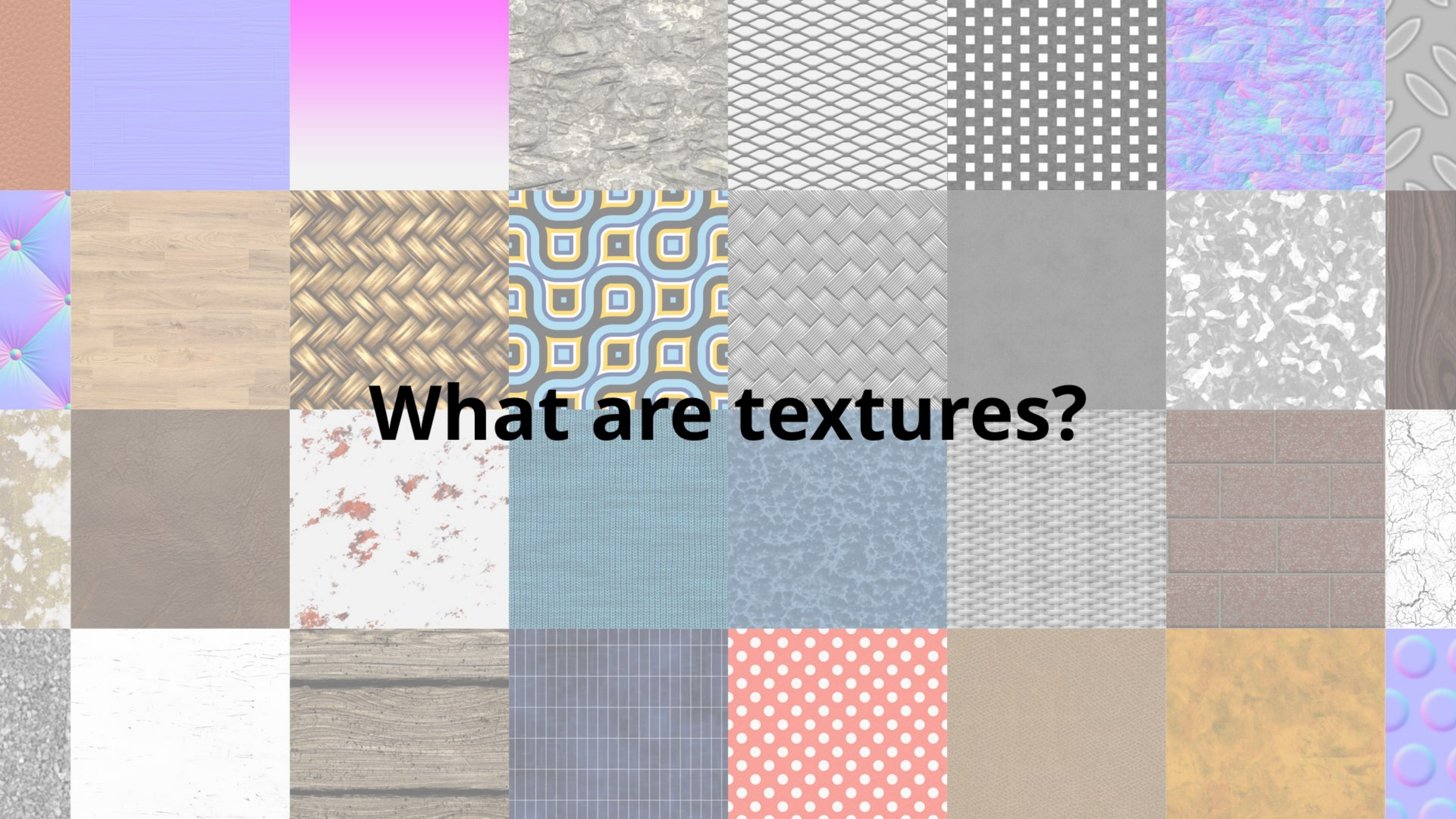
All About KeyShot Textures and Labels

October 6, 2016

Richard Funnell

Topics

- General Overview
- Texture Types
- Projection Types
- Hands on:
  - Image textures
  - Procedural Textures
  - Labels
  - Material Graph
- Q & A

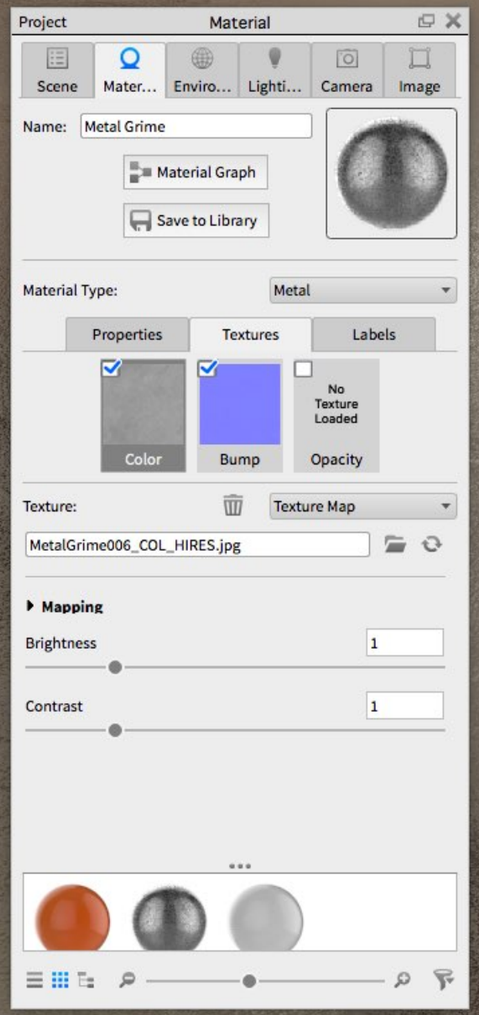

What are textures?

Generally speaking, KeyShot textures are images that define a specific material property.

Textures are not materials

They are a property of a material, and are used to customize the material's appearance or behavior.

The metal material here is using image textures to define color, roughness, and bump.



texture from poliigon.com

What are labels?

Generally speaking, labels are images that are used as graphics or printing on top of another material.

Parent Material
(plastic with wood textures)

Very fancy label

In KeyShot 6, labels can have materials AND textures

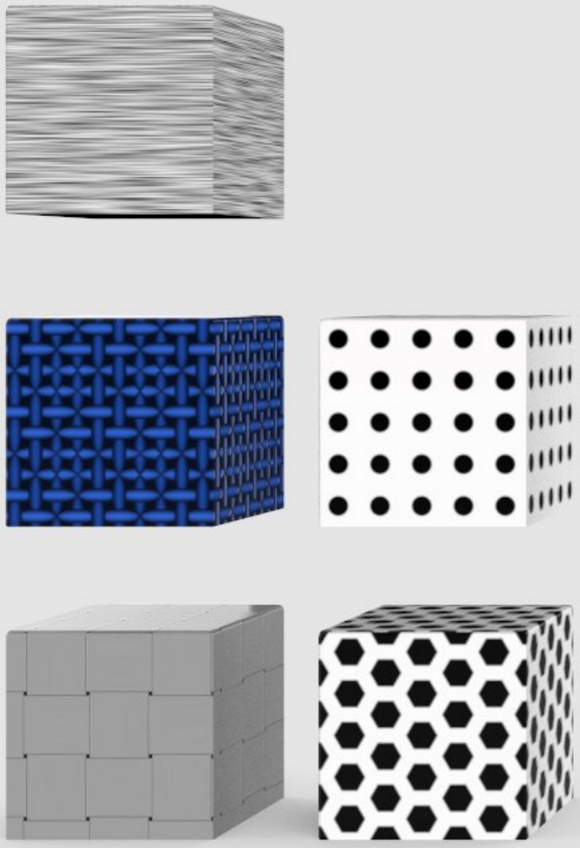
Stock Materials and simple labels

Bump and roughness textures added to materials

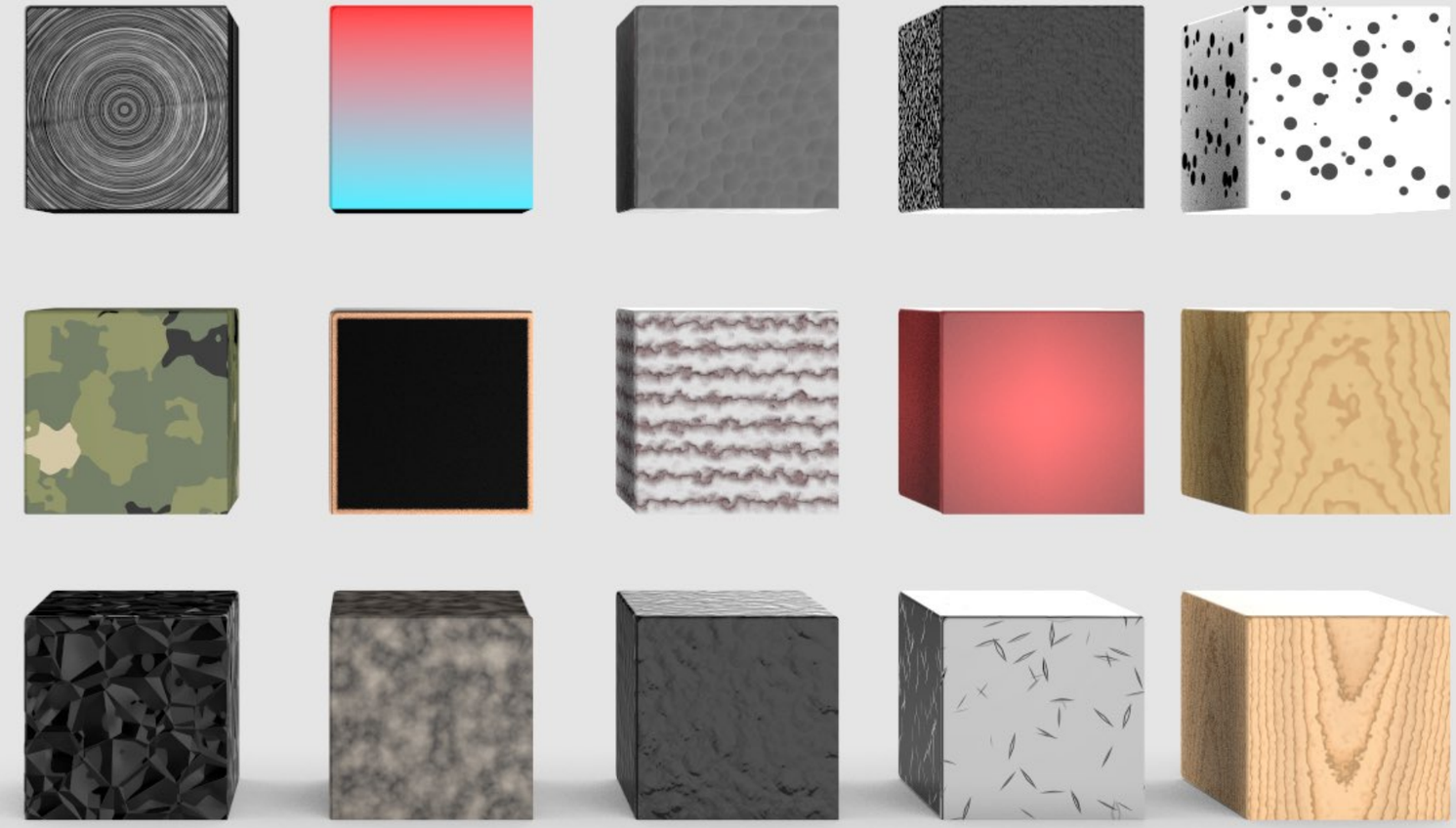
What are procedural textures?

Procedural textures are math based, not image based. They can be completely seamless and are highly customizable.

2D

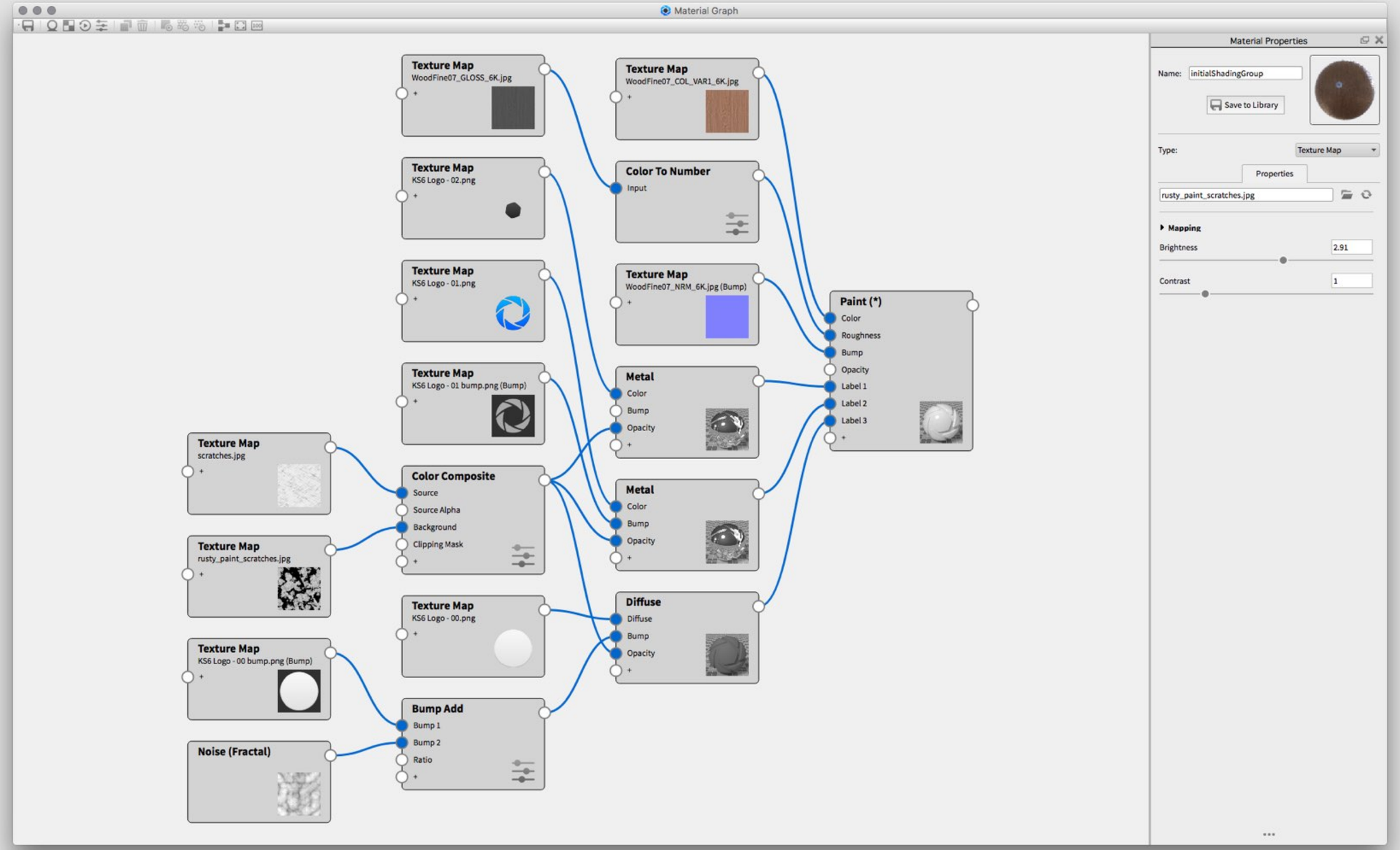


3D



Rhinoceros model by Voibor via GrabCAD

What is the Material Graph?


Material Graph
Texture Map
WoodFine07_GLOSS_6K.jpg
Texture Map
WoodFine07_COL_VAR1_6K.jpg
Texture Map
KS6 Logo - 02.png
Color To Number
Input
Texture Map
KS6 Logo - 01.png
Texture Map
WoodFine07_NRM_6K.jpg (Bump)
Texture Map
KS6 Logo - 01 bump.png (Bump)
Metal
Color
Bump
Opacity
Paint (*)
Color
Roughness
Bump
Opacity
Label 1
Label 2
Label 3
Texture Map
scratches.jpg
Color Composite
Source
Source Alpha
Background
Clipping Mask
Metal
Color
Bump
Opacity
Texture Map
rusty_paint_scratches.jpg
Texture Map
KS6 Logo - 00.png
Diffuse
Diffuse
Bump
Opacity
Texture Map
KS6 Logo - 00 bump.png (Bump)
Bump Add
Bump 1
Bump 2
Ratio
Noise (Fractal)
Material Properties
Name:
initialShadingGroup
Save to Library
Type:
Texture Map
Properties
rusty_paint_scratches.jpg
Mapping
Brightness
2.91
Contrast
1

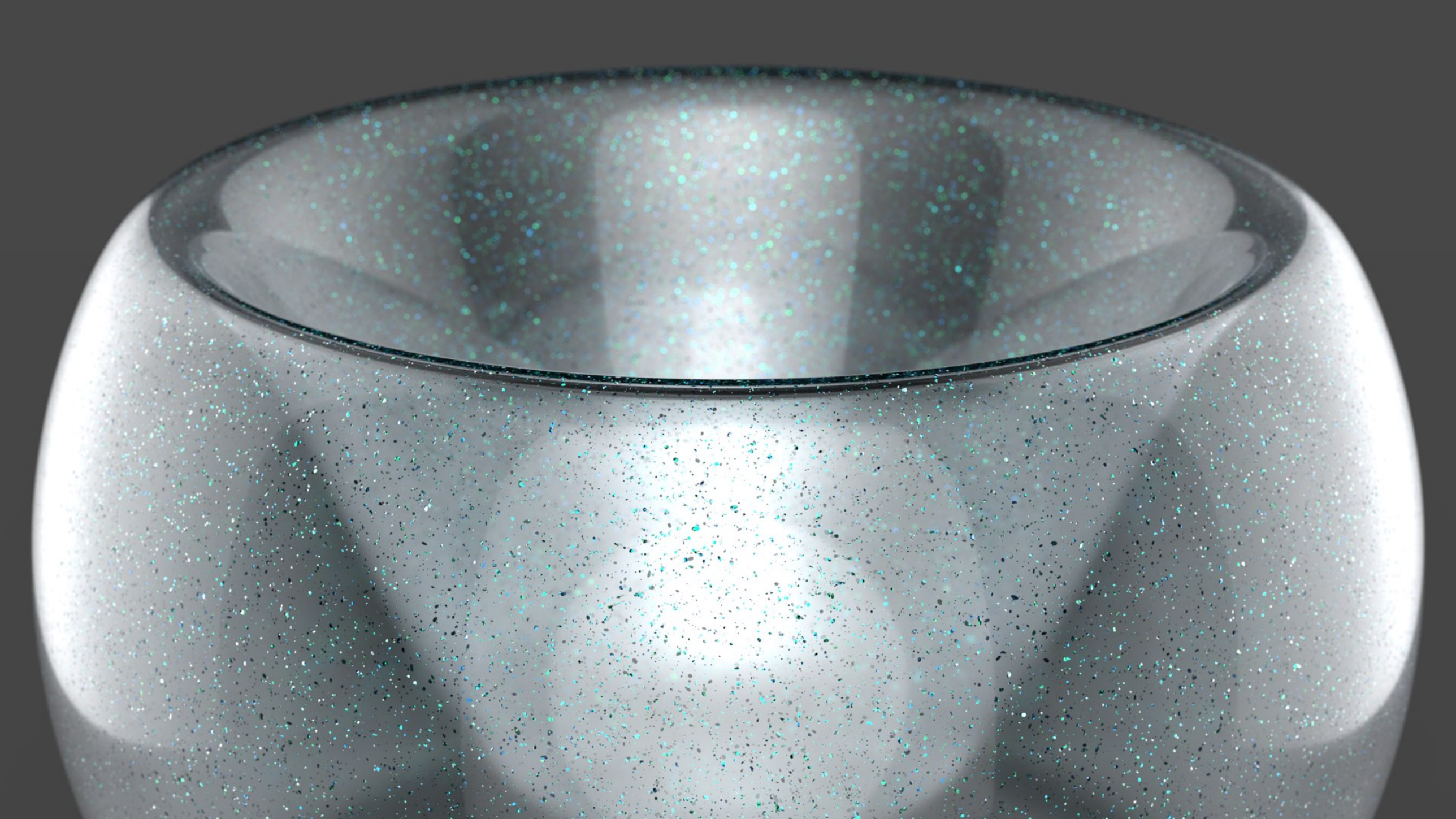
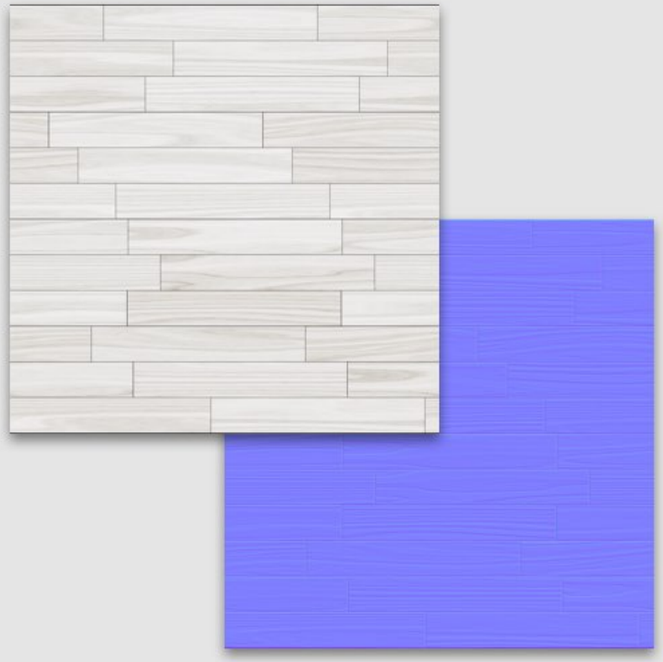


image by John Seymour

Textures Types

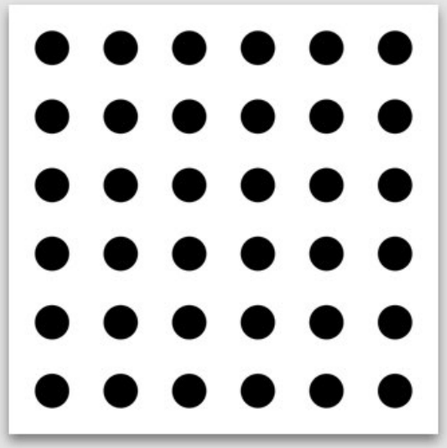
Color/ Diffuse

Bump/ Normal



Roughness (Gloss)

Opacity



Color or Diffuse texture

- Overrides material color, available for most materials
- Can be JPG, PNG, TIFF, etc and supports transparency

Color: 50% Gray

Color texture applied


texture from poliigon.com


alessandro-paolin.com
3D photo-rendering & video

Bump Texture

- Uses grayscale values to simulate surface deformation
- KeyShot will accept any image as a bump texture and simply interpret grayscale values

Bump Texture

- White values become peaks, black values become valleys; grayscale values fill in space
- Negative values can be used to reverse direction
- Good values are usually between 1 or -1
  - 0.2 is a good starting value

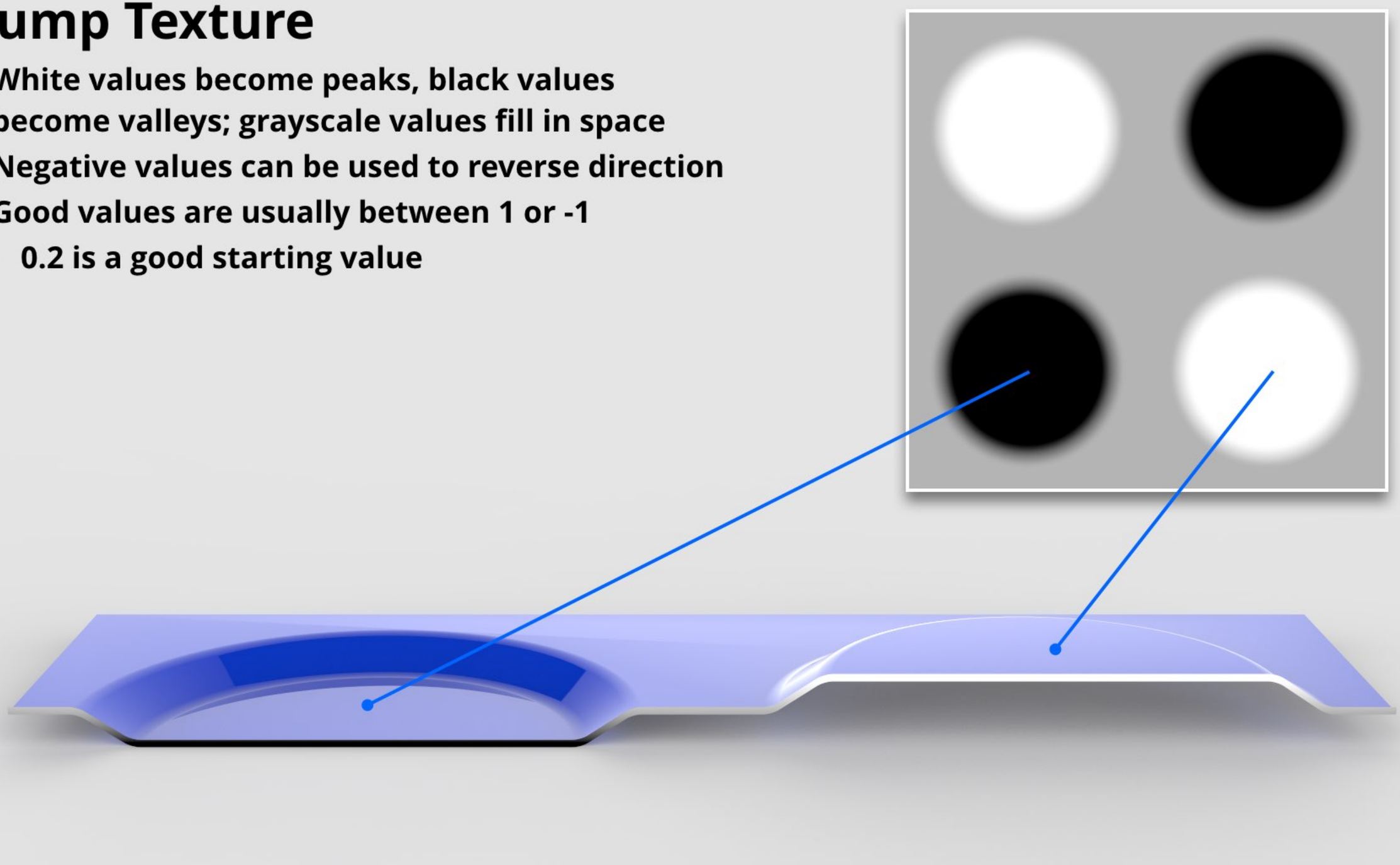
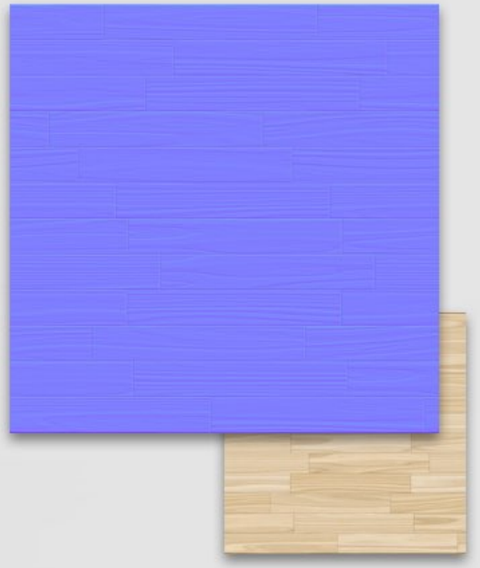


image from realizm.nl

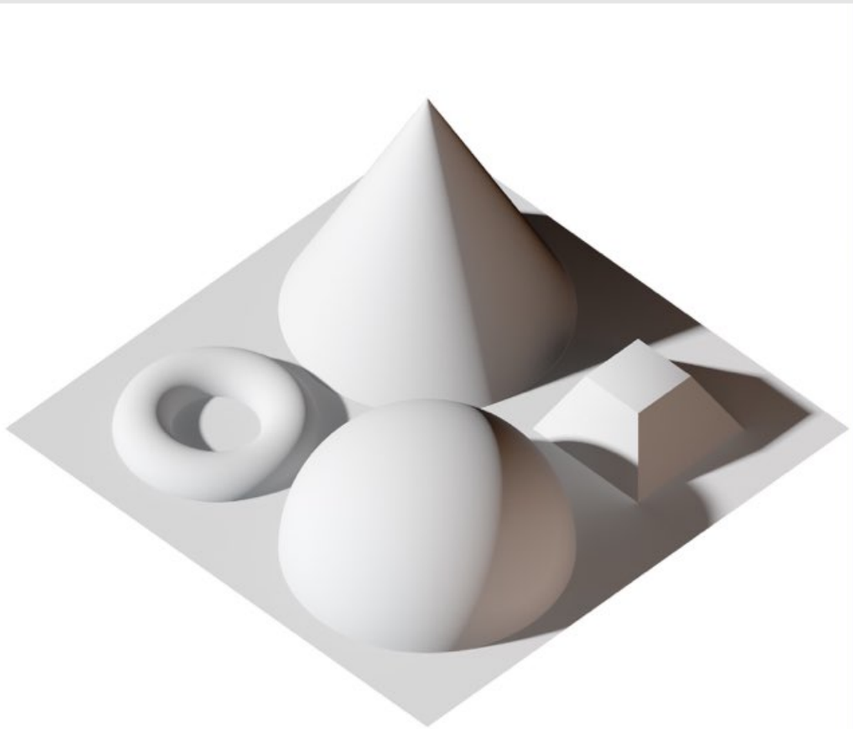
Normal Map

- Uses RGB values to define reflection direction
- Can be generated using 3D geometry or via 3rd party applications like Crazy Bump, PixPlant, or Photoshop

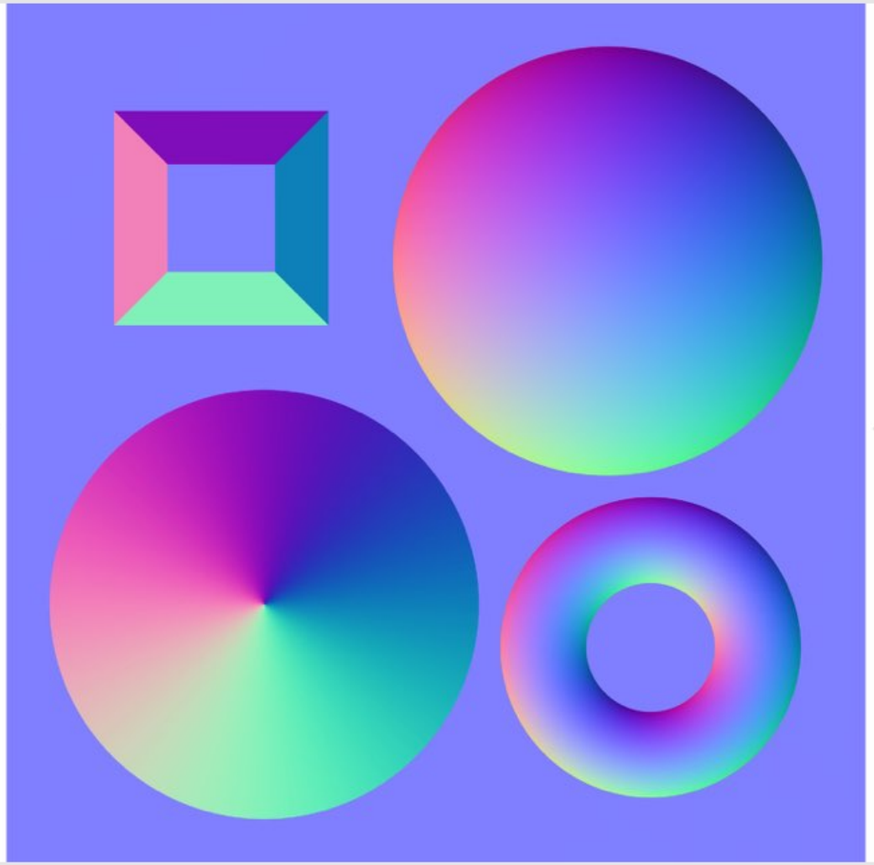


Normal Map

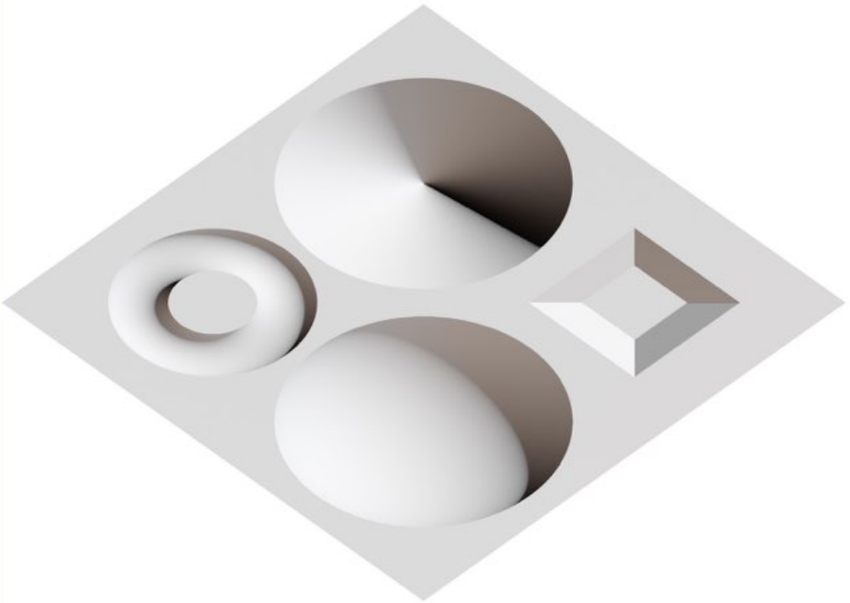
- Uses RGB values to define reflection direction



3D Geometry



Normal Map

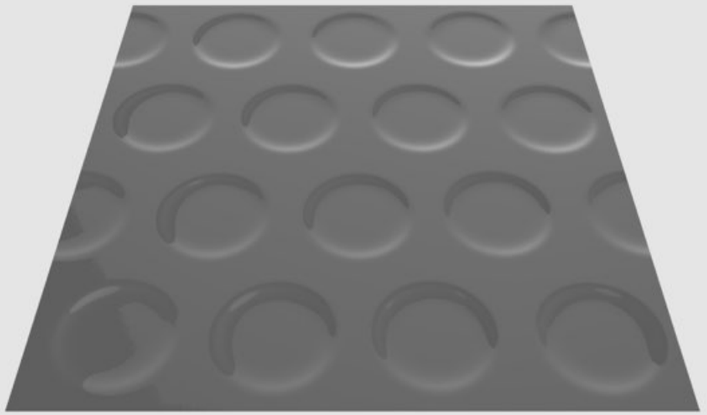


Texture applied to geometry

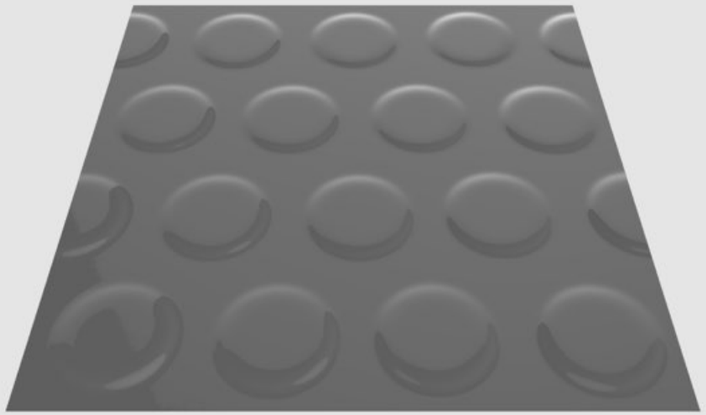
Image via Wikipedia

Normal Map

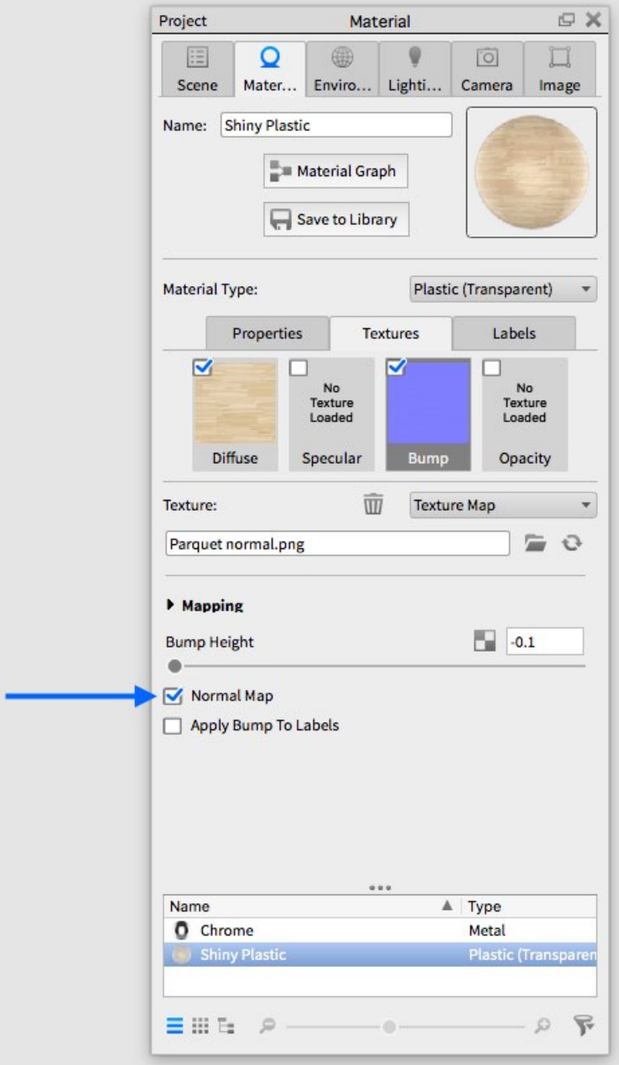
- When using in normal map KeyShot, make sure check box is enabled (auto-detect enabled by default)
- Negative values can be used to reverse direction



Positive .5 Height

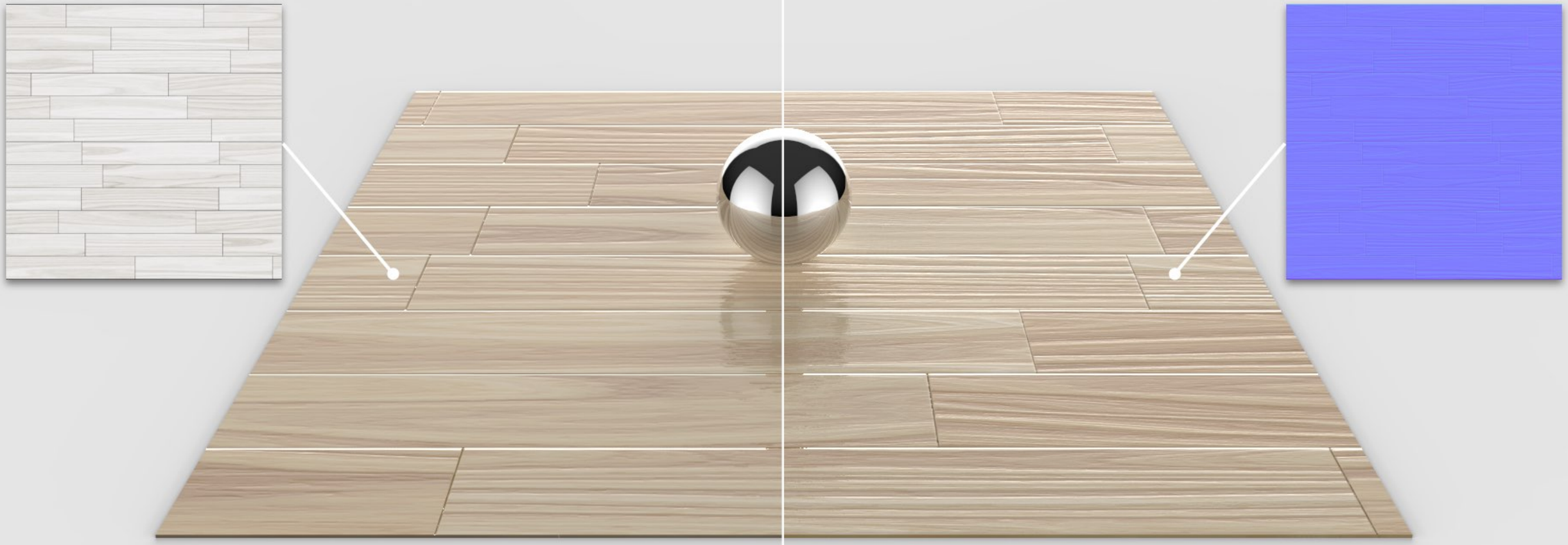


Negative .5 Height



Bump vs Normal

- Normal map has more information but has to be specifically created
- Bump map is easier to create (and understand)

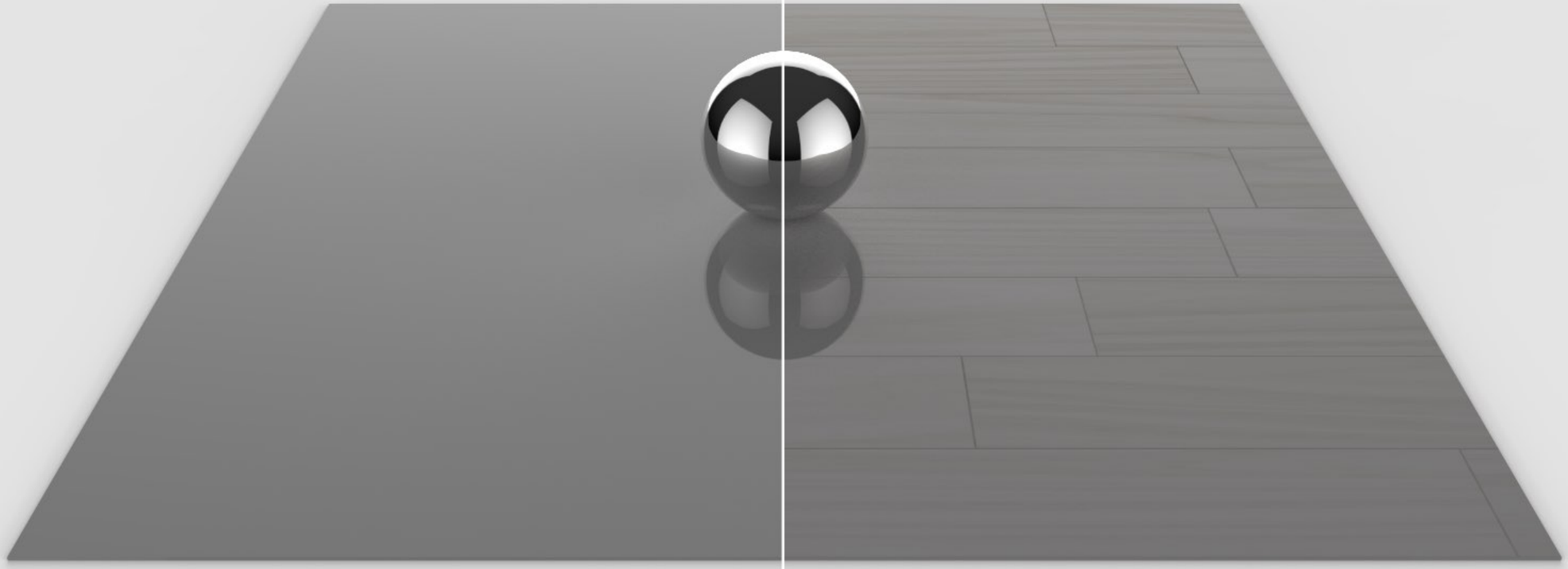


Bump

Normal

Specular texture

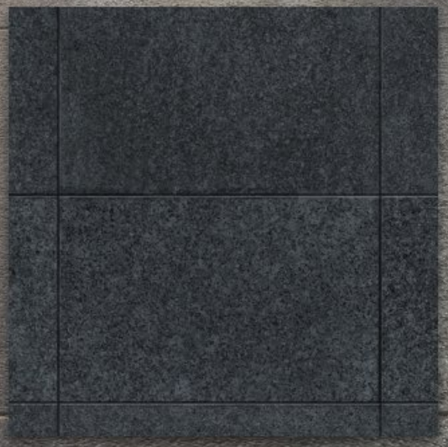
- Defines specularity (reflectivity) of a material
- White is 100% reflective, black is 0% reflective



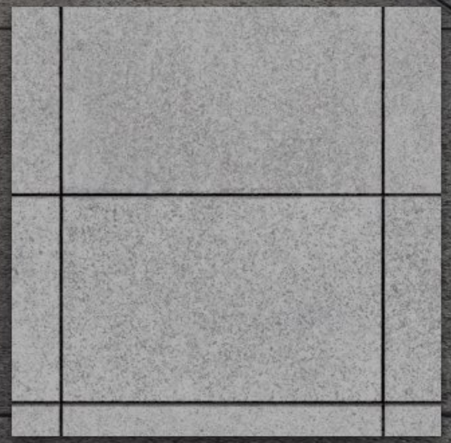
Color: White (100% reflective)

Specular texture applied

Color + Bump Textures

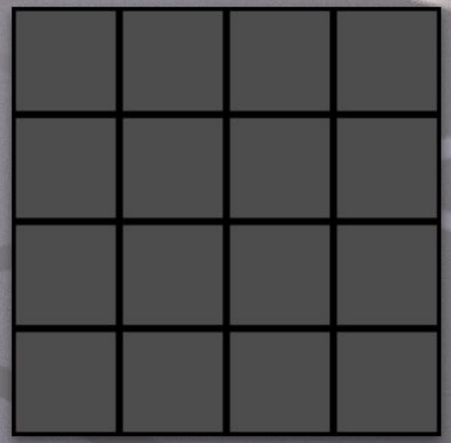


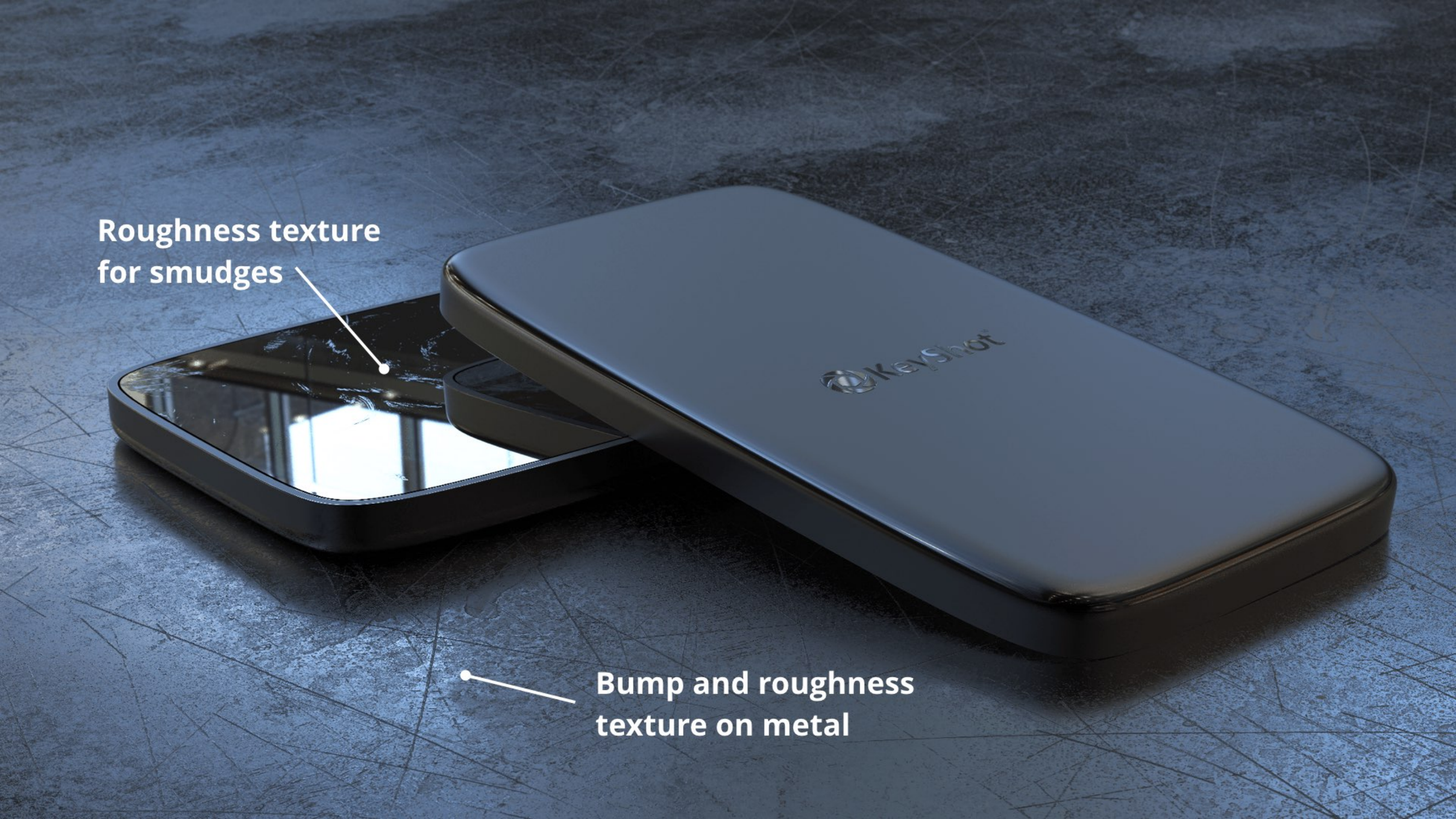
Color + Bump + Specular Textures



Roughness texture

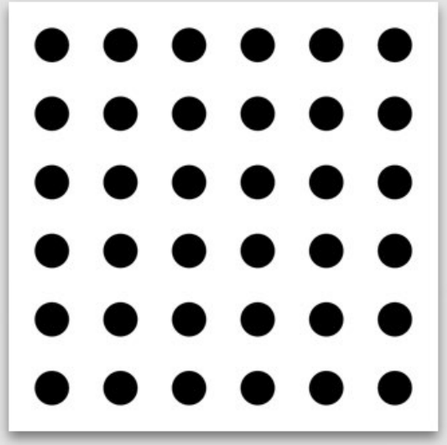
- Determines roughness (gloss) value
- Roughness of 0 = 100% gloss value
- We can use colors to define roughness:
  - black = roughness 0 (smooth)
  - white = roughness 1 (matte)

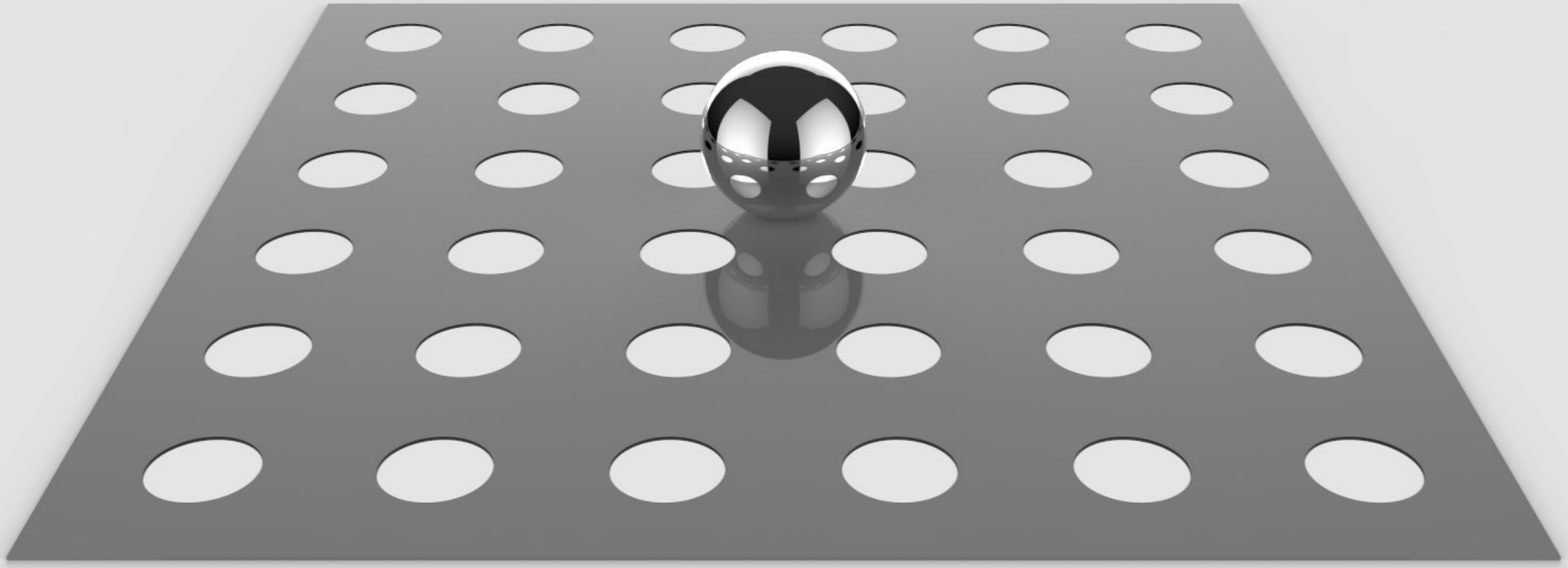



Roughness texture
for smudges
Bump and roughness
texture on metal

Opacity texture

- Determines opacity/visibility of material
- Black is invisible, white is visible





Opacity texture

- Use with bump or normal maps to add realism

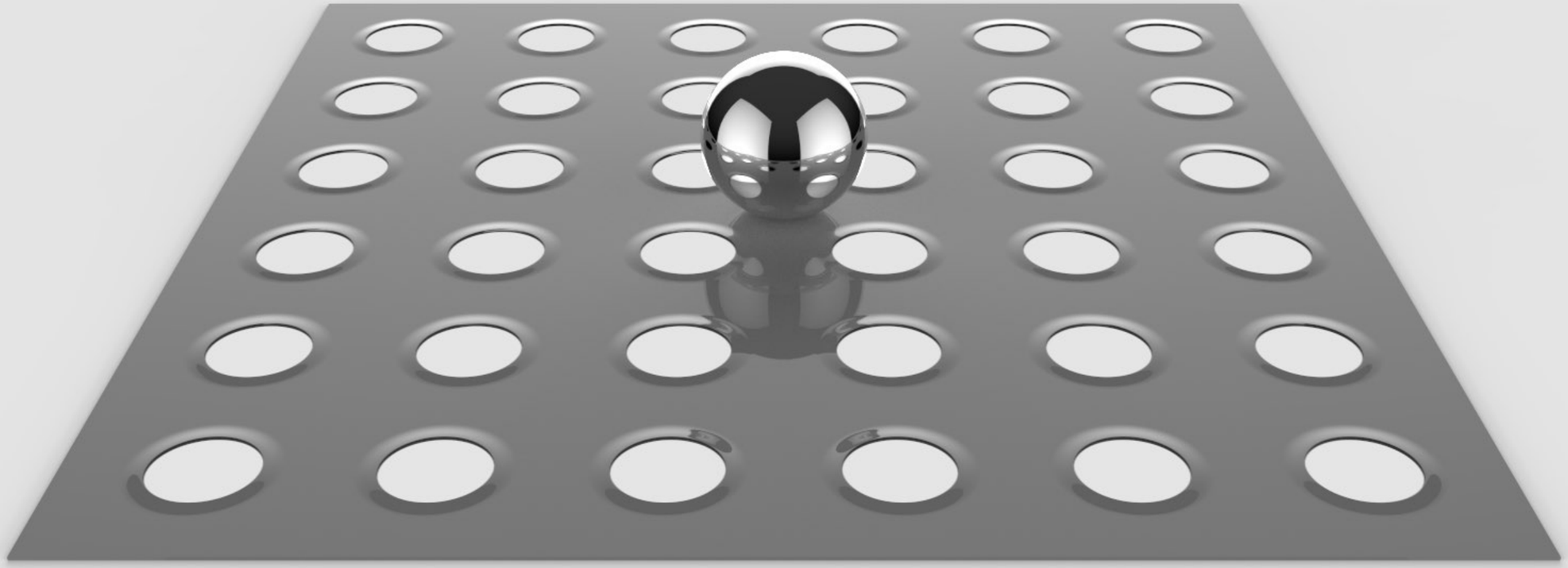
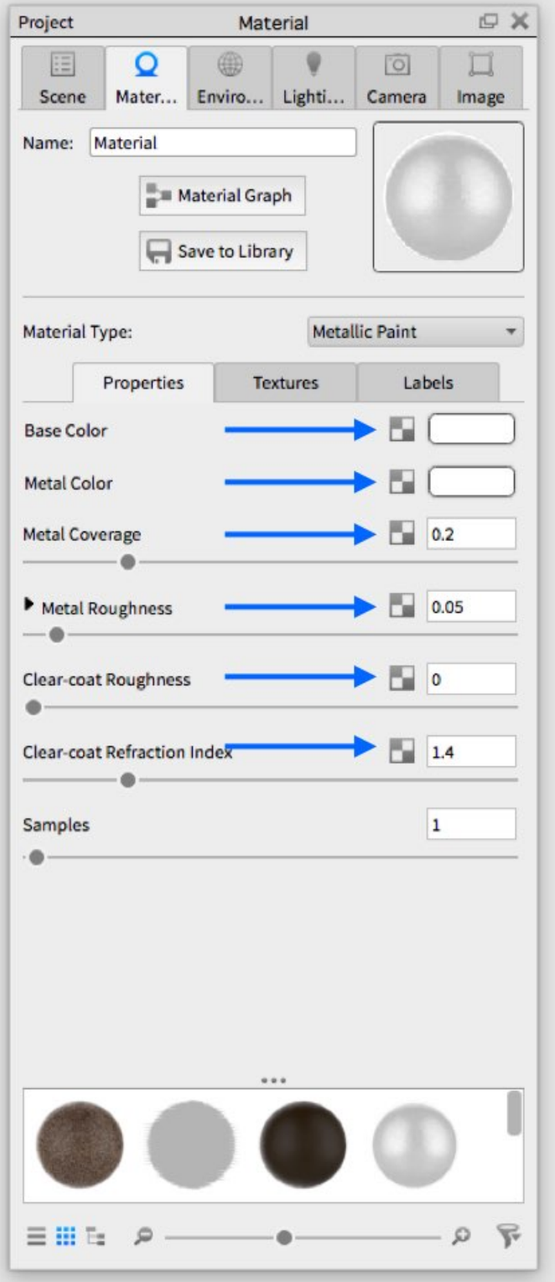


image by Magnus Skogsfjord

Other texturable properties...

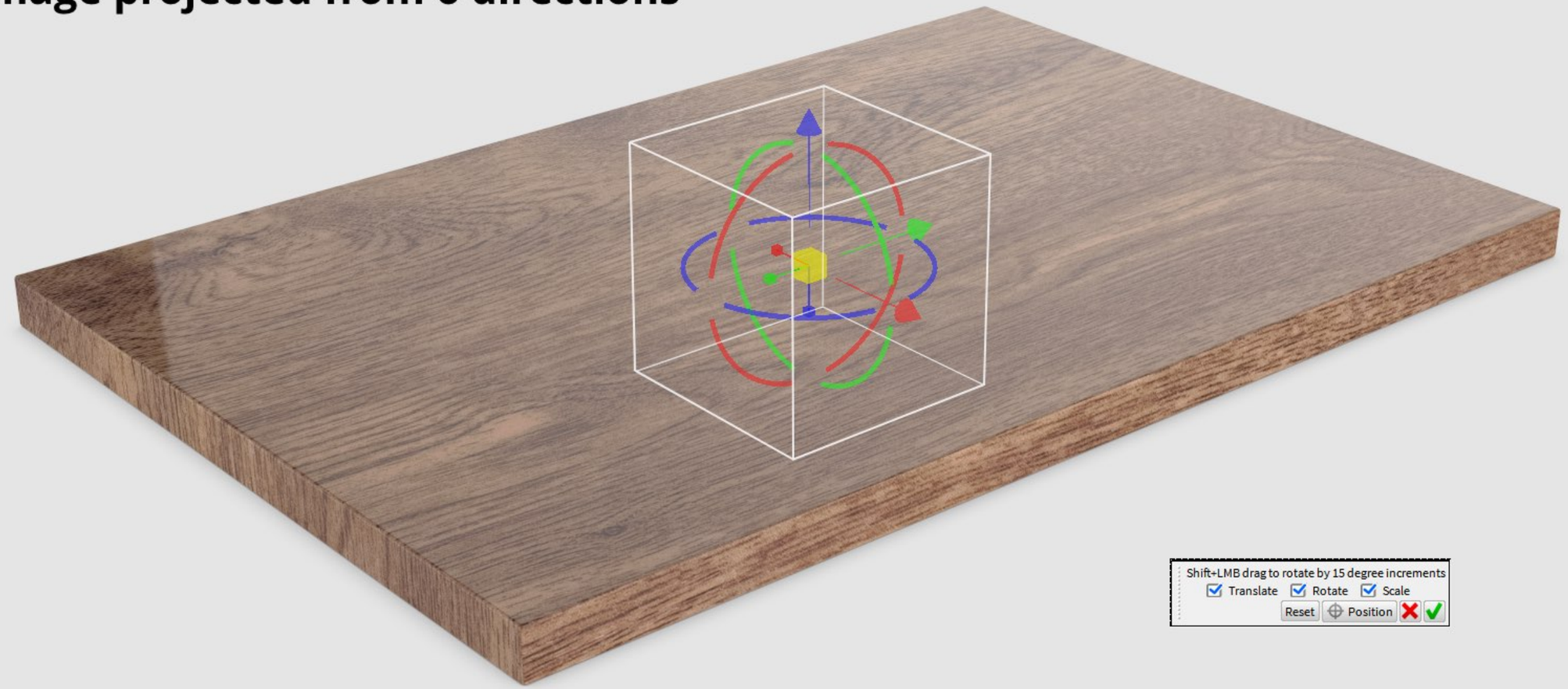
- **Keep an eye out for the icon that denotes a texture can be applied to that property**



Projection Types

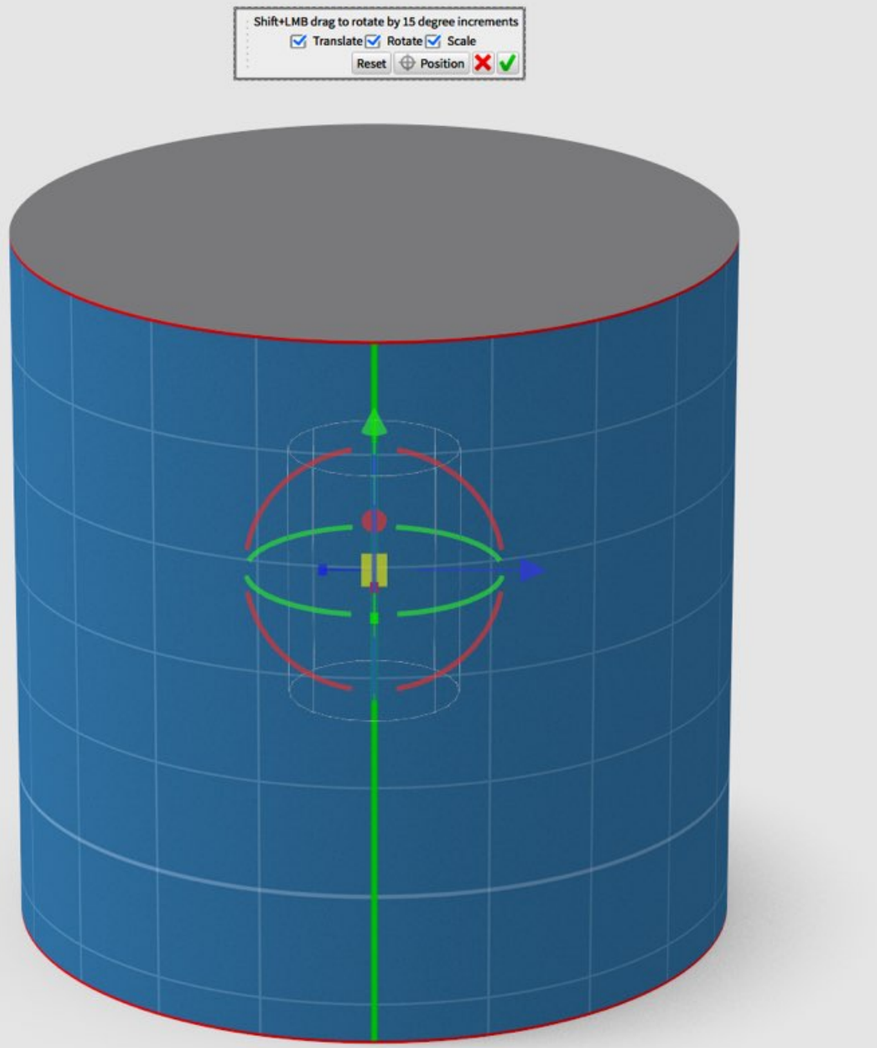
Box Map

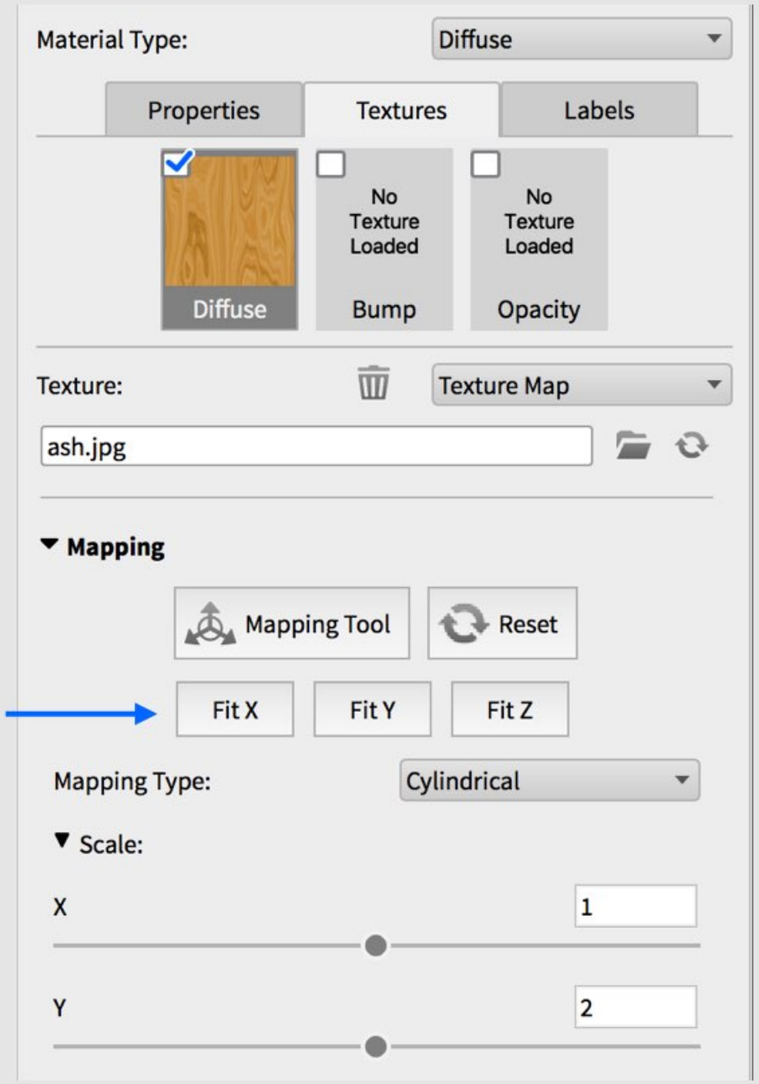
- Default projection type
- Simple to use
- 1 image projected from 6 directions



Cylindrical

- 2D Image wrapped around 3D cylinder
- Updated in KeyShot 6 with fit buttons





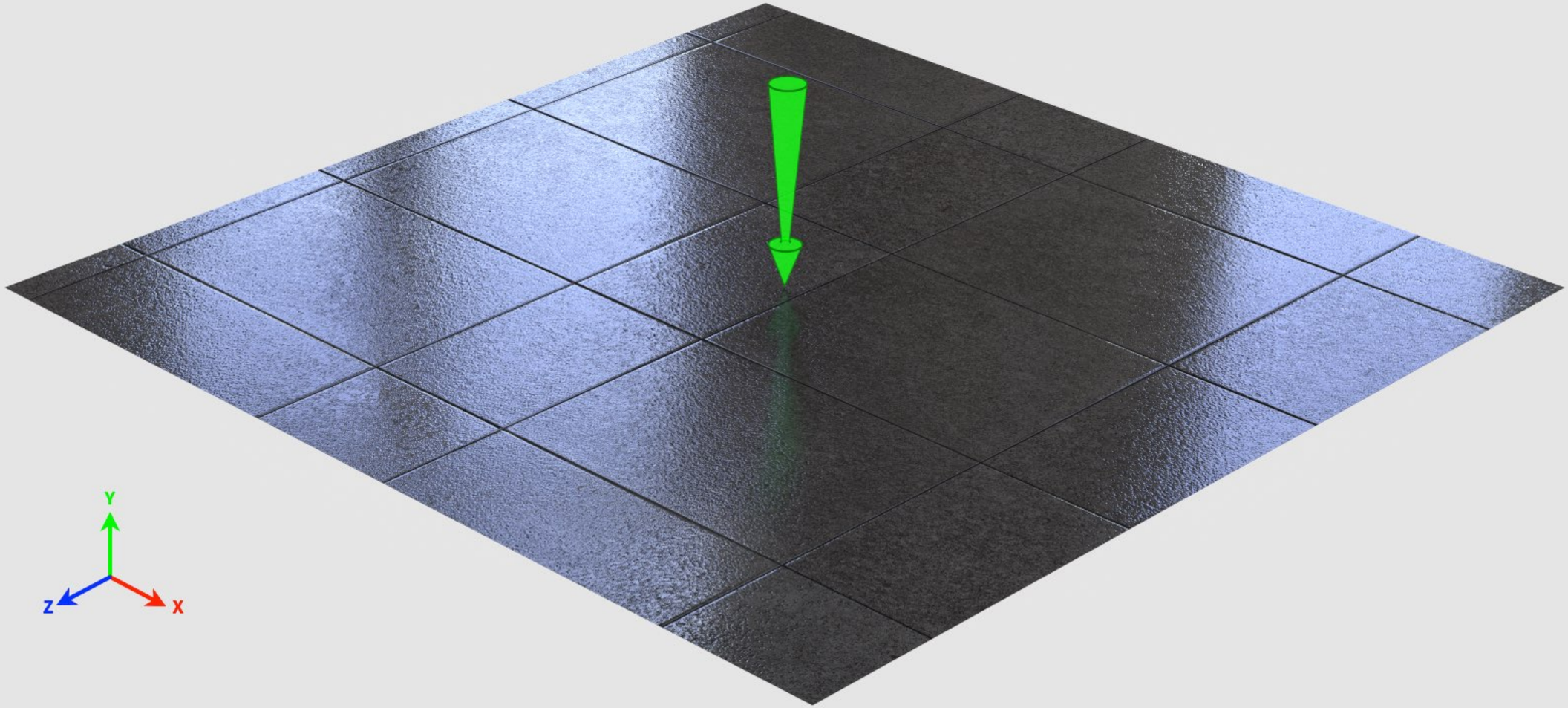
Cylindrical

- Create labels 1:1 using height and circumference of part to define artboard size

1 to 1

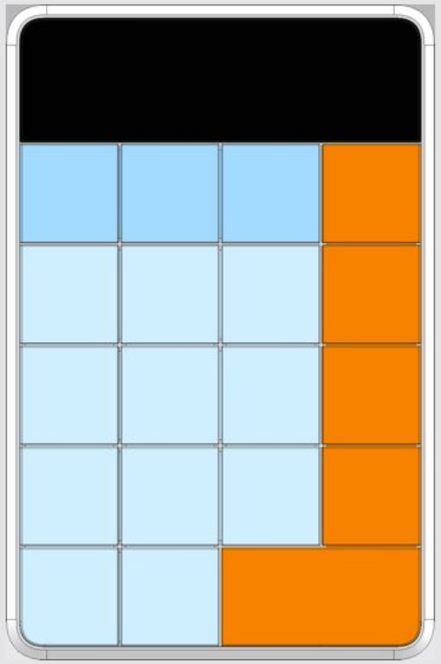
Planar Projection

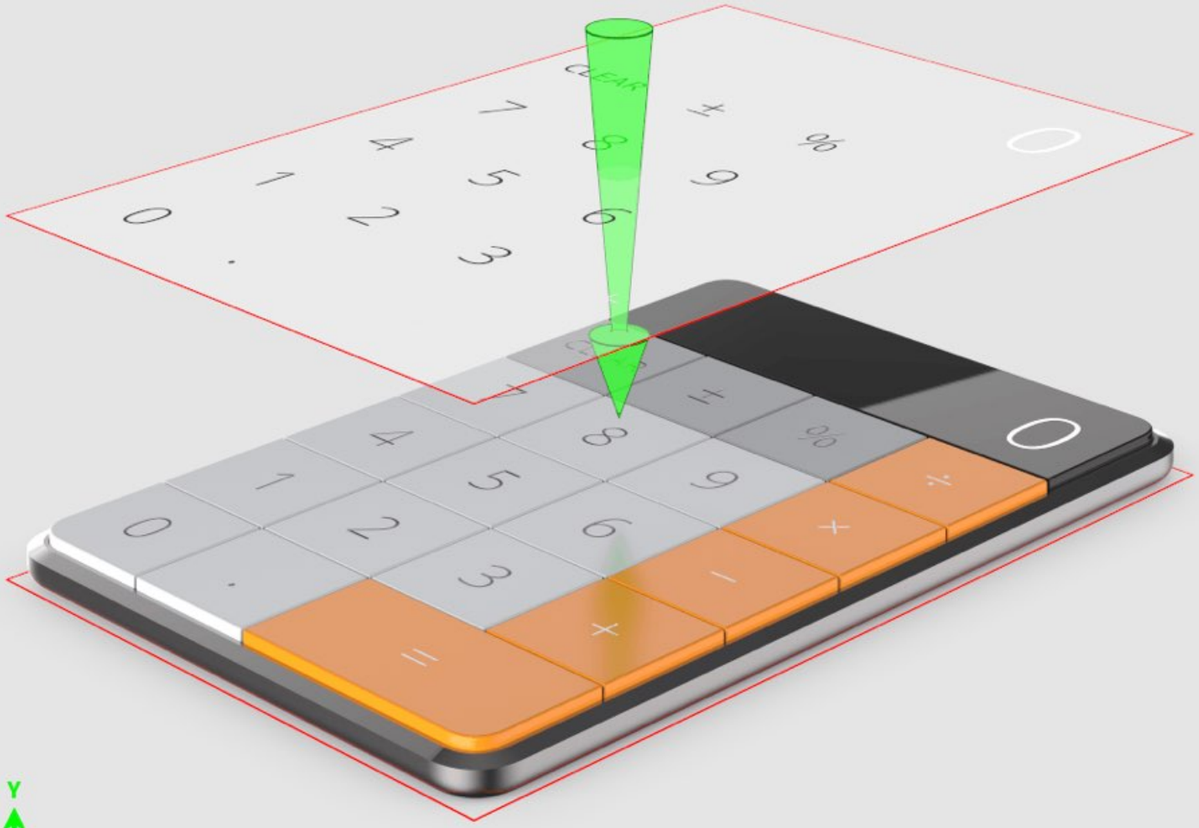
- Projected on X, Y or Z axis
- Very clean method for bump textures
- Great for flat surfaces

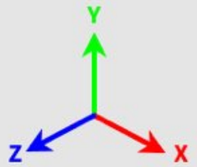


Planar Projection

- **Perfect for Labels**
- **Create labels 1:1 and use DPI function for size**
- **Set artboard to same size as model**







UV Coordinates

- Has to be defined in 3D modeling application
- Cannot be defined in traditional CAD modeling packages: SolidWorks, NX, Solid Edge
- CAN be defined in Rhino, Blender, Maya, ZBrush, 3ds Max, etc

image by Andy Jones

Normal Projection

- Default projection for labels
- Great for curved surfaces
- Camera influences placement
- Depth slider is important
- Use DPI function for 1:1 size

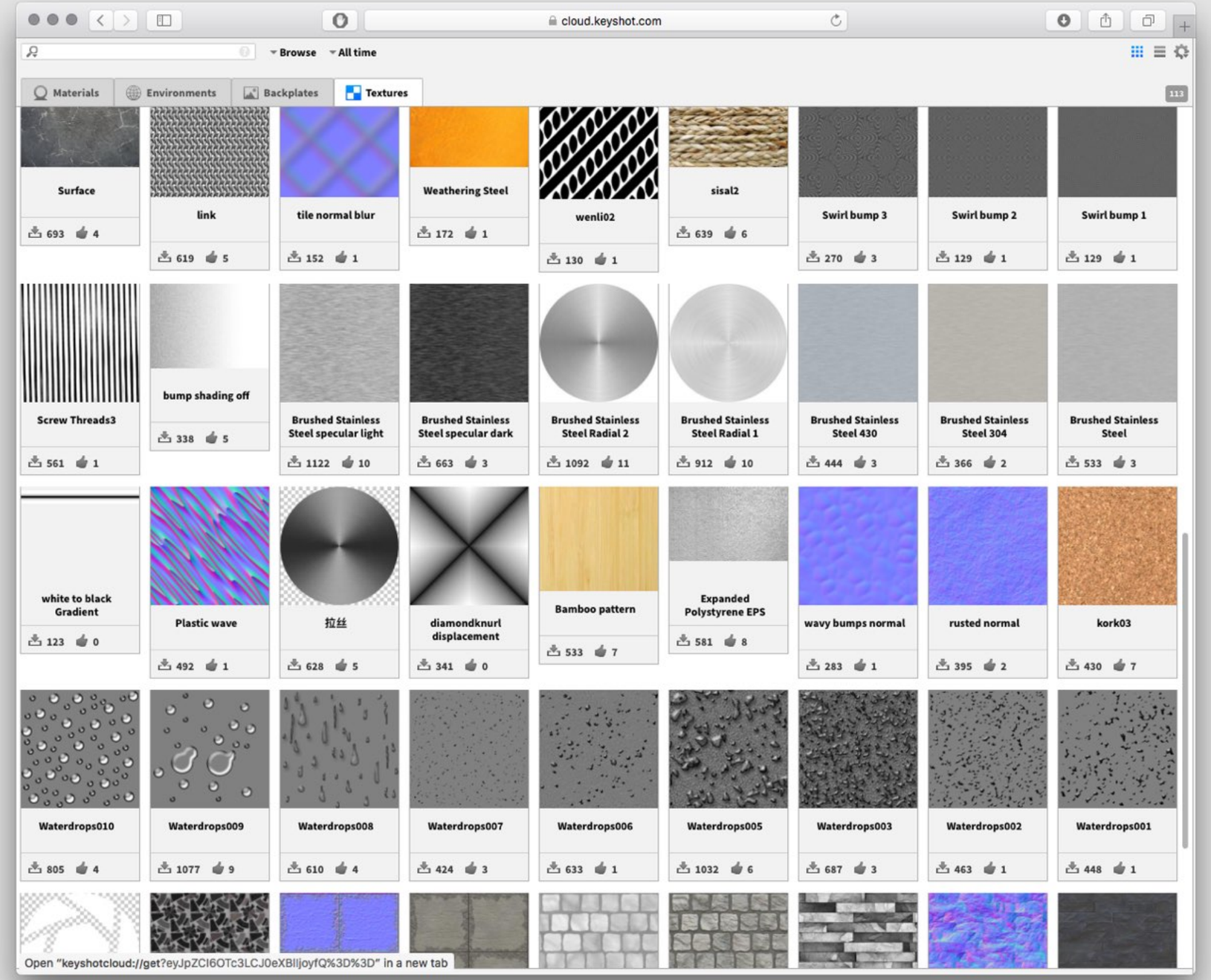
Resources:

- KeyShot Cloud Library
- keyshot.com/forum

- www.poliigon.com *
- www.textures.com
- www.episcura.com

- Filter Forge

*two i’s in “poliigon”



Questions?

Thank you for watching!

keyshot.com/learning