

Guide to ripping and printing white with Onyx and the HP Latex 630W Printer



The aim of this document is to provide fundamental guidance on printing white ink using Raster Image Processor (RIP) features of ONYX for HP Latex 630 W.

The HP White Latex Ink is a new feature of HP Latex Printers, offering new possibilities for printing applications. With the inclusion of white ink, HP Latex Printing expands its capabilities, enabling a broader range of options for backlit and two-sided prints. Additionally, it facilitates printing on colored, translucent, and transparent substrates, providing increased versatility.

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1. Basics

1.1. White Print Modes

The addition of white ink introduces several options, including:

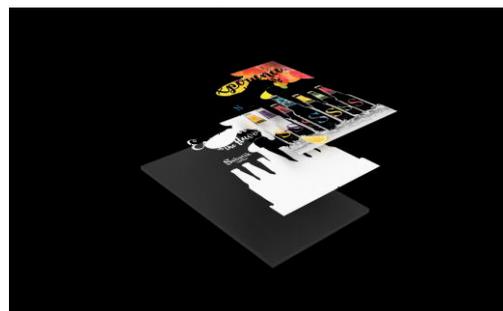
- Spot: A white spot color must be predefined to print white simultaneously with other colors.



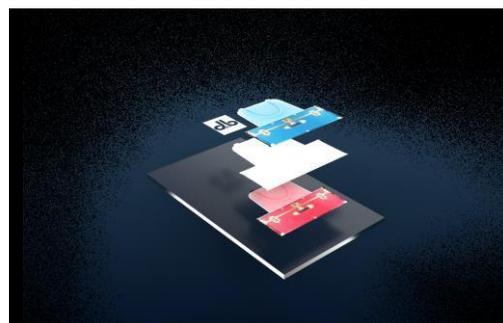
- Overflood (OF): A white layer is printed over the color layer. Used when the presentation involves viewing the image from the reverse side through translucent or transparent media.



- Underflood (UF): A white layer is printed between the substrate and the color layer. It serves as a foundation, allowing colors to be printed on non-white, translucent or transparent media.



- Sandwich: The white layer is embedded between two different pictures, facilitating the display of both pictures from either side. It is typically used for translucent or transparent substrates.



HP Latex 630W printers offer four ink densities options, each tailored for specific preferences and requirements, depending on the media category:

| White Modes |
|------------------------------------|
| W60 - Productivity / Low Opacity |
| W100 - High Speed / Medium Opacity |
| W160 - Medium Speed / High Opacity |
| W260 - Low Speed / Best Opacity |

1.2. Sandwich Mode Application

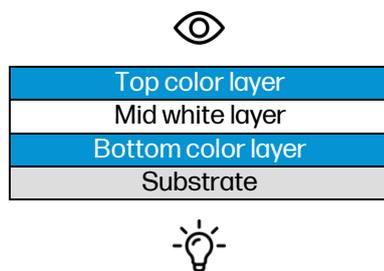
The sandwich mode used in HP Latex 630 W corresponds to a 3-layer configuration. The terms associated with this mode are:

- Light side: This application is crafted for backlighting, with one side facing the light source known as the "light side." It is designed to be viewed from the opposite side.
- Visual side: This is the printed image that faces the viewer once the application is exposed.

Sandwich Mode offers different applications, such as Day and Night and Dual Side.

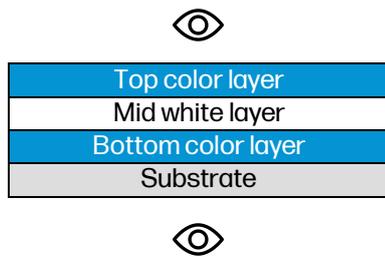
Day and Night

Day and Night printing is designed for single-sided viewing and undergoes a visual transformation when backlit. During the day, the white layer enhances the top color layer. At night, the backlighting causes the bottom color to shine through, creating a high-end look with maximum impact for retail.



Dual Side

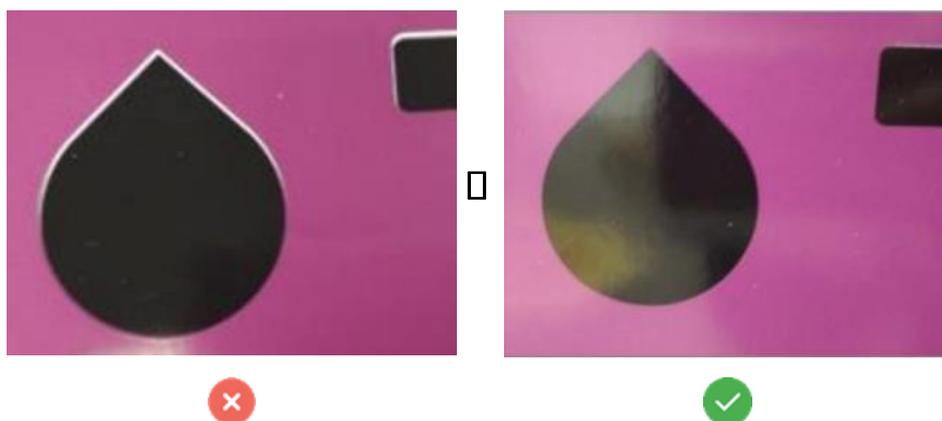
Dual-sided printing is tailored for viewing from both sides, printing identical images on the top and bottom layers, typically without any text.



Section "2.5 Sandwich Job Preparation", provides detailed steps to set the Sandwich Mode.

1.3. Choke Application

Adding white ink may cause misalignment with color ink. To address this, applying choke is necessary. Choke helps shrink the white layer when misalignment occurs between the color and white layers in the printed output, especially in UF or OF modes. In the images below, printed in UF mode, it is solved by applying choke.



NOTE: Choke may effectively correct misalignment in some areas but may not eliminate it in others. Factors contributing to this include printhead alignment quality, media deformation, and the chosen print mode.

2. RIP and Print Process from ONYX

Printing with white ink on HP Latex 630W requires a specific workflow for optimal results, with the RIP software serving as the intermediary between the image and the printer. Here is a general guideline of the ONYX RIP software and its capabilities.

NOTE: Please be advised that this manual refers to ONYX version 22.5.1. We recommend this version or further. To download, go to Help in the application bar  Application Updates.

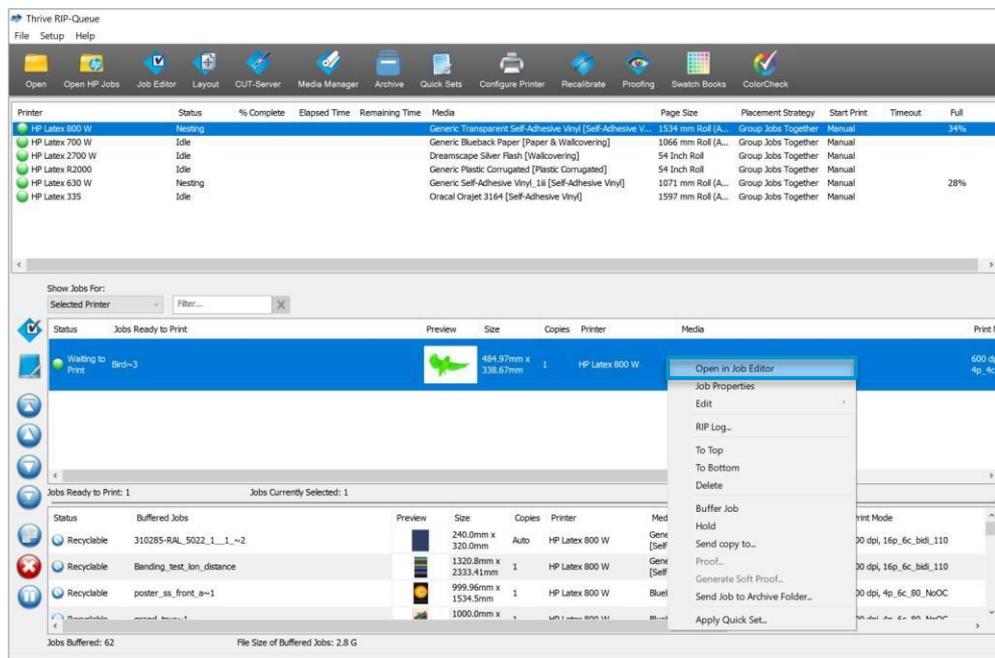
2.1. Selecting a Print Mode

It is important to note that print files don't necessarily need a white channel to enable white printing. Whether the file contains white data or not, follow the next steps:

- Launch ONYX.
- Click on Open in the toolbar to import a file.



- In the Rip Queue, right-click on the image and select Open in Job Editor.

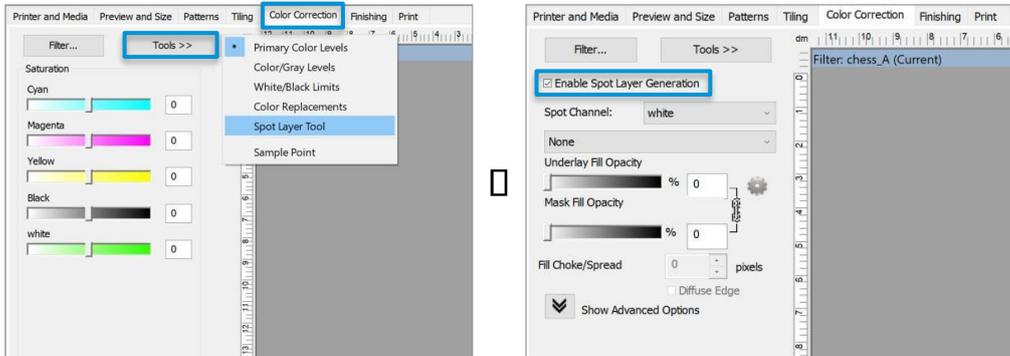


- Tap on the Printer and Media tab. Verify that the selected media matches the printer media. Otherwise, choose the corresponding substrate from the Media Group and Media Name.
- Select one of the white print modes from the Print Mode drop-down list. Section 1.1 offers a short description for each process:
 - Spot.
 - Overflood.
 - Underflood.
 - S3L, which stands for sandwich 3 layers.

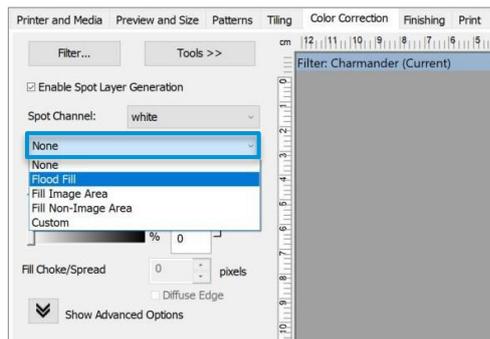
2.2. Selecting a White Type

If the file doesn't have any white layer determined, it is possible to create one from ONYX:

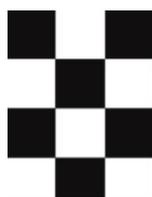
- Open the print file in Job Editor go to the Color Correction tab, click on Tools >> choose Spot Layer Tool from the menu and check Enable Spot Layer Generation.



- A white channel has been created. Select on the drop-down menu under Spot Channel to select the white coverage type. Its position varies based on the print mode selected.



- The options are:
 - Flood Fill: fills the graphic with white. Its position, either on top or at the bottom, depends on the print mode selected. The Underlay Fill Opacity and Mask Fill Opacity is set to 100%.
 - Fill Image Area: prints white wherever there is color in the graphic.
 - Fill Non-Image Area: prints white wherever there is no color in the graphic.
 - Custom: this setting allows the user to define a customized the white coverage type. This can be achieved by modifying the Underlay Fill Opacity and Mask Fill Opacity.



Flood Fill



Fill Image Area



Fill Non-Image Area



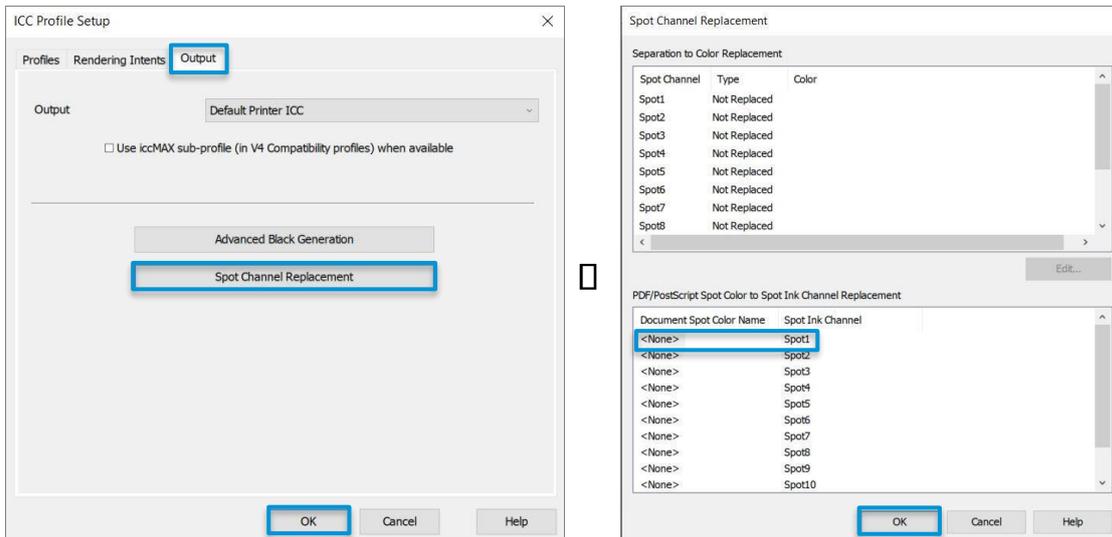
NOTE: The opacity of the white ink can be controlled by modifying the Underlay Fill Opacity and/or Mask Fill Opacity values.

NOTE: If the file contains pre-existing white data, it is not possible to override or subtract it. Only the addition of new data without modifying the pre-existing white information is permitted.

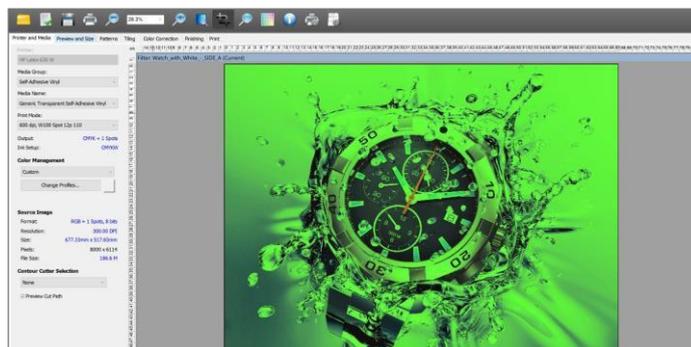
If you did not create the file and the white spot color is named something other than “Spot1”, it is possible to assign that spot color name to the white channel in ONYX. The Spot Channel Replacement option allows you to specify which spot color will be assigned to which spot ink channel. To do so, follow the steps below:

- Open the file in Job Editor and go to the Printer and Media tab.
- In the Color Management dock, go to Change Profiles ICC Profile Setup window opens.
- Go to the Output tab click Spot Channel Replacement.
- Under the second entry, double-click on <None> and type in the spot color name. Ensure that the name matches the spot color’s name to map it to the Spot1 white channel. Once completed, click OK to get out of the dialogues.

NOTE: In ONYX, the white channel must be identified as “Spot1”.



When opening a file with a white layer defined with the correct name, that is, “Spot 1”, ONYX will recognize it automatically. It is visually displayed as a green layer wherever the white ink was defined by the design software.



2.3. Sandwich Printing Mode

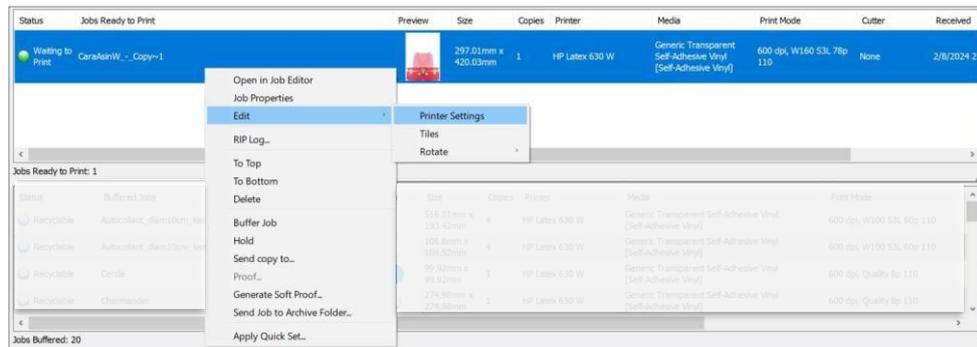
Key Points:

Two images are selected as side A and side B:

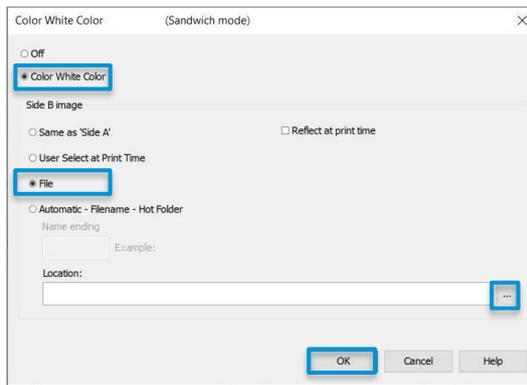
- Side A layer: in contact with the substrate. It also contains the white layer, which will be printed between Side A and Side B.
- Side B layer: in contact with the air.

Printing in Sandwich Mode requires two layers or images:

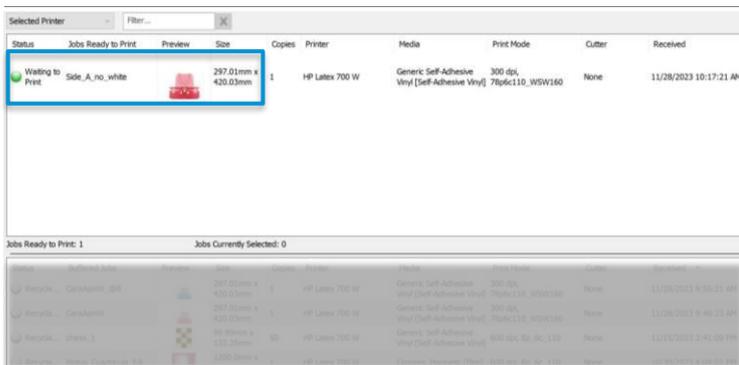
- For side A, follow these steps:
 - Open the first file to serve as side A in Job Editor.
 - Go to the Printer & Media tab. Select the Print Mode drop-down menu and choose the S3L print mode. The RIP will automatically detect the white layer of the print file and represent it as a light green shade. If the image lacks white data, go to the Color Correction tab, click on Tools >> choose Spot Layer Tool from the menu and check Enable Spot Layer Generation. Select the white coverage type from the drop-down menu under Spot Channel.
 - Go to the Print tab and click Submit.
- For side B:
 - In the Rip Queue, right-click on the job and select Edit  Printer Settings.



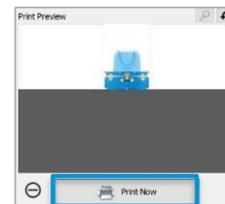
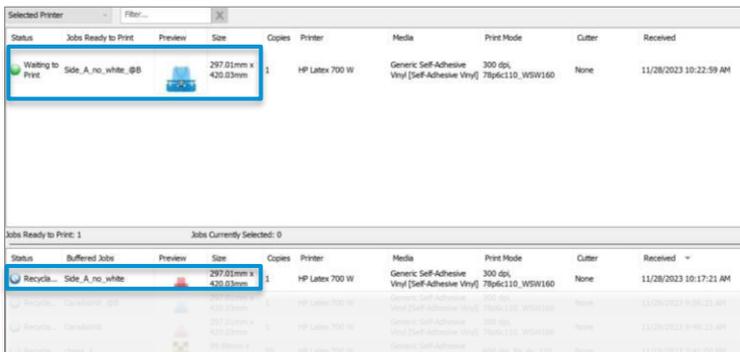
- Under the Color White Color deck, click on the gear icon  to open the Color White Color (Sandwich mode) window.
- Select Color White Color option.
- In the Side B image deck, select according to your needs:
 - Check Same as 'Side A' to use the same image and Reflect at print time to mirror.
 - To use a different image, click on File, then the  icon. In new the window, choose the side B image and click Open. Once done, click OK. As an example, a different image is selected.



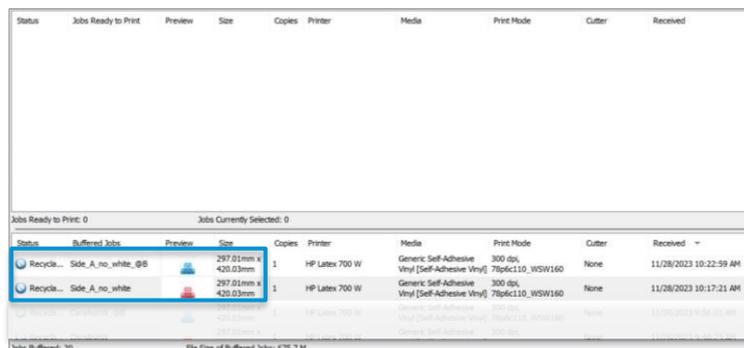
- In the Rip Queue, only side A file is visible, but it contains both sides. Select the file to preview it Print Preview area. Then, click the Print Now button.



- Notice that side A moves to the bottom of the Print Queue and side B appears in the Rip Queue. Click the Print Now button to send side B to the printer.



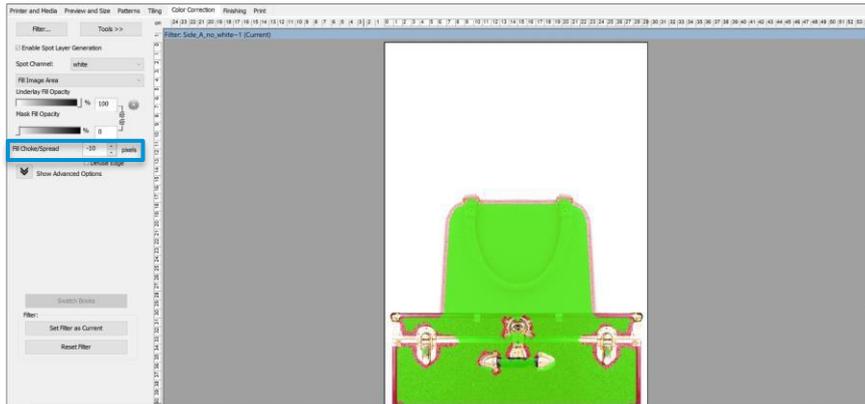
- The job name in the printer queue will be <Side A name>_@B.



2.4. Choke

To set choke from ONYX, follow the next steps:

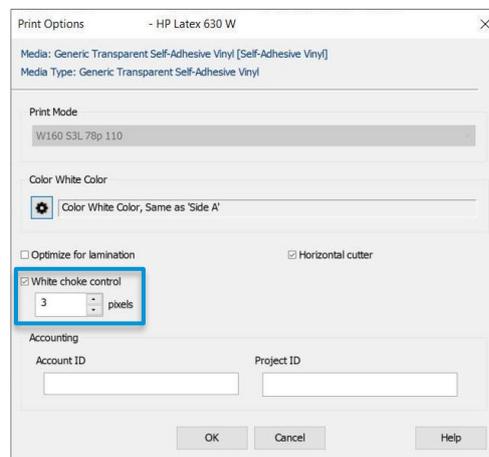
- With an image opened in Job Editor, go to the Color Correction tab, click on Tools >> choose Spot Layer Tool from the menu and check Enable Spot Layer Generation.
- Choose the number of pixels from the Fill Choke/Spread option to decrease or increase the value to shrink the white layer respectively.
- This will apply to all white color.



NOTE: It is possible to choke/spread up to +/- 50 pixels. The preview above is an exaggerated representation from what is printed.

The White choke control feature is a tool that strategically applies choke only in areas where color and white overlap. To configure:

- In the Rip Queue, right-click on the job and select Edit >> Printer Settings.
- Check the White choke control box and start at 3 pixels, which is the value recommended by HP. This is usually set by default.



3. Considerations

These considerations apply specifically to the tested version of this guide. Please note that there may be variations with newer versions.

- Sandwich jobs cannot be nested.
- Sandwich jobs with mirrored images may not be suitable due to insufficient opacity of the white layer.