

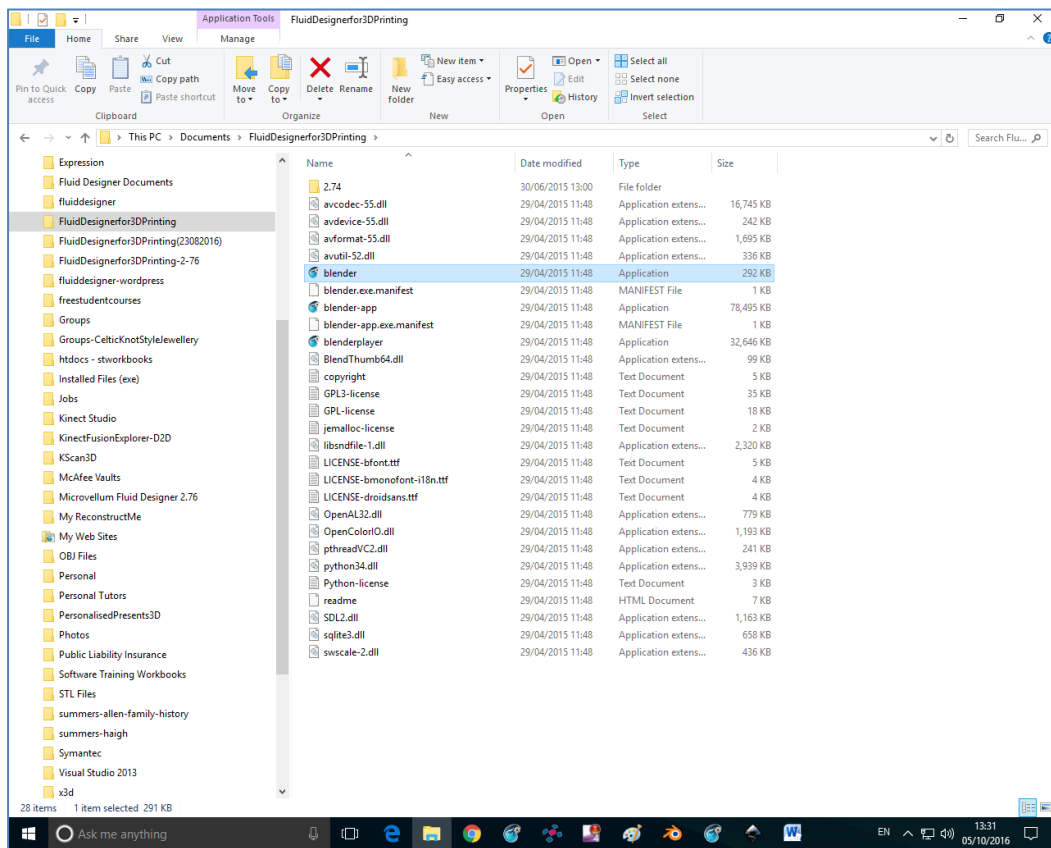
FLUID DESIGNER FOR 3D PRINTING

Installing & Configuring Startup Screen

INSTALLING THE APPLICATION



After downloading the file FluidDesigner3DPrinting.Zip from our web site you should install it in either the C:\Program Files (x86) *your* Document folder:

1. **Double-click** the file **FluidDesignerfor3DPrinting.Zip** and set the Destination Folder as **C:\Users\YourName\Documents** (the Documents folder of your system).
N.B. *Check carefully that you install the folder as c:/Documents/FluidDesignerfor3DPrinting and that you do NOT install the folder as c:/documents/FluidDesignerfor3DPrinting/FluidDesignerfor3DPrinting.*



2. To run the application browse to the folder **\FluidDesignerfor3DPrinting** and **double-click** the application file **blender** – you can also Pin this to the Taskbar or Create Shortcut using the right-mouse button.

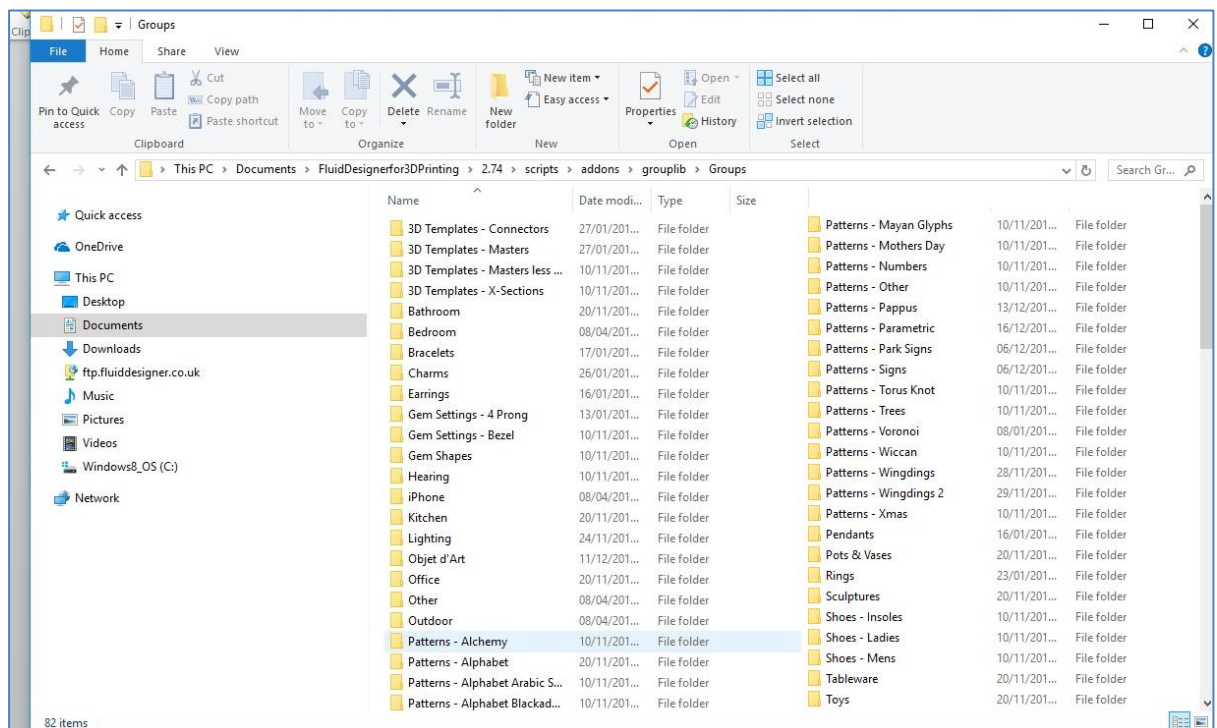
QUICK CONFIGURATION

1. Start the application and then select **File, Load Fluid Designer Defaults** and click **OK. Close** down the application and then open it again to view the Fluid Designer for 3D Printing default setup.
2. To refresh the file list in the Browser panel click the **Group Library**  button, now select **File** and then **Save Startup File** and **OK**.
3. If at any time you can NOT see any files listed click the **Group Library**  button in the Browser panel.

INSTALLING INDIVIDUAL OBJECTS/FILES IN THE GROUPS FOLDER

After installing FluidDesignerfor3DPrinting.Zip as detailed above you may wish to purchase additional software for individual styles or you may have enrolled on our e-Learning Course. To install these additional data files:

1. **Double-click** the file **Groups-####.zip** file or the **Patterns-###.zip** file and Browse to the Destination Folder **C:\Users\YourName\Documents** and unzip the files and folders.
2. Now open the newly unzipped folder and Browse until you can view a list of folders with names such as those shown below – these folders should contain **##.blender** files in them. Highlight the unzipped folders and **Copy** them to the clipboard, Browse to the folder **C:\Users\YourName\Documents\FluidDesignerfor3DPrinting\2.76\scripts\addons\grouplib\Groups** (the Documents folder of your system), then **Paste** the files.








FLUID DESIGNER

Checklist for 3D Printing with Fluid Designer

MINIMUM SIZE

No object smaller than 2mm x 2mm x 2mm can be printed. Press N to open the Properties window, click the Show the Main Information () icon in the Properties window and view the Dimensions X:, Y: & Z:.

POLYGON THRESHOLD

Shapeways accept polygons up to a 1 million limit and/or a file size of 64MB. Switch to the Blender menu (click ) and look for the list of Faces: 0/112 in the information toolbar at the top right of your screen. Switch back to the Fluid Designer menu () system.

MINIMUM THICKNESS

Using the (very approx.) 1 : 1 : 3 rule for printing to Precious Metal : Plastic : Ceramic check no part of the mesh is narrower than 1mm, 1mm or 3mm. Highlight the object, press the Tab key to switch to Edit Mode, press A until nothing is selected, press T on the keyboard to open the Toolbox, select the tab 3D Printing, change the Thickness to 1mm (or 2mm or 3mm etc.) click the Checks: option Thickness. Scroll down and click Thin Faces to view any problems.

MAXIMUM SIZE

Depending on the material and the 3D printing service you are using there is always a maximum size you can use. Check out Shapeways guidelines at: <http://www.shapeways.com/materials/material-options>

MATERIAL DESIGN GUIDELINES

Shapes need rigidity. In addition to thickness you need to consider the structure of the printed object in relation to its intended use and the material it is made of. Again, check out Shapeways guidelines at: <http://www.shapeways.com/materials/material-options>

APPLY SCALE

Open the Toolbox window by pressing the T key on the keyboard, look in the Resize window and make sure that the Vector scale for X:, Y: & Z: are all set to 1.000. If they are not hold down the Ctrl key and press A, select the Scale option to re-set all to 1.000. You should also note that you should re-set the Scale EVERY TIME you re-size an object, if you do not do this you will encounter problems when applying Solidfy or Subsurf modifiers.

APPLY MODIFIERS

To apply the modifier you must go to Tools, Object Tools and Convert To Mesh. Until you apply the

modifiers the mesh will not be as it appears on your screen. N.B. When saving to .obj file format Fluid Designer applies the modifiers as it exports the file.

RECALCULATE NORMALS

In Edit Mode (press Tab) press the A key on the keyboard to select All Faces, then hold down the Ctrl key and press N - this will ensure all faces are facing in the same direction which the printer file requires. If you have many issues it is probably much better and easier to register with Netfabb Cloud and run your mesh through their mesh repair tool which should fix all your faces for you.

REMOVE DOUBLES

Select the object, switch to Edit Mode (Tab key), press the A key until All the vertices are selected, press the W key on the keyboard, select the Remove Doubles command.

NON MANIFOLD EDGES

Highlight the object, press the Tab key to switch to Edit Mode, press A until nothing is selected, press T on the keyboard to open the Toolbox, select the tab 3D Printing, click the Checks: option Solid. Scroll down and click Non Manifold Edge to view any problems.

INTERSECTING FACES

Highlight the object, press the Tab key to switch to Edit Mode, press A until nothing is selected, press T on the keyboard to open the Toolbox, select the tab 3D Printing, click the Checks: option Intersections. Scroll down and click Intersect Faces to view any problems.

SAVE CHANGES MADE

Select File and Save any changes you have made. N.B. ONLY do this ONCE you have saved your work to the My Projects folders.

EXPORT TO OBJ FILE

Select File, Export and Obj(.obj), save it to the desktop with the same name you normally use for the file.



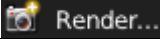













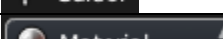




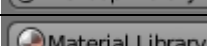
NETFABB BASIC

Go to Netfabb online where you will find free software that will allow you to checker your meshes for errors and to fix them. This can be found @ <http://www.netfabb.com/basic.php/>.

OTHER INFORMATION

Printing to a 3D Printer is not like printing a page of text. A lot of factors affect the outcome. Do NOT send any files to be printed until you are 100% sure that they are correct and that the object you will be paying for is the object you want and expect.

FLUID DESIGNER - Menu / Toolbar

Icon	Action
 File	File menu
 Edit	Edit menu
 Render...	Render menu
 Help	Help menu
	Current editor type for this area
	Select Views, Filters, Save and Tools options
 Learning Projects - Ceramic & Porcelain Projects	My Projects category selected with Ceramics Projects open – save your work in the My Projects folders
	Current editor type for this area – for 3D printing use:  3D View – work space  Properties – detailed properties of objects  Outliner – lists all elements being used  File Browser – Fluid Designer drag-and-drop UI
 View	View menu
 Add	Add menu
 Tools	Tools menu
 Select	Select menu
 Cursor	Cursor menu
 Material	Wireframe / Material / Solid / Rendered view options
 Global	Use a 3D manipulator widget for controlling transforms / Manipulator translate / Manipulator rotate / Manipulator scale / Transformation orientation
 Closest	Snap during transform / Type of element to snap to / Which part to snap onto the target
	Interactive ruler
 Group Library	View the Group Library
 Material Library	View the Material categories

FLUID DESIGNER - Keyboard shortcuts

OM = Object Mode only EM = Edit Mode only

Keys	Mode	Action
A		Select all / Deselect all
Ctrl + A	OM	Apply menu (such as apply the Scale)
B		Border select
C		Circle select
Alt + C	OM	Convert menu
Alt + C	EM	Close / Open a curve
Shift + D		Duplicate
Alt + D		Linked Duplicate
E	EM	Extrude region
Alt + E	EM	Extrude menu
F	EM	Create Face (3+ vertices selected)
Ctrl + F	EM	Faces menu
G		Move (Grab)
Alt + G	OM	Reset location
H		Hide selected
Shift + H		Hide unselected
Alt + H		Unhide all
Ctrl + J	OM	Join selected objects
M	OM	Move object to a different layer
Ctrl + M		Mirror object over an axis
Alt + M	EM	Merge menu
N		Open/Close Properties panel (right of work area)
Ctrl + N	EM	Recalculate normals to outside
Ctrl + Shift + N	EM	Recalculate normals to inside
O	EM	Proportional Editing on/off toggle
Alt + O	EM	Proportional Editing connected toggle
Shift + O	EM	Proportional Editing Falloff type toggle
Ctrl + Alt + Q		Quad View toggle
R		Rotate
Alt + R	OM	Clear rotation
Ctrl + R	EM	Loop Cut

Keys	Mode	Action
S		Scale
Alt + S	OM	Reset Scale
Shift + S		Snap menu
Alt + S	EM	Shrink/Fatten – Transform Radius Curve
T		Open/Close Toolbox panel (left of work area)
Ctrl + T	EM	Tilt (Curve)
V	EM	Set Handle Type menu (curves)
Ctrl + V	EM	Vertices menu
W	EM	Special menu
X		Delete menu
X		Constrain global X axis transform
Y		Constrain global Y axis transform
Z		Constrain global Z axis transform
Ctrl + Z		Undo
Ctrl + Shift + Z		Redo
1		Front view
3		Side view
7		Top view
5		Perspective/Orthographic view toggle
Ctrl + 1		Back view
Ctrl + 3		Other side view
Ctrl + 7		Bottom view
4 / 6		Rotate view left/right in iterations
2 / 8		Rotate view up/down in iterations
HOME		Frame all in view
Tab		Object Mode / Edit Mode toggle
Ctrl-Tab	EM	Change Mesh Select from Vertex – Edge - Face
Ctrl + LMB drag		Lasso select
Shift + F1		Link/Append from Library