5.8.5.15 Modeling - Modifiers - Deform - Wave Modifier

Wave Modifier

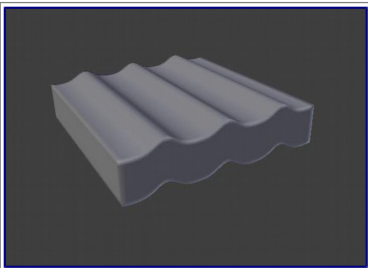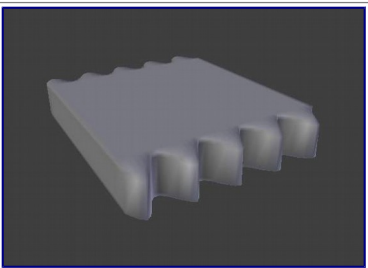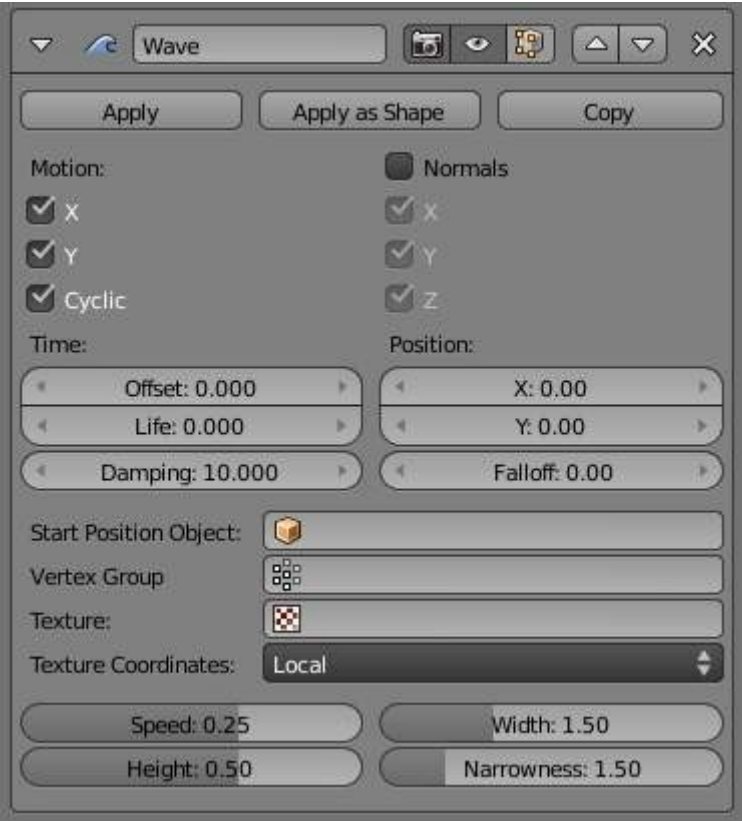|		
Circular wave front	Linear wave front	Motion enabled for X, Normals enabled for Y.

The Wave modifier adds a ripple-like motion to an object's geometry.

This modifier is available for meshes, lattices, curves, surfaces and texts, with one restriction for non-mesh objects: Activating *Normals* or typing a name in *VGroup* will simply deactivate the modifier.

Options

Wave modifier

Motion

  X, Y

   The wave effect deforms vertices/control points in the Z direction, originating from the given starting point and propagating along the object with circular wave fronts (if both *X* and *Y* are enabled), or with rectilinear wave fronts (if only one axis is enabled), then parallel to the axis corresponding to the *X* or *Y* button activated.

  Cyclic

   Repeats the waves cyclically, rather than a single pulse.

Normals

  For meshes only. Displaces the mesh along the surface normals (instead of the object's Z-axis).

Time

  Settings to control the animation.

  Offset

   Time offset in frames. The frame at which the wave begins (if *Speed* is positive), or ends (if *Speed* is negative). Use a negative frame number to prime and pre-start the waves.

  Life

   Duration of animation in frames. When set to zero, loops the animation forever.

  Damping

   An additional number of frames in which the wave slowly damps from the *Height* value to zero after *Life* is reached. The dampening occurs for all the ripples and begins in the first frame after the *Life* is over. Ripples disappear over *Damping* frames.

Position

  X, Y

   Coordinates of the center of the waves, in the object's local coordinates.

  Falloff

   Controls how fast the waves fade out as they travel away from the coordinates above (or those of the *Start Position Object*).

Start Position Object

  Use another object as the reference for the starting position of the wave. Note that you then can animate this object's position, to change the wave's origin across time.

Vertex Group

  For meshes only. A vertex group name, used to control the parts of the mesh affected by the wave effect, and to what extent (using vertex weights).

Texture

  Use this texture to control the object's displacement level. Animated textures can give very interesting results here.

Texture Coordinates

  This menu lets you choose the texture's coordinates for displacement:

  Local

   Object's local coordinates.

  Global

   Global coordinates.

  Object

   Adds an additional field just below, to type in the name of the object from which to get the texture coordinates.

  UV

   Adds an extra *UV Layer* property, to select the UV layer to be used.

Speed

  The speed, in BU (for "Blender Units") per frame, of the ripple.

Height

> The height or amplitude, in BU, of the ripple.

Width

> Half of the width, in BU, between the tops of two subsequent ripples (if *Cyclic* is enabled). This has an indirect effect on the ripple amplitude - if the pulses are too near to each other, the wave may not reach the `0` Z-position, so in this case Blender actually lowers the whole wave so that the minimum is zero and, consequently, the maximum is lower than the expected amplitude. See **Technical Details and Hints** below.
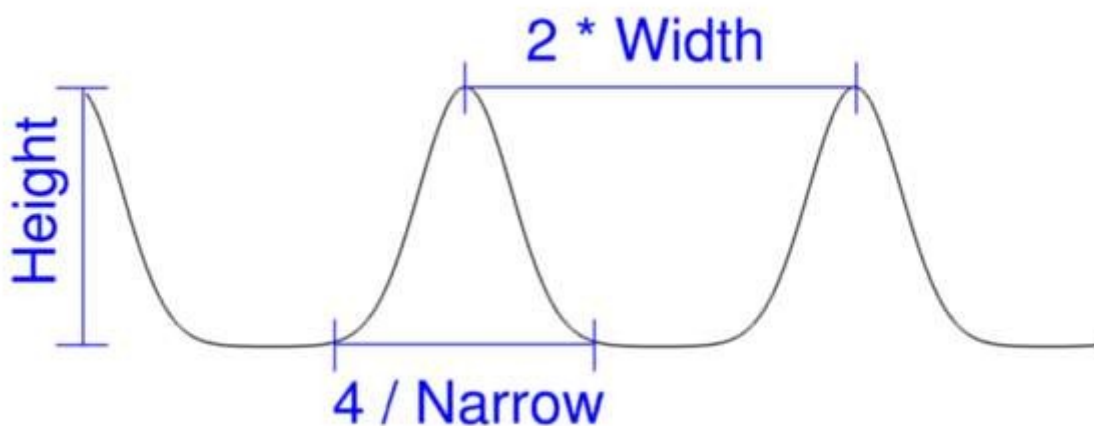
Narrowness

> The actual width of each pulse: the higher the value the narrower the pulse. The actual width of the area in which the single pulse is apparent is given by `4/Narrowness`. That is, if *Narrowness* is `1` the pulse is `4` units wide, and if *Narrowness* is `4` the pulse is `1` unit wide.

Warning
All the values described above must be multiplied with the corresponding *Scale* values of the object to get the real dimensions.

Technical Details and Hints

The relationship of the above values is described here:

Wave front characteristics.

To obtain a nice wave effect similar to sea waves and close to a sinusoidal wave, make the distance between following ripples and the ripple width equal; that is, the *Narrowness* value must be equal to `2/Width`. E.g. for *Width* = `1`, set *Narrow* to `2`.