How to do vehicle wrapping using self-adhesive vinyl with HP Latex 700 and HP Latex 800 Printer Series

This document will explain how to create and print vehicle wrapping on self-adhesive vinyl, including lamination and installation.
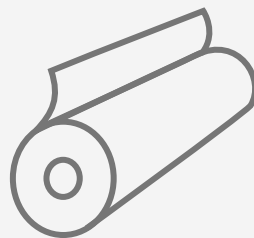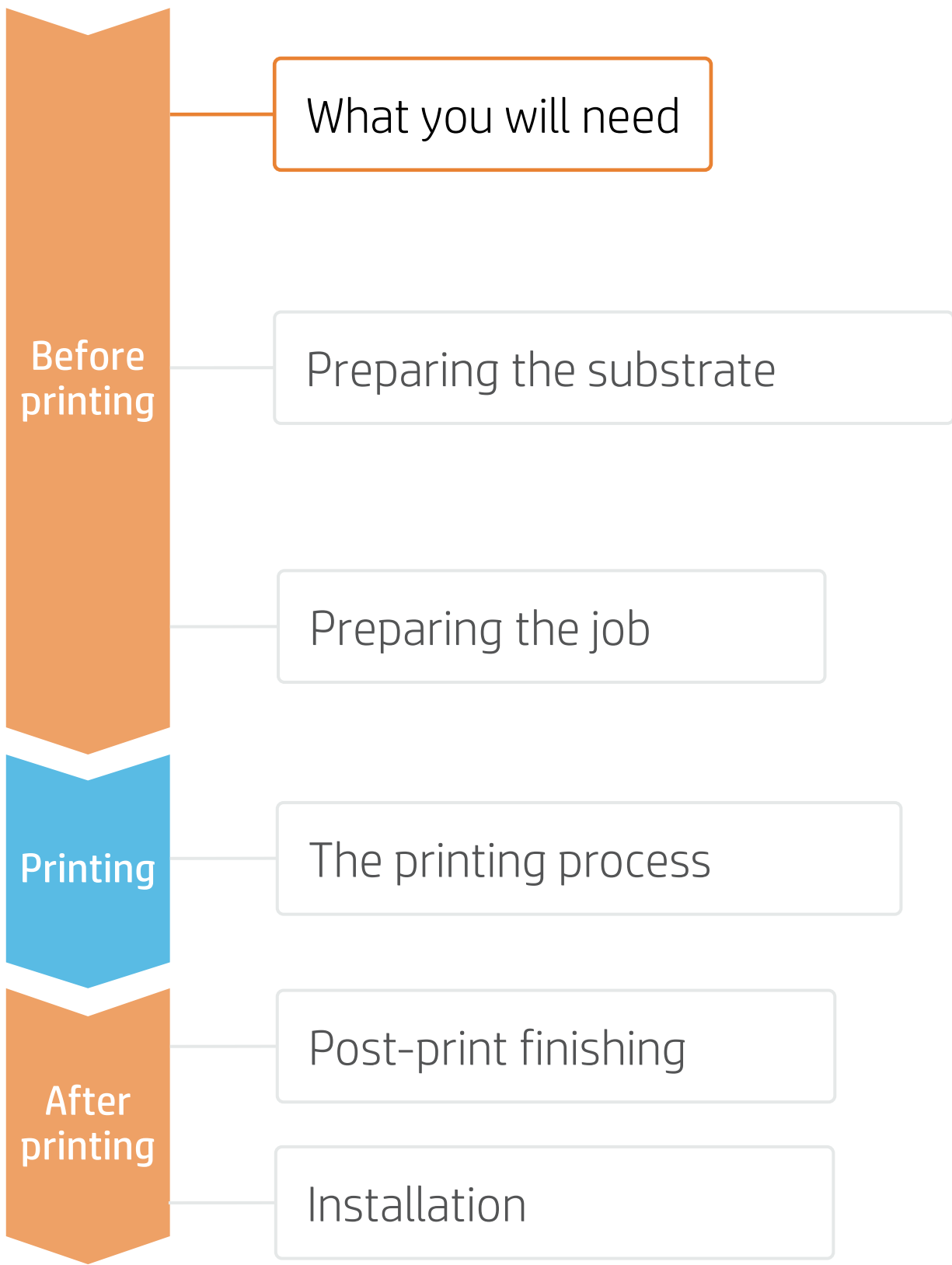
A deep dive training about **HP Latex 700/800 Printer series – Vehicle wrapping** is available in the Learn App from your PrintOS account. See more details in **this article**.

How to do vehicle wrapping using self-adhesive vinyl

What you will need

Before printing
- What you will need
- Preparing the substrate
- Preparing the job

Printing
- The printing process

After printing
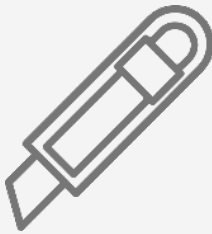- Post-print finishing
- Installation

Self-adhesive vinyl or PVC-free films
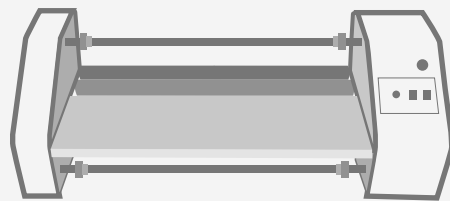
SW tools (RIP, edition, etc.)

Printer

Cutting device
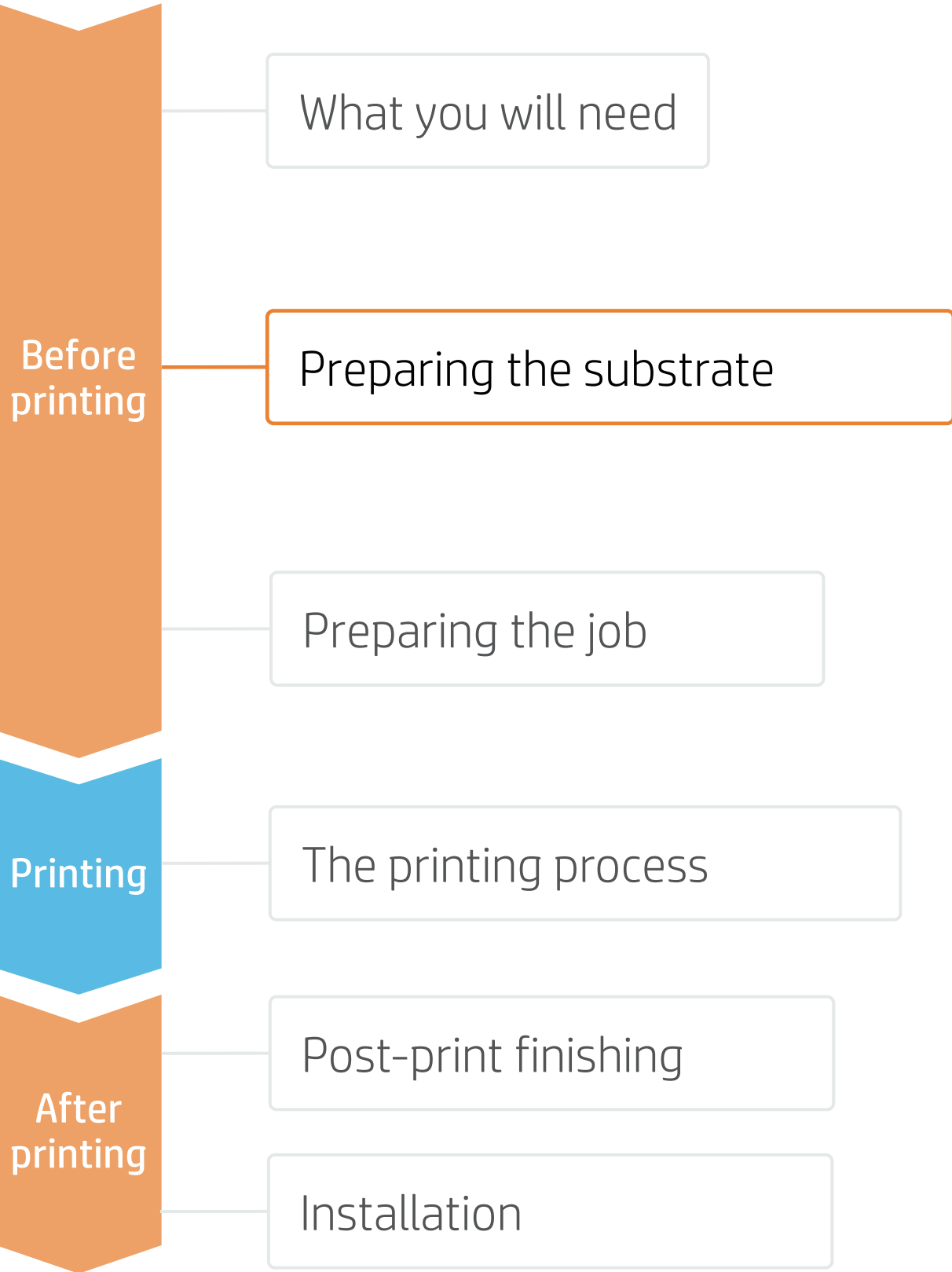
Film laminate (optional)

Film laminator (optional)

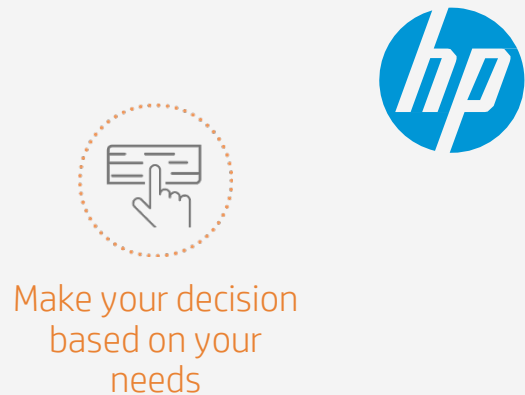Plastic Squeegee with low friction sleeve

How to do vehicle wrapping using self-adhesive vinyl

Preparing the substrate

1. Choose the right substrate

- Firstly, understand the requirements of your application.

- Most film manufacturers (3M, Avery, Orafol, etc.) have huge portfolios of wrap films classified by **usage**, **type of surface**, **type of adhesive,** and **raw material**.

- Choose the appropriate **laminate** for your film. Follow the manufacturers recommendations.

Make your decision based on your needs

a) Usage:

Long term

Short-term promo graphics

b) Type of surface:

Flat

3D surfaces

c) Type of adhesive:

- **Repositionable:** For short-term graphics and easy application.

- **Removable:** The most common.

- **Permanent:** Not highly recommended for vehicles.
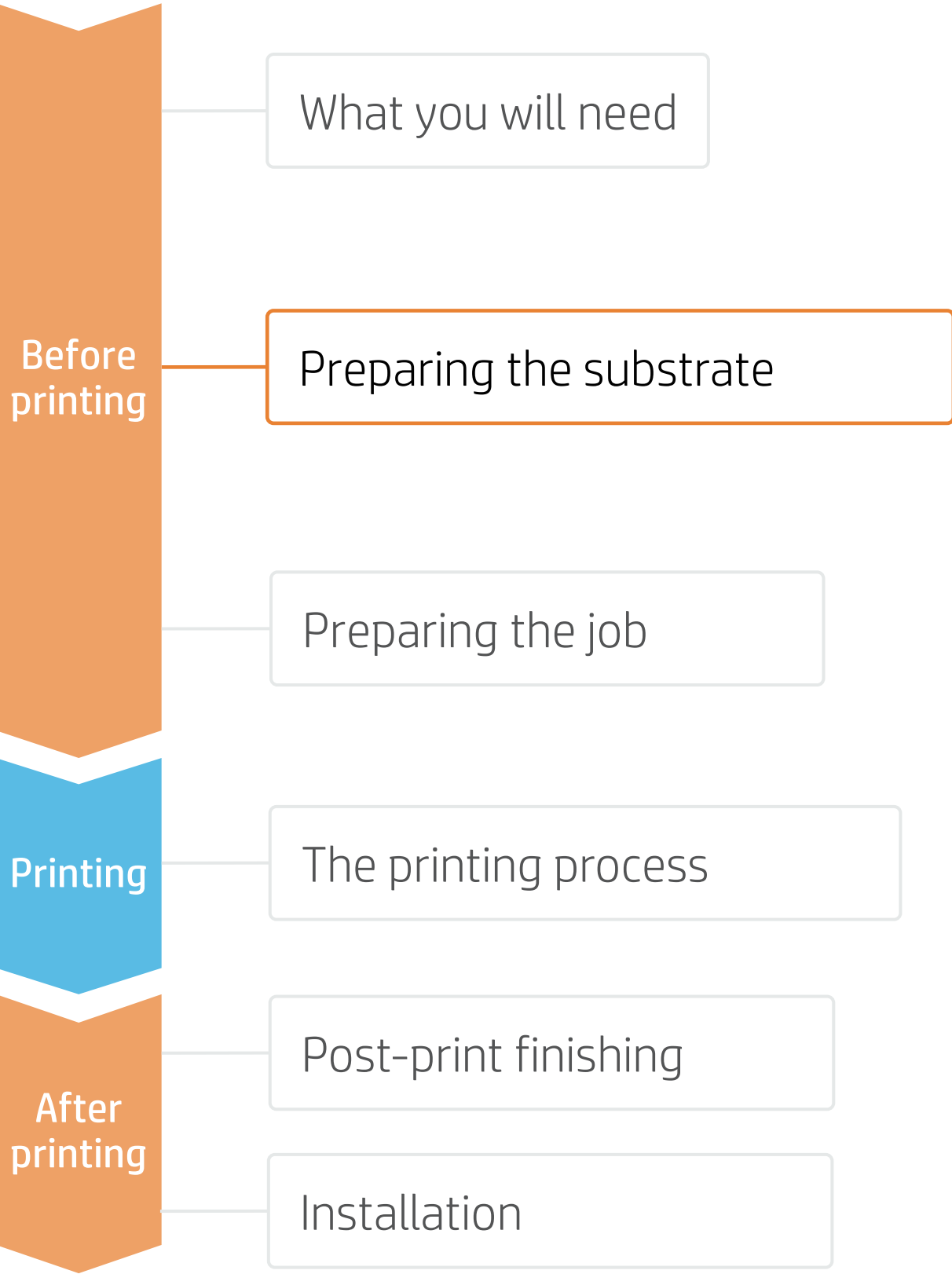
  NOTE: Most wrap films have bubble-free adhesive technologies.

d) Raw material:

- **Self-adhesive vinyl:** The most common.

- **PVC-free self-adhesive films:** A greener alternative, most brands have their PVC-free range.

How to do vehicle wrapping using self-adhesive vinyl

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Before printing
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Printing
- The printing process

After printing
- Post-print finishing
- Installation

2. Substrate presets

Make your decision based on your needs

- Check that the material you are going to use has its own substrate preset:

  a) On the **web,** in the HP PrintOS Media Locator:
     www.printos.com/ml/#/medialocator

  b) On the printer's **front panel** online search (Substrate Library)

  c) On the **web,** from the substrate vendor's or RIP vendor's websites

- Download and install.

NOTE: If you cannot find the substrate presets, you can always use the **generic presets for self-adhesive vinyls** that are already installed in your printer. If you need to fine-tune some settings, clone the existing generic preset and modify it, or create a new one with the **Add new substrate** function on the front panel.

TIP: Learn how to customize your profile by enrolling on the available training HP Latex 700/800 Printer series – Advanced main tasks and maintenance routines on the Learn with HP website.
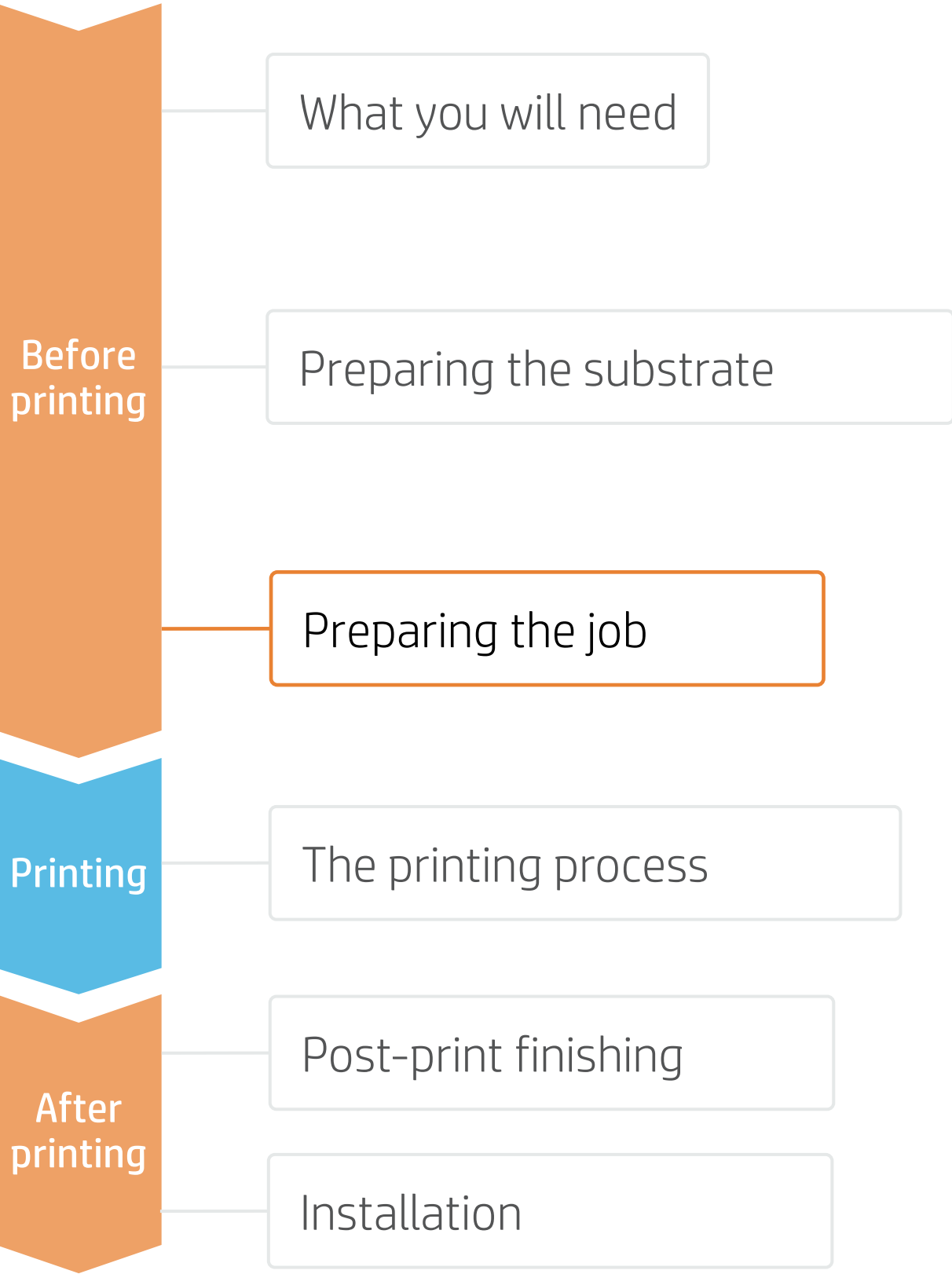
Preparing the job

1. Software for designing and editing

Tools such as Adobe Illustrator, Photoshop, and InDesign help you design and edit jobs and adapt them to your needs.
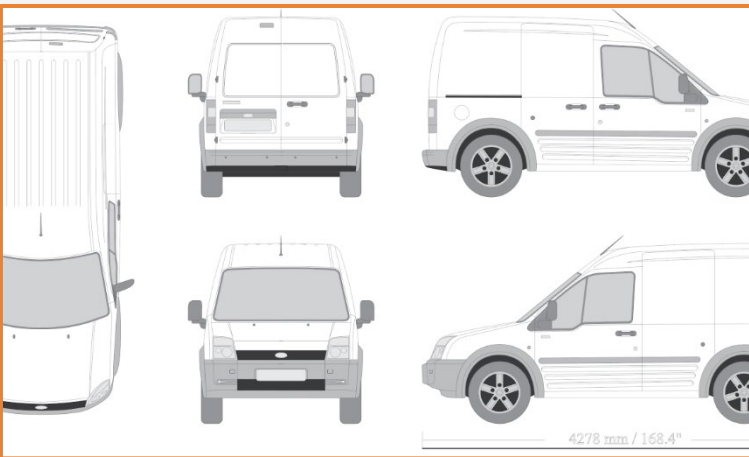
Make your decision based on your needs

2. Adapt design to vehicle geometry

Especially for full wraps, **templates** of the vehicle are needed.

Search online for the best supplier of car and vehicle templates, some might offer free files.

💡 TIP: Save each part in a separate file, and name it properly to indicate which part of the vehicle it corresponds to.

3. White ink designs

In some cases, transparent films are used when it is desired to preserve the vehicle color.

📝 NOTE: To work with white ink layers, learn how to create it with Illustrator and Photoshop by enrolling on the available training HP Latex 700/800 Printer series - White ink on the Learn with HP website, or refer to the cookbook How to print on white.

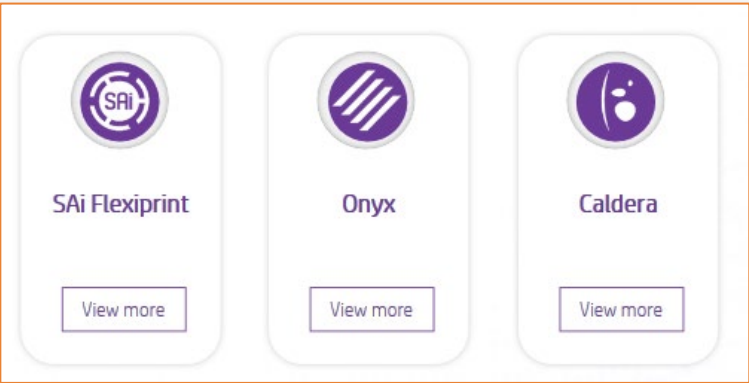## 4. RIPs

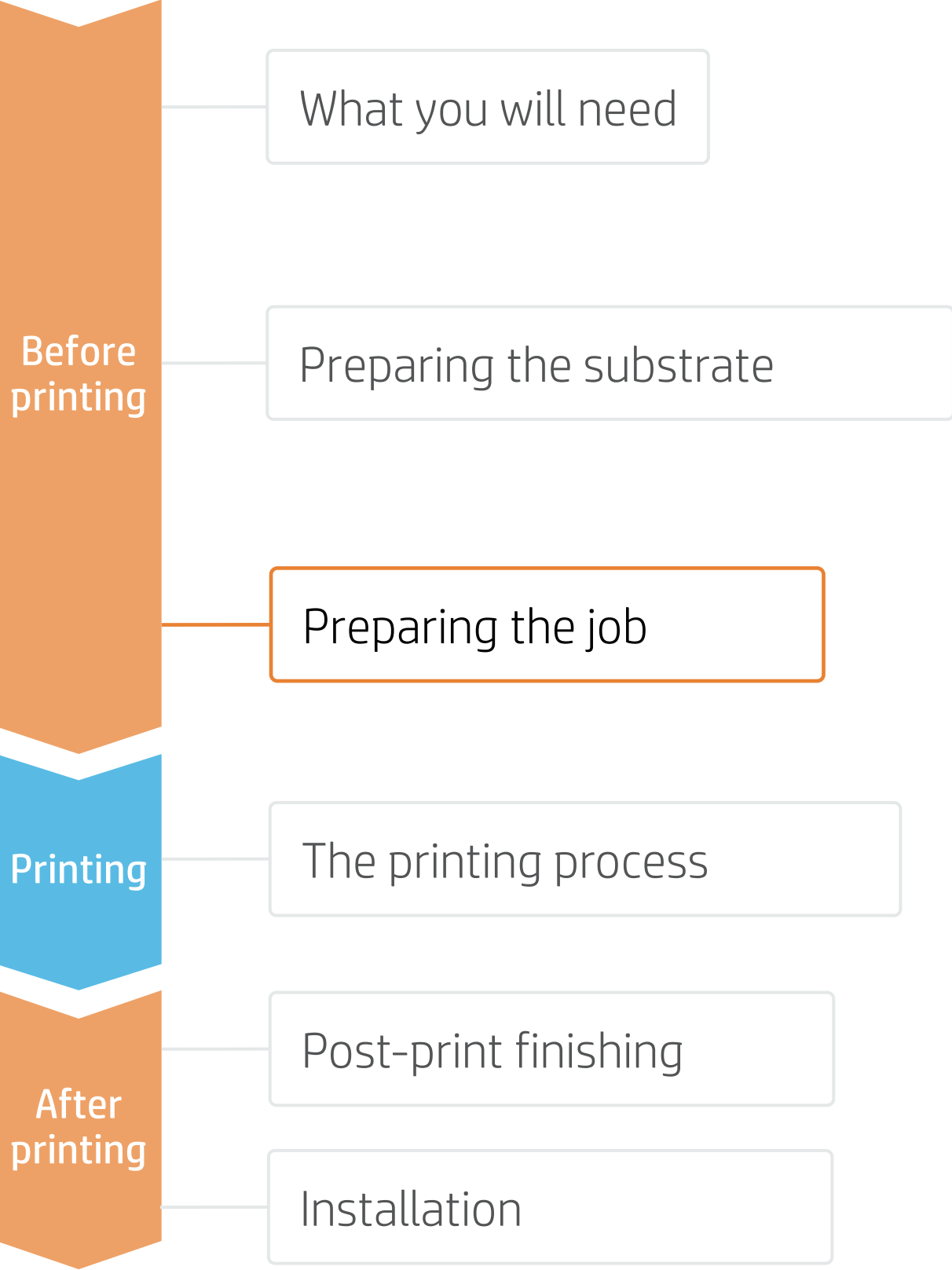ONYX, CALDERA, and SAi RIPs have been certified for HP Latex 700/800 series printers.

All these RIPs have specific options for job editing.

📝 NOTE: Please refer to the specific trainings on RIPs available at the PrintOS Learn App.

SAi Flexiprint — View more

Onyx — View more

Caldera — View more

How to do vehicle wrapping using self-adhesive vinyl

Preparing the job

```
Before printing
    What you will need
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    The printing process
After printing
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    Installation
```

5. RIP processes

A. Substrate & Printmode selection

- Choose the substrate type (self-adhesive vinyl), then select the specific substrate you have loaded on the printer or a generic preset.

- Next, choose the print mode: **8p mode** is the recommended mode for car wrapping applications; for higher image quality, choose **12p** print mode; if productivity is key for your job, then **6p** can be used.

TIP: Use 12p print mode plus the take-up-reel (TUR) for optimal tiling match, both in length and color.

B. Image size & tiling

- Modify the image size, if required, to adapt it to the car parts that will be wrapped.

- If tiling, select the number of tiles and the size of the overlap (normally 25 mm).

C. Finishing: cutting marks & other factors

- In the RIP, select the automatic cutter you will use for cutting your jobs, and configure the cutting marks for that cutter: trim box, placement, and type of barcode.

- The RIP will detect the cutting path thanks to the named Spot Color in your file.

- If graphics are going to be **laminated**, activate the **optimize for lamination** option in the RIP or select a print mode with overcoat at 0dpp.
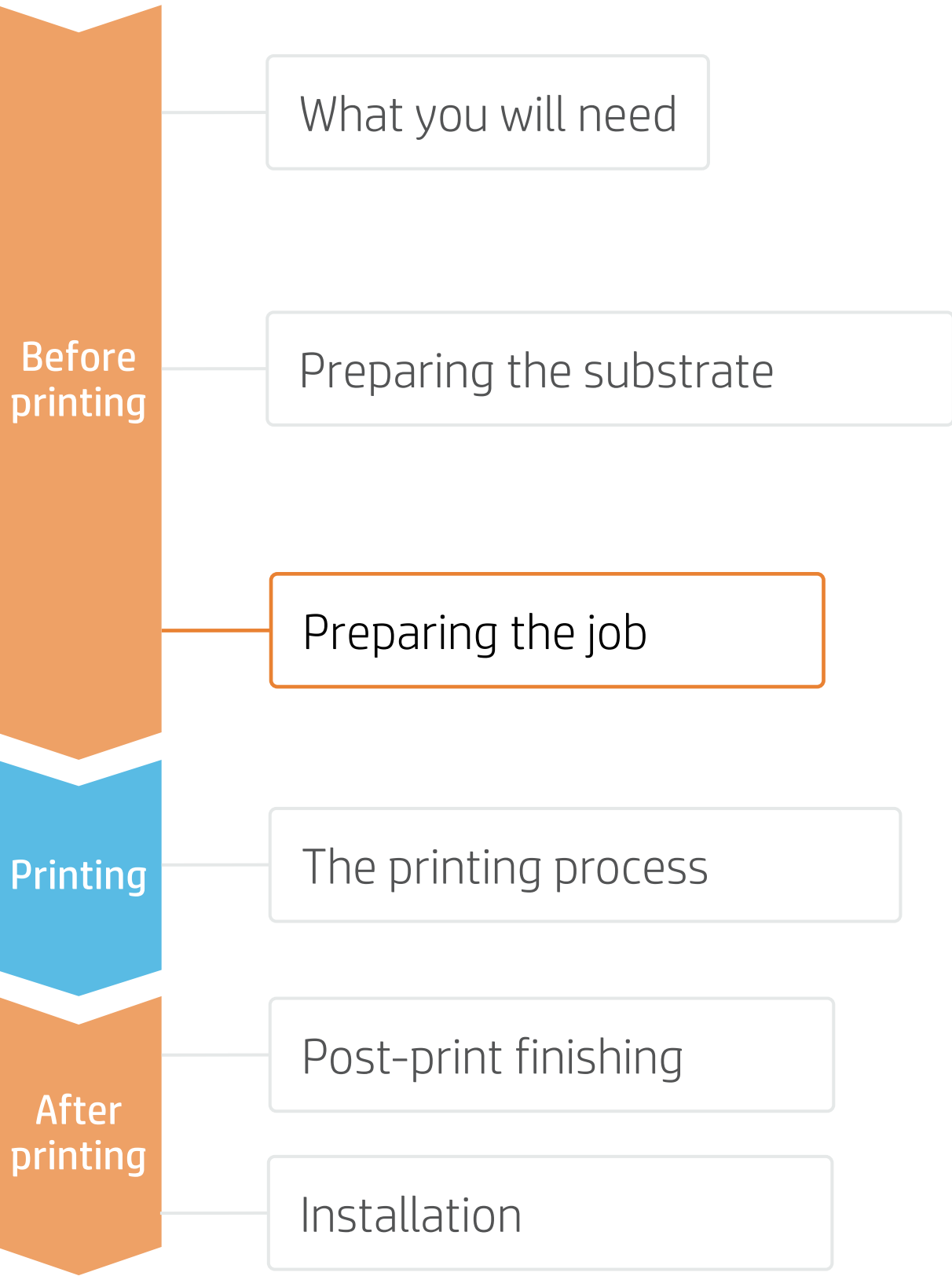
NOTE: Each RIP has different ways to set cutting marks. Please refer to the specific RIP manuals.

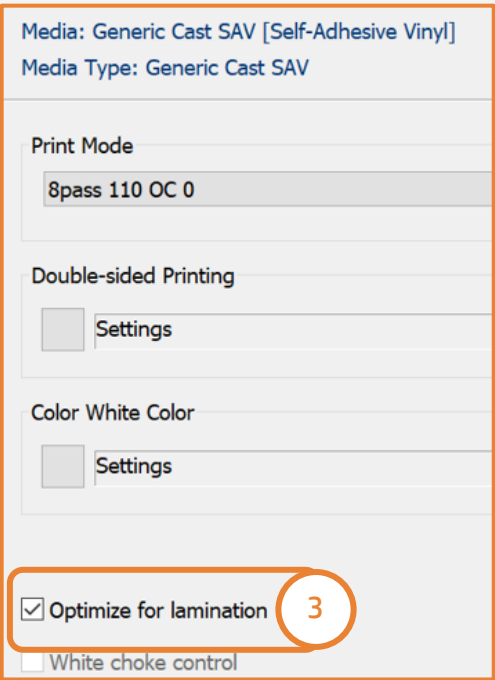NOTE: To work with white, please refer to the cookbook How to print on white.

Make your decision based on your needs

Preparing the job

What you will need

Before printing

Preparing the substrate

Preparing the job

Printing

The printing process

After printing

Post-print finishing

Installation

D. Option to optimize lamination

Make your decision based on your needs

Media: Generic Cast SAV [Self-Adhesive Vinyl]
Media Type: Generic Cast SAV

Print Mode
8pass 110 OC 0

Double-sided Printing
Settings

Color White Color
Settings

☑ Optimize for lamination   ③
☐ White choke control

Onyx

In the job queue;

1. Right click on your job
2. Select **Edit** – **Printer Settings**
3. Select **Optimize for lamination**

Caldera

1. Open your printer options menu
2. Click on **Specific settings for printer** (wrench icon)
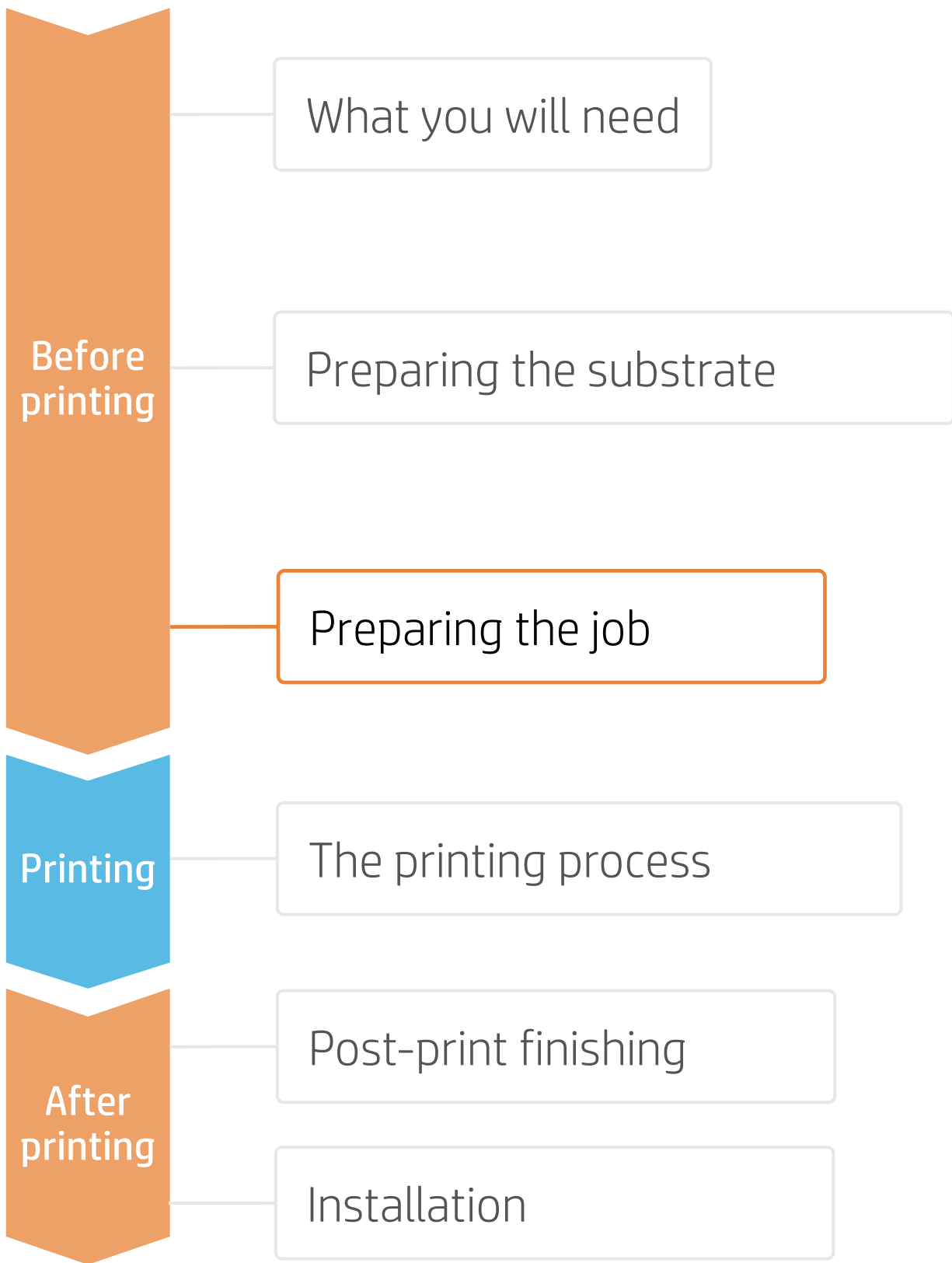3. Under the **Advanced parameters** menu, select **Optimized for lamination**
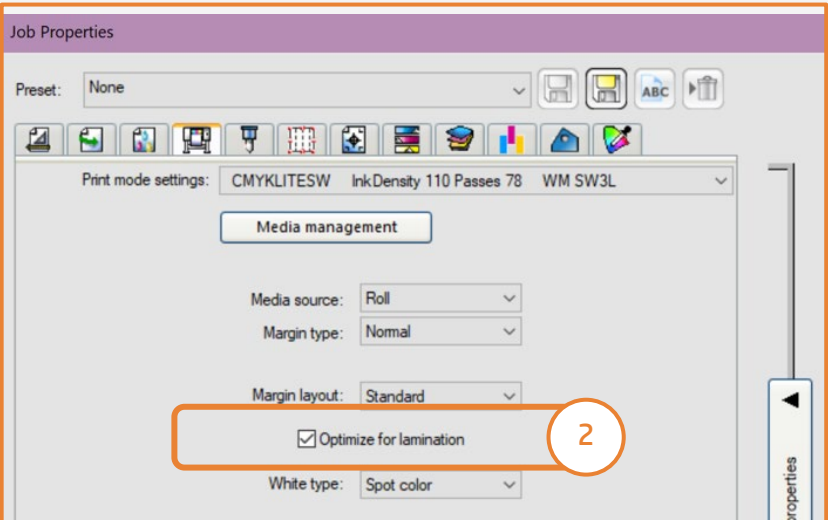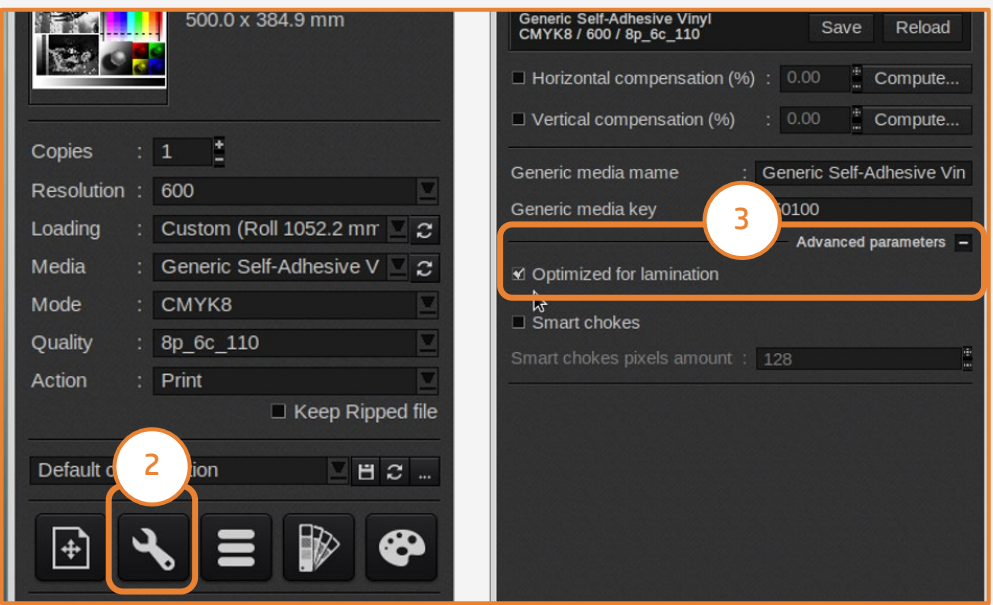
SAi

In the job properties menu;

1. Select the **Printer Options** tab
2. Select **Optimize for lamination**

Preparing the job

```
┌─ Before printing
│    • What you will need
│    • Preparing the substrate
│    • Preparing the job
│
├─ Printing
│    • The printing process
│
└─ After printing
     • Post-print finishing
     • Installation
```

6. Tips for tiling applications

Two critical requirements for tiling applications are the **color consistency** and **length consistency** tile-to-tile.

Contiguous tiles with the same background solid color may show differences in color between the right side of the first tile and the left side of the second tile.

Also, non-uniform dimensional stability of substrates, e.g. specifc banners, can lead to differences in length side-to-side. Also, the dimensions of the print will not be correct when expansion or shrinkage of substrates occurs.

A. Color consistency tile-to-tile

- Ensure that your environmental conditions are suitable for best print quality: RH 40-60%, Temp. 20-25ºC.

- Start printing with substrate already attached to the TUR.

- Choose print modes of **8p or higher**, with the lowest density possible.

- Avoid printing with a **cold printer**; warm it up by printing a short job in advance: A **nozzle health check** is enough to warm up the printer.

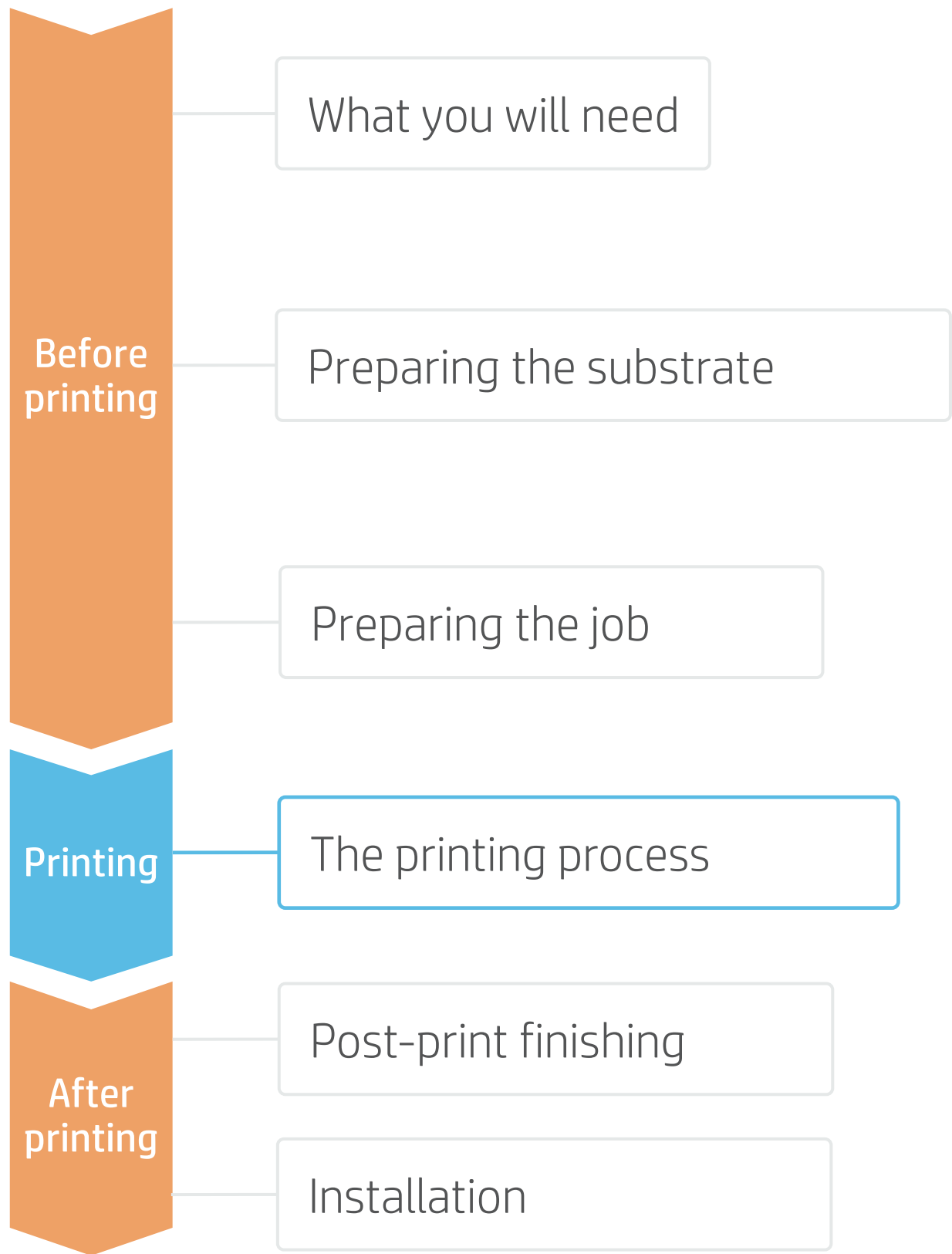- Invert alternate tiles, from the RIP feature.

B. Length consistency tile-to-tile

- Ensure that the substrate-advance sensor is enabled in the RIP's substrate preset

- Start printing with substrate already attached to the TUR.

- Invert alternate tiles, from the RIP feature.

- Tile together areas with similar amounts of ink. If this is not possible, print the areas with different amounts of ink as different jobs and modify the length of the job with less ink in the RIP to match its size with the job with high ink content.

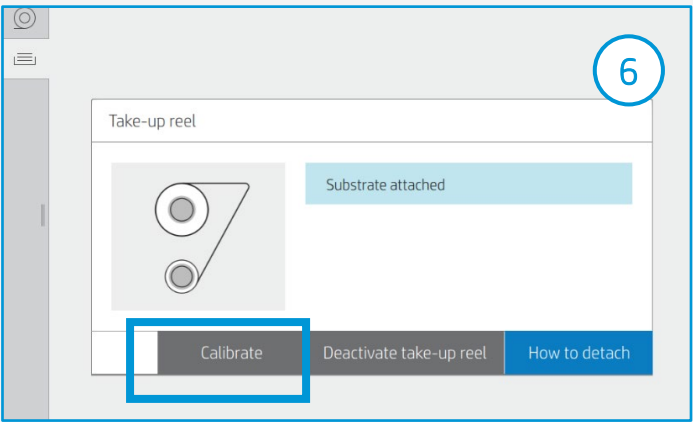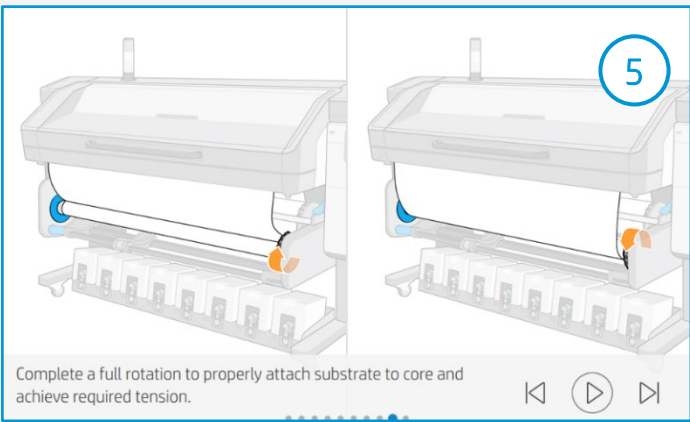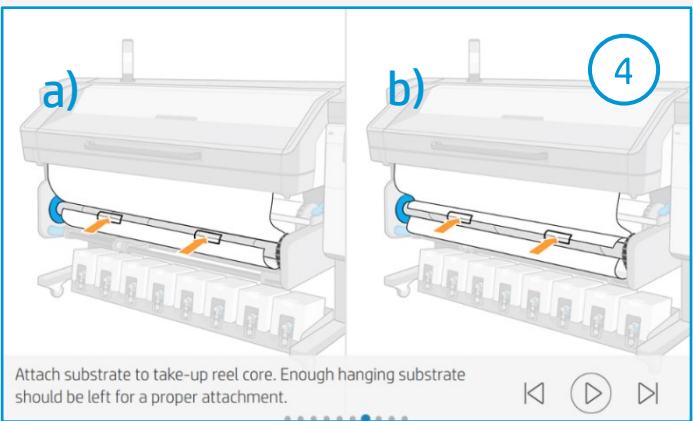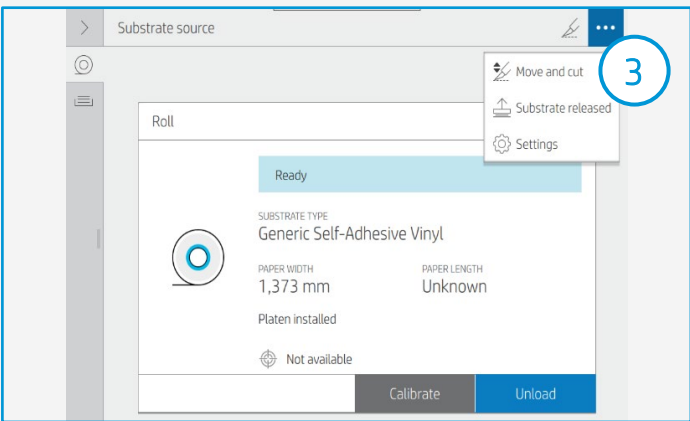- Print a sample and adjust the size of the image in the RIP accordingly.

The printing process

What you will need

Before printing

Preparing the substrate

Preparing the job

Printing

The printing process

Post-print finishing

After printing

Installation

Loading substrate | Connecting to the take-up reel (TUR)

1. **Prepare the TUR**
   Attach an empty core on the TUR.

2. **Move the substrate**
   Move enough substrate to be able to wind a couple of turns.

3. **Release the substrate from the pinches**
   For better alignment with the TUR core.

4. **Attach the substrate to the TUR**
   You can attach the substrate so that the printed side faces **in (a)** or **out (b)** (out is most common).

5. **Activate the TUR**
   Complete a full rotation of the TUR.

6. **Calibrate the TUR**
   Select **calibrate** on the front panel.

Press and hold "up" arrow to rewind and "down" arrow to advance substrate.

Attach substrate to take-up reel core. Enough hanging substrate should be left for a proper attachment.

Complete a full rotation to properly attach substrate to core and achieve required tension.
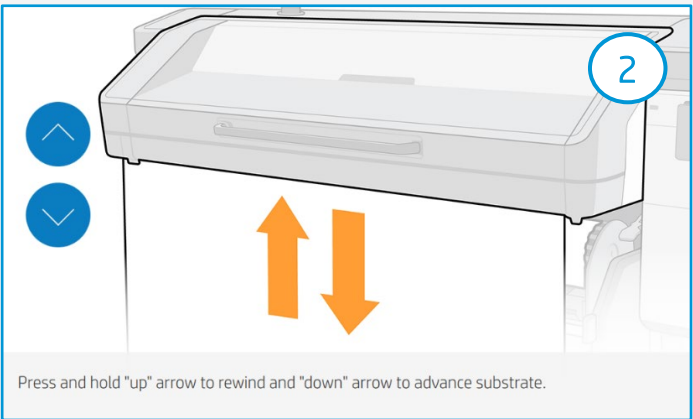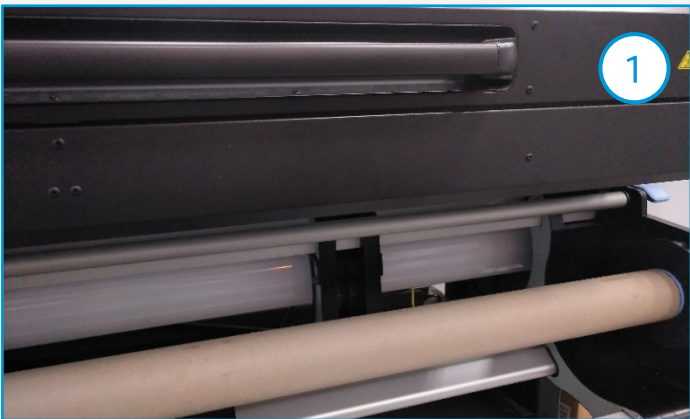
💡 TIP: For long jobs, connect the substrate to the take-up-reel (TUR). For tiling applications, connect the TUR before you start printing.
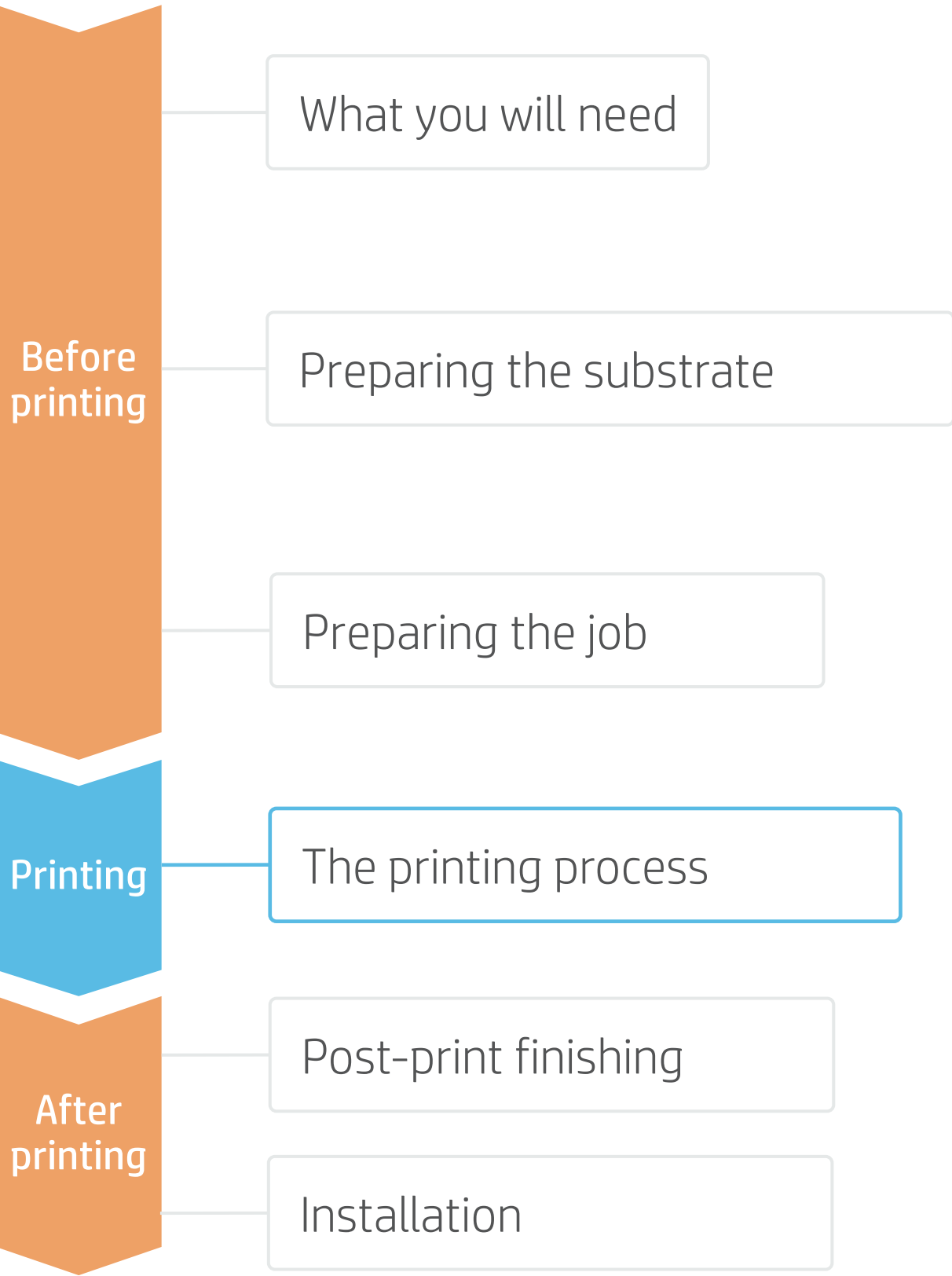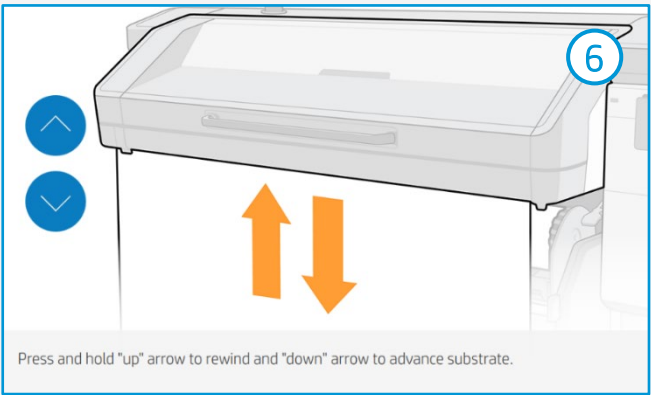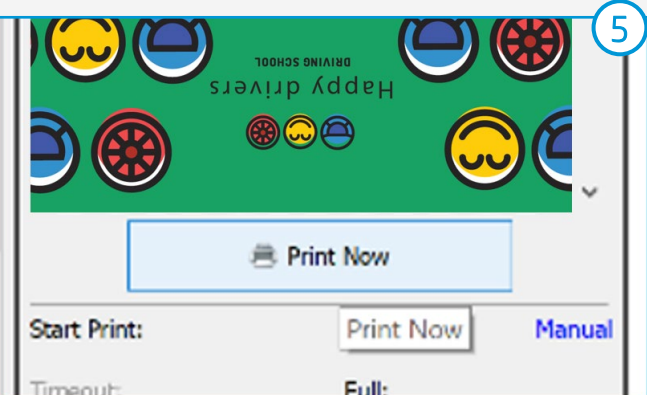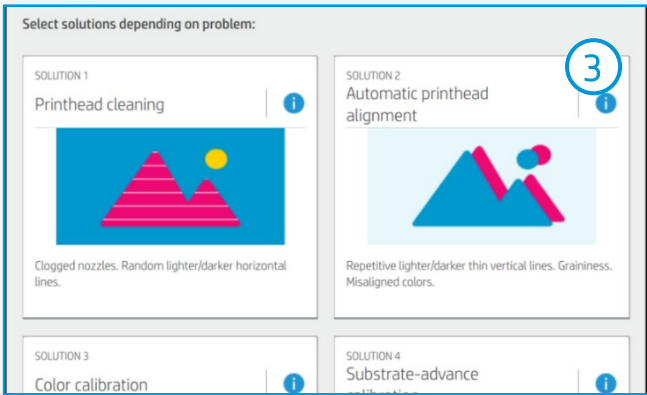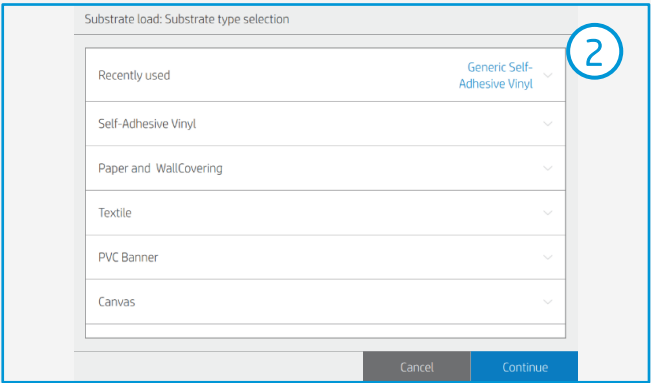
How to do vehicle wrapping using self-adhesive vinyl

The printing process

- Before printing
  - What you will need
  - Preparing the substrate
  - Preparing the job
- Printing
  - The printing process
- After printing
  - Post-print finishing
  - Installation

1. **Load the roll**

By default, this is in automatic mode.

2. **Select the correct substrate preset**

If your substrate is new, select the **generic self-adhesive vinyl** or **generic cast self-adhesive vinyl** preset.

3. **Check print image-quality status**

Perform the printhead nozzle check and printhead alignment.

4. **Start printing position**

Normally this is from the printing platen, but some vinyls might need to be positioned after the curing zone or even be attached to the TUR to avoid a substrate crash.

5. **Send the job to print from the RIP**

Check the RIP has synchronized the loaded substrate with the printer.

Select the correct print mode and any other settings (copies, placements, etc.).

Click **Send to print.**

6. **Cut & retrieve the printed roll**

This can be done in automatic mode or manually.
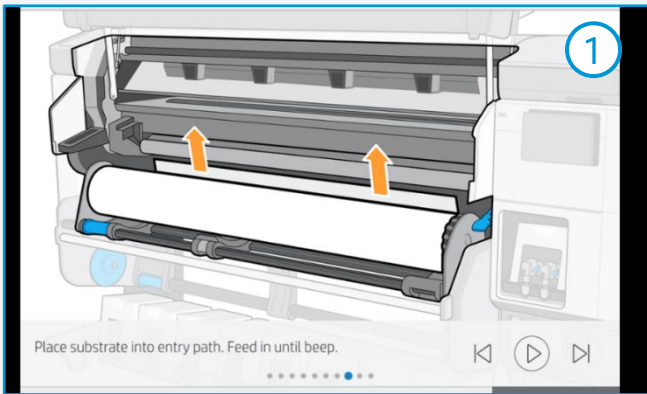
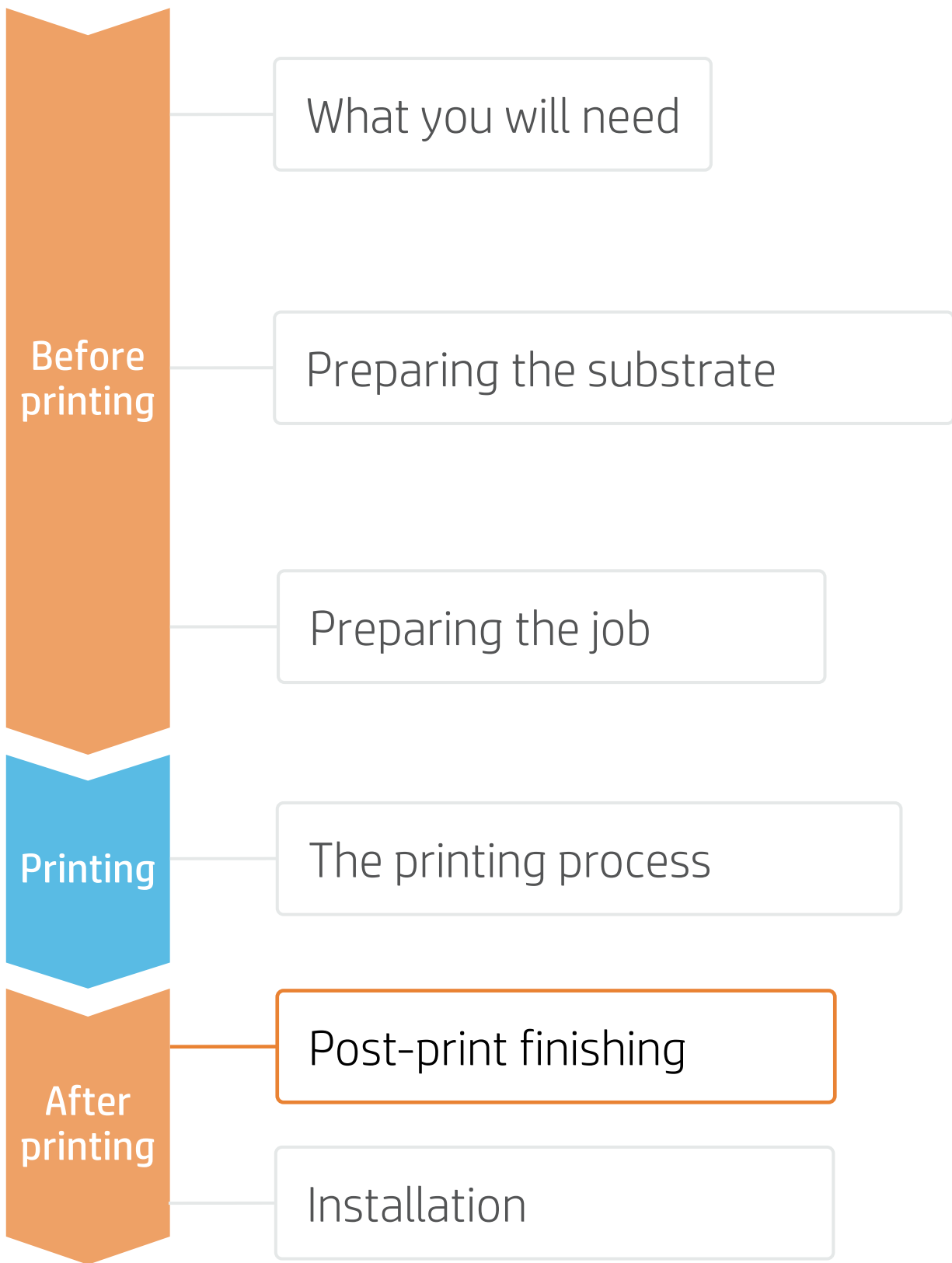💡 TIP: Before cutting the printed job, advance the substrate so that you protect the printed roll when it is unloaded.

Post-print finishing

Before printing
- What you will need
- Preparing the substrate
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Printing
- The printing process

After printing
- **Post-print finishing**
- Installation

1. Lamination (optional)

Film lamination is recommended for almost all vehicle wrap applications.

Use the film laminate recommended by the self-adhesive vinyl manufacturer.

Follow the lamination settings (speed, pressure, and temperature) specific for the self-adhesive vinyl+laminate combination.

⚠ IMPORTANT!: 3M MCS and Avery ICS warranties refer to specific film+laminate combinations.

💡 TIP: Remember to select a print mode with NO overcoat when laminating, or check the option **Optimize for lamination** in the RIP's printer settings.
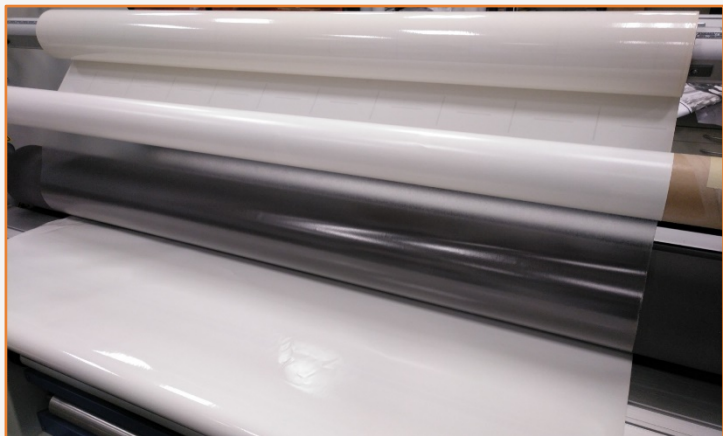
2.Cut

To cut the graphics automatically, you can use XY cutters or flat-bed contour cutters.

Except for some decals, most jobs will be cut with a "cut through" cutting type.

How to do vehicle wrapping using self-adhesive vinyl

Installation

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- What you will need
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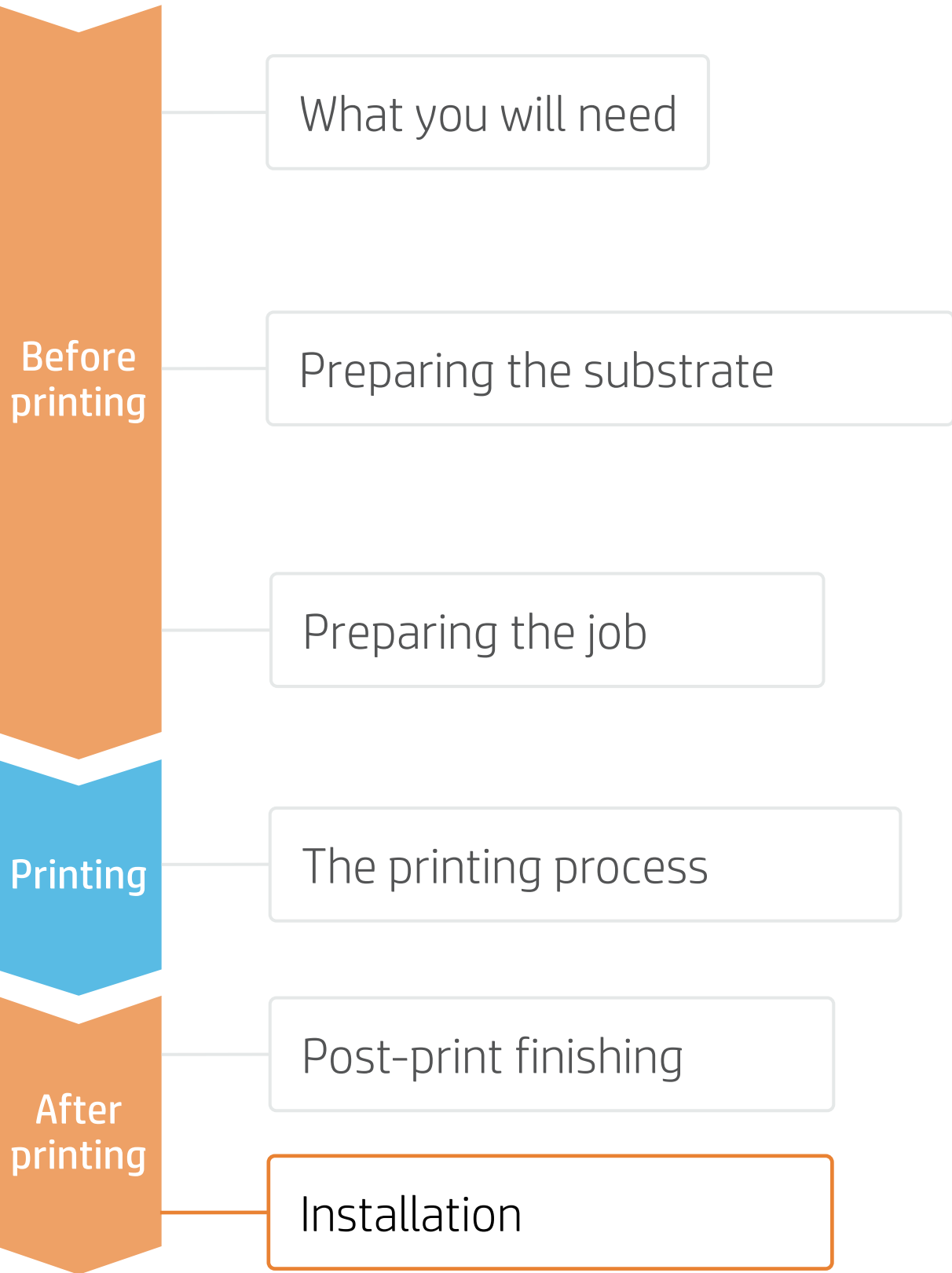- Preparing the job

Printing
- The printing process

After printing
- Post-print finishing
- Installation

1. Prior to installation

1 — Prepare the surface
- Be sure the surface is **clean and dry.**
- Consider the presence of rivets, joints, or other elements on the surface.

2 — Test the adhesion
Test your vinyl on the surface you intend to install the graphics on.

3 — Vinyl instructions
In all cases, follow the vinyl manufacturer's instructions.

2. Installation on smooth surfaces or curvy elements

Try to avoid the use of application fluids (e.g. water or soap solutions).

Apply the graphic using a squeegee with one edge protected with felt; this will avoid damaging the graphic.

⚲ TIP: Self-adhesive vinyls with air-release adhesive systems are much easier to install and avoid the presence of bubbles. Dot patterned adhesive systems don't require the use of a squeegee.

3.Installation on irregular surfaces

Rivets, grooves, or complex curves, are examples of irregularities present on vehicles.

Special tools are need to apply the film on these areas: e.g. rivet brush, heat gun, etc.

📝 NOTE: Take into consideration the stretching capabilities of your film + laminate construction. Do not exceed the stretch capability.

⚲ TIP: Some film manufacturers' instructions: 3M instructions , AveryDennison instructions
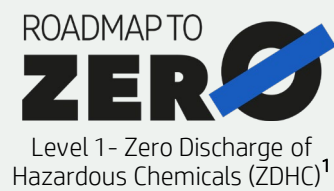
Remarks

- Flexible inks that dry just after printing, ready for instant lamination.
- No need to use the HP Overcoat Latex Ink when laminating.
- The new HP Latex inks are ideal for safe indoor applications. The newest HP Latex Inks are UL ECOLOGO and UL GREENGUARD GOLD certified, and conform to the Zero Discharge of Hazard Chemicals (ZDHC) manufacturing restricted substances list v1.1.
- With the HP Latex 700 and 800 Printer series, you can print on cast self-adhesive vinyl at speeds of up to 20 m²/h.
- Compatible with PVC-free wrap films.
- 3M and Avery Denninson provide application warranties for customers using their products in conjunction with HP Latex printers.

Learn more at:

- HP Latex Knowledge Center
- Learn with HP

Certifications:

ROADMAP TO ZERO
Level 1- Zero Discharge of Hazardous Chemicals (ZDHC)[1]

ECOLOGO PRODUCT CERTIFIED FOR REDUCED ENVIRONMENTAL IMPACT. VIEW SPECIFIC ATTRIBUTES EVALUATED: UL.COM/EL
Inks meet stringent health and environmental criteria[2]

GREENGUARD GOLD PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818
Unrestricted, full room. No-wait installation or lamination[3]

ICS Warranty Program

3M™ MCS™ Warranty

[1]Zero Discharge of Hazardous Chemicals. Applicable to HP Latex Inks. The ZDHC Roadmap to Zero Level 1 demonstrates that an ink conforms to or meets the standards of the ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) 1.1, a list of chemical substances banned from intentional use during production. ZDHC is an organization dedicated to eliminating hazardous chemicals and implementing sustainable chemicals in the leather, textile, and synthetics sectors. The Roadmap to Zero Program is a multi-stakeholder organization which includes brands, value chain affiliates, and associates, that work collaboratively to implement responsible chemical management practices. See roadmaptozero.com.

[2]Applicable to R Series and 700/800 Printer series HP Latex Inks. UL ECOLOGO® Certification to UL 2801 demonstrates that an ink meets a range of multi-attribute, lifecycle-based stringent criteria related to human health and environmental considerations (see ul.com/EL). HP is the only printing company with UL ECOLOGO® Certified inks in the "Printing Inks and Graphics Film" product category, see spot.ul.com/main-app/products/catalog/.

[3]Applicable to HP Latex Inks. UL GREENGUARD Gold Certification to UL 2818 demonstrates that products are certified to UL's GREENGUARD standards for low chemical emissions into indoor air during product usage. Unrestricted room size—full decorated room, 33.4 m² (360 ft²) in an office environment, 94.6 m²(1,018 ft²) in a classroom environment. For more information, visit ul.com/gg or greenguard.org.

In partnership with:

ZÜND swiss cutting systems

Summa Legendary Performance

FOTOBA

ONYX

CALDERA WIDE FORMAT IMAGING

SAi