# How To Use the Bleed Teak Tool

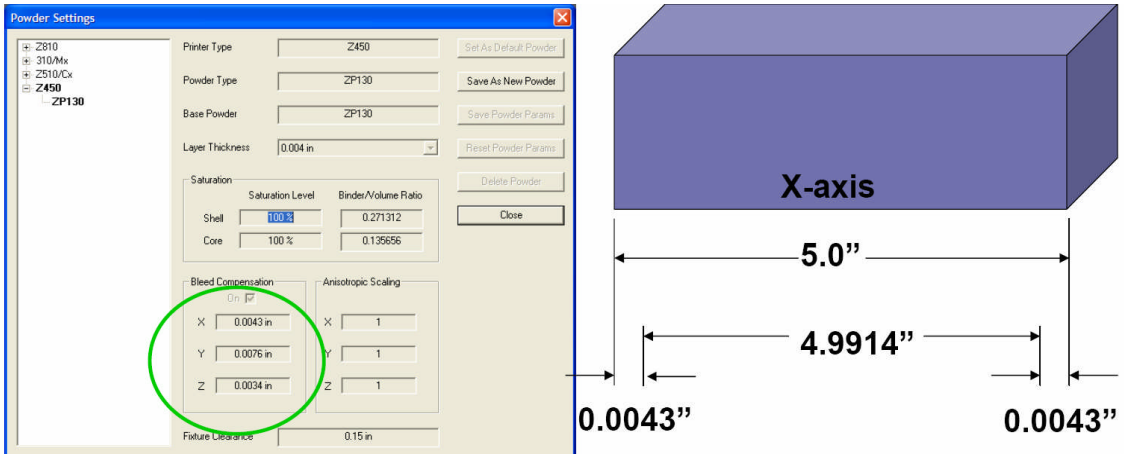
## When To Use It

Binder printed on powder will tend to spread slightly, causing surfaces of a part to migrate outward. To compensate for "bleeding," it is necessary to perform bleed compensation on the part: to shave off a small amount of thickness from all surfaces.

This is an important function to enable in the ZPrint software to if:

- overall accuracy of your part needs to be within 0.005"
- part features such as holes, bosses and text need to be within 0.005"
- part is mating with another part and an exact fit is required

## How Bleed Compensation Works



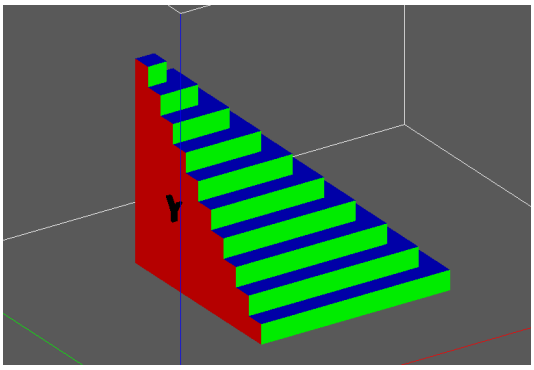

This example illustrates how the bleed compensation values work. The designed value of the x-axis of this block is 5.0". Because Bleed compensation is enabled, refer to the value, X = 0.0043". This means that ZPrint prints an X-axis value of 4.9914" to compensate for the 0.0043 inches of "bleed" at each end of the x-axis.

The default Bleed Compensation works in most cases. But in some cases, due to the difference in the printer's environment setting (temperature and humidity), you may have to adjust the Bleed Compensation values to meet your specific accuracy requirements. Other equipment, such as environmental control equipment may be required and/or the adjustment procedure may need to be performed at regular intervals to accommodate changes in climatic conditions.

## How To Use The Tool

The Bleed Compensation Tweak Tool consists of an Excel spreadsheet and a pyramid print file.

*Pyramid Print File*




*Important tips*

Prior to performing the bleed compensation adjustment, it is recommended to use new printheads and perform a proper alignment. Do not perform the compensation adjustment with old or over-recycled powder.

*Click here for Powder Management Best Practices*

Make certain that the 3D printer is clean before performing the adjustment. Verify that the pulley is clean and in good condition, and that the belt tension is proper.

The pyramid can be printed in color or monochrome. The pyramid can be infiltrated prior to measurements if desired. However, poor post-processing technique can affect the results. The dip method is preferred if you intend to infiltrate the part to assure even wicking of the resin over all surfaces. Do not over-brush or sand during the depowdering process.

1. Print the pyramid with default bleed compensation values enabled in ZPrint
2. Take actual measurements of increments and record in the first sheet (Dflt Pwdr Setting Measurements) of the Excel file to get bleed compensation adjustment values
3. The new adjusted values for the X, Y, Z axis are shown in Column J and K, Rows 36-38 of the Excel file

4. Follow the instructions in the Excel file on how to set the new Bleed Compensation values to your powder settings
5. Select Powder Settings from the Settings pulldown menu in ZPrint
6. Highlight the powder type under the appropriate 3D printer
7. Click the Save as New Powder button and type the name of the new powder type (*example: ZP130_New Bleed Values*)
8. Change the Bleed Compensation numbers by the corresponding values in Colored Bold Text in cells J37-39 or K37-39 in the Excel spreadsheet.
    a. Add or subtract the values in these cells from the default Bleed Compensation values. If a value is negative, you would subtract it from the default value; if it's positive, you would add it to the default value
9. Close the Powder Settings dialogue box
10. As a check of your new Bleed Compensation values, you can print the pyramid again with the new adjusted Bleed Compensation values (select the new powder that you've just created)
11. Take measurements of the new pyramid in the 2nd sheet of the Excel file called: ***New Pwdr Setting Measurements***. The average x,y,z difference should be much closer to 0 that what you initially had in the first sheet.

You may wish to set the new powder with the adjusted bleed compensation values as the default powder for your printer.