



STARCH 3D PRINTING SUBMISSION GUIDE

3DS Projet 660 Printer

3DS Projet 360 Printer

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Installing 3D Print software

The software for file checking and submitting a print for the 3D Systems Projet 660 printer and the 3D Systems Projet 360 Printer is located on the Daniels FTP.

Go To:

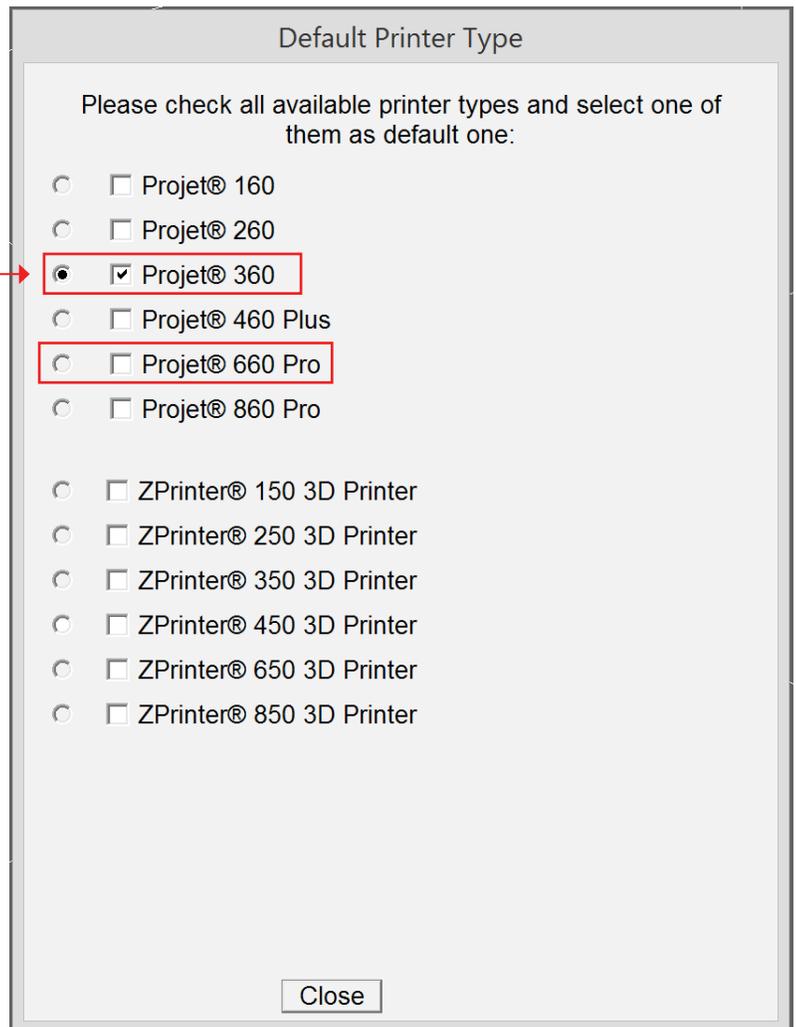
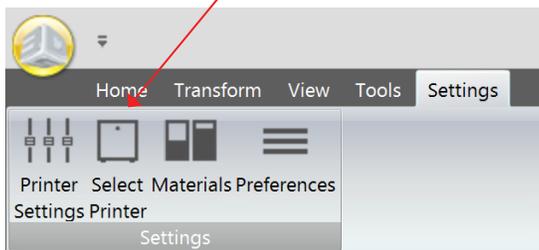
\\ald.utoronto.ca\root\Groups\3D_Printing\3D Printing Software\3D Print (Starch)

Copy the 3D Print software to your desktop. Click to Install. The 3D Print software is compatible for both the 660 and the 360 printer, file extensions are the same.

The Projet 660 printer has the option to print in color, the 3DS Projet 360 is strictly a monochrome (white) printer.

You must choose to install either of these printers at the time of installation, if you wish to print in color install the Projet 660 printer as the Projet 360 is monochrome only.

Select and check both boxes before close the default printer selection box. This can be changed at any time later via select printer under the settings tab.



Information about the Projet 660 Printer and the 3D Systems Projet 360

Projet 660 Build Platform Dimensions:

10"(y) by 15"(x) by 8"(z) 254mm(x) x 381mm(y) x 203mm (z)

Layer Resolution:

0.004 inches 0.1mm

Full Bed Print:

11-14 Hours with drying cycle.

Projet 360 Build Platform Dimensions:

8"(y) by 10"(x) by 8"(z) 203mm(y) by 254mm(x) by 203mm(z)

Layer Resolution:

0.004 inches 0.1mm

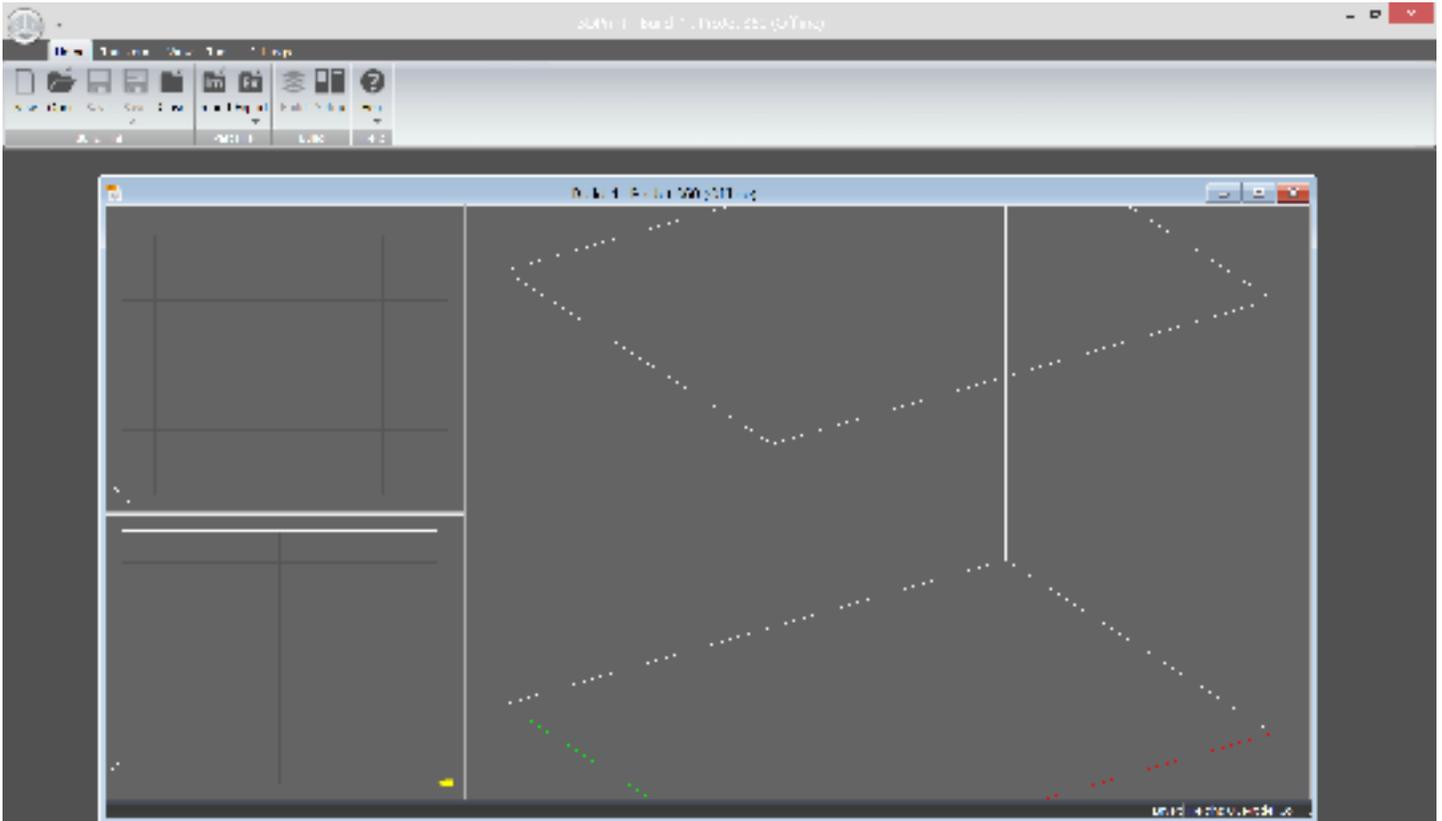
Full Bed Print:

11-14 Hours with drying cycle.

Both printers run the same material and binder.

A MINIMUM WALL THICKNESS OF 3mm IS REQUIRED FOR PRINTING.

There are five tabs for working within 3D Print. Home, Transform, View, Tools and Settings. The home tab allows file opening, saving and exports. To save a ZBD file open the stl and save, this will save to ZBD



The Transform tab allows for copy and paste, rotation and scaling of the object.



The view tabs allow for the 2d slice view or 3D rendered view of the object.

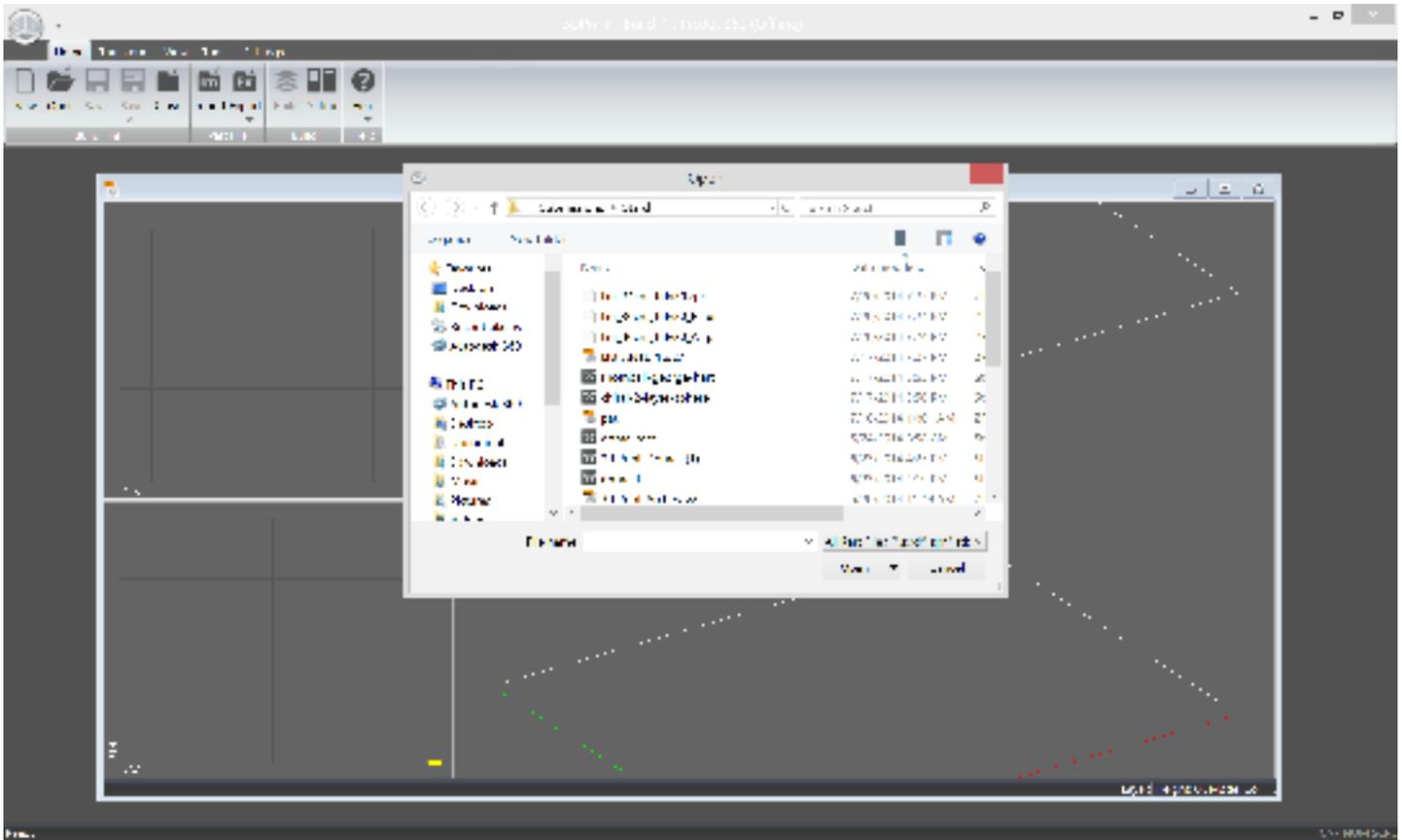


The Tools tabs allow you to estimate the build time and volume and run collision detection on a build if multiple objects are close to each other when nested.

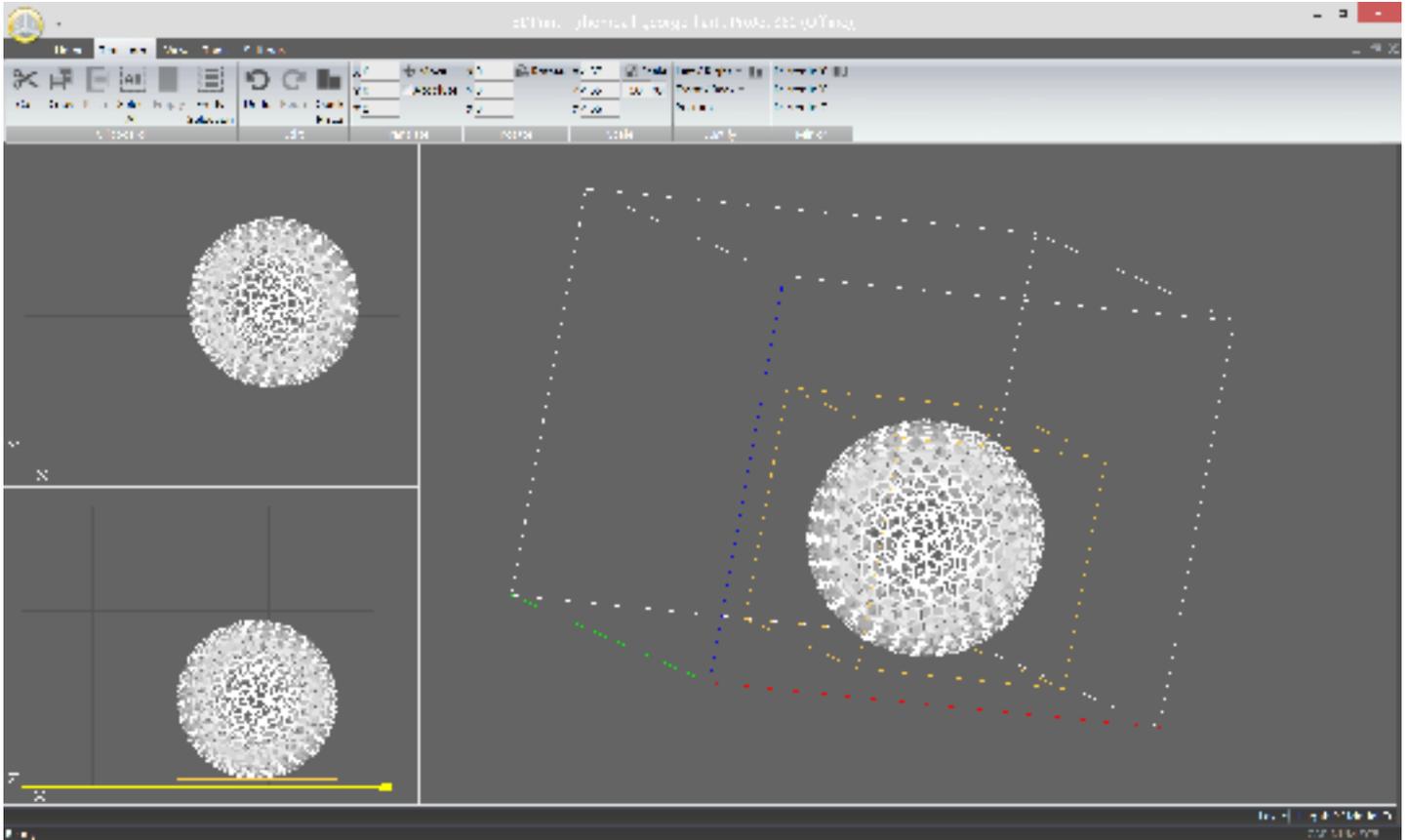


The Settings tab allows for the changing of printer model and the changing of units for building calculation in the preferences button.





3D Print will accept zpr, zbd, stl, ply and wrl file formats. Exporting from most software is done to STL format, always check the surface normals when exporting to STL. Inverted normals (ie not directed outwards from the meshed object) will not print properly, they will appear dark in 3D Print render preview, this must be corrected before printing can commence. Fixing normals will be covered in the next section.

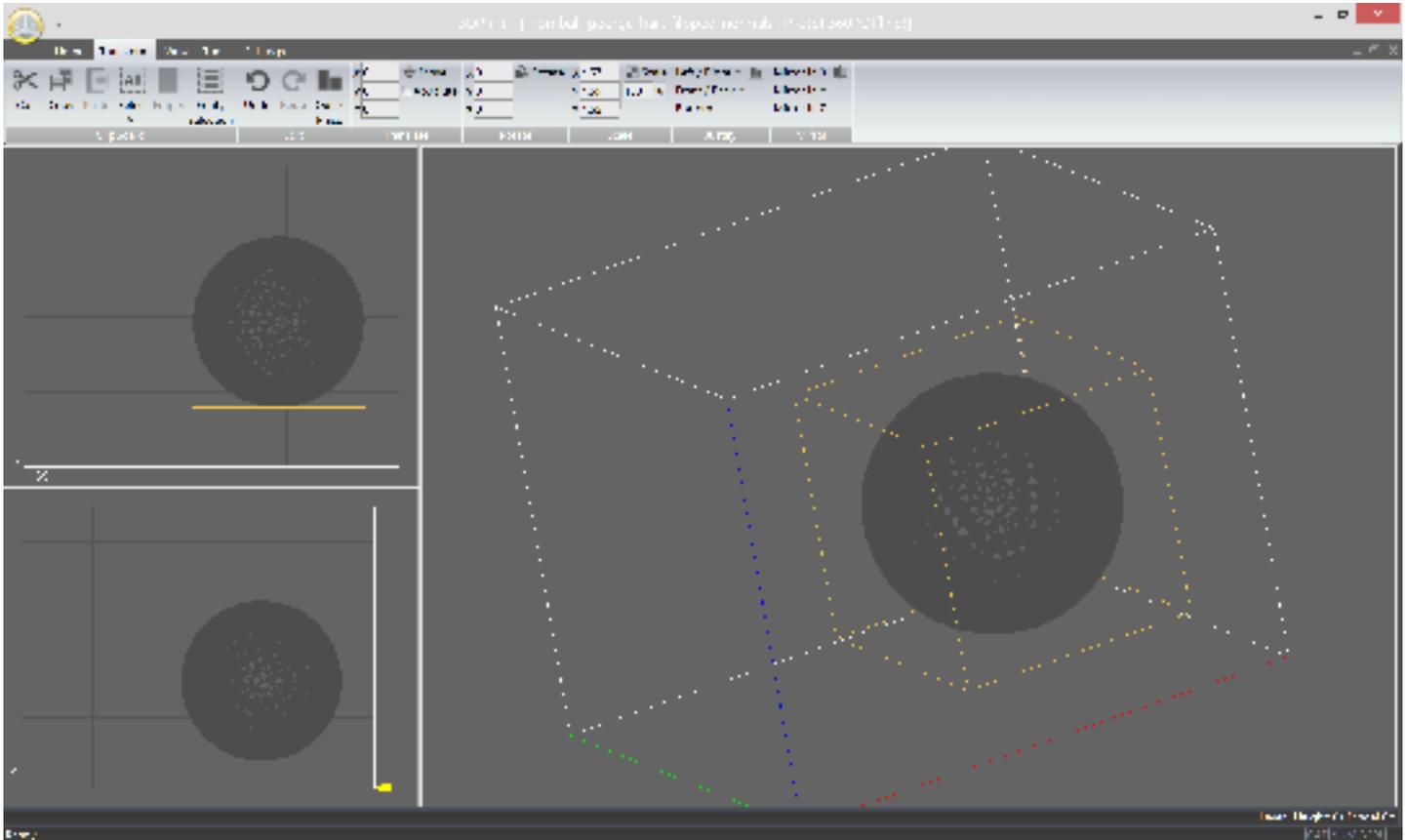


Once your file is opened the STL file should appear shaded in monochrome white, there will be a orange bounding box surrounding the file show that it is within the build chamber.

If you have exported your STL with color settings, you should see these colors visualized when the 660 printer is loaded.

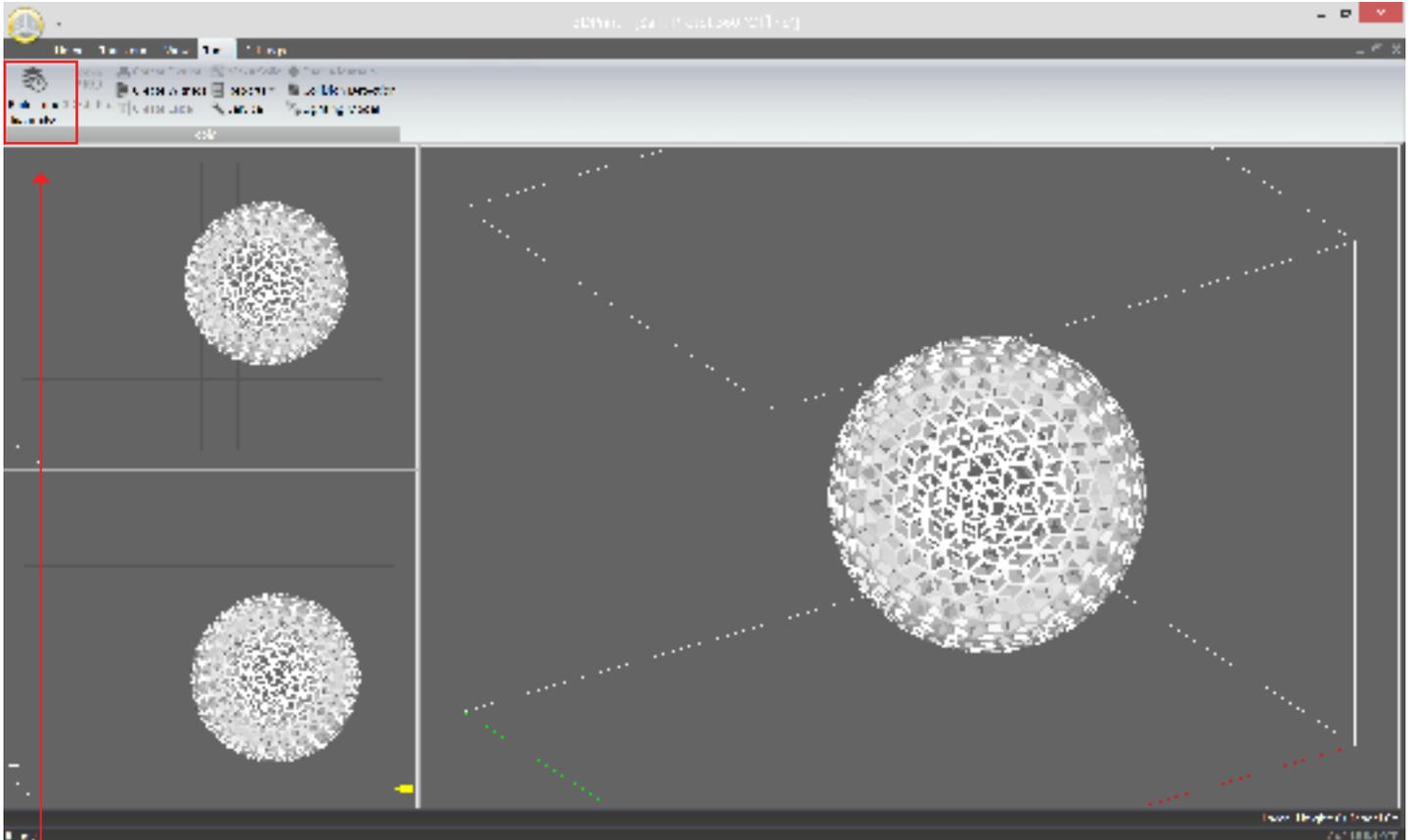
If the bounding box is red the object is outside of the build chamber.

If you export Multiple items as one STL an unbreakable bounding box will be created, for nesting purposes it is best to export single STL files and nest in 3D Print, or draw the bounding region in Rhinoceros and nest before exporting as a single STL.

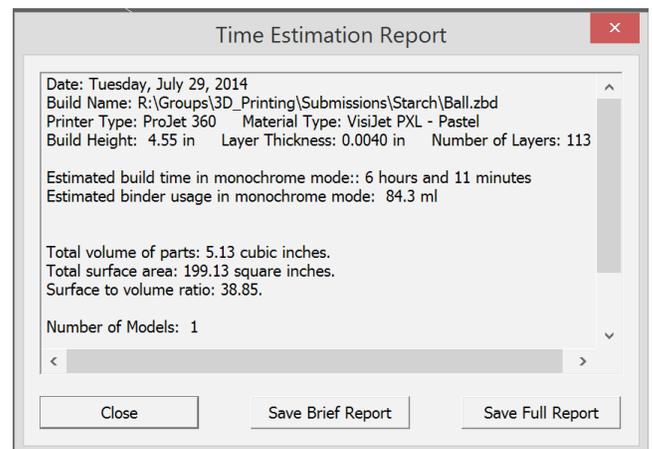


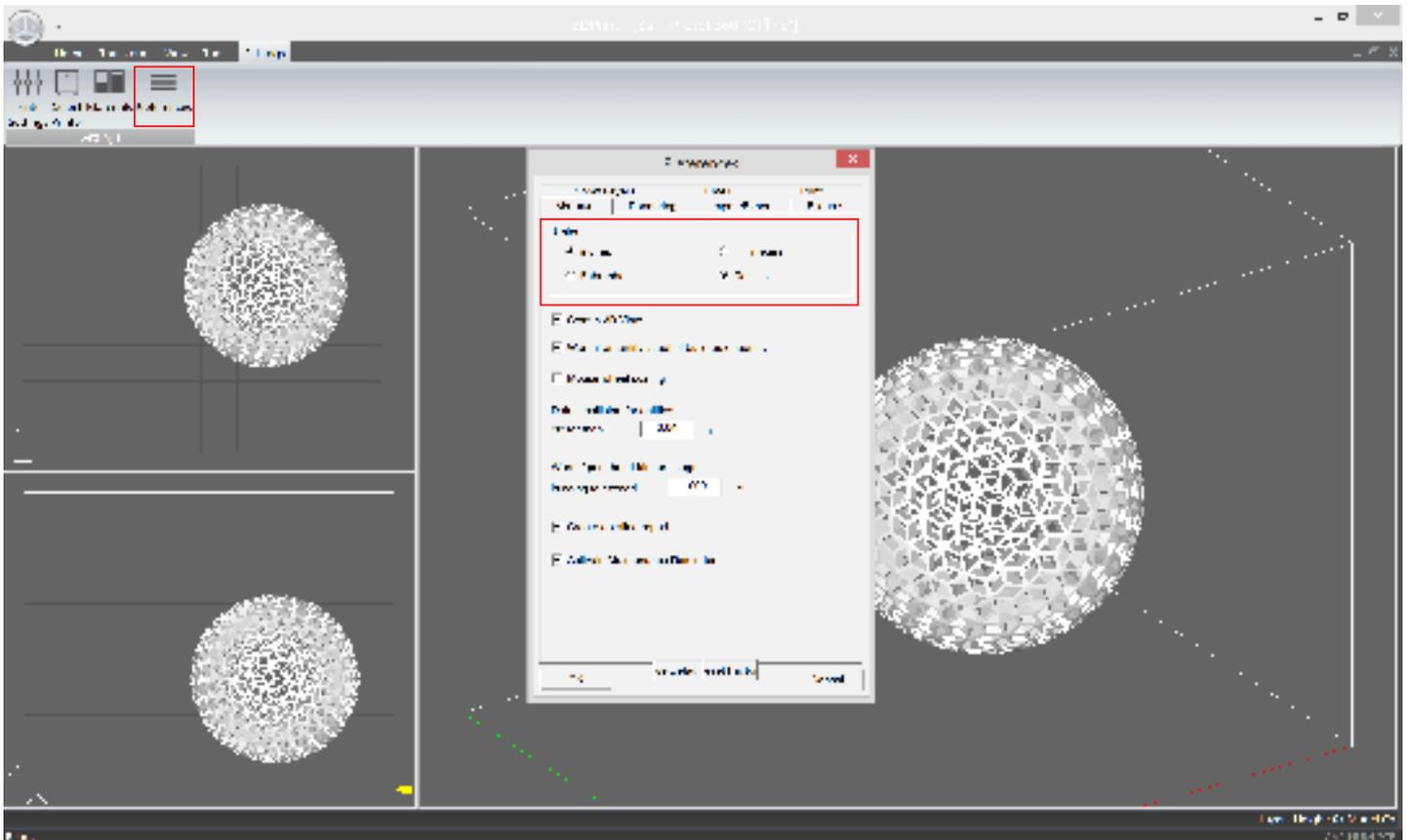
If a STL file has inverted normals the image above is how the file will appear in 3D Print. These files will not print properly as the software doesn't recognize the solid areas to print. The software will sometimes prompt to fix the flipped normals if they are detected, occasionally this will correct the issue, in most cases you have to set the normals properly in the software the file was exported from. Even some areas that are flipped can cause prints to fail or pieces to not be adhered to one another.

Always run a normal analysis before exporting the STL file for 3D Printing.



Once your file is ready to submit for printing, check the build time estimator for the total cost and length of the build cycle. The total volume of parts in cubic inches is the amount you will be charged at 5\$ per cubic inch. The estimated build time in monochrome is the build without the drying time for a print, this is an additional 1.5 hours.





If the estimator is showing in cubic centimeters you can change the unit output in the preference menu, check the inches for units and the estimator will display the units in inches.

Proper File Name and Submission

3DS 660 / 3DS 360

Once you have reviewed your file and are ready for submission, name your file:

lastname_firstname_date.zbd

Always save the ZBD file for Starch submission, STL files are not accepted.

Upload your file to:

ftp://files.daniels.utoronto.ca/Groups/3D_Printing/Submissions/Starch/

Once your file is uploaded email the 3D Printing group to notify of file submission.

3dprinting@daniels.utoronto.ca

Always include in the email-

Student First and Last Name:

Student Number:

File Name:

FAILURE TO DO SO MAY RESULT IN YOUR PRINT NOT BEING PROCESSED