

# Abwicklungen von 3D Modellen zu 2D Patterns

- [dxf2papercraft](#)

# dx2papercraft

dx2papercraft is an open source flattener, available at

<https://sourceforge.net/projects/dx2papercraft/files>

Documentation page: <https://dx2papercraft.sourceforge.net>

## command line options

```
Usage: ./dx2papercraft [options] infile3D.dxf outfile2D.dxf
```

```
convert a polygonal 3D object into a 2D cut-out sheet for  
producing a paper model of the object using glue and scissors
```

```
Copyright by Thomas Haenselmann <givenname@familyname.de>
```

```
Options:
```

```
-m, --nomerge      no merging of faces into single polygon  
-n, --number      print face numbers  
-d, --divide      draw each face separate  
-o, --overlap     allow overlapping faces in cut-out sheet  
-h, --hide       hide glue tabs  
-f, --force      force glue tabs, even if intersecting faces  
-p, --split 8,17  face number 8 and 17 get disconnected from the rest  
                  (use -n to see face numbers in 2D DXF file)  
-s, --strategy 0..5 0: draw smallest polygon first / 1: draw largest first  
                  2: as ordered in file / 3: keep adjacent faces continuous  
                  4: stretch 2D layout wide / 5: keep layout dense  
-?, --help      display this text
```

## Converting dx2papercraft generated DXF file output to SVG

Using dx2papercraft generates 2D DXF output from 3D DXF input. We can use some tools to convert away the DXF to a neutral format like SVG.

kabeja (works)

Some tests with conversion of dxf2papercraft dxf output to SVG files

```
./dxf2papercraft/dxf2papercraft -d test3d.dxf test2d.dxf
sed -i 's/ENDSEQ/ENDSEC/g' test2d.dxf
cd kabeja/
java -jar launcher.jar -nogui -pipeline svg ../test2d.dxf ../test2d.svg
cd ../
inkscape test2d.svg
```

## OpenSCAD (failed)

The dxf generated output from dxf2papercraft is not usable with openscad (we could use openscad to convert).

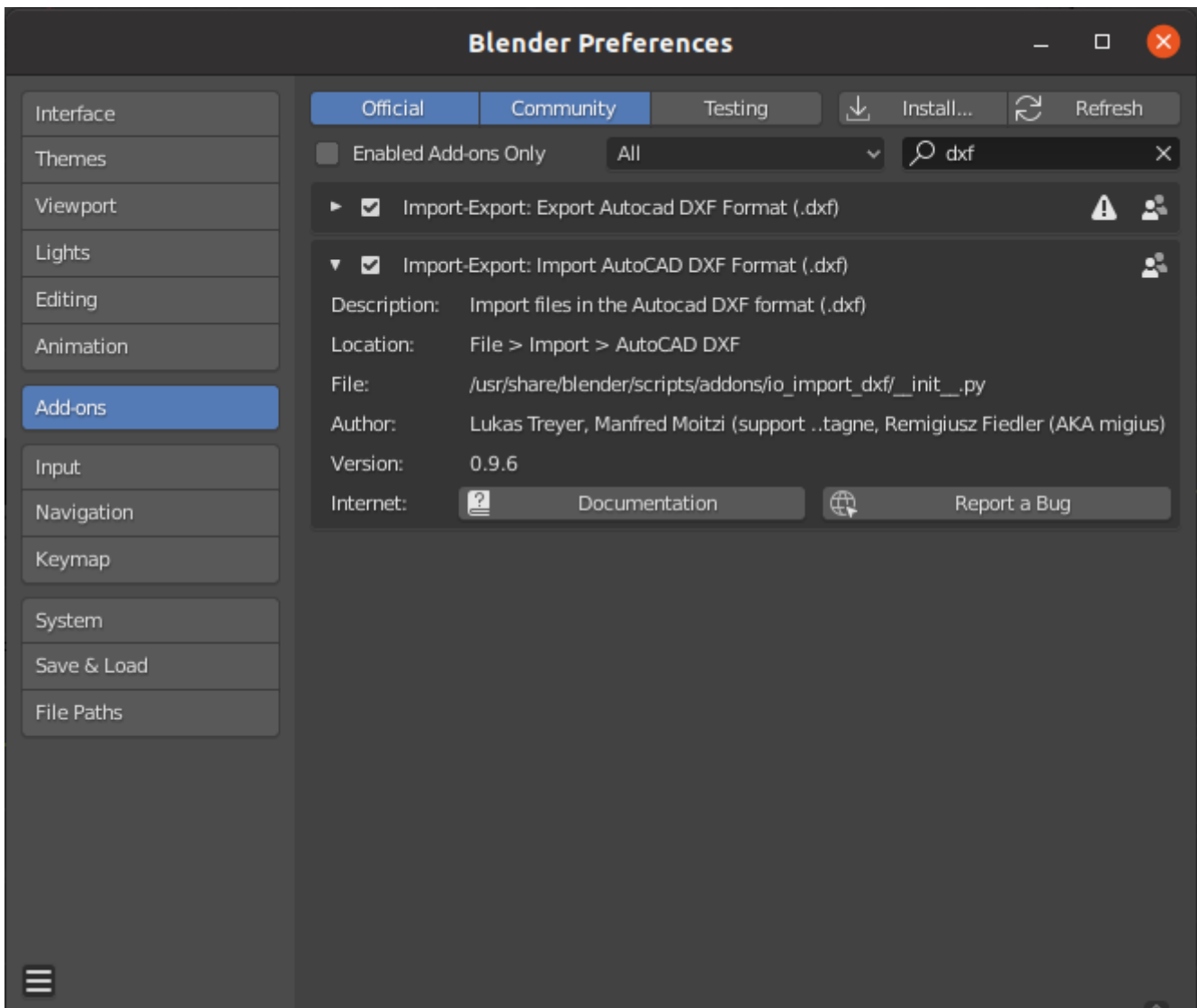
```
import(file="/home/tomate/mightyscape/papercraft_unfold/test.dxf");
WARNING: Unsupported DXF Entity 'SEQEND' (170) in "test.dxf".
WARNING: Unsupported DXF Entity 'VERTEX' (63c) in "test.dxf".
WARNING: Unsupported DXF Entity 'POLYLINE' (170) in "test.dxf".
```

## How to create usable input files for dxf2papercraft?

dxf2papercraft only handles 3D DXF files. A lot of files are not shipped in this format. So how we can convert models to 3D DXF to use dxf2papercraft?

## Blender "Import AutoCAD DXF format (.dxf) Addon

On Linux and Windows we can use Blender to import models like STL or OBJ. We can write a usable DXF file for dxf2papercraft.



## admesh

admesh is a simple tool which works well to make 3D DXF files

```
sudo apt install admesh
admesh 3dprint-bolt.stl --write-dxf 3dprint-bolt.dxf
```

admesh is able to generate DXF files from STL files too. But trying to import larger files may give error

```
dimeModel::largestHandle: 0
terminate called after throwing an instance of 'std::bad_alloc'
hat(): std::bad_alloc
Aborted (core dumped)
```

# How to improve dxf2papercraft?

In conclusion there are some ToDos to make dxf2papercraft better

- fix ENDSEQ bug (must be named "ENDSEC")
- update dime library to most recent one
- add native SVG file export option
- make colored output
- add STL input option (integrate admesh into conversion toolchain)
- allow to disable printing out numbers
- remove duplicate lines