3D Printing with
PANTONE® Colors

Overview

Stratasys J735™ and J750™ printers are PANTONE Validated™. This is the first additive manufacturing technology that offers professional design realism. Pantone, a leading global authority on professional color standards in multiple vertical industries helps designers, modelers, and manufacturers all over the world accurately define, communicate, and consistently reproduce colors. Using a simple workflow, Stratasys CMYK colors can be matched to 1,970 printable Pantone Colors, Solid Coated and SkinTones™.
3D printing with Pantone reduces time and costs significantly and ensures superior color fidelity.

This document describes recommendations and tips for best color results when printing 3D parts with Pantone Colors on Stratasys printers.

A. Supported Printers, Materials, and Modes

B. Preparing for Printing

C. Printing Parts with Pantone Colors
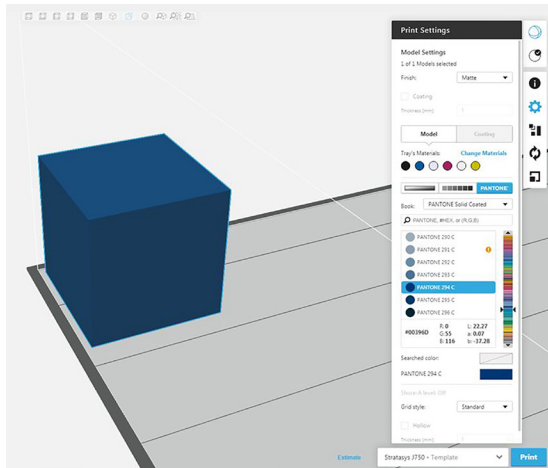
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Figure 1: Pantone Color selection in GrabCAD Print
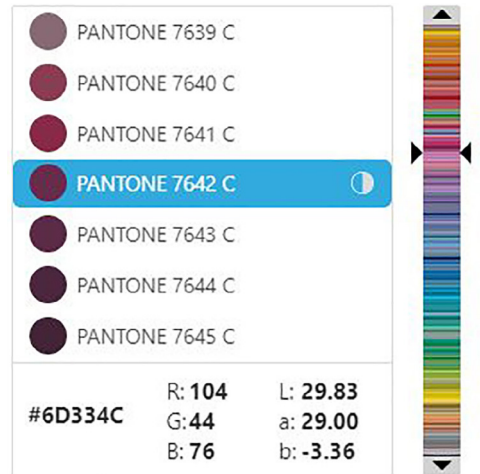

Figure 2: Pantone Colors with color simulation indicator (sample)

Recommendations and Tips

A. Supported Printers, Materials and Modes

3D Printers	J750 (software version 85.1.0.25247 D97.1 and above), J735 (software version 83.1.0.25248 D98.1 and above)
Printing Modes	High Mix, High Quality (High Speed is not supported.)
Model Materials	• VeroVivid™ materials: Vivid Cyan - VeroCyanV™, Vivid Magenta - VeroMagentaV™, Vivid Yellow – VeroYellowV™ • Vero PureWhite™ • VeroBlackPlus™
Support Materials	SUP705™, SUP706B™
File Type	STLs (color per shell)
GrabCAD Print	GrabCAD Print™ version 1.28 and above (Note: The advanced slicer must be enabled.)

B. Preparing for Printing

Proper file preparation, printing material usage, and color selection and assignment are required for best results when printing Pantone Colors.

* Pantone Colors have been tested and validated for parts printed as follows:

    – a flat and glossy surface.

    – a 1-mm thick color coating over a 4-mm thick core made of Vero PureWhite.

Other geometries and thickness might result in color differences.

* It is recommended to use the Pantone PMS Color Guides for Solid Coated and SkinTone™ to identify the color you wish to 3D print.

   Tip
   Make sure that the guides are current and in good condition. Pantone recommends purchasing new guides annually, because the colors change over time.

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- Use STL files. VRML files are not supported.

- In GrabCAD Print, the advanced slicer must be enabled to use the Pantone Colors.

- Pantone Colors are not suitable for printing on walls that are less than 3-mm thick.

- These five materials must be loaded in the material cabinet (see Figure 3):

    – Vero PureWhite

    – VeroBlackPlus

    – VeroCyanV

    – VeroMagentaV

    – VeroYellowV

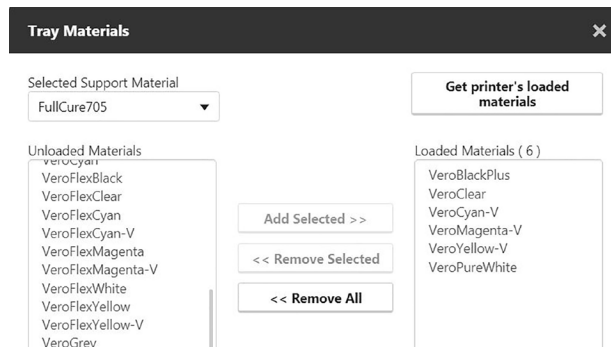The sixth material can be any material you choose (for example, VeroClear™, Agilus30™ White).

Figure 1: Loaded materials for printing with Pantone

- When printing the Pantone Colors, the VeroVivid materials are opaque, due to the Vero PureWhite core. Transparency is not supported.

- Avoid switching materials to prevent color contamination that might adversely affect color accuracy. If you switched materials, perform two material replacement cycles to flush the system thoroughly and achieve the intended color accuracy.

- Printed colors may vary from the Pantone Colors due to several factors, such as temperature, materials, printer maintenance and calibration. The degree of color matching between the Pantone Color and the printed color is indicated in GrabCAD Print next to the Pantone Color.

    Tip
    With Pantone Colors, the color of the model on the build tray in GrabCAD Print will be the actual color of the printed model.

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Indicator	Meaning
	Accurate match. Differences are generally minor and acceptable.
	Minor visible differences might be seen between the printed color and Pantone swatch. Acceptability will vary by job.
	Visible differences might be seen between the printed color and Pantone swatch. Acceptability will vary by job.
	Major visible difference might be seen between printed color and Pantone swatch. Acceptability will vary by job.

C. Printing Parts with Pantone Colors

1. Load the Model printing materials listed above.

2. In the Preferences dialog box, click PolyJet™ and make sure that the **Enable advanced slicer** checkbox is selected.
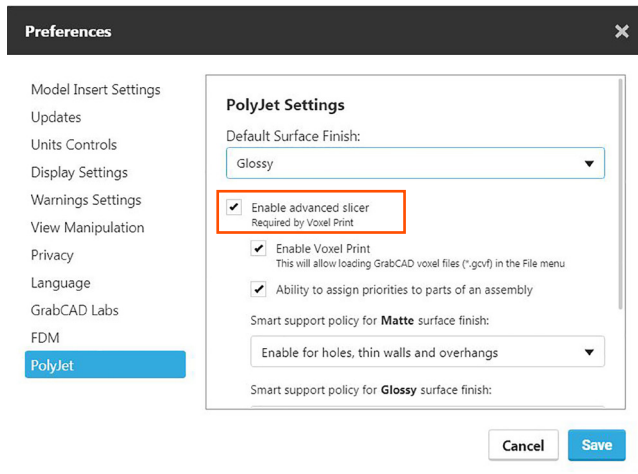

Figure 4: Enabling the advanced slicer

3. Insert your part into GrabCAD Print.

4. Display the Print Settings dialog box and select PANTONE®.

> **Tip**
> If the Pantone button is disabled, you need to enable the advanced slicer as described in step 2.

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Figure 5: Selecting Pantone Colors in GrabCAD Print

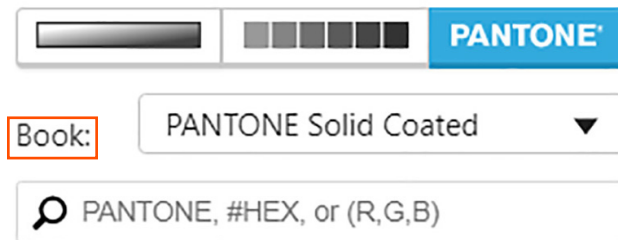5. From the Book drop-down list, select the **Pantone Solid Coated** or **SkinTone™** guide.

Figure 6: Selecting the Pantone guide

6. In the search box, enter the Pantone Color value you wish to print. Alternatively, you can select from the list of colors or enter the equivalent Hex or RGB values for the color you wish to print.

Tip
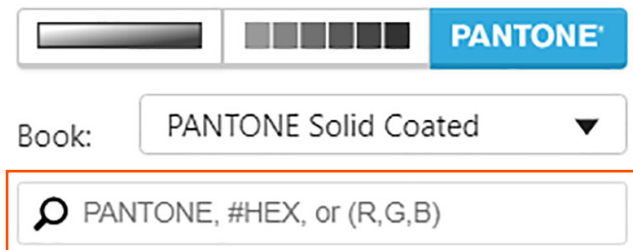When entering an RGB value, write it inside parenthesis. For example (68, 161, 210).

Figure 7: Search box for entering a color value

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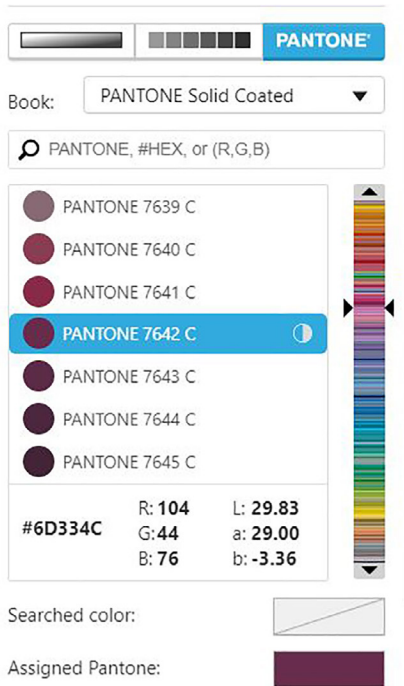
A range of Pantone Colors appear.

Figure 8: Pantone Colors with color simulation indicator showing

7. Assign the selected Pantone Colors to the part and print.

Tip
If you require a spot color or you are unable to find the color using Pantone Colors, follow the instructions in "Best Practices for Color Matching" on how to use the 3D Swatch Generator, print a 3D color guide and achieve better color matching.

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