



# Application Notes

## Textile Functions



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## Introduction

This documentation describes some features especially developed for textile printing. The first two chapters deal with some special functions for importing images while the last chapter mentions some other features useful for textile printing.

The image import function for textile repetition is a powerful feature for creating patterned designs in which the pattern is repeated such as wallpapers, fabrics, etc.

The image import function for separation coloring is a mighty feature for re-combining and coloring images consisting of separations in digital format already created e.g. for textile cylinder printing.

The additional tools help in adding extensions to the created design, compensate media shrinkage due to after-treatment as well as printing several copies of a job without gap.

## Textile Repetition (Step and Repeat)

This command allows importing a pattern to repeat it several times in both horizontal and vertical direction. Mirroring and shifting the pattern are also included. The pattern must be saved as a TIFF or BMP image. Alpha channels in the image are used as masks so that the covered part of the image will be treated as if it would not exist.

1 To import an image for textile repetition select menu *Tools > Color & Special Features > Step and Repeat*. Please note that you have to select the file type *Step&RepeatMono* to import grayscale Tiffs when you want to print them in black&white only.

2 Enter the number of repetitions or the final image size both Width and Height.

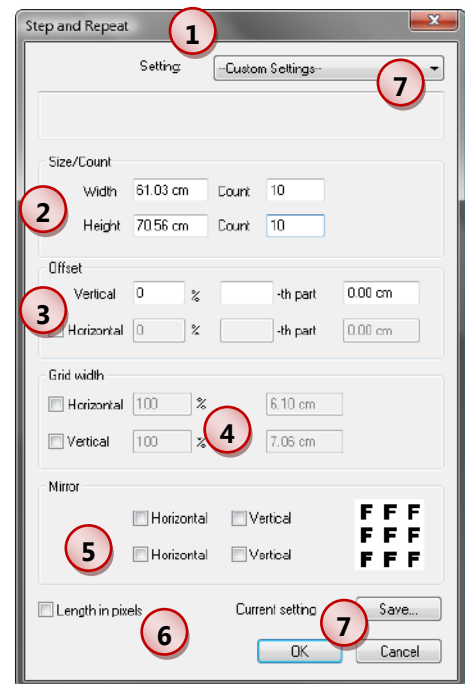
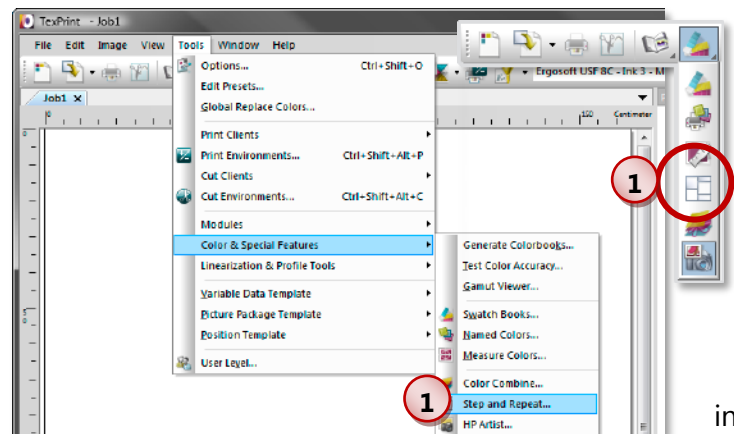
3 The shift of the image can be determined vertically and horizontally, related to a row or column.

4 Specify the size of a pattern repetition vertically and horizontally. Please note that the size of a pattern repetition may be larger or smaller than the width and/or length of the original pattern file.

5 Mark whether the pattern is to be mirrored vertically and/or horizontally. Watch the sample with the "F"s for the effect of your selections.

6 The sizes can be entered in the current unit or in pixels when **Length in pixel** is checked.

7 The settings can be saved and later selected from the list on the top of the dialog box.



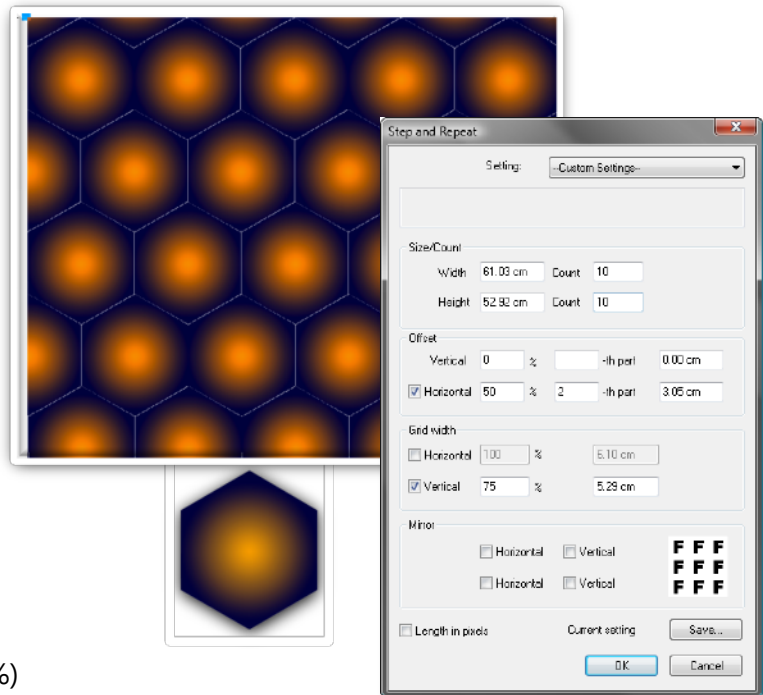
Settings that were specified during the import can be modified by using the command *Edit Parameters* in the *image* context menu.

## Examples

### Honeycomb pattern

The honeycomb pattern has been created from the single honeycomb. This honeycomb was created in Photoshop as a rectangular TIFF file. The honeycomb itself is separated from the white background with the help of the mask function. When combining the honeycombs without the white border is desired, the following specifications are needed:

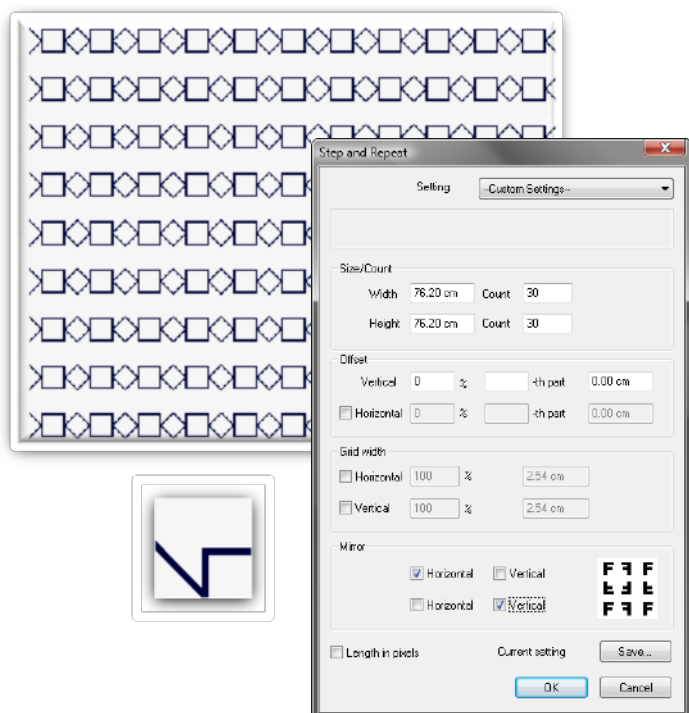
- Dialog part **Offset:**  
Vertical: 0%  
Horizontal: 50%
- Dialog part **Grid width:**  
Horizontal: not checked (100%)  
Vertical: 75%



### Jagged pattern

The jagged pattern has been created from the single jag at the right side. This time, the image has not been moved but has been mirrored:

- First line of dialog part **Mirror:**  
Horizontal: checked  
Vertical: not checked
- Second line of dialog part **Mirror:**  
Horizontal: not checked  
Vertical: checked



## Coloring Separations (Color Combine)

This function allows an image built by layers/separations to be imported and colored. The layers can be of format "Bitmap TIFF" (only black and white) and "Grayscale TIFF".

**1** To import a separated image for coloring select menu *Tools > Color & Special Features > Color Combine*.

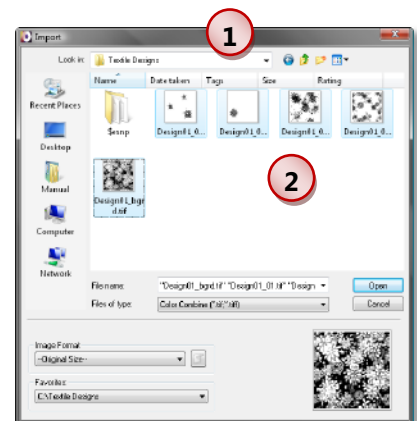
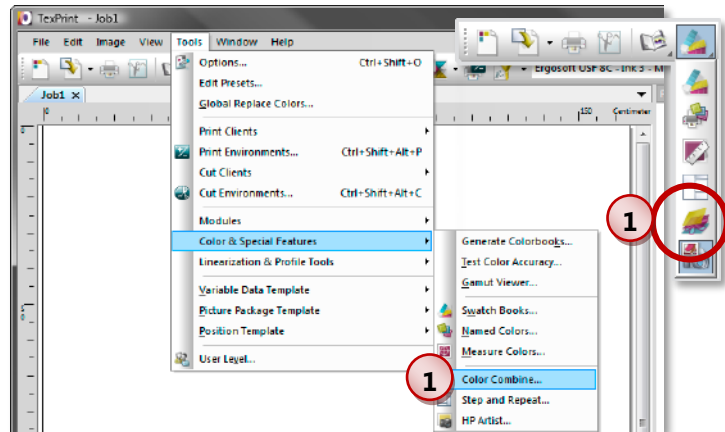
**2** Select all layers that are to be combined to one image using the mouse and the Shift / Ctrl key.

All layers must have the same resolution and dimensions in pixels.

The layers can be colored in any color and not only in CMYK or RGB. Thus, this option can be used to import the already existing textile screens that have been created for specially mixed textile colors and color the layers in the correct original color. This allows simulating traditional textile printing on inkjet printers without having to recreate the designs.

The dialog box for the parameters for function **Color Combine** consists of four tabs **Coloration**, **Step and Repeat**, **Halftone Screening**, and **Options**. They are described in the next chapters.

Settings that were specified during the import can be modified by using the command *Edit Parameters* in the *image* context menu.





## Coloration Tab

The **Coloration** tab holds the main functions for **Color Combine** such as adding/removing layers and coloring the layers.

1 Use the buttons to change the order of the layers, to remove the selected layers from the list, and to add a new layer to the list.

2 The information tools help to colorize the layers. From left to right:

- **Preview:** Opens a preview window to display a preview of the current coloration.
- **Show ColorInfo:** Opens a window with some color information for the selected layer.
- **Show RasterInfo:** Opens a window with some raster information for the selected layer. Please note that this button is only available when screening is enabled.

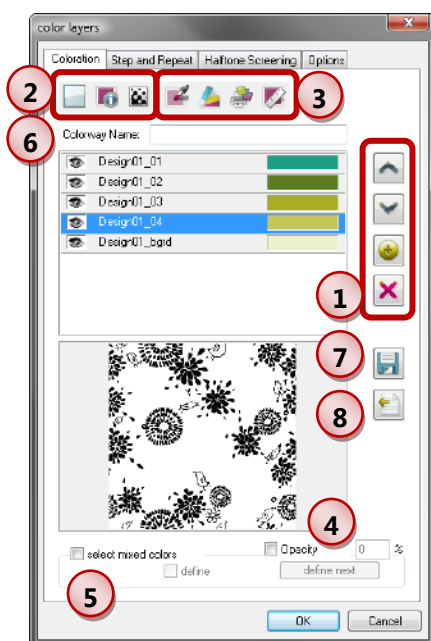
3 The coloration tools help to select the color for the coloration. From left to right:

- **ColorPicker:** Opens another dialog box to select the color visually. Click on **Apply** to assign the selected color to the selected layer. When having specified the CMYK color mode on the **Options** tab you may enter device colors after having checked **Device**.
- **Swatch Books:** Opens another dialog box to choose the color for the selected layer from a Swatch Book.
- **Named Colors:** Opens another dialog box to choose the color for the selected layer from the current Named Colors Profiles.
- **Measure:** Opens another dialog box to directly measure the color and assign the values to the selected layer. Please note that this function requires a spectrophotometer which can not only measure color strips, but any color from any source.

4 Set the **Opacity** of the layers to control the mixing with the colors of the other layers. A value of 100% means that the color is not mixed with the colors of other layers. Please note that this function requires the color mode being set to Lab or Spectral on the **Options** tab.

5 When the layers are Bitmap TIFF files (only black or white pixels), or when screening is enabled on the tab **Screening**, special color values can be assigned to mixed colors. First, mark **select mixed colors**. Then, select the layers (2 or more) to specify a special value. Last, mark **define** and select the desired color. This color is used whenever the colors of all selected layers have to be printed. Use the button **define next** to scroll through the already defined mixed colors.

Please note that this function is only available when the definition of mixed color is enabled on the tab **Options** and when the rasterization is enabled on the tab **Screening**.

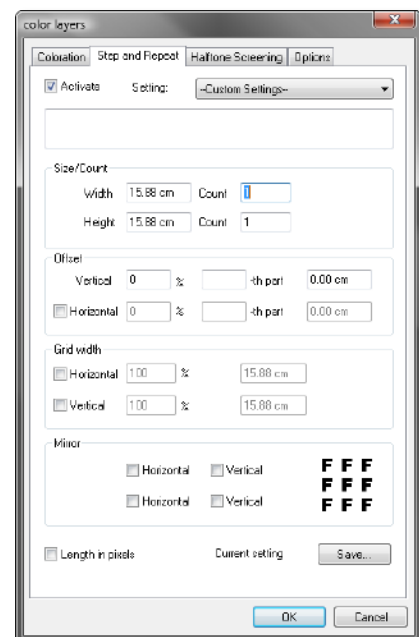


- 6 You can enter a **Colorway Name** that is automatically entered into the image information when the layers are combined. This information can be printed in the label of the print marks.
- 7 The complete coloration can be saved as a new Swatch Book. The Colorway Name is used to propose a Swatch Book name. After having entered the name of the Swatch Book, all used colors are available when selecting this automatically created Swatch Book in the list of Swatch Books. Please note that the Swatch Book is not saved automatically; you have to confirm saving when closing the Swatch Books dialog or the **Color Combine** function.
- 8 The coloration can be exported to a file, e.g. for use in other applications. The file can also be imported like an image into a job in the **ErgoSoft RIP** or processed automatically using the **HotFolder** function.

## Step and Repeat Tab

The **Step and Repeat** tab allows using the textile repetition directly on the combined image.

For information about the settings in this dialog box please refer to the manual part about Textile Repetition.



## Halftone Screening Tab

The **Halftone Screening** tab allows specifying the raster that is used for the rasterization when the layers are combined. Please note that Bitmap TIFF files (black & white pixels only) are always rasterized; grayscale TIFF files may be rasterized but can also be combined without rasterization.

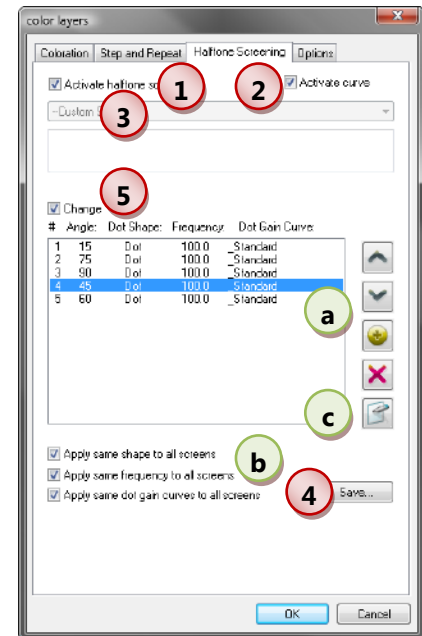
**1** Activates the screening for the layers. The screening can only be activated for grayscale TIFF files; screening is not available for BITMAP TIFF files.

**2** Activates the dot gain curve that is configured in the screening for the output. This function can be used together with the activated screening function or stand-alone.

**3** The screening scheme can be selected from the list (as long as modification for the screening is not activated). Please note that the screening scheme is only used when the screening is activated.

**4** Save the current screening scheme in order to re-use it for another **Color Combine** image.

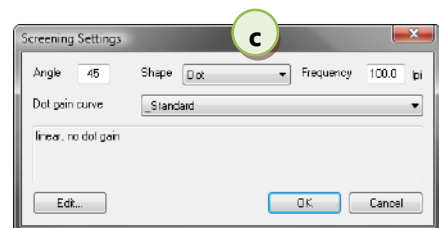
**5** Activates the modification of the screening.



**a** The buttons allow moving the current setting up and down, adding a new setting, and deleting the current setting.

**b** When the options **Apply same shape for all screens**, **Apply same frequency for all screens**, and **Apply same dot gain curves for all screens** are checked, changes to the dot shape, frequency, and dot gain curve will not only affect the current screen but all others also.

**c** This button opens another dialog box to modify the current screen. Enter the **Angle** and the **Frequency**, select the **Shape** and the **Dot gain curve**. Click on **Edit** to modify the dot gain curve in another dialog box which also allows saving the new dot gain curve.



The functions for moving, adding, and deleting screens are used to manually re-assign the screens to the layers when the layers are manipulated on the tab **Coloration**.

## Options Tab

The **Options** tab allows doing some configuration as well as saving and loading configurations as presets.

1 Color samples with the color values that were used to color the layers can be printed.

2 Enable editing the device values when using the color picker for the coloration so that you can enter device values (CMYK plus additional colors) for the selected color.

3 When having selected **Combine as Lab** the combination of the layers is converted into a Lab image.

When having selected **Combine as CMYK** and the current printer profile supports CMYK only the combination of the layers is converted into a CMYK image.

When having selected **Combine as CMYK** and the current printer profile supports CMYK and additional color channels the combination of the layers is converted into a separated image.

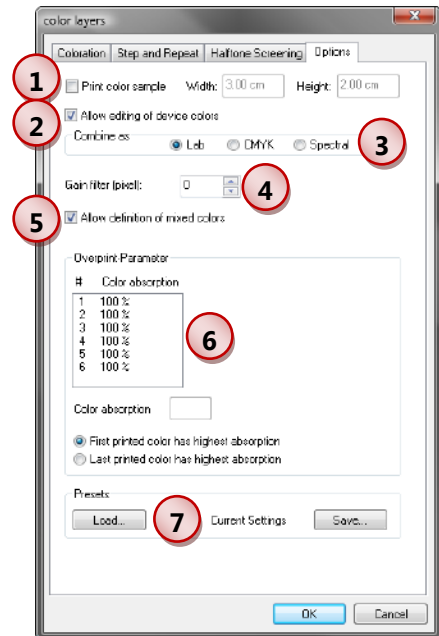
When having selected **Combine as Spectral** the layers are combined to a Lab image using a new algorithm that considers the spectral values of measured colors. If the coloration colors do not have spectral values, the Lab values are used to calculate reasonable spectral values.

4 Set the number of pixels used to enlarge the dots. Please note that this function is only available when the rasterization is enabled on the **Screening** tab.

5 When the layers are Bitmap TIFF files (only black or white pixels) or when the specified layers are to be rasterized during the import (activate screening on the tab **Screening**), special color values can be assigned to mixed colors. Checking **Allow definition of mixed colors** allows specifying color values also to combination of layers on the tab **Coloration**.

6 Use the **Color absorption** to consider that the color absorption increases or decreases with the layers. That means that e.g. the first printed layer may absorb more color than the second printed layer which itself may absorb more color than the third printed layer etc. Specify whether the first printed color has the highest absorption or whether the last printed color has the highest absorption.

7 The current settings – except the coloration and the screening parameters – can be saved as presets. When loading a preset, these settings will become the default settings for the **Color Combine** function.



## Coloring Tools

All available coloring tools are also used for color replacement and described in this manual part. This documentation just holds some short information about the tools. For more information please refer to the manual part "Color Replacement".

### Named Colors

The **Named Colors** tool provides the possibility to manage colors in a so called Named Colors Profile and selectively use them for color replacement.

The color values are defined in the respective device specific color space and are therefore described in **CMYK plus additional colors**. This means that similar to an ICC profile, a Named Colors Profile is specific to a combination of printer, ink and media. Thus, it is part of the print environment and should not be used for another print environment without carefully checking (and correcting) the color values.

The Named Colors Profile respectively the contained list of named colors that are specifically defined for the device color space, are mostly used to ensure that certain color values are printed exactly as they are expected. E.g. in a perceptual ICC workflow, this allows to print certain colors very saturated without sacrificing the color fastness of the rest of the file by bypassing the actual ICC workflow.

### Swatch Books

The **Swatch Book** tool provides the possibility to manage colors in so called swatch books and selectively use them for color replacement.

The replacement colors are defined in **Lab** values that are printed using the printer profile set in the print environment used when the color replacement is done. The rendering intent for replacement colors is set to **Relative Colorimetric**.

### ColorPicker

The ColorPicker allows defining a Lab value visually.

### Measuring Colors

The measure tool allows you to measure colors with a measuring device supporting single patch measurement and use them for your coloration.

## Colorbooks

The **Colorbooks** tool allows creating Lab or RGB colorbooks for printing. The colorbooks can be used for finding Lab or RGB values for certain color tones by visually checking the printed patches.

## Additional Tools

In addition to the powerful textile functions *Step and Repeat* and *Color Combine* there are some other functions available in the **ErgoSoft RIP** that might be useful for textile printing.

## Image AddOns

The image AddOn **SeamExtension** has been especially created for textile printing. It mirrors the margins of the image on all four sides to get a seam.

For more information about the image AddOns please refer to the manual part about image presets ("Image Editing Automation").

## Shrinking Compensation

To automatically consider changes in the media dimensions caused by after-treatment such as washing, drying, etc. a value for **Size changes caused by additional processing** can be specified in the print environment on the **Extras** tab.

## "Repeat" Printing

In order to reduce ripping time for long jobs with repeated patterns (such as wallpapers, fabrics, etc.) that could be realized by printing several copies of a shorter job, the function **Printing without gap** is available on the **Print** dialog when specifying several copies or entering an absolute print length.