is another new section that can be opened within the Asset window. It allows you to save your most frequent searches and queries, easily access them at any time and even open them as a new sub-library tab that can be docked separately.



Camera settings

This section of the **Display Settings** controls the behavior of the camera as well as the final look of the viewport.

Defines the distance at which the focus point is located. This point is used by the Depth of Field effect.



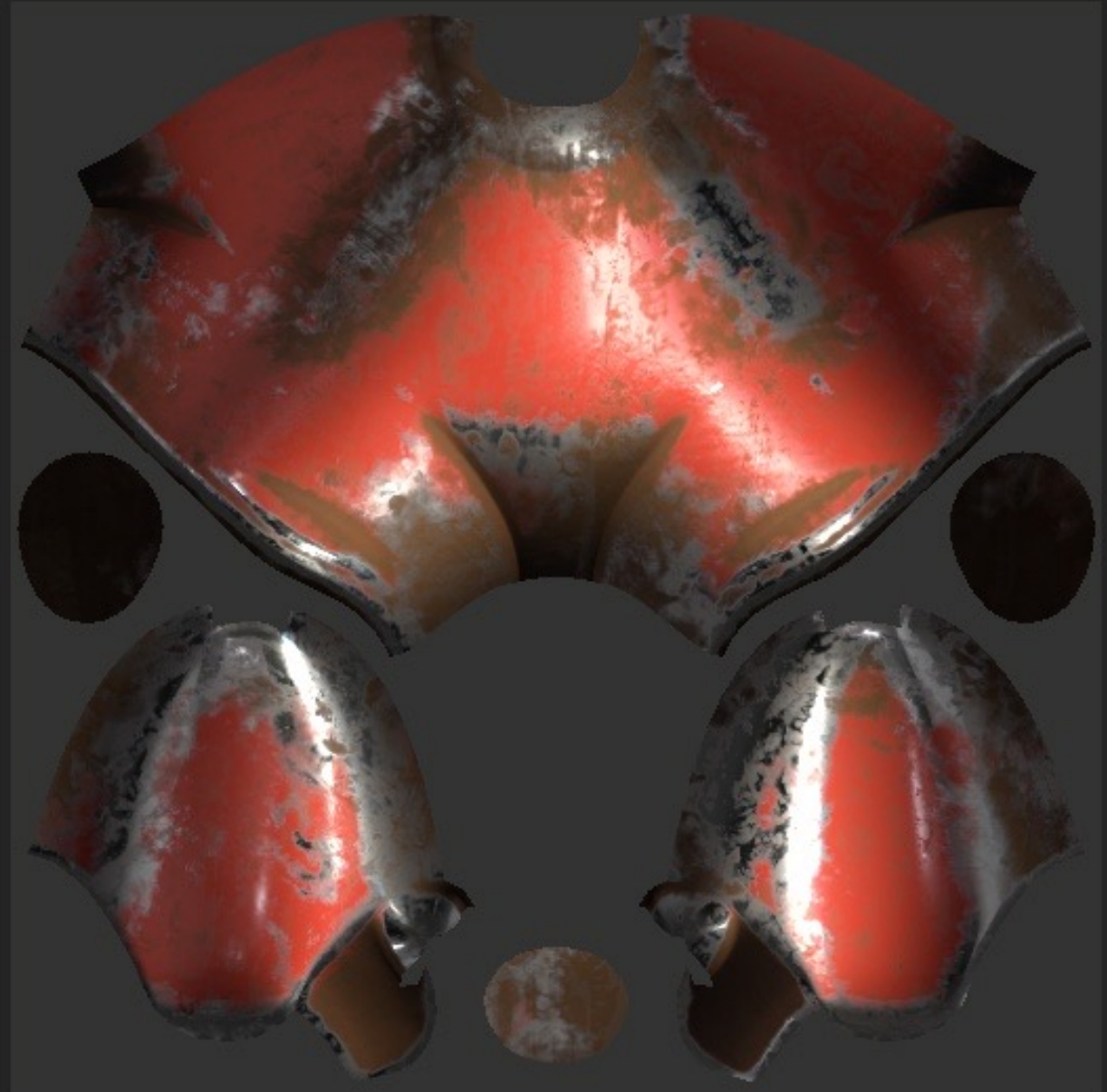
Viewport

The viewport is where the 3D mesh and its textures are displayed. This is also where it is possible to paint on the 3D mesh surface.



2D View

Displays the mesh UV islands from the currently selected [Texture Set](#). It allows to see the textures from the Layer Stack but also to paint on the mesh UV islands.



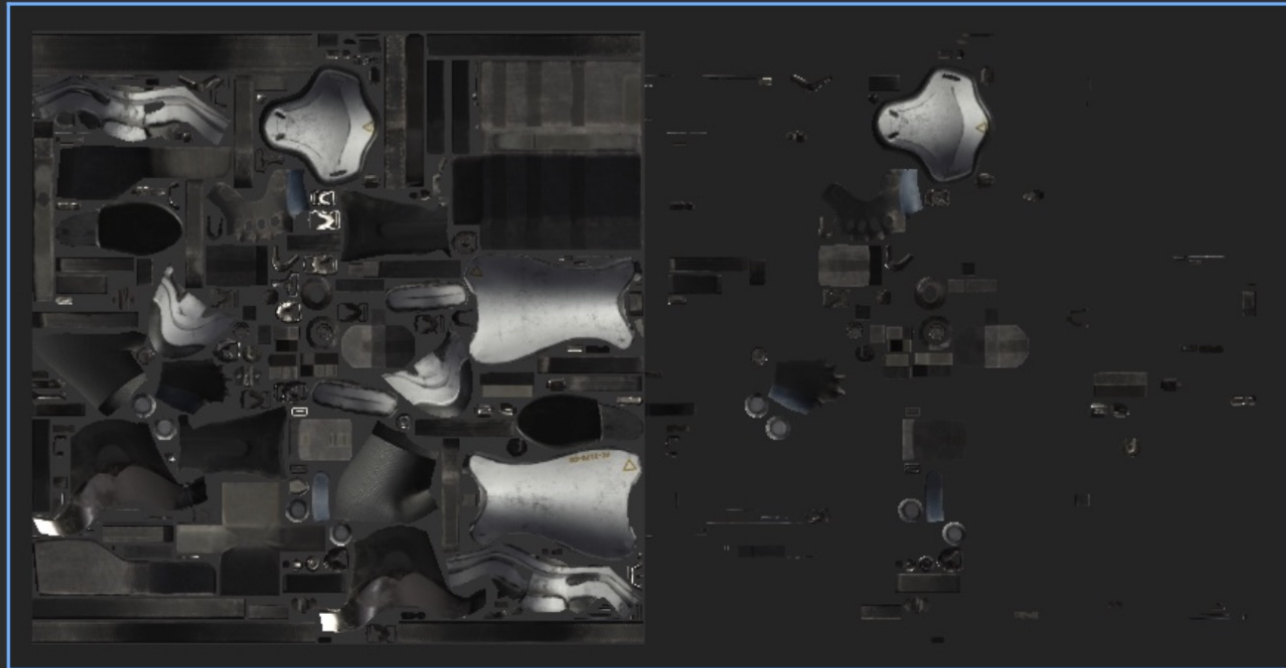
Project Workflow

Regular project

Behaviors

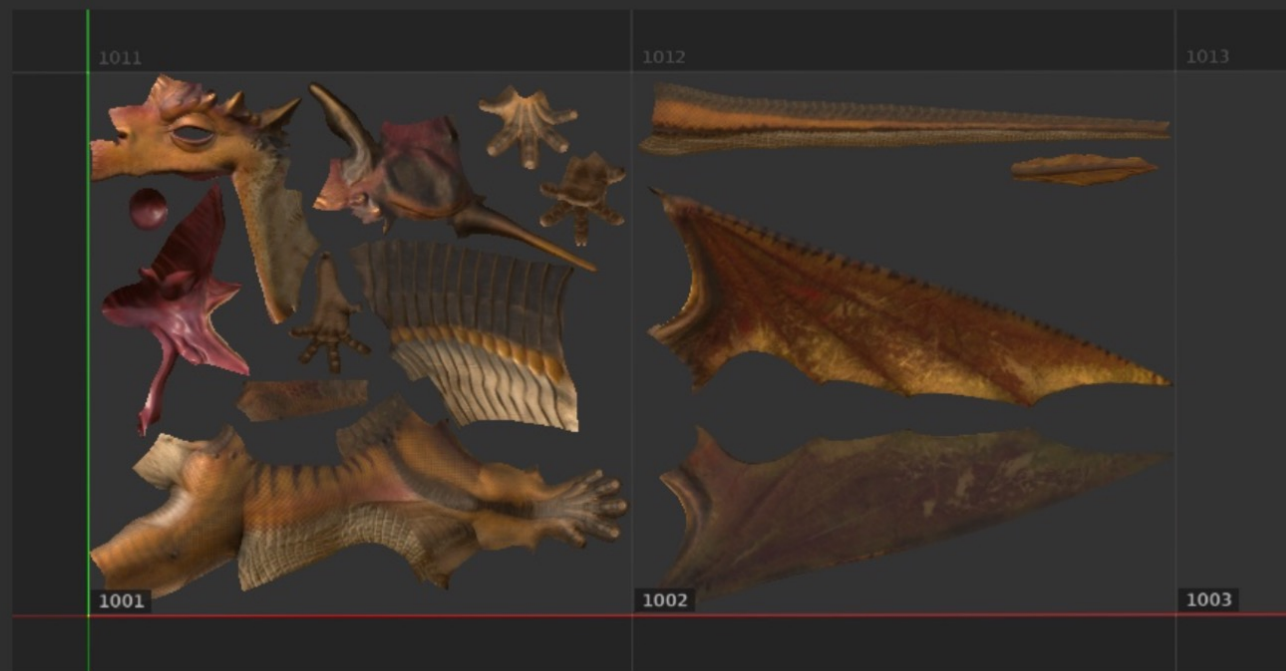
With regular project, only the UV within the UV range [0-1] can be painted on. Anything outside this range will be visible but won't be interactive.

In this example only the UV islands on the left can be painted on (with the light gray background behind).



UV Tile project

With UV Tile project, each UV range is a new set of textures, which can be painted on. The 2D view displays as well a grid to see better how each tile is organized. Each tile will have a UDIM number assigned.



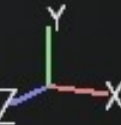
The 3D View

Shows the 3D model under lighting conditions which helps look at how the surface material is defined. This is also where it is possible to directly paint over the 3D model.

Profile: ACES_Standard_Log

Default camera

Material



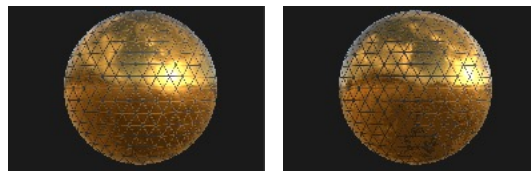
Painting

Painting in Substance 3D

Painter can be achieved in many ways with manual tools or automatic actions.

Paint brush

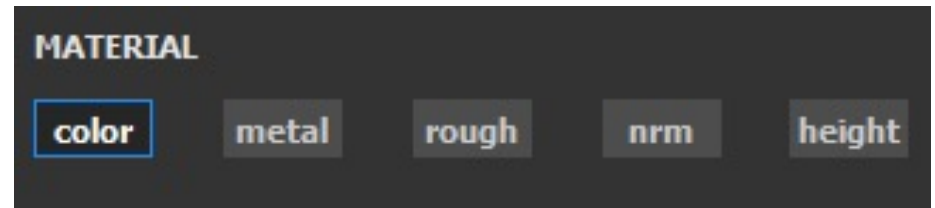
The Paint tool is the default tool of Substance 3D Painter to apply colors and material properties on a 3D mesh.



Tool	Description
	Paint The paint tool allows to apply Brush Strokes with a specific material over the mesh in the project.
	Eraser The eraser allows to remove any existing paint information.
	Projection The Projection allows to apply a material or texture aligned to the current point of view.
	Polygon fill The Polygon Fill allows to select polygons on the 3D mesh to create masks base don the geometry.
	Smudge The Smudge tool allows to stretch, mix and blur color but also other material properties.
	Clone The Clone tool allows to duplicate or patch any part of the existing material on the 3D mesh.
	Material Picker The Material Picker allows to pick on the surface of the 3D mesh the material properties (color but also other channels). This is a temporary tool, once a color is picked the previous tool will be switched back on.

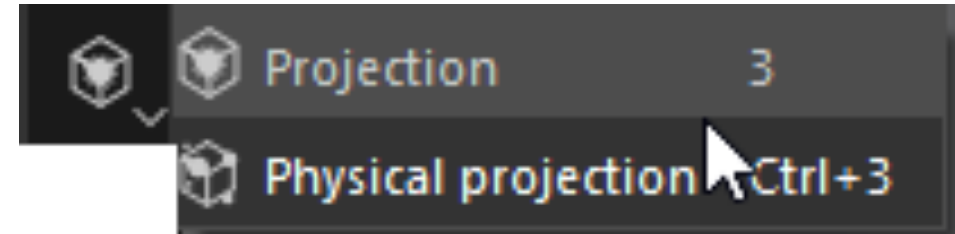
Eraser

The Eraser is a paint tool that erase/hide what has been painted previously by other tools. This tool only affect one layer at a time.



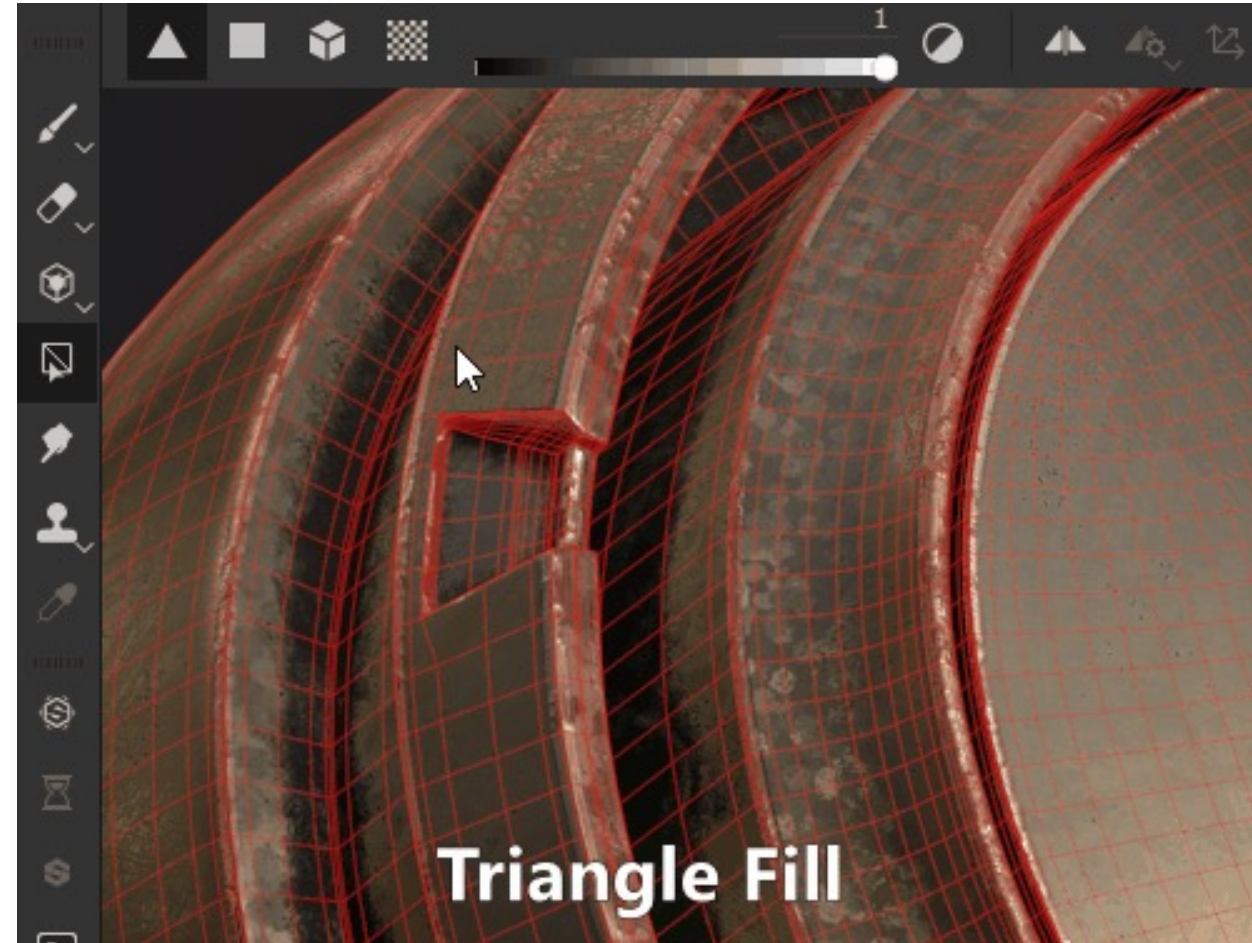
Projection

The projection is a tool that allow to paint a material by projecting it in screen/viewport space. It shares similar controls to the stencil. It is possible to edit the projection transformation by pressing the **shortcut S** :



Polygon fill

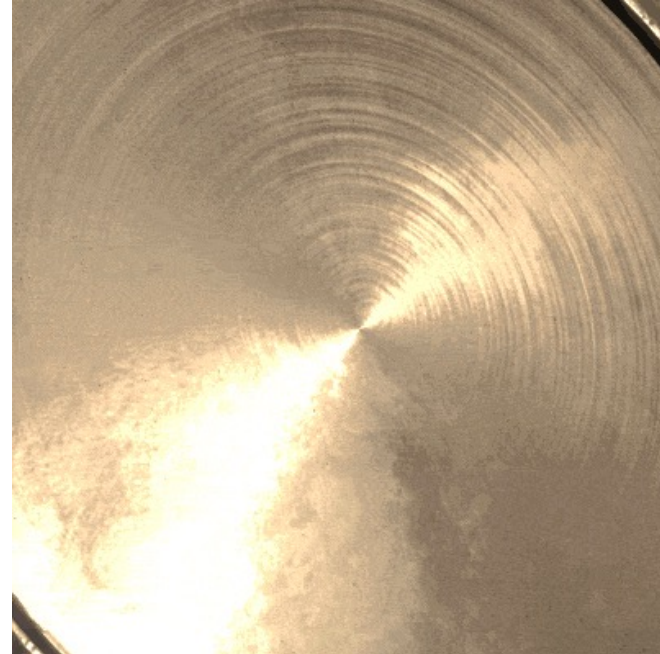
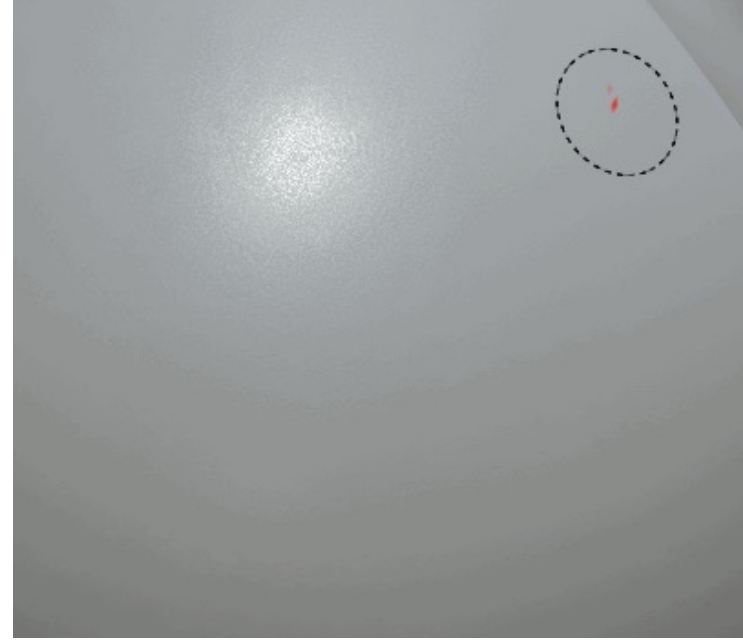
Allows you to draw masks quickly by turning selected polygons into a pixel mask. It might seem like a 3D selection tool from other 3DCC applications, but is actually a painting fill tool that results in pixel data. That means selecting and unselecting works by using it to paint white or black.



Dynamic strokes

Dynamic Strokes are regular brush strokes powered by **Substance files** that can **change** for each stamp inside a **brush stroke**.

Each individual element alongside a brush stroke can be modified based on specific behavior designed in the Substance file itself.





Adobe Substance 3D
Painter

