HP Latex 500 series Printers: Tips and Tricks for length consistency with tiling applications

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Scope of this document

Length accuracy is an important requirement for tiling applications. In this document, you will find some tips & tricks to prepare your printer for tiling applications.

NOTE: This document refers to Self-Adhesive Vinyls and Paper, but the concepts shown can be applied to other types of media.

Key concepts for length consistency

This section provides an overview of the main settings and parameters that influence the length consistency that can be obtained with the printer.

Ink and media interaction

Different types of media can react in different manners when ink and heat is applied. Some media tend to contract with heat, while others can expand when absorbing moisture.

Front tension

When using the Take-up reel, the dancer provides front tension to the media. This can be very useful in various cases, such as:

- Unattended printing
- Specific materials that need help being advanced out of the printer

However, this front tension, together with ink and heat, can affect length accuracy.

Tips & Tricks for printing on the HP Latex 500 series

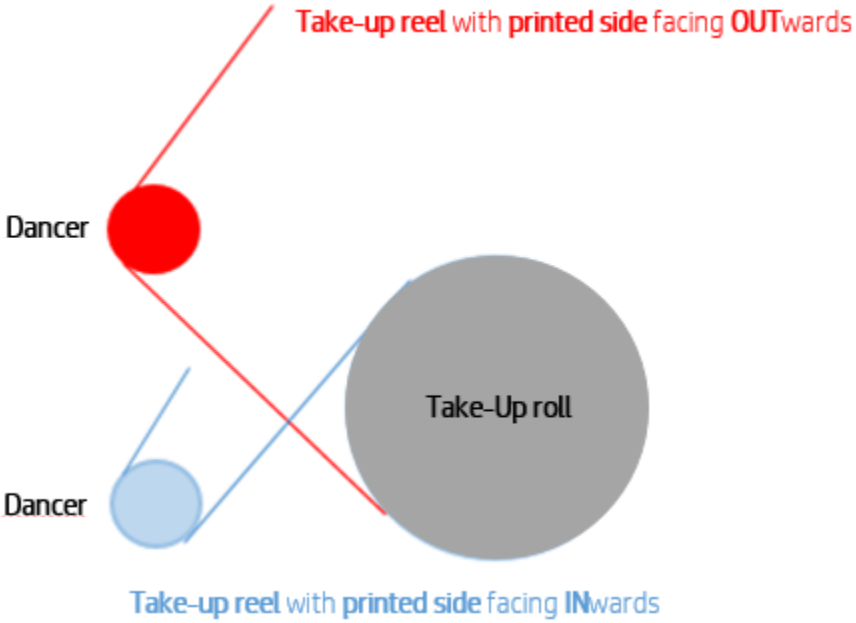
Performance can vary depending on the specific media that is being used, but as general rule for length accuracy:

- **Self-Adhesive Vinyls** usually require a **lower** front tension.
- **Paper** might require a **higher** front tension.

Different levels of front tension can be applied by adjusting the position of the dancer:

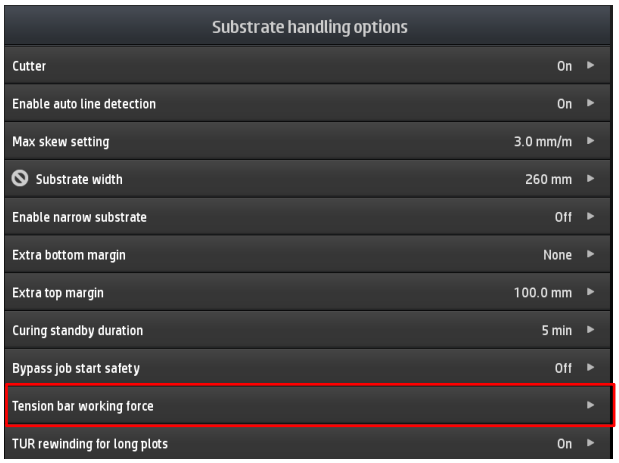
- Using the Take-up reel with the **printed side outward** will provide **more front tension**.

- Using the Take-up reel with the **printed side inward** will provide **less front tension**.

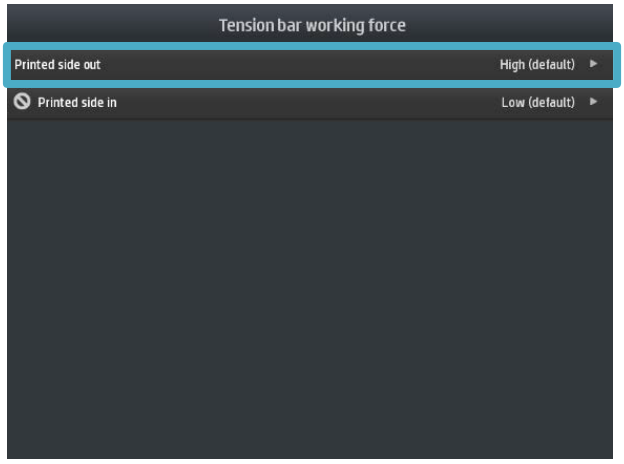


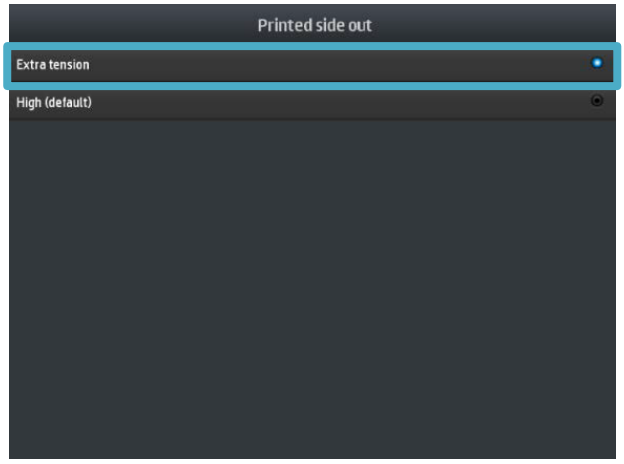
If required, substrate tension can be customized the specific needs of your application. The tension bar working force can be changed at the printer's Front Panel:

- **Settings** > **Substrate** > **Substrate handling options**



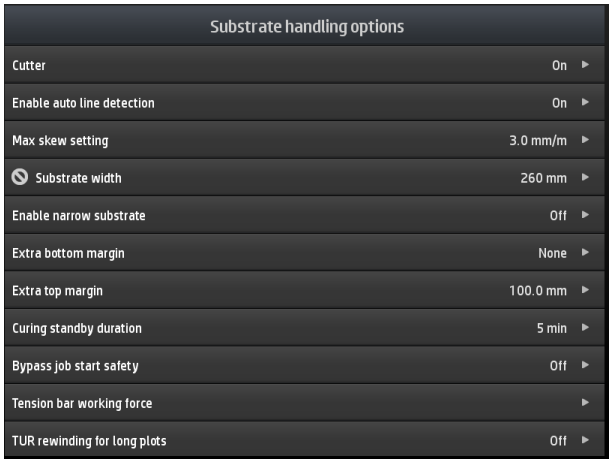
If the **Take-up reel is loaded with the printed side out** (meaning **high tension**) but even **higher front tension** is required, then you should select **Extra tension** in the Front Panel. "High" is the default selection in this configuration.

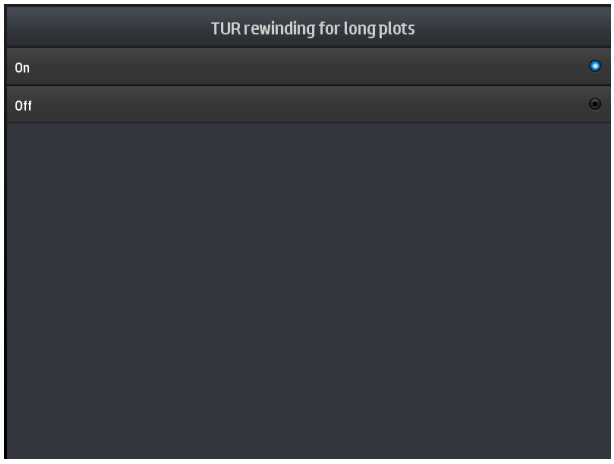




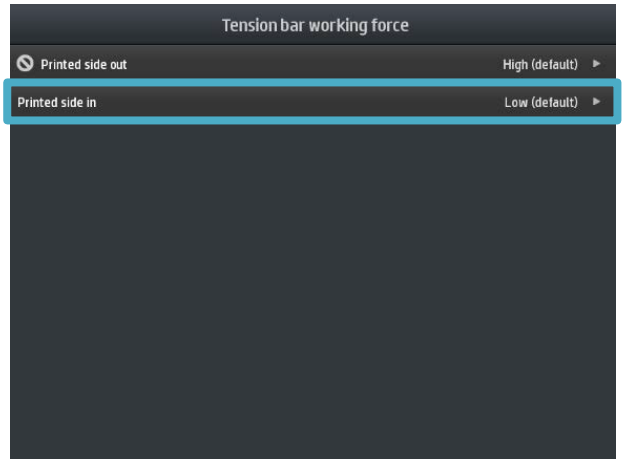
When the Take-up reel is loaded with **printed side out** and the **high tension** setting (default) is selected, it is possible to enable **TUR rewinding for long plots** in the **Substrate handling options** menu. This option modifies the behavior of the dancer bar and improves the rewinding quality. It is recommended to enable this option when printing long runs.

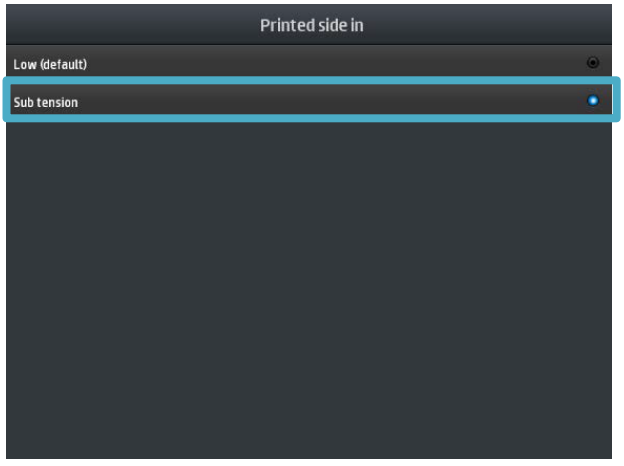
NOTE: TUR rewinding for long plots can only be enabled when both conditions are met: Take-up reel loaded printed side out and high tension selected.





If the **Take-up reel is loaded with the printed side in** (meaning **low tension**), but even **lower front tension** is required, then you should select **Sub tension** from the Front Panel. “Low” is the default selection in this configuration.





Temperature

The higher the temperature, the more the media tends to deform. If media deformation is observed in the print, lowering temperatures can always help to reduce the deformation and therefore control the length accuracy.

Vacuum

High vacuum values can help control the media in the printzone, but when the values are too high it can also affect media advance. Therefore, lowering vacuum can help to improve length accuracy. Take into account that when the Take-up reel is used, less vacuum is needed.

Step-by-step guide for length consistency in tiling applications

This section provides a step-by-step guide to optimize your printer for length consistency in tiling applications.

NOTE: The recommendations provided in this document are tailored for Self-Adhesive Vinyls, so they might need to be adjusted for your specific media.

1. **Prepare your printer:**

Check that all the scheduled preventive maintenance procedures have been performed on the printer to ensure good hardware performance. If not, it is recommended to use the **Service Maintenance Kit** required by the printer.

Make sure your printer is running the **latest version of firmware**. To follow the steps provided in this document, it is required to have firmware version **STORM_00_11_07.2 (or higher)** installed on your machine.

2. **Unload the substrate from the printer (if there is any media loaded).**

3. **Take-up reel settings:**

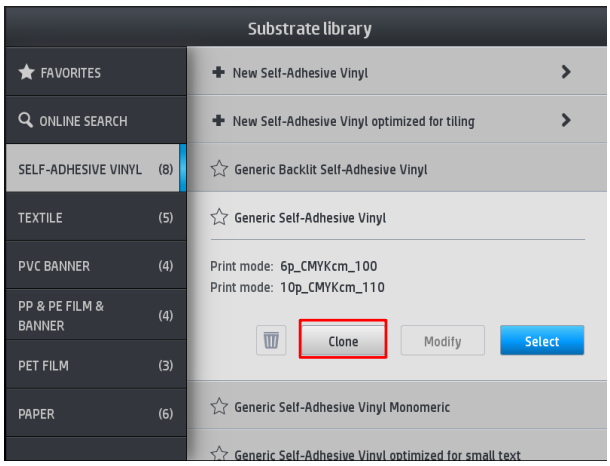
Adjust the Take-up reel settings to the tension requirments of your media.

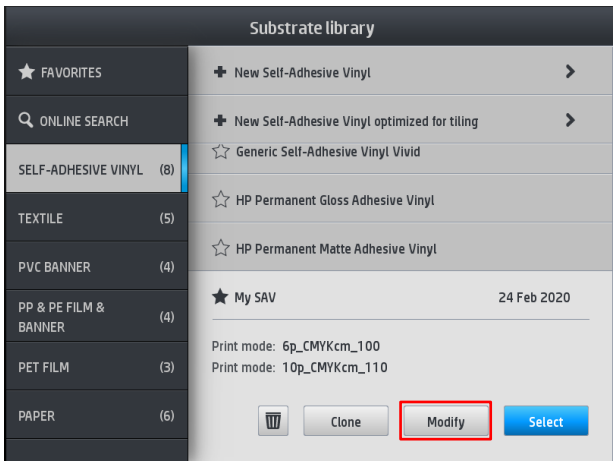
Go to **Settings** > **Substrate handling options** and Enable **TUR rewinding for long jobs.**

4. **Substrate preset settings:**

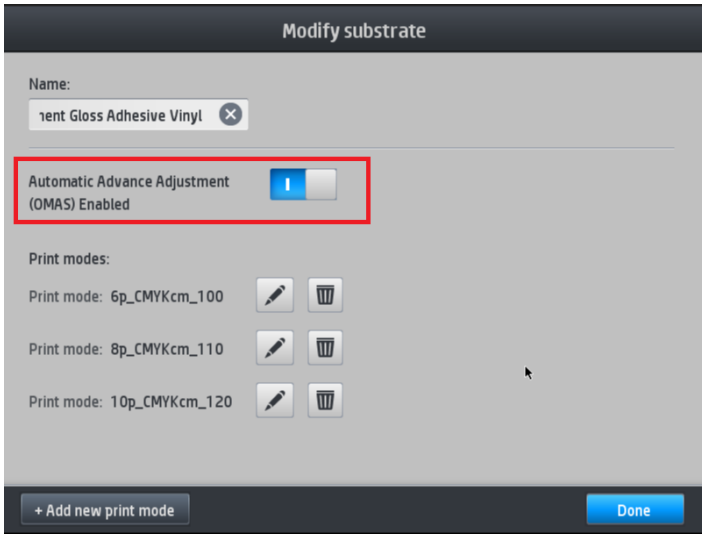
In the printer's **Substrate library**, navigate to the substrate preset that you intend to use for tiling. If you are using a Generic substrate preset, you will need to **clone** it to modify the substrate preset settings.

After selecting the substrate preset, tap **Modify** to access the substrate options and **disable Automatic Advance Adjustment (OMAS)**. All print modes within the media profile will be affected by this setting.





The Automatic Advance Adjustment (OMAS) is intended to obtain the best Image quality in a quick and easy way. It is ideal for printing short runs with different materials without the need of performing a manual media advance calibration. By using the OMAS, the printer will obtain banding-free, high quality prints. However, for tiling applications where length consistency across multiple tiles is key, it's recommended to manually adjust the media advance.



5. Synchronize the RIP settings with the printer:

It is necessary to synchronize the RIP settings with the printer to ensure that the substrate presets are properly updated on the RIP side.

6. Load the substrate with a 1 mm maximum skew.

7. Perform a manual media advance calibration:

If total length accuracy (in addition to length consistency) is important for your application, it is recommended to manually calibrate the media advance. Since the tiles will be printed with the Take-up reel engaged, it is recommended to perform the media advance calibration with this same set-up.

The manual media advance calibration needs to be done whenever the substrate type is changed.

NOTE: These steps (except the media loading skew requirement) only need to be performed the first time you prepare your media for tiling.

General printing advice for tiling

To obtain the best results, its recommended to:

- Use printmodes with 8 or more passes
- Avoid using a curing temperature higher than 105ºC
- Set the vaccum pressure to 35 mmH_2O or lower
- Allow enough time for the printer to warm-up before printing. It is recommended to print a dummy plot to bring the printer to operating conditions before running the tile job.
- Attach the substrate to the Take-up reel from the beginning of the plot
- Always print all the tiles in a single run (tailgating), avoiding cooldowns and warm-ups between the different tiles

NOTE: The recommendations provided in this document are tailored for Self-Adhesive Vinyls, so they might need to be adjusted for your specific media.

For any additional help or clarification, please contact the next level of your technical support team.