

# KE WORLD TEXTURE (keWT)

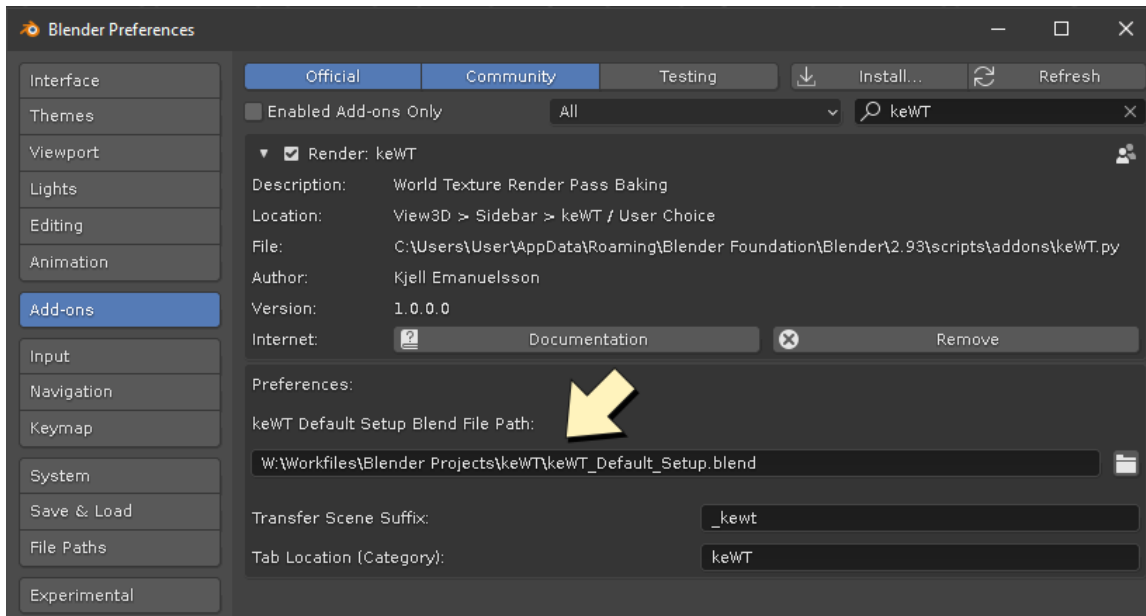
## Render Pass Baking for Blender

### TFM

#### Installation Instructions:

*Tested on: Win 10, Blender 2.93 (Not tested on Linux or Mac, or other Blender releases.)*

1. Unzip the keWT files somewhere safe. Like your projects folder.
2. From Blender Add-ons, choose install. Pick the “**keWT.py**” file to install.



3. Activate the keWT add-on and enter the path to the “**keWT\_Default\_Setup.blend**” file.  
Optionally ,change the other options here. Use tab location to override tab placement.  
Transfer Scene Suffix will be used when creating new keWT-setup scenes (see next step).

*Tip: This document will go through each step, but, you can always use the pop-up tool tips on all the operators and values in Blender for more condensed info as a reminder.*

# Pipeline Process

## 1. Scene setup

You are ready to render/bake your model(s) with keWT.

*Tip: Make sure to name the obj/collection (as intended texture base name) to save some time later.*

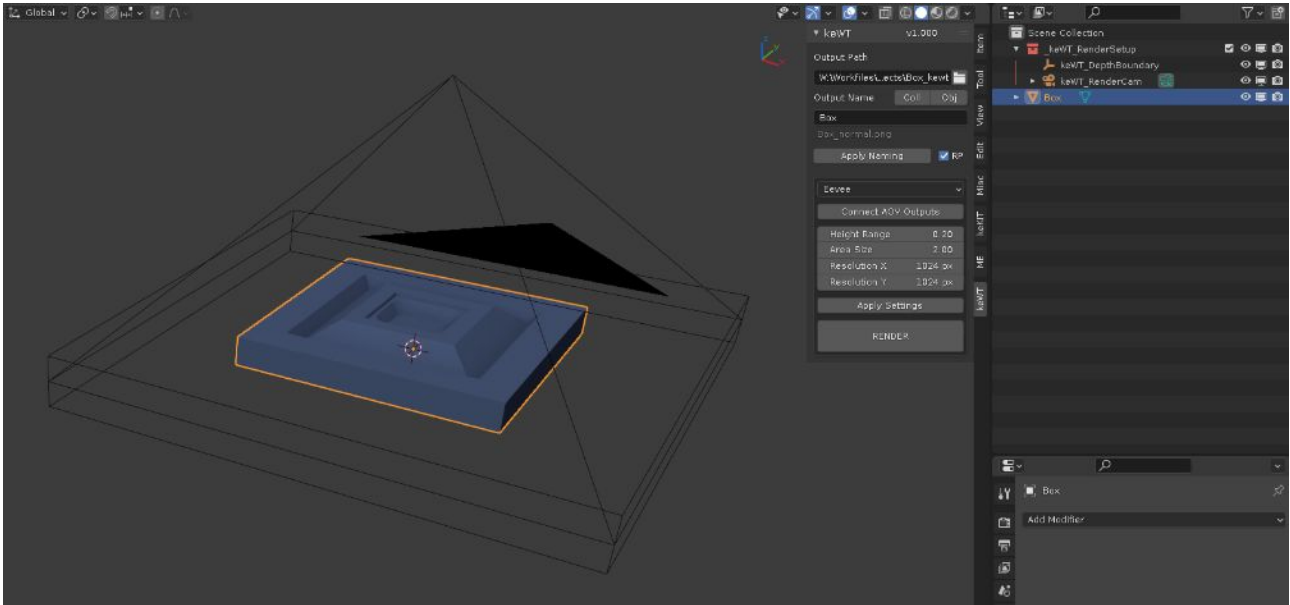
The add-on only works using the default keWT scene. This is assigned in the add-on prefs and is used when you **automatically create a new blend file** with a selected object or collection. The new file will be using their name + the suffix from the add-on prefs previously. *In the same folder as the original file you ran setup from.*



You can of course do this whole procedure manually, if you want/need to:

- Load the default scene file
- Append your model(s)
- Save scene as something different (to avoid overwriting the default scene)
- Enter paths & naming manually (see next step)

## 2. Adjust Path & Naming Settings.



Once the new keWT scene is setup, all the add-on operators should be available.

- You can adjust Output path and naming, if the automatic picks doesn't work for whatever reason, or if you are not using the automated process.

## 3. Adjust Render Settings

### 3A. Engine Choice

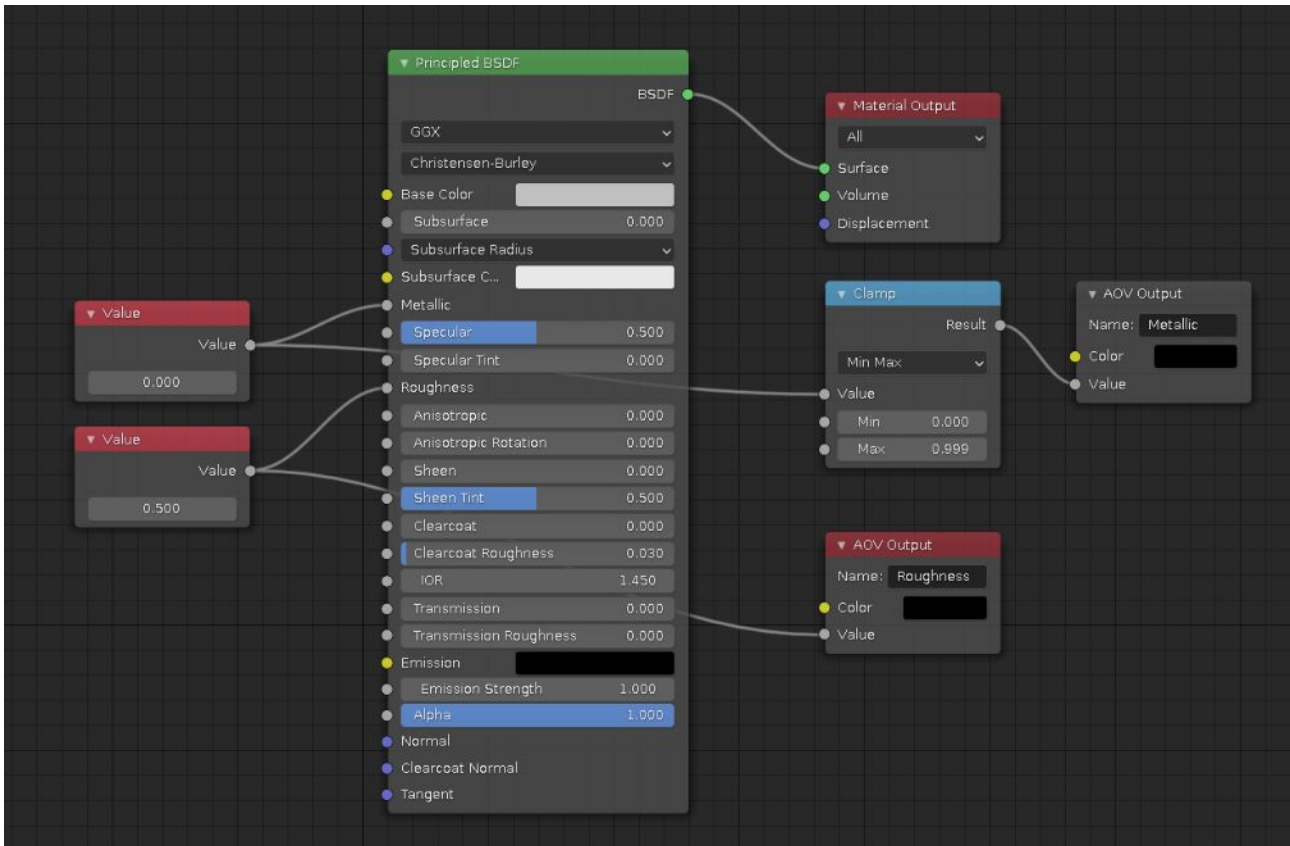
The default scene is heavily customized both for EEVEE and Cycles, though the best choice is EEVEE (faster). Most of the features in cycles are useless as this is mostly a data transfer (GI, denoising etc. have been turned off for Cycles) Cycles is still supported as a backup, if EEVEE doesn't work for some reason. **Cycles AO levels** have been matched to EEVEE's, so one can use either one, without it being too much of a difference (in contrast mostly - they still look a bit different, *being* different).

**Anti-aliasing** nodes are used for the data passes that do not have AA otherwise (normal, height and emissive). You can tweak these in the **Compositor** if you like, or disable and do the old 2x resolution thing if you have to. (See **Tips** section later)

EEVEE's SSAO is using **overscan** so that image borders wont "bleed", since it's a screen effect it would just fade out on the borders otherwise. *You still have to make sure there is mesh geometry outside the borders too, if you expect things to tile, of course.*

### 3B. Connect AOV Outputs

keWT uses AOV outputs for Roughness and Metallic outputs, as there is not really any other choice for layers not included in the default passes. The operator **automates the procedure** to hook up all the output nodes in the materials. If no nodes are used, value nodes duplicating the R & M settings will be created, as pictured:



*Note: The 0-0.999 Clamp for Metallic is to avoid making the diffusepass 100% black at 1.0 value - it just snaps at exactly 1.0 and kills all diffuse. But, 0.999 still registers as 255 white when rendered to 8-bit texture & keeps the diffuse pass intact. (Part of the automatic process)*

If you don't need Roughness and Metallic outputs, you can of course skip this step. (Note:Both will be created by the operator even if you just use one of the render outputs. Very low overhead.)

### 3C. Height Range

This value sets the range for the height map output. The value will be divided in two, for 100% black to be at the negative half min value, mid level gray will be at world space Z coordinate 0 and 100% white will be at the positive half max value:

Range value "0.2" → range -0.1, 0.1 (Z) The setting has to be applied using "Apply Settings".

This is also represented with a 3D reference empty (updated when setting is applied).

### 3D. Area Size

This value sets the physical size in meters (in X & Y) that will be rendered by the camera. The 3D reference box will also take non-square resolution into account (e.g: 512x1024). Power of two only. The setting has to be applied using "Apply Settings".

### 3E. Resolution X & Y

Sets the resolution used in the camera for the assigned area. It will also take non-square resolution into account (e.g: 512x1024). Power of two only. The setting has to be applied using "Apply Settings". (Though some realtime preview will be available for this one)

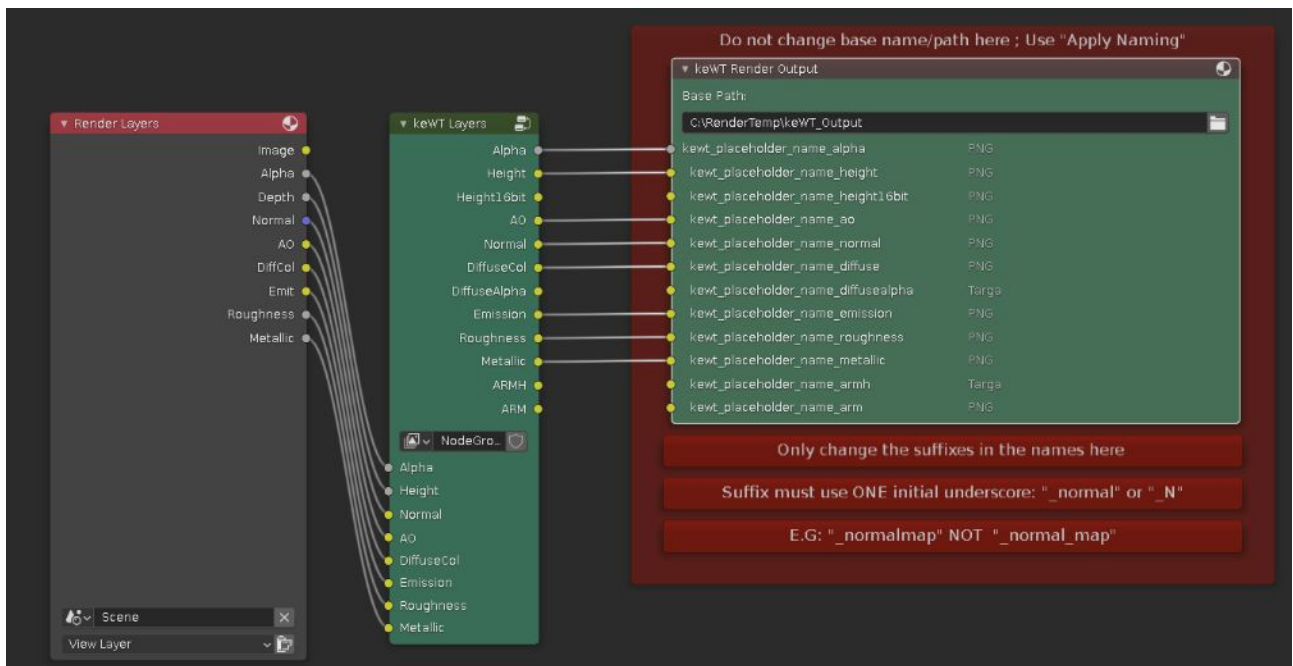
### 3F. Apply Settings

"..."

## 4. Render

This is a custom render function that is necessary for keWT to operate properly. Use it.

## Composition



- Here you can adjust what files should be output. Unhook nodes from the keWT Layers Group to the keWT Render Outputs at your discretion. **Do not change passes in the Blender Properties > View Layer Properties / Passes.**
- The output paths and naming should not be changed here, **use the keWT operators.**
- Only change the suffixes in the keWT Render Outputs: “\_normal” to “\_N” or whatever.
  - The script needs the last underscore to be before the suffix, thus you cannot use more underscores after this.
- I left helpful notes in the compositor for the key points, should you forget / not rtfm.

## Tips

### Custom Default Scene

You can, of course, treat the keWT default scene in a similar way as the Blender default scene. Customize defaults to your liking; file name suffixes (as mentioned above) as well as outputs, file formats, resolution etc.

You can also tab to enter the **keWT Layers Group** and customize anti-aliasing values (and whatever else you feel comfortable messing with), or removing them altogether should you prefer the old 2x render resolution method.

### Tiling

Use instances/linked duplicates, or just simple matching geo, around your mesh (as needed) to ensure AO pass is continuous, and not have dark borders or other tilebreaking results, which are likely to occur otherwise.