



# 3D Printing with PANTONE® Colors



## Overview

PolyJet® is the first additive manufacturing technology that offers professional design realism with Pantone validated Stratasys® printers (see printer list below). 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



# 3D Printing with PANTONE® Colors

## Recommendations and Tips

### A. Supported Printers, Materials and Modes

3D Printers	J55™ J750™ and J735™ J850™ Prime J826™ Prime
Printing Modes	J55 – High Quality Speed J7/J8 – High Mix, High Quality (High Speed is not supported.)
Model Materials	<ul style="list-style-type: none"> <li>Vivid Cyan, Vivid Magenta, Vivid Yellow</li> <li>Vero PureWhite™ / Vero™UltraWhite</li> <li>VeroBlackPlus™ / Vero™UltraBlack</li> </ul>
Support Materials	J55 – SUP710™ J7/J8 – SUP705™, SUP706B™
File Types	All file types that GrabCAD Print can import
GrabCAD Print	GrabCAD Print™ version 1.28 and above

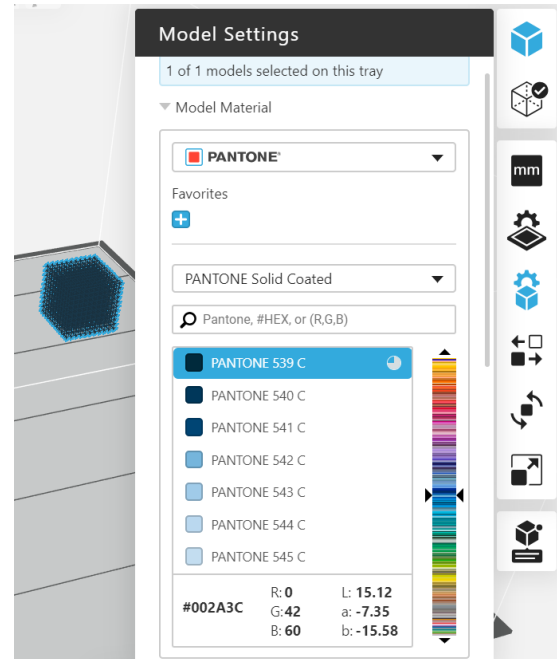


Figure 1: Pantone Color selection in GrabCAD Print

### 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 or VeroBlackPlus
  - a 0.5-mm thick color coating over a 1-mm thick core made of VeroUltraWhite or VeroUltraBlack

Other geometries and thickness might result in color differences.

- To ensure best results and color accuracy, Pantone colors must be assigned to the part in GrabCAD Print and not in other programs.
- 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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- You can use any file type that allows color assignment in GrabCAD Print, such as STL.
- When printing with Vero PureWhite, Pantone Colors are not suitable for printing on walls that are less than 3-mm thick. For walls that are less than 3-mm thick, print parts with VeroUltraWhite for best results.
- These five materials must be loaded in the material cabinet (see Figure 3):
  - Vero PureWhite / VeroUltraWhite
  - VeroBlackPlus / VeroUltraBlack
  - VeroCyanV
  - VeroMagentaV
  - VeroYellowV

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

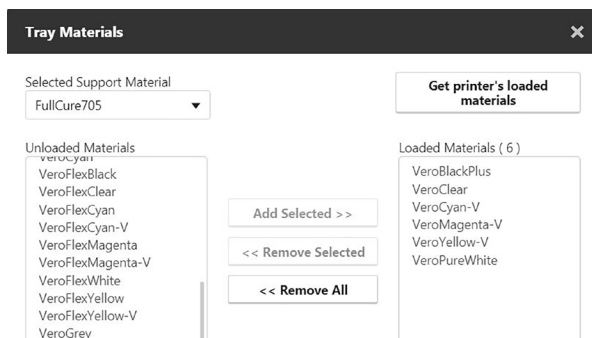






Figure 2: Loaded materials for printing with Pantone on J750 printers

- 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. Insert your part into GrabCAD Print.
3. Display the *Model Settings* dialog box.
4. From the *Model Materials* drop-down list, select **Pantone**.

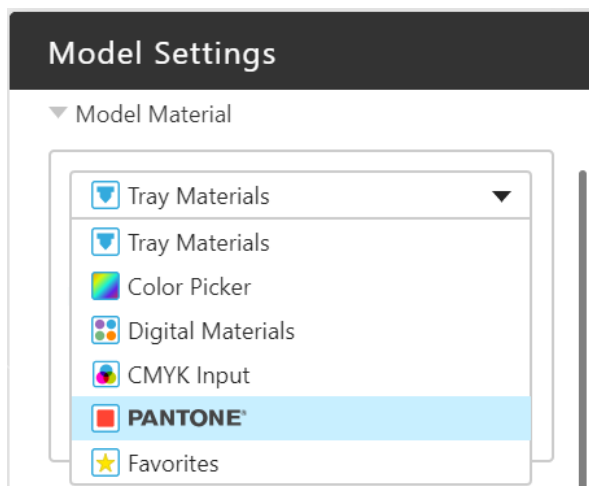


Figure 3: Selecting Pantone in GrabCAD Print

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

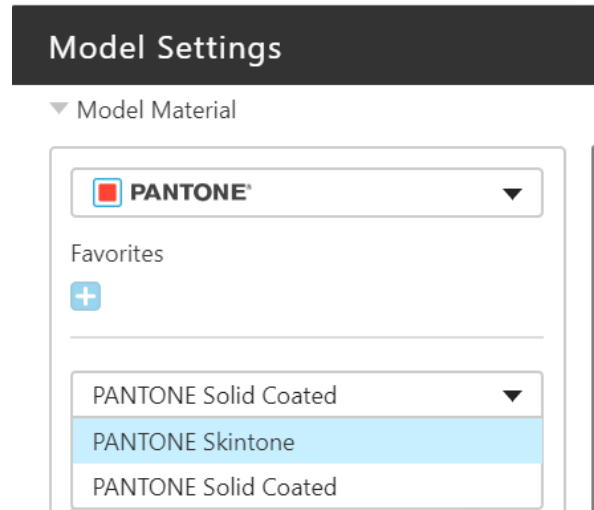


Figure 4: Selecting the Pantone guide

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 parentheses. For example (68, 161, 210).

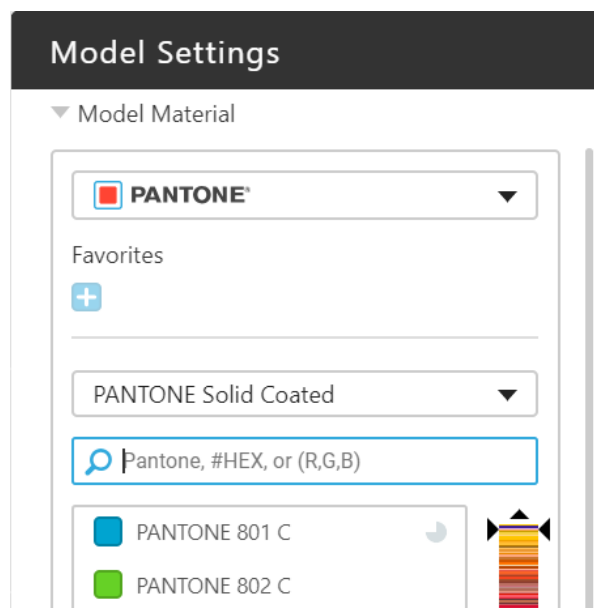


Figure 5: Search box for entering a color value

A range of Pantone Colors appear.

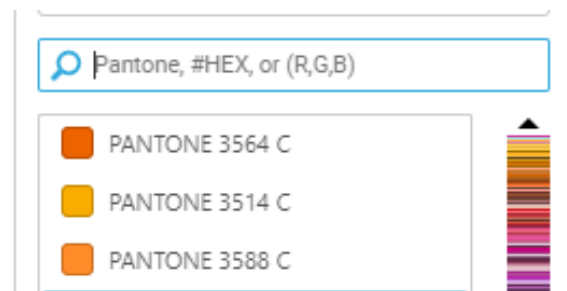


Figure 6: Pantone Colors with color simulation indicator showing

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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, use the 3D Swatch Tool application available in GrabCAD Print to print a 3D color guide and achieve better color matching. To find out more about the swatch tool, view this tutorial: <https://grabcad.com/tutorials/how-to-use-the-color-swatch-tool-in-grabcad-print>

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