Best practices to achieve the intended length in tiling applications (Firmware release PLS_50_23_39.1)

The aim of this newsletter is to provide complete instructions to print tiling applications with the best length performance using the HP Latex 700/800 Series.
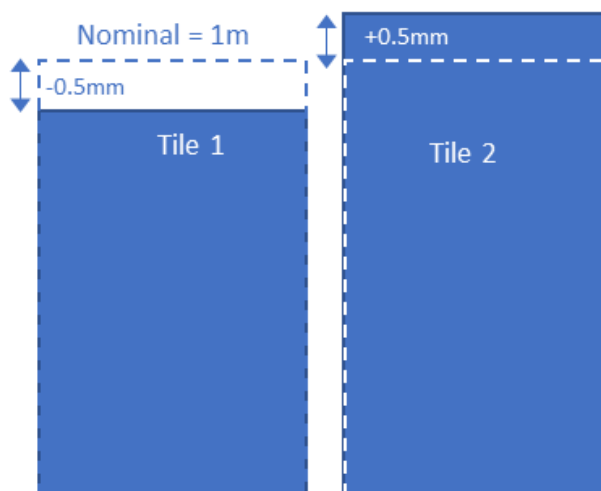
1.   TILING SPECIFICATION

a. Total length repeatability (TLR)

The total Length repeatability (TLR) accounts for the difference in length between tiles.

NOTE: A maximum tiling **length deviation from tile to tile of +/-0,5mm/m** is expected if the recommended workflow is followed.

b. Total length accuracy (TLA)

Difference between the printed length and the nominal length of the file image (length value on the RIP). In case TLA is not in spec, it must be corrected by applying an **output size compensation factor** in RIP.

> **NOTE:** The absolute **length accuracy is 0,2%** is expected if the recommended workflow is followed.
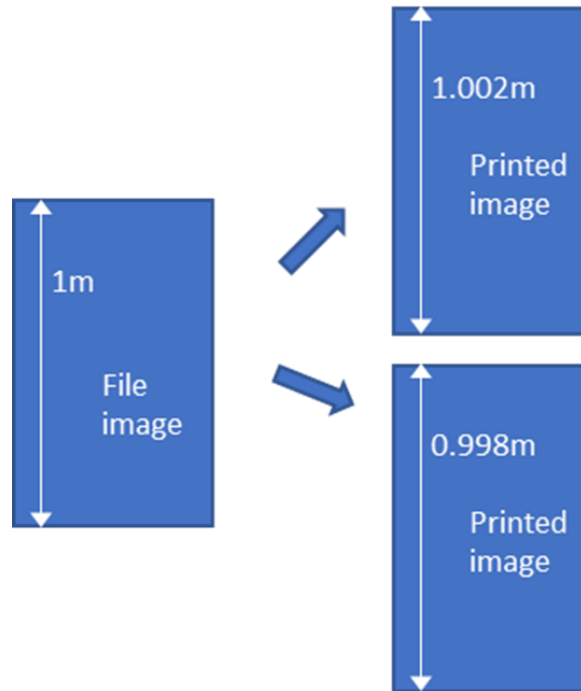
2. TILING OPTIMIZATION

- **Upgrade from PLS_50_23_39.1 MR5 (aka MR5) onwards**

- **Check the Environment Conditions**
  Ensure that your environmental conditions are suitable for the best print quality, with relative humidity between 40/60%, and temperature from 20 to 25°C.

a. Description

The new slider in the Front Panel Menu has been improved to achieve better TLR results in Wallpaper, Self-Adhesive vinyl, and 3M Traffic Signage without the necessity of printing the stabilization plot.

The following modifications will be done if the user selects **"Tiling optimization"**:

- Include an ExtraTopMargin of **200mm**. The top margin is done before the 1st job and between jobs without tailgating.

- Disable cooldown movements.

- Disable warmup movements.

- Printer warm-ups process **up to 10 min** (optimized for long-run stability).

b. How to activate

The tiling optimization setting can be activated in 2 ways during the loading process or inside the substrate source settings:

1. Loading process
- Initiate the Loading media. Select the substrate type selection and CONTINUE.

- On Substrate configuration click the Tiling Optimization Option and finish with the loading process jobs.
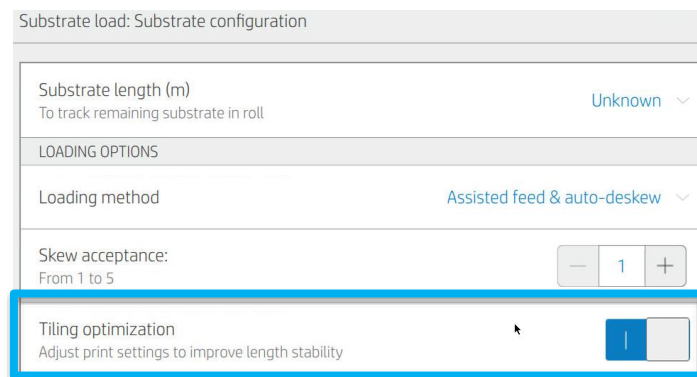
2. Inside Substrate source settings
- With the roll Loaded the tiling optimization can be able and disable.

  Substrate Source - - click the option. Tiling Optimization
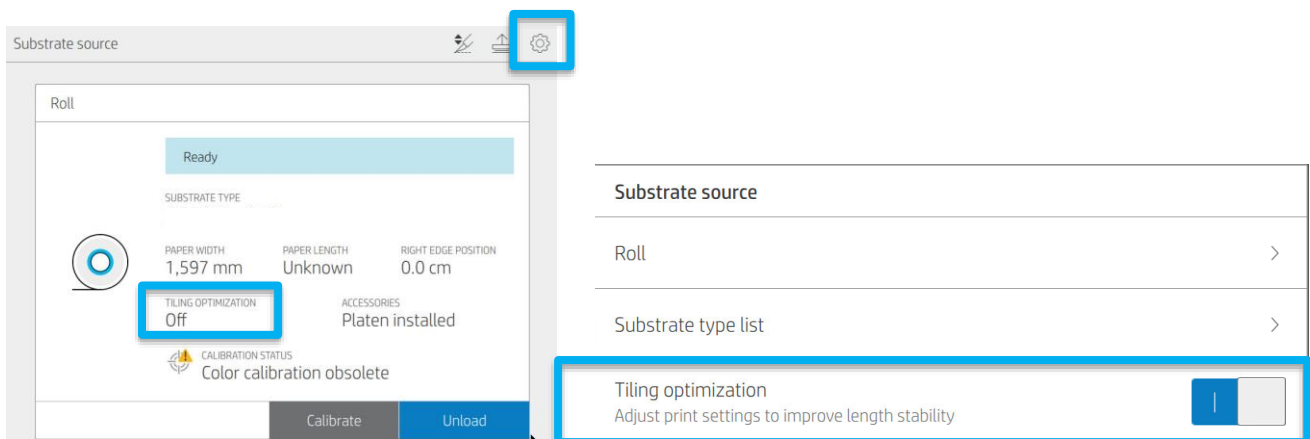
IMPORTANT: The tiling optimization settings will be applied until the option is disabled.

c. Wallpapers

The recommendation is to activate the Tiling optimization option to achieve TLR performance. This option is compatible with all profiles: generics, clones and OMS from PrintOS.

NOTE: Wallpapers Generic is set up by default at 10 N/m input tension.
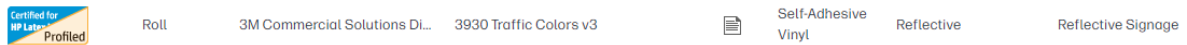
d. Self-Adhesive Vinyl

The recommendation is to activate the Tiling optimization option to achieve TLR performance. This option is compatible with all profiles: generics, clones and OMS from PrintOS.

NOTE: Generic Self-Adhesive Vinyl is set up by default at 6 N/M input tension.
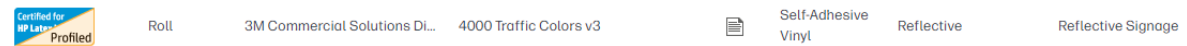
e. 3M Traffic Signage

The recommendation is to activate the Tiling optimization option to achieve TLR performance. This option is compatible with substrate packages from PrintOS.

- Install upgraded substrate packages from PrintOS.

  o HIP 3930 Traffic Colors

Certified for HP Latex Profiled	Roll	3M Commercial Solutions Di...	3930 Traffic Colors v3	📄	Self-Adhesive Vinyl	Reflective	Reflective Signage

  o DG 4000 Traffic Colors

Certified for HP Latex Profiled	Roll	3M Commercial Solutions Di...	4000 Traffic Colors v3	📄	Self-Adhesive Vinyl	Reflective	Reflective Signage

- **Edge holders** are mandatory.

- **Output Platen Protector** is highly recommended to avoid adhesive residues. Service part Y0U21-67222

NOTE: **How to do traffic signage with the HP Latex 700/800** cookbook available here (HP LKC).

3. LOADING WORKFLOW

a. Substrate load

- Before proceeding, check and discard any Roll telescoping.

BAD   GOOD

- Load the substrate as usual making sure to select the appropriate Substrate Package from the Front Panel.

NOTE: For **L800/L800W** it's important to verify that **the Left Hub is not overly tightened**. This can be achieved by releasing tension on the left. To do this, locate the brake mechanism and click on it to release the tension. This will prevent any unnecessary strain or pressure on the left Hub which could affect the performance. For a visual demonstration of this step, please refer to the <u>attached video</u>.
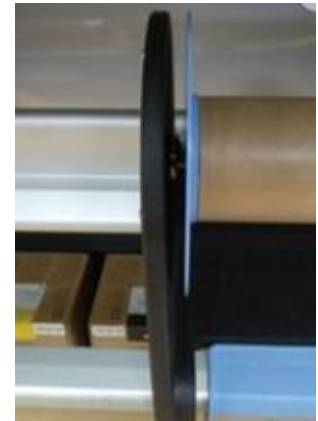
- Select **Assisted feed & auto-skew** and ensure **skew acceptance** is **set at 1.**

Substrate load: Substrate configuration	
Loading method	Assisted feed & auto-deskew ⌄
Skew acceptance: From 1 to 5	− 1 +
ACCESSORIES	

b. Tiling Optimization

- In the loading process you must select the option "Tiling Optimization".

Substrate load: Substrate configuration	
Substrate length (m) To track remaining substrate in roll	Unknown ⌄
LOADING OPTIONS	
Loading method	Assisted feed & auto-deskew ⌄
Skew acceptance: From 1 to 5	− 1 +
Tiling optimization Adjust print settings to improve length stability	▮

c. Attach substrate to Take-Up Reel

- The front panel will pop up a message to strongly recommend advancing substrate and attach it to the TUR.
- Advance the substrate until the leading edge is levelled with the TUR.

- Cut the substrate in **"V" shape** as shown in the picture and attach the substrate tightening with a single strap from the center.

d. Activate the Take-Up Reel

- Advance substrate to be able to activate the TUR by completing a full rotation of the TUR.

4.   HOW TO ACHIEVE THE BEST TILING PERFORMANCE

Below are the specifications depending on different scenarios and media families:

Media Family	Tiling Optimization	Stabilization Plot from RIP
Wallpaper and Self-Adhesive Vinyl (MR5)	+/- 0,5mm/m	< +/- 0,5 mm/m

To achieve the optimal results, it's important to follow the step-by-step workflow described below. Only required in those cases where the substrate performance is out of specs after applying the recommended solution explained above on this newsletter.

a. Stabilization plot

On those situations where is not achieved the performance with previous recommendations, is strongly recommended to use the Stabilization plot.

- Rip and print a first-meter stabilization plot alongside the desired image plots.

- The first-meter stabilization plot can be any image of a linear meter length; any job that won't be used for tiling or a low ink density image.

IMPORTANT: Both images must be ripped and printed with the same print mode that will be used later in the tiling job.

5. SUMMARY

Summary of the key recommendations for each family substrate. Please follow all of them to achieve the best performance:

	Wallpaper	Self-Adhesive Vinyl	3M Traffic Signage
Firmware	From PLS_50_23_39.1 (aka MR5)		
Substrate package (OMS)	Default generic settings		3M HIP3930 and 3M DG4000 from PrintOS
Tiling Optimization	Activated		
Media management	Central Take-Up Reel attachment cut in "V" shape		
	Loading skew <1mm/m		
	[Recommended] Stabilization plot 1 meter for corner cases		
RIP	Enable RIP size compensation for an accurate total length accuracy		Enable Sai RIP output size compensation

6. BONUS: TOTAL LENGTH ACCURACY – SIZE COMPENSATION WORKFLOW

Even if the length of the tiles is consistent from tile to tile, it may not exactly match the original size of the job. This variation in size depends on the nature of the substrate and how much it expands or contracts with heat but can be compensated for using a scale factor in the RIP.

Total length accuracy adjustment:
- Print 2 copies of square images of known dimensions, recommended 1mx1m.
- Once dried, measure each side of the second copy: calculate the average for the width (W) and length (L) dimensions.
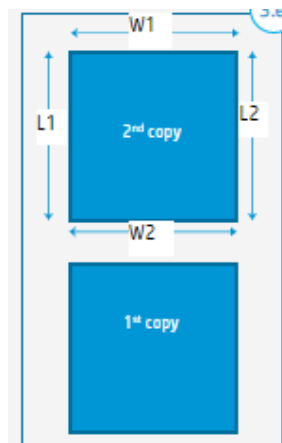
- Apply the scale factor in the RIP accordingly.

NOTE: This total length accuracy adjustment is only required when printing with a specific substrate and print mode for the first time.

a. Onyx

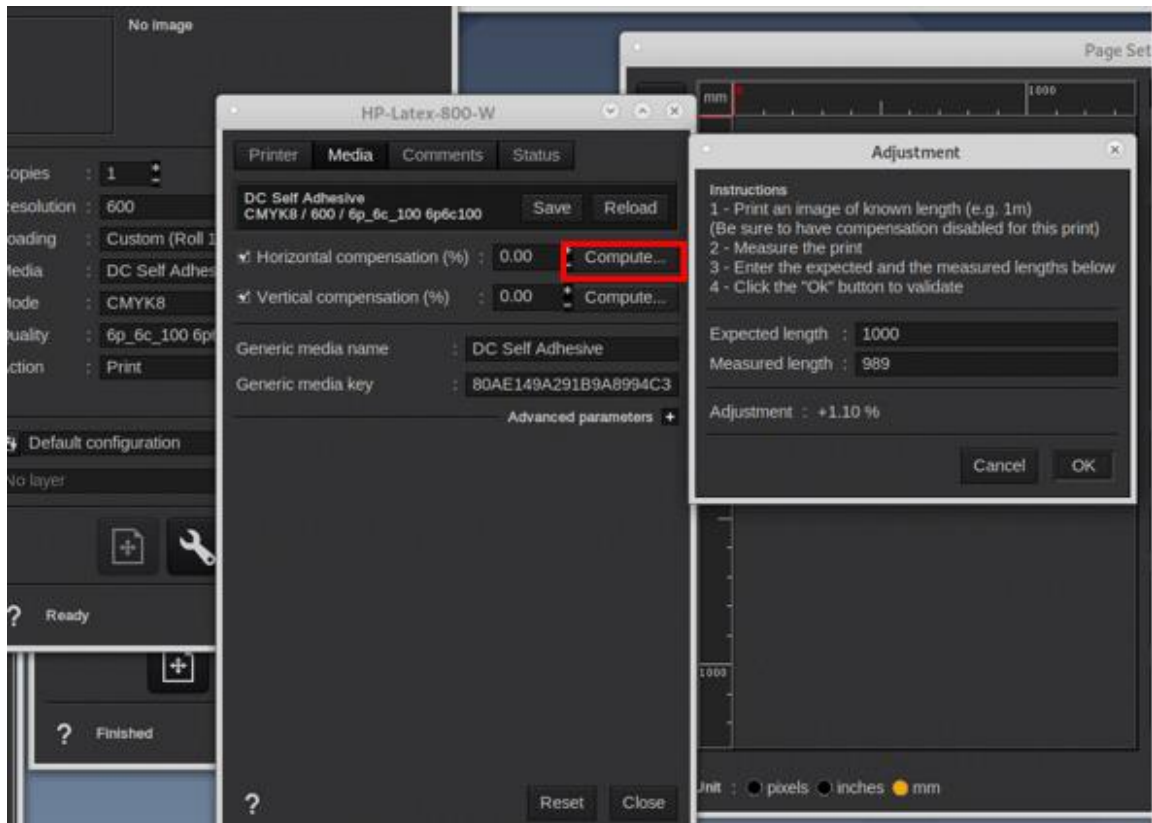1. Apply the scale factor from Media Manager

2. **Right Click** on the print mode

3. **Edit>** Scale the print width or height.
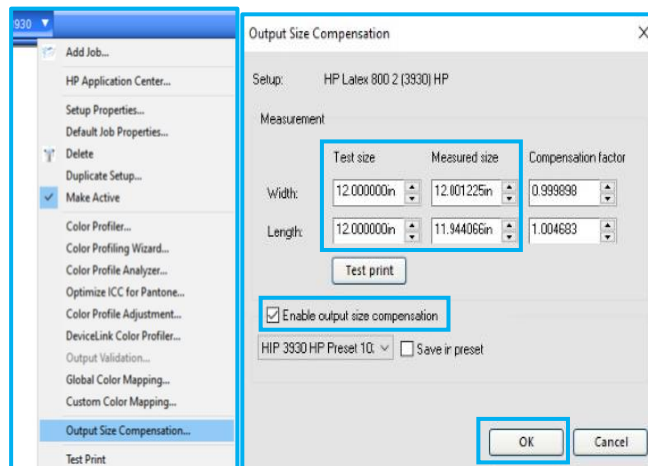

b. Caldera

Apply the scale factor from Media Tool go to Compute> and enter the values.

c. **Sai**

2. **Click** on the printer setup, select **Output size compensation.**

3. Prepare the tiling plots with the scale factor applied. If the media needs to be printed with the stabilization plot Rip with the complete tiling Job.