

# Creating a new substrate preset and testing Latex 800 Series Printers



## Introduction

Whenever you load a new substrate type into your printer, you must choose a substrate preset for it from the front panel.

If available, select the preset for the specific substrate type that you intend to load. Many presets are available and can be downloaded from [www.hp.com/go/mediasolutionslocator](http://www.hp.com/go/mediasolutionslocator)

If no specific preset is available, select a generic preset that corresponds to the specific type that you intend to load.

If no specific or generic preset matches your substrate, select the closest match available.

You can also create your own preset which has several advantages.

1. You can give the preset a name of your own choice to suit a particular substrate.
2. You can adjust the preset to suit the precise characteristics of your substrate.
3. You can adjust the preset to your intended use, which may range from high-quality printing to fast production output.

## Prepare the printer

Ensure that your printer is in an optimum state before you create a new preset, run printhead checks and alignments.

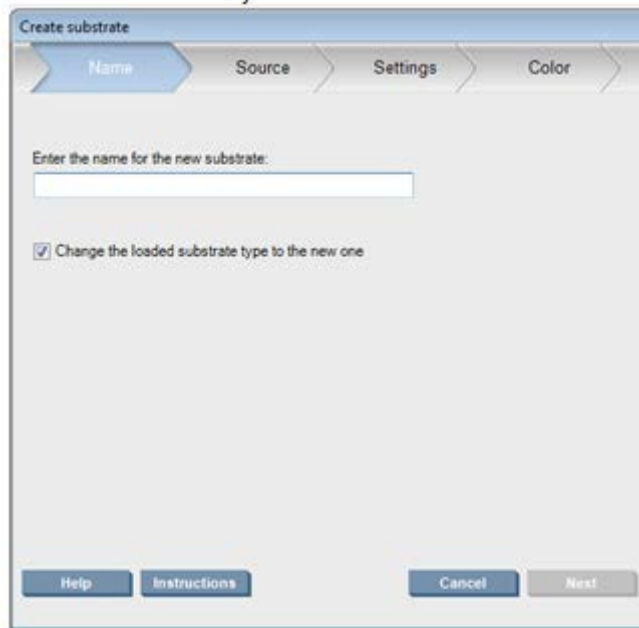
Load your new substrate, you are recommended to use the roll-to-roll configuration when creating a new preset if possible.

Choose a suitable carriage beam printing position for your substrate.

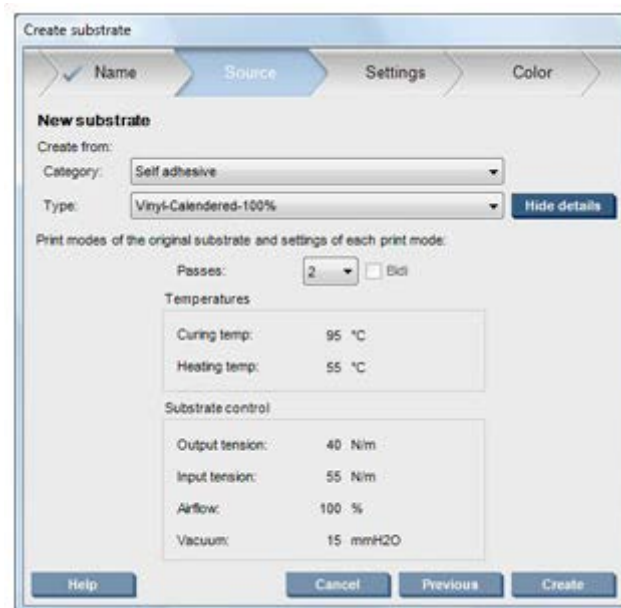
## Create and name the new preset

To create a new preset, you must copy a similar existing preset, then rename and modify it.

1. Select **Substrate > Create** in the HP Internal Print Server.
2. Choose a suitable name for your substrate. *If you plan to use more than one ink density or more than one number of print passes, include the ink density and/or number of passes in the name*



3. Select the parent substrate, choose one similar to the new substrate. If you choose a generic substrate, select the ink density according to the expected behavior and applications for your substrate.



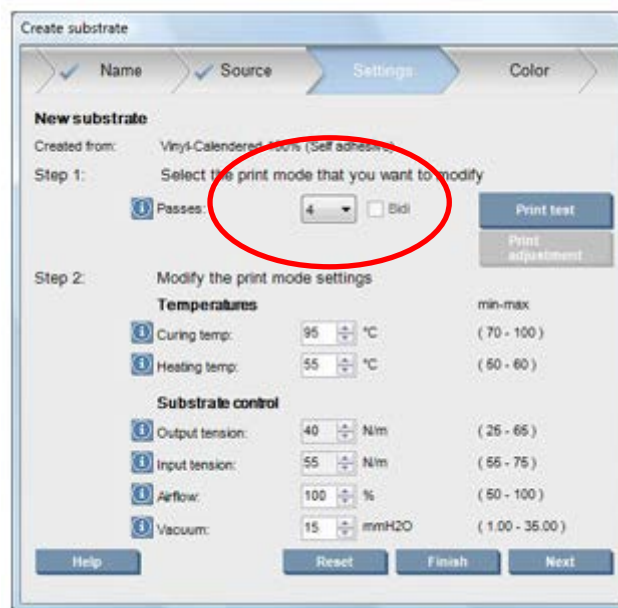
4. You can now press the Create button to create a new entry in the substrates list, in the Custom substrates category, with all its characteristics inherited from the parent substrate. Press Finish if you do not plan to modify any substrate settings for now.

## Fine-tune the settings in your new preset

First consider how you plan to use your new substrate. If you require high-quality printing, you will need more passes, if you require fast printing, you will need fewer passes. Make a list of the print modes you are most likely to use.

The changes in the Settings tab apply only to the highlighted print mode, so you must adjust each print mode independently. Any setting you have changed is indicated by an asterisk

1. Select the number of print passes that you want to use. *Color calibration uses six passes with 100% ink density, eight passes with 150% ink density, or fourteen passes with 250% ink density.* You are recommended to create a preset suitable for color calibration, for normal printing, you may want to create other presets with different numbers of passes.



2. Press the **Print test** button with the printer adjustments inherited from the parent substrate and look for any potential problems during printing, such as:
  - Potential head crashes or ink smears between the carriage and the substrate.
  - Potential substrate deformation and/or wrinkles caused by too much heat.
3. Wait five minutes after the last part of the sample emerges from the printer.
4. Evaluate the sample, directly from the output area.
  - Brush your fingertip over the full squares in the upper part of the sample to check that the ink is dry and firmly bonded to the substrate.
  - Look for coalescence problems in the middle part of the sample.
  - Look for ink bleeding problems in the lower part of the sample.



You are recommended to check the sample for problems and make adjustments to the settings. After making any adjustment, reprint the sample to see the current situation.

## If you experience printhead crashes, ink smears, substrate deformation, wrinkles or cockle,

Try these adjustments in this order:

- a) Check that the substrate is correctly loaded.
- b) Latex 850 only: If there are wrinkles on self-adhesive vinyl substrates, install the Output Diverter Roller.
- c) Decrease the curing and drying temperatures. Use the following table as a guide.

Curing °C	80	80	85	85	90	90	95	95	100	100
Drying °C	55	60	55	60	55	60	55	60	55	60

- d) Increase the Vacuum and/or the Tension settings. If you increase the vacuum pressure, also increase the tension. The input tension should be the output tension + 15 N/m.
  - I. Increase the Vacuum setting by 10 mmH<sup>2</sup>O.
  - II. Increase the Tension settings by 10 N/m.
  - III. Increase the Tension settings by another 10 N/m.
  - IV. Increase the Vacuum setting by another 5 mmH<sup>2</sup>O.
  - V. Set the carriage beam to its highest position.

## If the sample is damp or easily scratched

Try these adjustments in this order:

- a) Check that the ambient temperature is within the optimal range.

- b) Increase the curing and drying temperatures, unless you have already decreased them in a previous step. Use the following table as a guide.

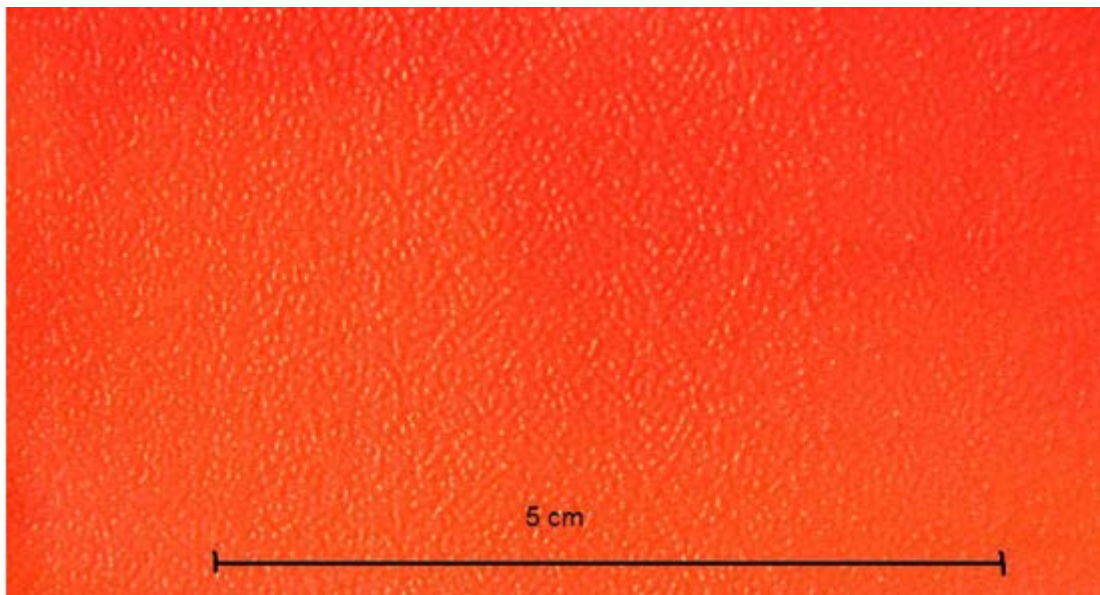
Curing °C	80	80	85	85	90	90	95	95	100	100
Drying °C	55	60	55	60	55	60	55	60	55	60

- c) Decrease the airflow in increments of 20%. If the edges of the substrate are still not fully cured, turn off the curing fans using the switch at the side of the fans.
- d) If your current ink density is 150% or above, decrease airflow in steps of 20%.
- e) If all test sample blocks are damp in the 100% to 80% columns, adjust the total ink limit in the RIP, or use the ink restrictions in the Color pane.

The screenshot shows the 'Create substrate' software interface. At the top, there are four tabs: 'Name', 'Source', 'Settings', and 'Color'. The 'Color' tab is selected. Below the tabs, the substrate name is 'essa12' and it was created from 'PVC Scrim banner front18-100% (Banners)'. There is a section for 'Adjust the color settings for this substrate:' followed by 'Ink restrictions plot'. A text box explains: 'Print the ink restrictions plot to help you adjust the appropriate percentages below. Color calibration will be done automatically while printing the plot.' There is a 'Print plot' button. Below that is the 'Ink restriction values' section, which says 'Adjust the ink restriction percentages:'. It lists six colors with their respective restriction percentages: Yellow (89), Cyan (89), Magenta (89), Black (97), Light magenta (89), and Light cyan (89). There are 'Reset', 'Help', 'Previous', and 'Finish' buttons at the bottom.

- f) If any test sample block is damp in the 70% to 10% columns, increase the number of passes.
- g) Decrease the ink density by adjusting the total ink limit in the RIP, or using the ink restrictions in the Color pane

## If you see ink bleeding or coalescence, such as the coalescence shown below



Try these adjustments in this order:

- a) Check that the ambient temperature is within the optimal range.
- b) Check that the curing temperature has not been wrongly set.
- c) If the curing fans were turned off at the switch by the side, turn them on now. If the airflow is not already at 100%, increase the airflow in increments of 20% and check the status of the curing after each increment.
- d) Increase the drying temperature in steps of 5 degrees, unless you have already decreased it in a previous step.
- e) If your current ink density is 100%, increase airflow in steps of 20%.
- f) Increase the number of passes.
- g) Decrease the ink density by adjusting the total ink limit in the RIP, or using the ink restrictions in the Color pane.

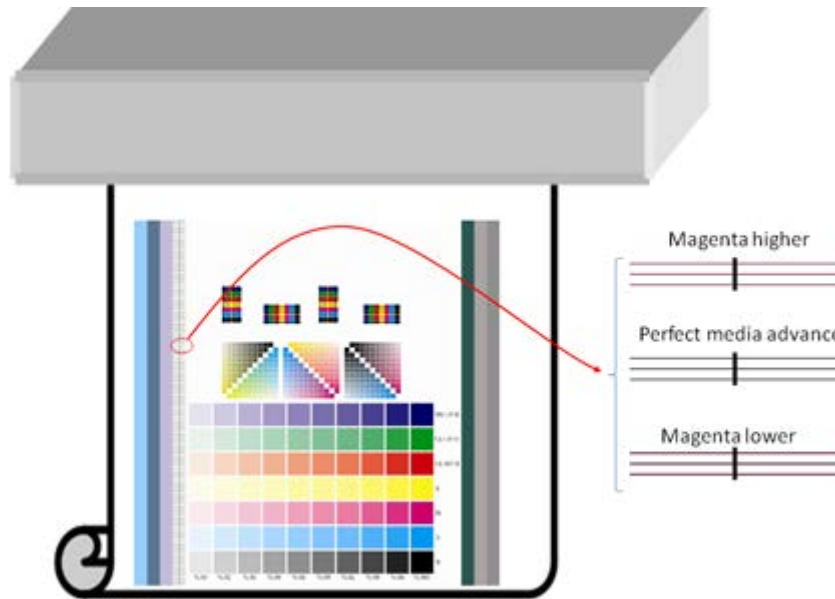
## If you see vertical banding

Try these adjustments in this order:

- a) Decrease the Vacuum setting in steps of 5 mmH<sup>2</sup>O, unless you have already increased it in a previous step.
- b) Decrease the drying temperature, unless you have already increased it in a previous step.
- c) Decrease airflow in steps of 20%, unless you have already decreased it in a previous step

## If you see horizontal banding

Check the substrate advance pattern in the test sample (the fine horizontal lines).



- If you see magenta above the black lines, press the Print adjustment button in the Create Substrate window and increase the substrate-advance setting.
- If you see magenta below the black lines, press the Print adjustment button in the Create Substrate window and decrease the substrate-advance setting.
- If the lines are simply black, proceed to the next step.

## If you see irregular horizontal banding

Try these adjustments in this order:

- Decrease the Vacuum setting in steps of 5 mmH<sup>2</sup>O, unless you have already increased it in a previous step.
- Adjust substrate tension according to the following recommendations:
  - The input tension should be the output tension + 15 N/m.
  - First increase tensions by 20 N/m. If results are unsatisfactory, decrease tensions in steps of 10 N/m.
- Increase the number of passes.

## If colors are misaligned

Try realigning the printheads manually.

When you have adjusted the settings for one print mode, you can proceed to other print modes. However, it's not necessary to deal with them all at once: you can edit the substrate preset at any time by selecting **Substrate > Edit** in the HP Internal Print Server. *Note the settings that you used with the first print mode you can probably use the same settings for other modes*

There is also a possibility to change these settings while printing *in case the substrate preset selected is a custom one*. This can be done while printing, click the **Print Adjustment** button, and then the different settings can be fine-tuned. Note that some changes might take some time to have an impact *for example: increases or decreases in temperature*.





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