

Directional Dissolve Shader (3D)

v1.0
Documentation

Contents

1 Introduction **2**

2 Documentation **3**
2.1 Universal Render Pipeline (URP) 3
2.1.1 Universal Renderer 3

3 Support **7**

Section 1

Introduction

The Directional Dissolve shader (3D) allows you to dissolve 3D meshes by gradually moving an emissive dissolve wave across their surface. The wave's emission, thickness, speed, and direction are fully customizable.

WARNING

This shader supports only Universal Render Pipeline (URP) on Unity 6.0+. Built-in Render Pipeline (BIR) and High-Definition Render Pipeline (HDRP) are not supported.

A controller script is included for dynamically changing the shader variables, creating dynamic effects, such as a rotating dissolve effect or a dissolve effect with a changing color.

You can stack these effects on top of each other by adding several or all effects to the same element, creating unique dissolve effects.

Feel free to check out the demo scenes included in the asset for inspiration.

Section 2

Documentation

2.1 Universal Render Pipeline (URP)

2.1.1 Universal Renderer

The Universal Renderer is the default URP Renderer when creating a 3D project.

Setup

The following paragraph presents the steps necessary to make the Directional Dissolve (3D) shader work in your project.
Visit https://docs.project-gamedev.com/directional-dissolve-shader-3d/setup.html for image-aided instructions.

The Directional Dissolve (3D) shader is, in principle, the same as the regular URP Lit shader you would use in your Unity project, only reconstructed and expanded. The setup is thus the same as with any other lit shader:

- Create a new material for your object(s).
- Select the material; then, select **Project G.A.M.E.D.E.V./Essential 3D Shaders/Directional Dissolve Shader (3D)** as the shader source for this material.
- Assign the new material to your object(s).

That's it! The shader is now active. Feel free to play around with the material properties to find a dissolve effect that you are happy with.

Keep in mind that certain post-processing settings (most notably **Bloom** and **Tonemapping**) will have a profound effect on the Directional Dissolve effect.

In case you wish to animate the dissolve effect, attach `DissolveController.cs` to an object in your scene. Consult with 2.1.1 for more information on the controller script.

Shader Options

Albedo The main (albedo/color) texture used by the shader.

Albedo Color An additional color multiplied with the one already present in the albedo texture. Use this to further customize the look of your mesh.

Alpha Cutoff This is a threshold value – all parts of the texture whose alpha value is less than the alpha cutoff will not be rendered.

Ambient Occlusion The regular ambient occlusion from the standard URP Lit shader.

Metallic Map The standard metallic map option in the default URP Lit shader. The metallic map is a black-and-white texture that determines the surface type of the object. It is used to make certain parts of the mesh reflect light like a metal would (metallic), and others like sand would (smooth).

Metallic This value determines how "metallic" the surface should be, i.e., whether it should reflect light like a metal or a wet surface, or should absorb it like sand or another rough, non-metallic surface.

Normal Map The standard normal map option in the default URP Lit shader. The normal map is used to simulate finer surface detail by containing information on how the light should be reflected by the surface.

Normal This value is multiplied with the normal map and is used to make the effect stronger or weaker. A negative value will mirror the 3D-effect (i.e., protruding surfaces will now be concave, and vice versa).

Emission Map The standard emission map option in the default URP Lit shader. A black-and-white map that determines which parts of the mesh will emit light. The white pixels of the texture are areas where the emission will have an effect, and the black pixels are the areas with no emission.

Emission Color The emission color as an HDR color. Keep in mind that **different post-processing effects (most notably bloom)** will have a **profound** effect on the look of your emission.

Emission Extra Intensity Since the default HDR color has a limited intensity (-10 to 10), this shader offers an additional intensity option that allows you to make your emission even stronger.

Dissolve Edge Thickness The thickness of the emissive dissolve edge. Customize the value to your liking.

Dissolve Edge Color The color of the emissive dissolve edge. Since this color is in HDR format, an emission can also be specified.

Dissolve Effect Controller The controller value for the dissolve effect. This value can be controlled via scripts (an example is provided) to create a smooth dissolve effect along the mesh by lerping the controller value, or to keep the dissolution stationary at a specific position by setting the controller to a constant value. The effect is fully contained between controller values **0** (the beginning of the dissolve) and **1** (the end of the dissolve).

Directional Dissolve Set to **true** for a directional dissolve effect (can be specified with the **Angle** option below). Set to **false** for a uniform dissolve across the entire mesh.

Angle The angle of the dissolve effect in degrees, controlling the direction of the dissolve wave across the mesh's surface. Leave at 0 or set to 180 for a horizontal dissolve. Set to 90 or 270 for a vertical dissolve. Set to any other value for custom angles (e.g., 45 for a diagonal dissolve). **Only works if Directional Dissolve is enabled!**

Noise The type of noise applied to the dissolve effect. Choose between **Gradient Noise**, **Voronoi Noise**, and **Simple Noise**.

Noise Scale The noise scale (in the case of Voronoi Noise, the angle offset and cell density). Increase for noisier dissolve effects.

API

Visit https://docs.project-gamedev.com/directional-dissolve-shader-3d/api.html for the Directional Dissolve Shader (3D) API documentation. This API allows you to modify all shader values in-code, from your own scripts, if necessary.

Advanced

NOTE

Note on static batching: the shader uses the absolute world position of the 3D object for its dissolve effect. This allows the shader to work correctly with **static meshes** even if static batching is turned on. Furthermore, lower quality models with e.g. non-centered origin or skewed coordinates or scales will also work correctly with this shader.

Controller Script

A controller script – `DissolveController.cs` – is included for indefinitely lerping the Directional Dissolve effect on a 3D mesh. If you wish to set up repeating effects, attach this script to any object in your scene, and set it up with the elements and effects you wish to enable.

NOTE

The controller script accepts any `GameObject` elements and searches them for a `MeshRenderer` component.

The controller script is split into the following sections, visible in the Editor:

General The General section contains a single setting – **Individual Elements**. Enable this setting to have all effects applied to the same elements. If you disable this option, you will need to specify (different or the same) elements for each effect you enable!

Main Controller This is the main dissolve effect. Enabling this section will let you customize the movement of the dissolve effect.

Further Effects Each shader property can be lerped independently by enabling its section. For example, you can set up rotating dissolve effects by enabling the Angle Controller effect, or make the dissolve edge change its color by setting up the Dissolve Edge Color Controller effect. Feel free to experiment with different effects and values for each effect.

WARNING

You can have multiple instances of the `DissolveController.cs` script in your scene, and different effects can target the same elements. However, ensure **different instances of the script do not target the same elements!**
For example, it is fine to have `DissolveController 1` target elements A and `DissolveController 2` target element B, but do not have both `DissolveController 1` and `DissolveController 2` target element A!

NOTE

When enabling several effects at once, it is fine to target the same elements **from within the same** `DissolveController`.
For example, it is fine to have the Main Controller effect target elements A and B, and the Angle Controller effect target element A as well. Just make sure both effects are **inside the same** `DissolveController` script!

Section 3

Support

In case you experience any problems with the shader, can't manage to set it up properly, or would simply like to propose an improvement, don't hesitate to contact us at contact@project-gamedev.com, or fill out the form at `https://project-gamedev.com/contact.html`.

If you are satisfied with this product, please consider leaving a review on the Unity Asset Store page.

Best of luck with your game development journey!