



HOW-TO GUIDE

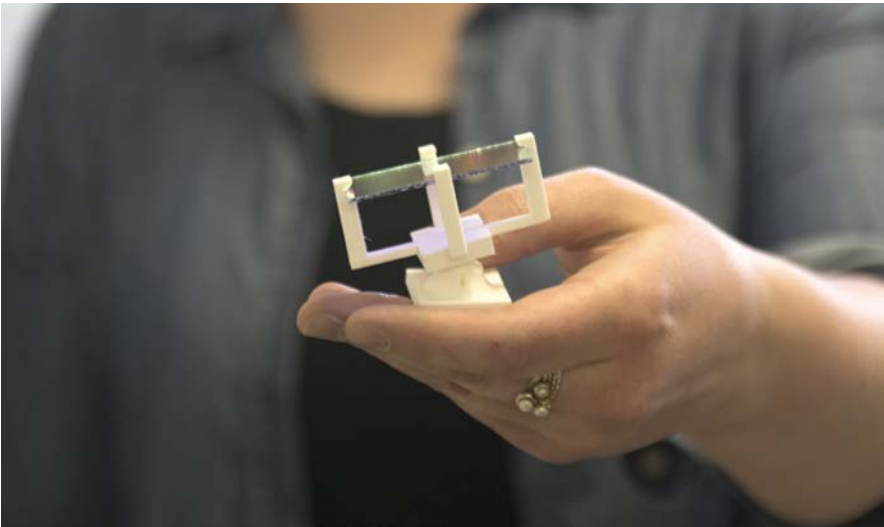
3D Printing From Adobe Photoshop CC

Every sculpture, product, installation and building (successful and unsuccessful) starts with an idea. When it takes physical form, the designer gets valuable aesthetic and practical feedback. Here are some tips on when and how 3D printing can feed this process.

Concept models: Regardless of what materials you'll use to create your finished work, 3D printing in the early planning stages provides a sketch in the round so you can evaluate proportions, physical viability of design choices and balance. It also helps you communicate your inspiration to others in ways words and 2D images can't. With 3D printing, concept models can be easily scaled down to let you experiment with huge ideas, or scaled up to help you examine details.



Art students designed 3D printed molds for ceramics at State University of New York at New Paltz.



MFA student at State University of New York at New Paltz designed custom fixtures to hold lenses that reflect light for her thesis show.

Custom hardware: When you're building something truly original, finding the right hardware can be a challenge. Mass-produced components don't always come in just the right shape. 3D printing offers a way for you to make your own plastic fixtures for construction and display.

Complex structures: As artists and designers increasingly blur the line between digital and analog aesthetics, 3D printing offers a way to render organic shapes with a precision, repeatability and experimentation with scale that would be difficult or impossible in traditional media. Some 3D printing technologies excel at smooth surfaces and fine details; others easily build hollow and convoluted forms. Mathematical concepts can directly inform construction.

Complex surface graphics: This is where recent advances in 3D printing technology really shine for Photoshop users. Any image or design can be applied to the surface of a 3D shape and, if your school has access to a Stratasys J750 3D Printer, rendered in full color. Whole, finished works of art can be created digitally. Or 3D files can be imported and the surfaces altered with the artist's design.

OBTAINING AND IMPORTING 3D FILES

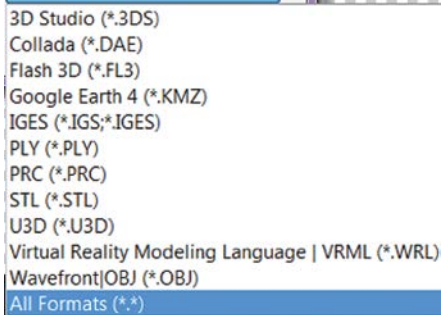
Designers and artists can get 3D files various ways, depending on available skills and the desired end product. Designers who work in two dimensions (for projects such as posters or web page design) can experiment with 3D by using Photoshop CC to give depth to a simple design or piece of text. Follow this [Adobe tutorial](#) and you'll have a 3D-printable geometry in no time.

If you want to experiment with more complex 3D geometries but don't have the computer-aided design (CAD) skills to create your own original forms, explore an online community where designers share files. Remember that each design belongs to the person who created it, and be sure to respect any restrictions on use (such as disallowing commercial use). In general, downloading 3D files is great for learning and experimentation. Check out these communities:

- [Thingiverse](#)
- [GrabCAD](#)

3D PRINTING FROM ADOBE PHOTOSHOP CC

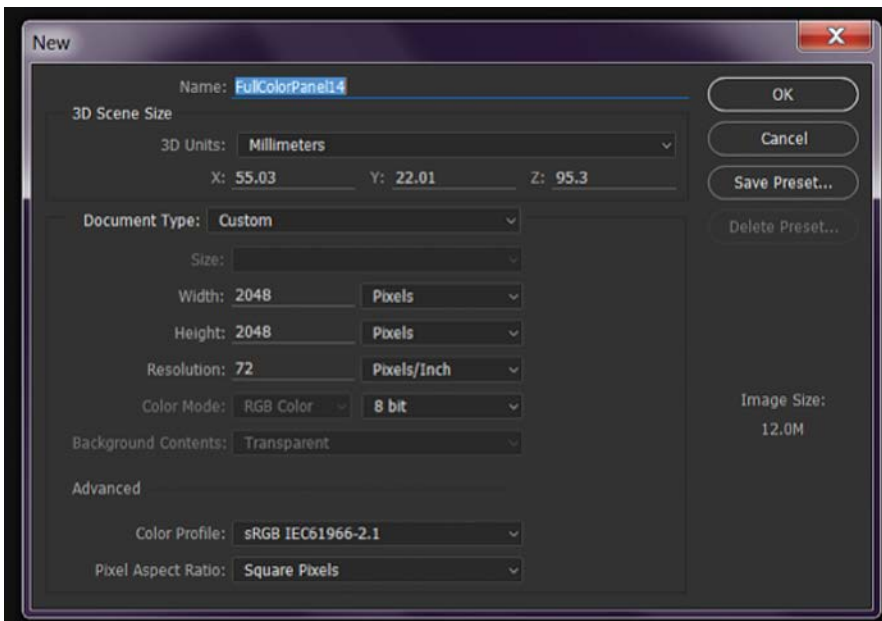
If you're proficient in CAD and want to manipulate your designs, Photoshop can import various 3D files such as STL, OBJ, VRML, COLADA, .Fbx.



A screenshot of a file format menu in Photoshop. The menu is open, showing a list of 3D file formats. The 'All Formats (*.*)' option is highlighted with a blue background. The list includes: 3D Studio (*.3DS), Collada (*.DAE), Flash 3D (*.FL3), Google Earth 4 (*.KMZ), IGES (*.IGS;*.IGES), PLY (*.PLY), PRC (*.PRC), STL (*.STL), U3D (*.U3D), Virtual Reality Modeling Language | VRML (*.WRL), Wavefront|OBJ (*.OBJ), and All Formats (*.*)

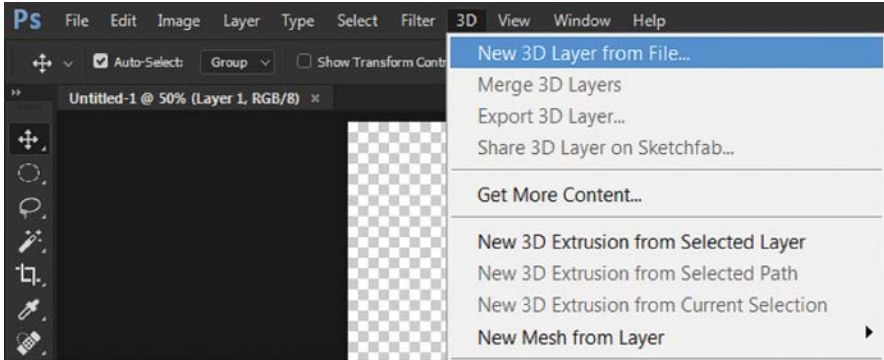
In order to import a 3D file into Photoshop, you can do one of the following.

1. **Drag and drop the 3D file into Photoshop.** In the new file dialog, set the file, 3D unit and document size.



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2. With a Photoshop document open, go to the 3D menu and click on “New 3D Layer from File.”



STEPS TO 3D PRINT

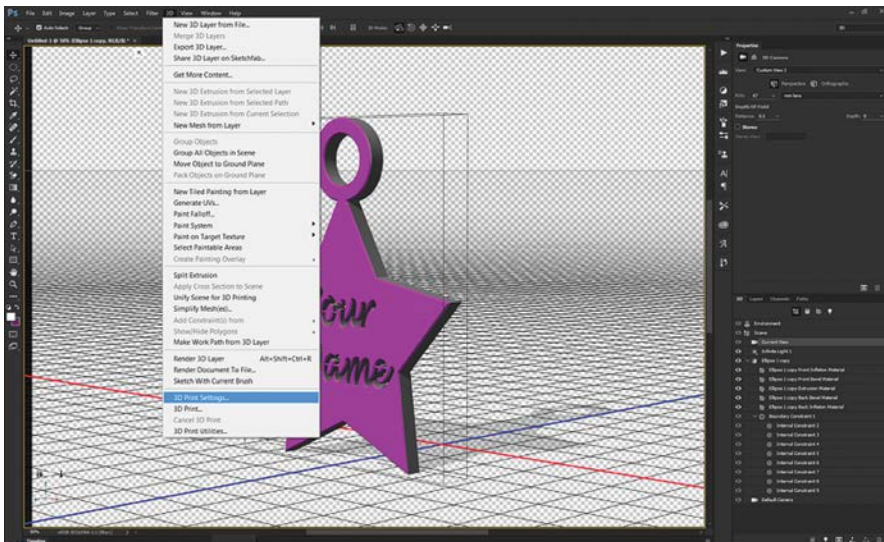
Whether you import a file from external CAD software, or create 3D content in Photoshop, you can prepare and export files for 3D printing directly from Photoshop.

Plain surfaces: 3D printing objects with plain surfaces can serve many functional and aesthetic purposes. Concept models, custom hardware and complex geometry applications can be created using this method. FDM technology is ideal for durable objects, and is an affordable 3D printing option when you don't need a smooth surface right out of the build chamber. PolyJet technology is best when you need finely detailed shapes and smooth surfaces. You can always sand and paint your plain-surface models.

Exporting for Print

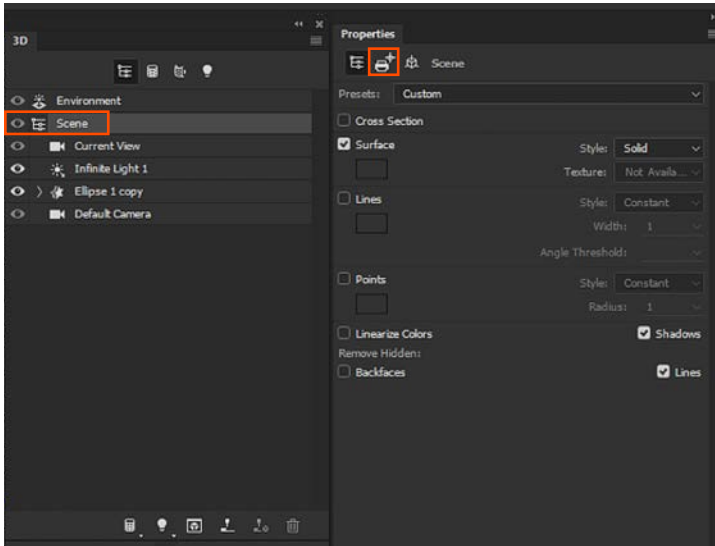
1. 3D Print Settings

Under the 3D menu, go to “3D Print Settings” to select your printer or export file format.

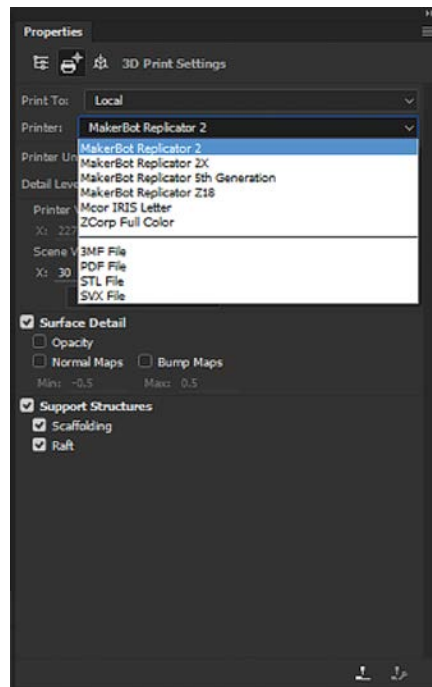
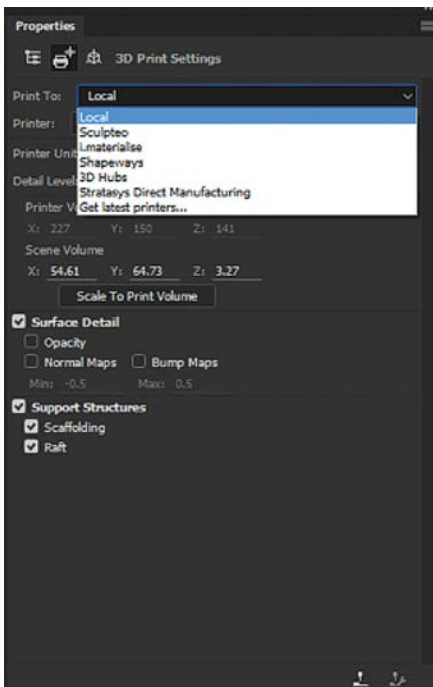


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Or from the 3D tab, select “Scene.” Under “Properties” select the printer icon.

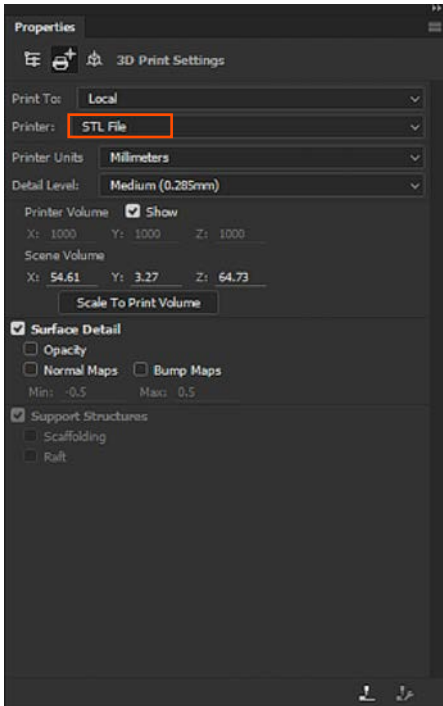


Click the “Print To” menu and select “Local” and the printer name to connect to your printer.



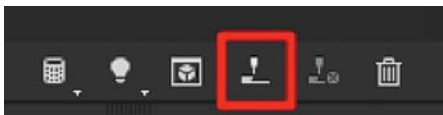
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If you have a Stratasys printer that is not supported by a locally connected printer, you can export a regular STL file and send it to any printer or printing service of your choice.

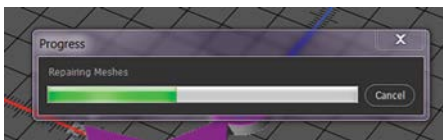


2. 3D Print

Click the “Start Print” icon from the 3D menu.

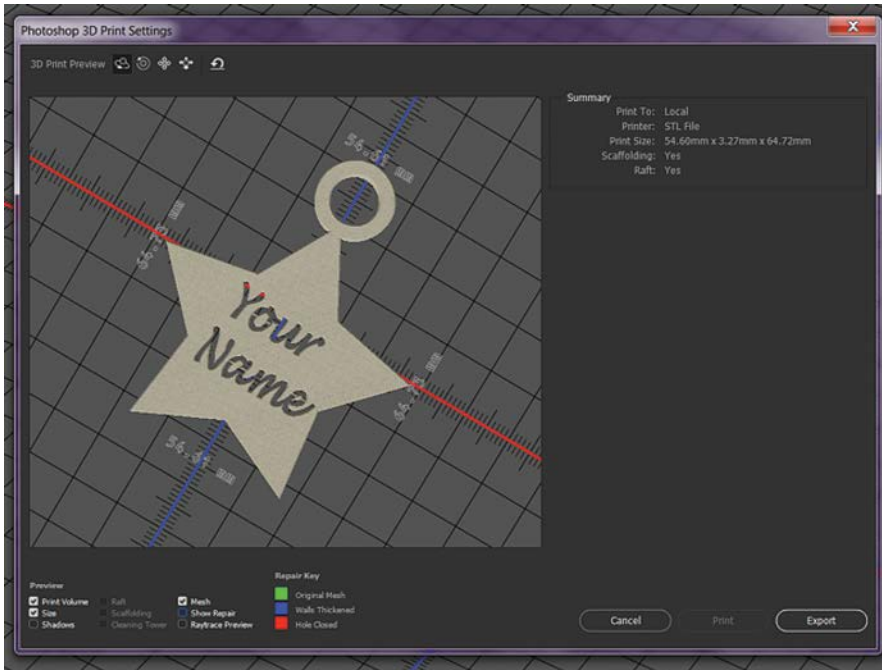


Once the process starts, Photoshop will check the mesh and make sure it is printable.

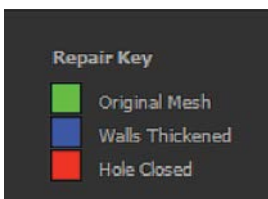
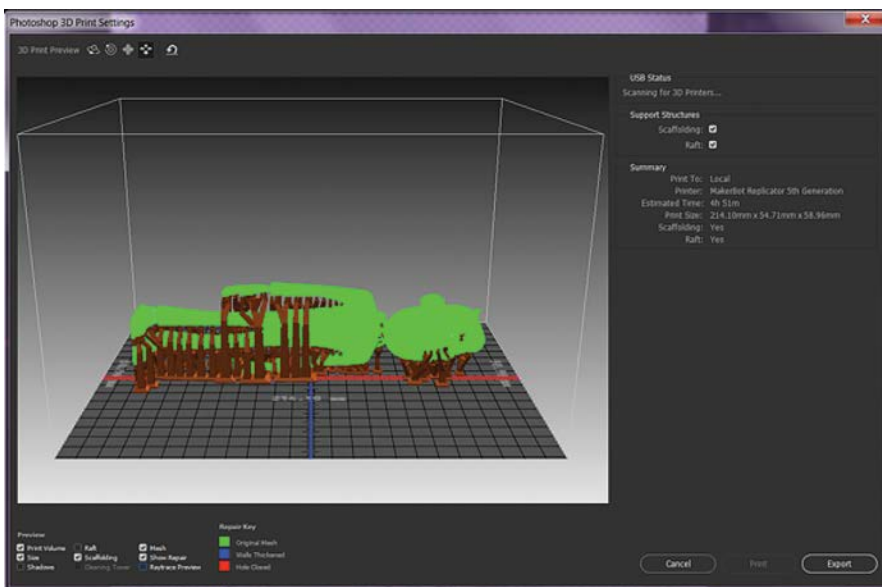


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In the 3D print preview, you can see the original and the repaired parts.



If needed, Photoshop will create support structures.



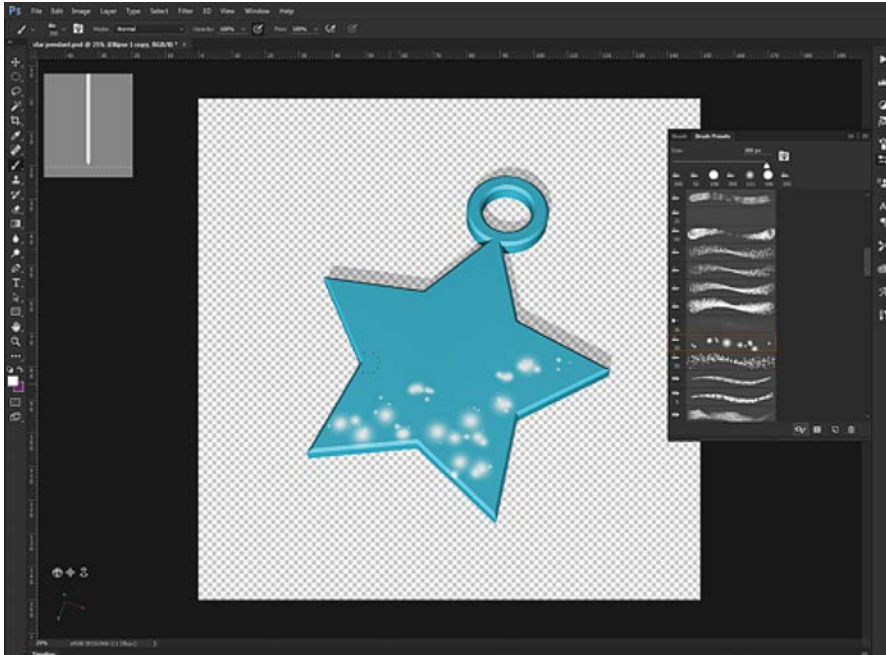
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COLOR AND SURFACE GRAPHICS

To 3D print objects with colorful, complex graphics and gradients, you'll need access to a Stratasys J750™ 3D Printer. With Photoshop you can easily add color and graphics to your model and export as a VRML file with all the color information.

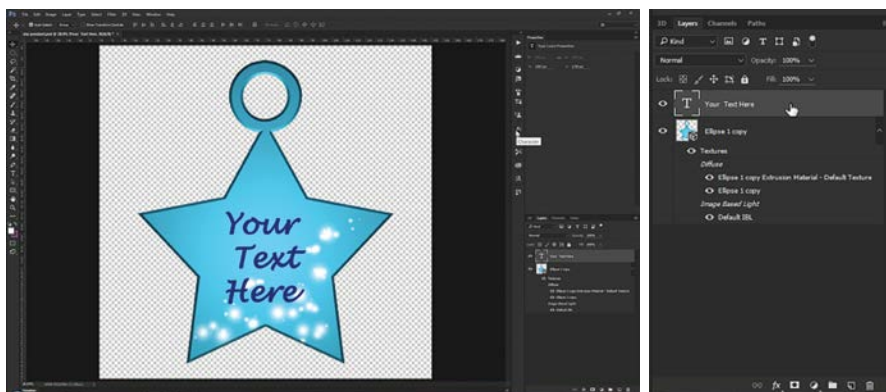
1. Painting on surface

You can use all brush tools in Photoshop to paint directly on the 3D model.



2. Adding text or graphic logo and merging on to the surface:

Add a new Graphics or Text Layer



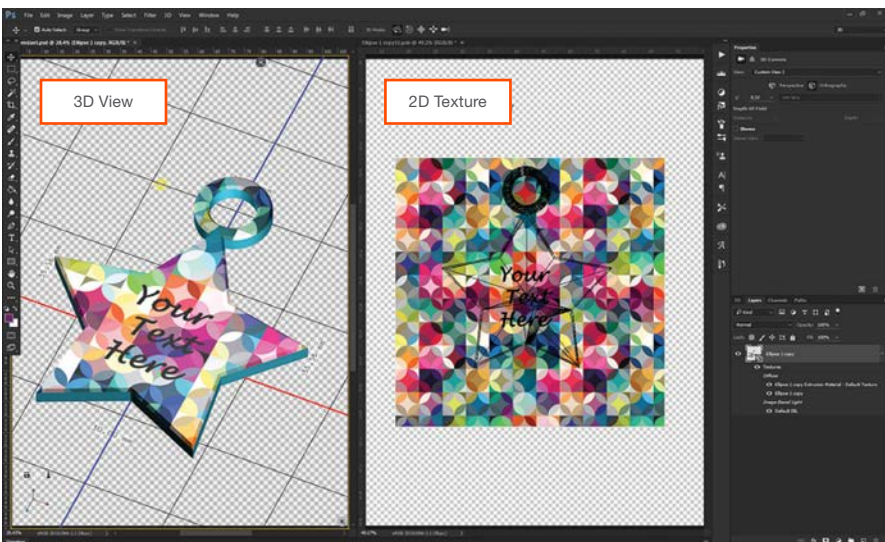
From the Layer Menu, Select "Merge Down."



The text is now part of the object's texture.

3. Editing the Texture Map

Another option in Photoshop is editing the texture map directly.



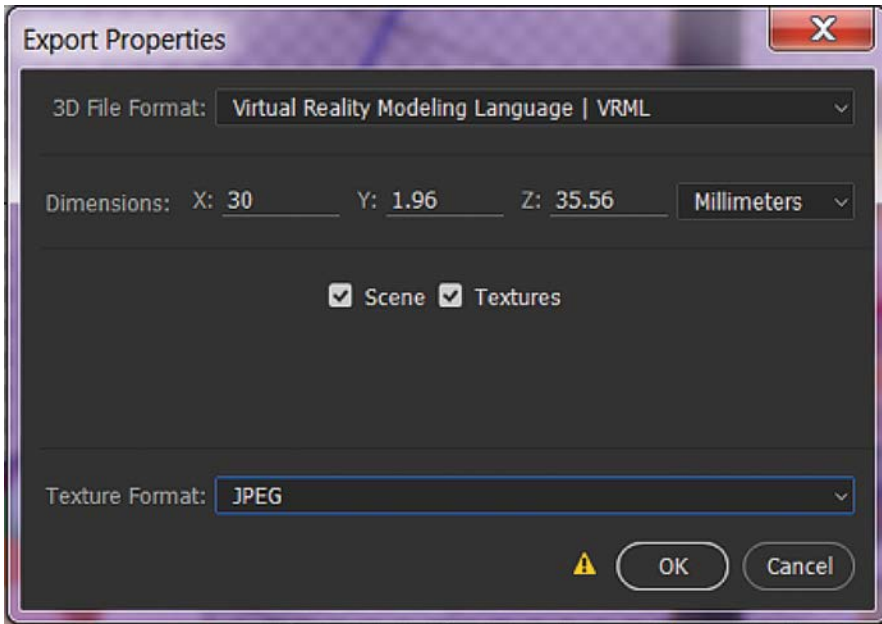
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4. Export file

When you are done with your design you can export your file to print.

In the 3D menu select “Export 3D Layer.”

Select VRML as the 3D file format, and JPEG, PNG or BMP as your texture format.

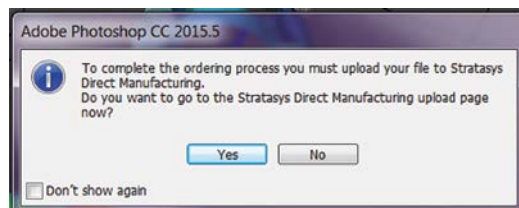
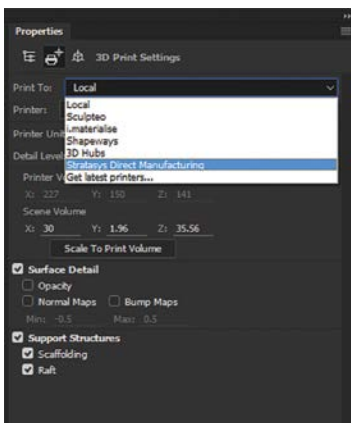


You are now ready to send your design to a Stratasys J750 printer.

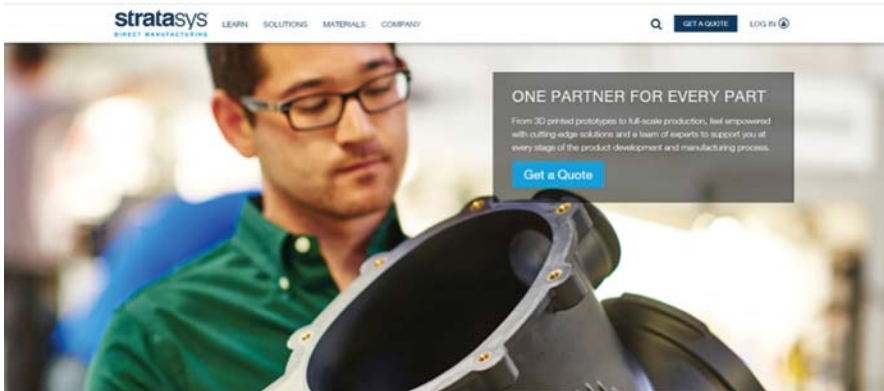
SENDING TO A PRINTING SERVICE

If you do not have access to a Stratasys Printer, you can choose to print with Stratasys Direct Manufacturing Printing Service Provider.

In the 3D printing Settings, select “Stratasys Direct Manufacturing.”



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CONTACT

For questions about the information contained in this document, contact Stratasys at www.stratasys.com/contact-us/contact-stratasys.

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