



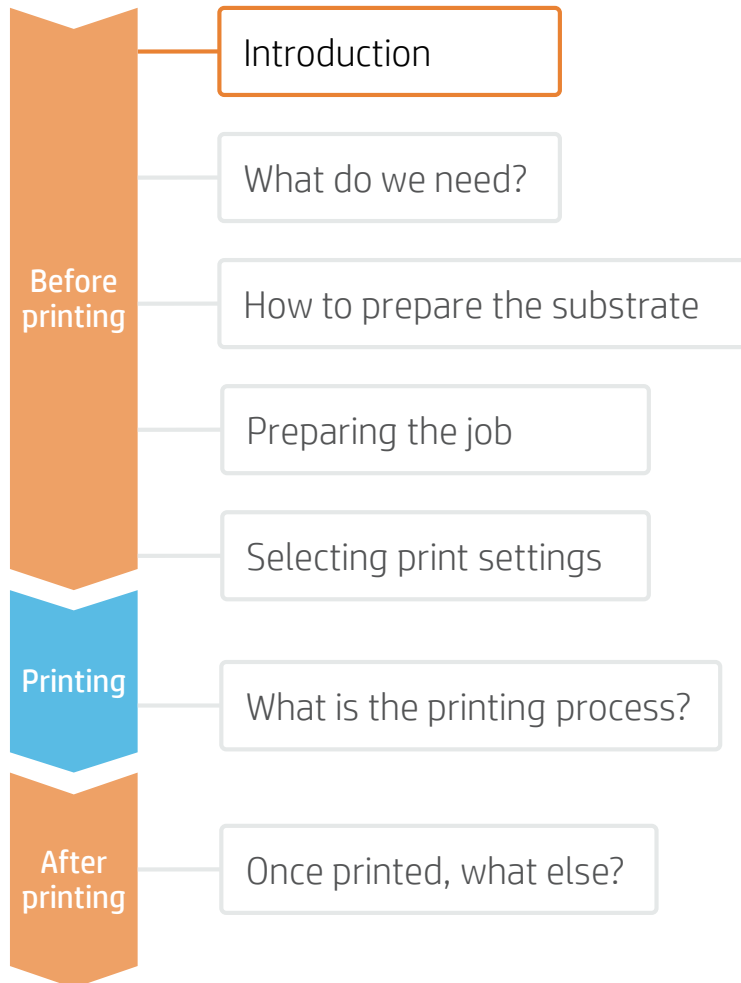
How to print Separation Panels with rigid materials

This document will explain how to produce
Separation Panels with rigid materials

How to produce Separation Panels with rigid materials



Introduction



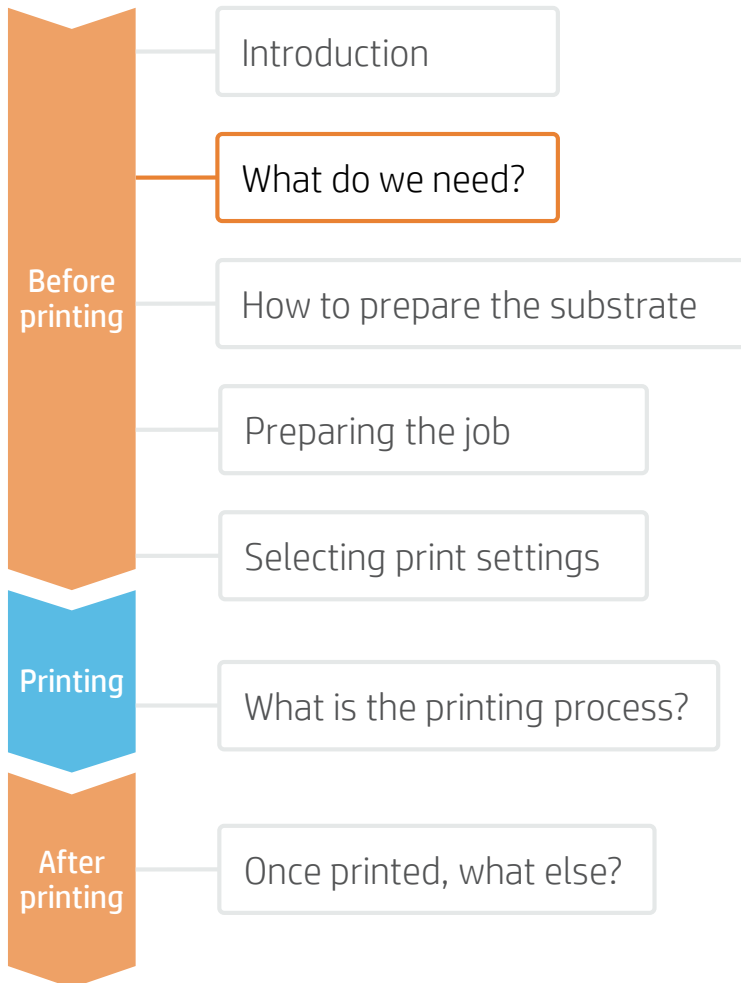
As the world slowly starts to come out of confinement, we are re-thinking how we keep our distance in public spaces. Organizations like retailers, restaurants, and office buildings are rapidly having to re-design their interiors to guard the safety of their employees and customers. Separation panels help to guarantee a safe distance between individuals, and also help to shield them from the pathogen carried through the air when someone sneezes, coughs, or breathes too close by.

Separation panels can be made of many materials, ranging from cardboard to acrylic and textile. Considering that these separation panels will possibly be a reality for a few months or longer, many business owners are starting to consider making these separating panels visually pleasing. HP Latex inks can offer a number of interesting benefits for any business owner who wants to enhance their functional panels to become decorative *and* functional.

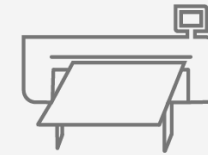
How to produce Separation Panels with rigid materials



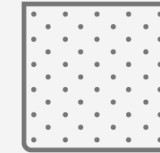
What do we need?



Rigid Board
Acrylic/
PVC Foam/Cardboard



HP Latex
R series Printer



Clean Cloth



Gloves



SW tools
(RIP, edition, etc.)



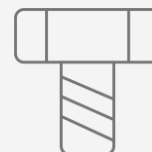
Liquid or Film
Laminate
(Optional)



Cutting device



Drill and metal drill bits
(optional)



Finishing parts: screws,
washers,..



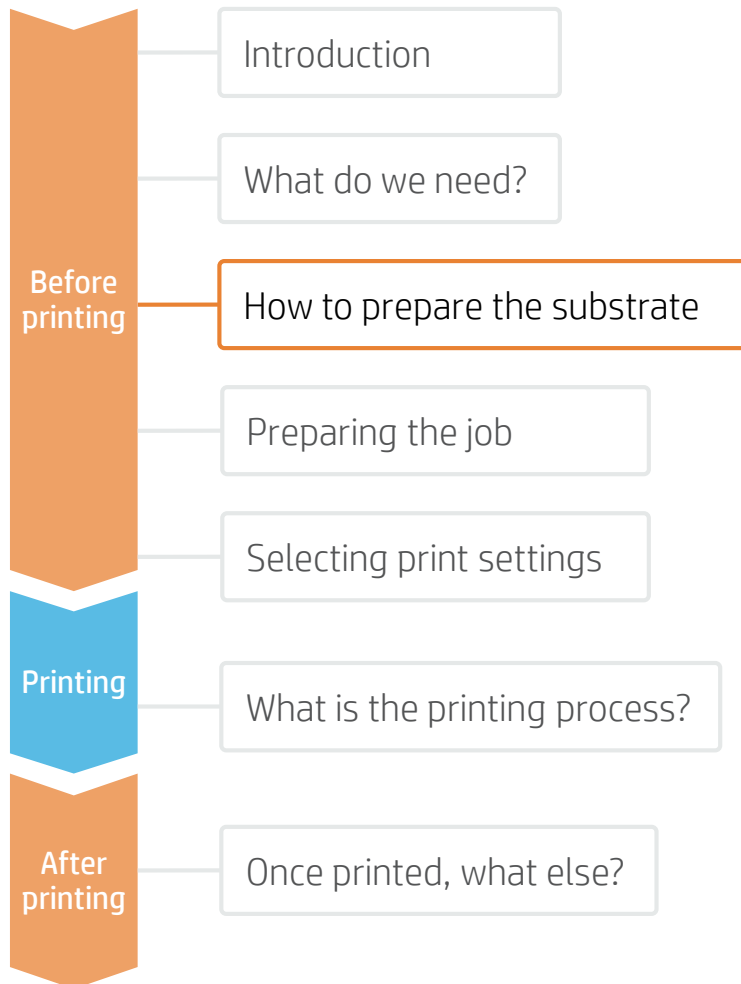
Primer
(optional)



Isopropyl Alcohol
(optional)

How to produce Separation Panels with rigid materials

How to prepare the substrate



1. Select Substrate

For transparent screens, the most common materials are **Acrylic boards** and **Polycarbonate (more suitable if impact resistance is needed)** or **Polystyrene (for an economical solution)**.

For opaque screens, **PVC Foams** are the most common material, while **Cardboard** offers an economic and more ecologically-friendly alternative.

Flexible **Self-adhesive Vinyl** can be applied to unprinted screens. However, this type of material will not be covered in this cookbook.

In this document, we will cover the most important steps for rigid materials. Check the following sites for specific information about:

- Acrylic: <https://hplatexknowledgecenter.com/applications/how-print-acrylic-boards-pmma>
- PVC Foam Boards: <https://hplatexknowledgecenter.com/applications/how-print-pvc-foam-board-hp-latex-r-series-printer>
- Self-adhesive Vinyl: <https://hplatexknowledgecenter.com/applications/how-print-separation-panels-self-adhesive-vinyl>



Considerations: Durability

For long term applications and/or **if the prints will be cleaned** regularly, it is recommended to protect the prints with either **Film** or **Liquid lamination**.

Acrylics tend to have worse scratch resistance and ink adhesion than other plastics. If extra durability is required, a **primer** can be applied prior to print.

Alternatively, an acrylic with digital surface treatment can be used: **Plaskolite Optix DA** is an enhanced acrylic for digital printing.

Polycarbonates may also be an option for Acrylic substrates in most applications, especially if laser cutting is not required for the final sign.

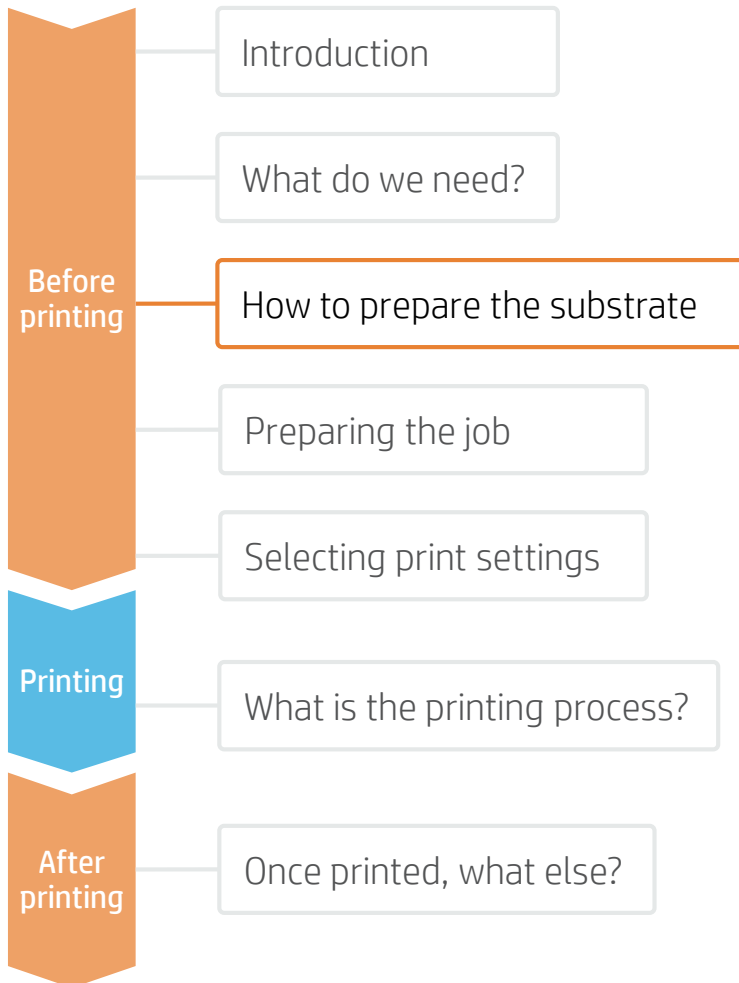
Considerations: Cutting method

Polycarbonates and Cardboards are not suitable for laser cutting.

How to produce Separation Panels with rigid materials



How to prepare the substrate



1. Ensure panel flatness

Some media tends to absorb moisture and lose its flatness. Ensure the board is flat prior to print.

NOTE: If the panel is deformed there is a risk of a printhead crash. The use of edge holders may be necessary when printing on waved substrates.



2. Media handling

Handle samples with care!

It is recommended to use gloves to prevent accidental cuts and also to avoid leaving fingerprints on the surface. Marks and scratches created prior to print will be visible after printing.



3. Cut (optional)

Cut the sample to the desired size using a device (table saw, cutting table...).

NOTE: This process can be also done after the job is printed. There is no ink chipping along the cut edge.



4. Remove the Liner

If the substrate has a protective film, peel it off from one side, leaving the other side protected until finishing or installation of the finished graphic.

Avoid touching the print surface with unprotected hands. Fingerprints may become visible after printing.



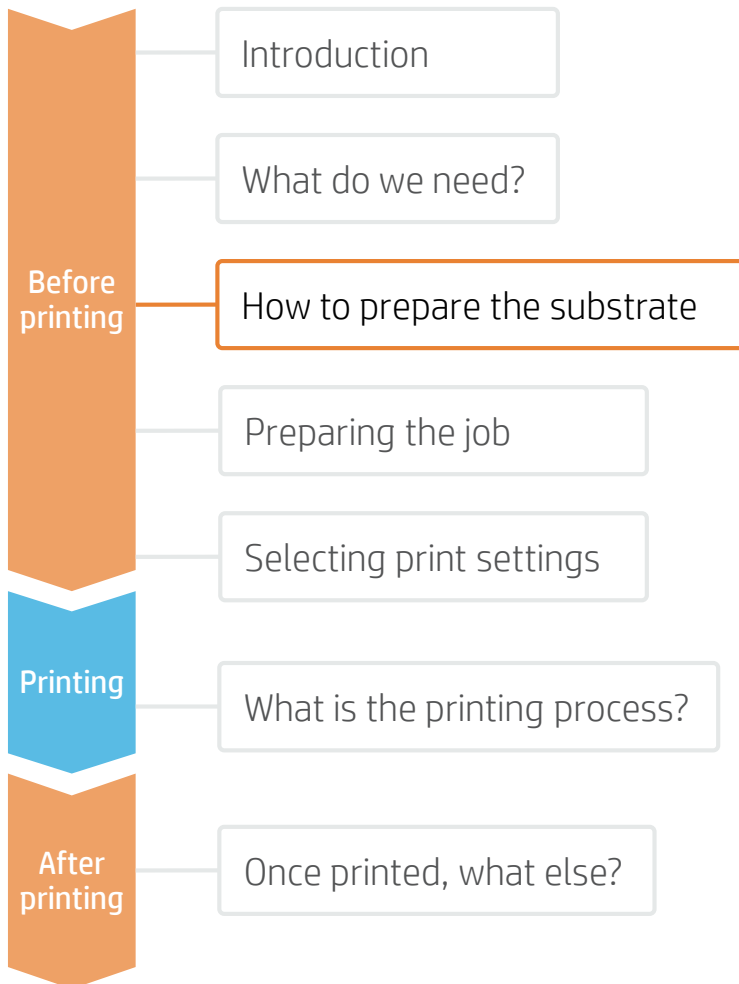
5. Cleaning

After the protective film has been removed, dust particles may tend to adhere to the print surface. Remove dust particles by wiping the surface with an anti-static cloth.

TIP: If an anti-static cloth is not available, use an Alcohol based cleaner with a lint free cloth and wipe the print surface. Let it dry before printing.

How to produce Separation Panels with rigid materials

How to prepare the substrate



Acrylic: Apply Primer (optional)



6. Primer considerations

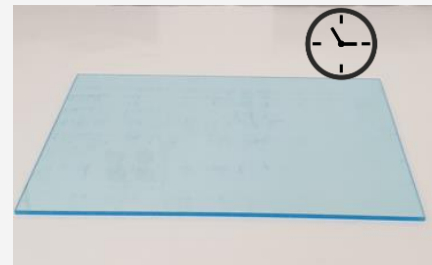
Acrylics tend to have worse scratch resistance and ink adhesion than other plastics. If extra durability is required, a primer can be applied prior to print.

If long term durability or chemical resistance is required, it is recommended to apply a protective lamination even when primer is used.

6a. Primer application (optional)

Apply the primer from edge to edge uniformly to avoid marks or lines.

 **TIP:** It is recommended to apply the primer to the whole surface in order to avoid visual differences. Manual application is recommended for small or medium size panels. (A3 / A2 sizes).




6b. Primer drying


Allow the primer to **dry for 30-60 mins** prior to print. It's recommended to print within the following **4-5 hours**.


Follow the instructions provided by the primer manufacturer.

6c. Primer durability

After printing, handle samples with care. Full ink durability is usually achieved 24h after printing.

 **NOTE:** Ink and primer adhesion depends on the surface chemistry and its interactions. We recommend a compatibility test with ink and primer prior to applying them to a whole job.

 **HEALTH & SAFETY:** Protective gloves and goggles are recommended when applying primers (check complete information in MSDS). A clean and ventilated room is required when applying most primers.

 **NOTE:** Primers tested by HP that have shown increased durability:

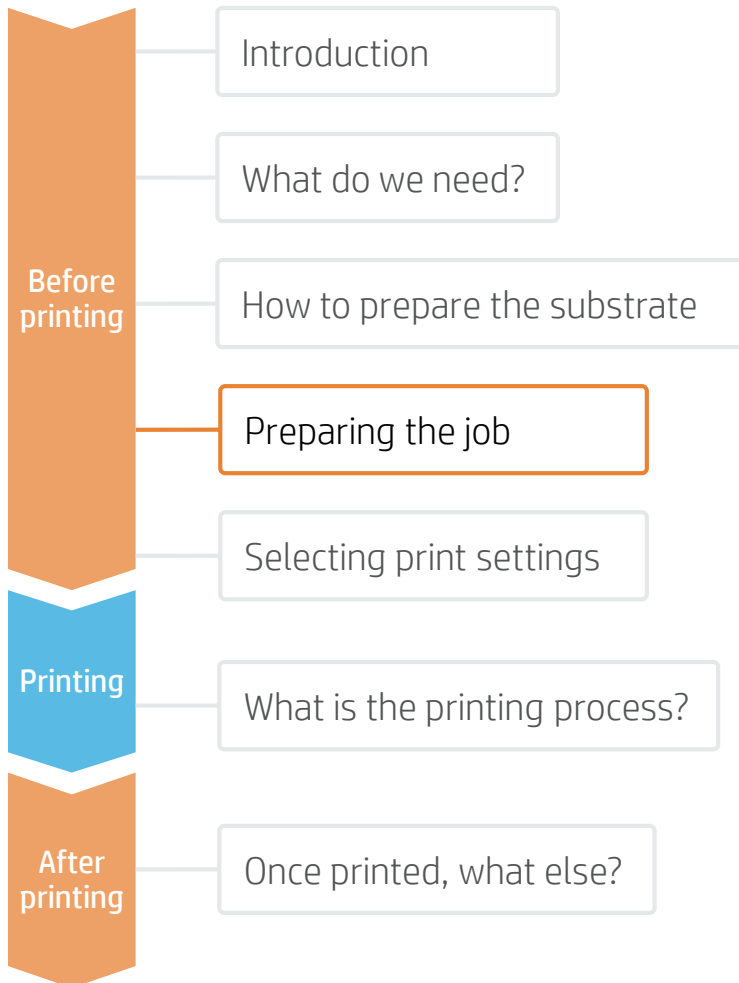
- Spandex DGPA,
- Fujifilm Sericol Uvijet Adhesion Promoter ZE 680

Tests performed on Evonik Plexiglass XT and Evonik Plexiglass GS.

How to produce Separation Panels with rigid materials



Preparing the job



1. Create the Image

Create the graphic using standard design tools (Photoshop, Illustrator...).

Make sure the image size fits the characteristics of your screen structure.

Some cutter manufacturers provide **ready-to-use panel templates** through their online tools (like Zund Design Center).

If the image will use white ink, define the corresponding image layers (see (see “Selecting Print Settings”).



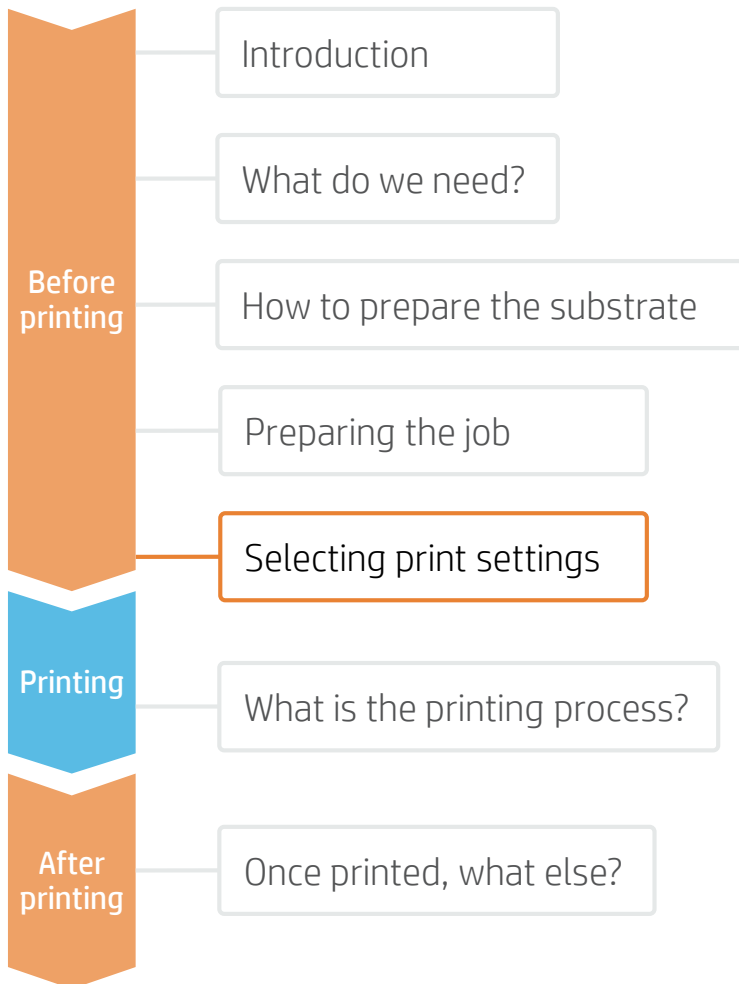
2. Add Cutting Marks (optional)

If you plan to use an automatic cutter, create the cutting job for your using your design tool or your RIP.

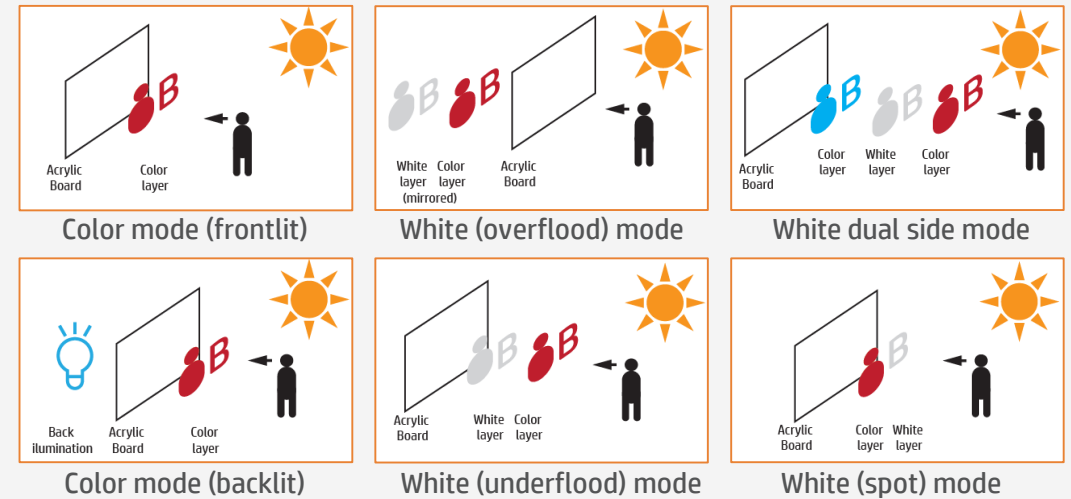
Check if your screen structure requires any special shapes or perforations.

How to produce Separation Panels with rigid materials

How to prepare the job?



Choose how white ink will be applied based on the application and substrate needs:



NOTE:

- **For clear materials:** Printing *White Overflow* or *Underflood* ensures color accuracy and opacity on printed areas.
 - If the prints will not be protected, *Overflow* will provide the best durability.
 - If images need to be seen from both sides, use *Dual Side* mode.
- **For white materials:** Color mode is the best option.
- **For colored materials:** Spot white mode allows you to print white images on non-white panels.



NOTE: To know more about how to **work with white ink**, please refer to the cookbook “How to print with White”:
<https://hplatexknowledgecenter.com/applications/how-print-white-ink-hp-latex-r-series-printer>



Media presets

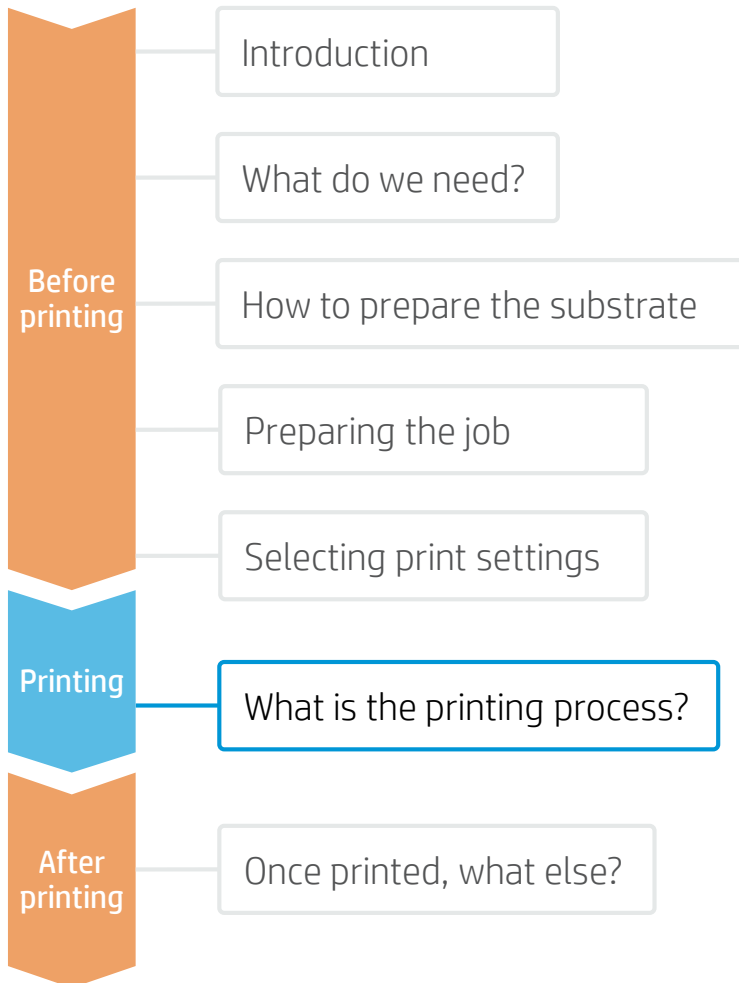
Many substrates have been tested at HP. In some cases, a media preset has been created and is available for downloading. Visit:
<https://www.printos.com/ml/#/homeMediaLocator>

If the media you’re using has an available media preset, we recommend downloading, installing, and using it on your printer and RIP.

If there is no media preset for the specific substrate being used, using the corresponding Generic preset is a good starting point. (e.g. Generic Plastic Solid for Acrylics).

How to produce Separation Panels with rigid materials

The printing process



1. Rip the artwork after selecting the corresponding media preset and print mode.

Send the output to the printer's nest.

NOTE:

Regarding printmode selection:

-Select **color** modes "**Fast/Outdoor Signage/Indoor Signage**" to print on white boards with thickness **equal or greater than 3 mm**.

-Select how white will be applied:

- **White UF** to print UnderFlood
- **White OF** to print OverFlood
- **White SP** to print white as a Spot Color.

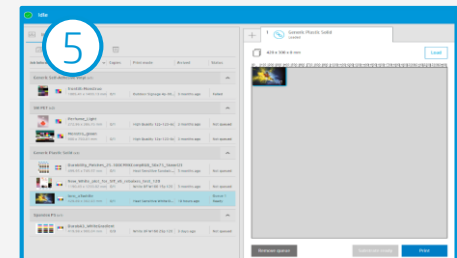
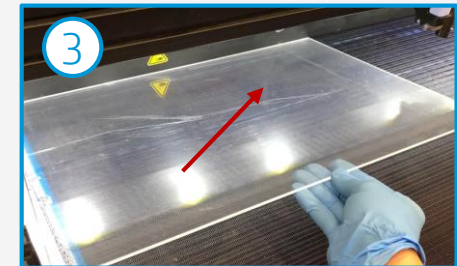
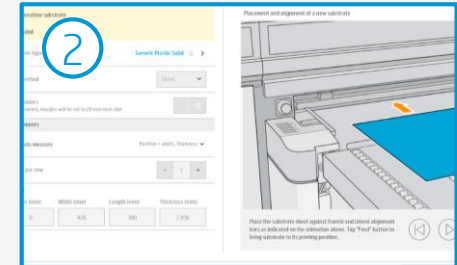
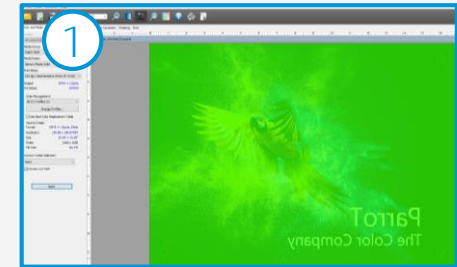
-Select **Heat Sensitive** modes "**Fast HS/Heat Sensitive**" to print on boards **thinner than 3 mm**. Those modes apply a smoother temperature ramp that helps to keep boards flat.

2. Load the substrate on the printer using the specific preset previously downloaded, or the corresponding *Generic*.

3. Follow the loading process.

4. In case you use a heat sensitive (HS) print mode, activate the curing lever.

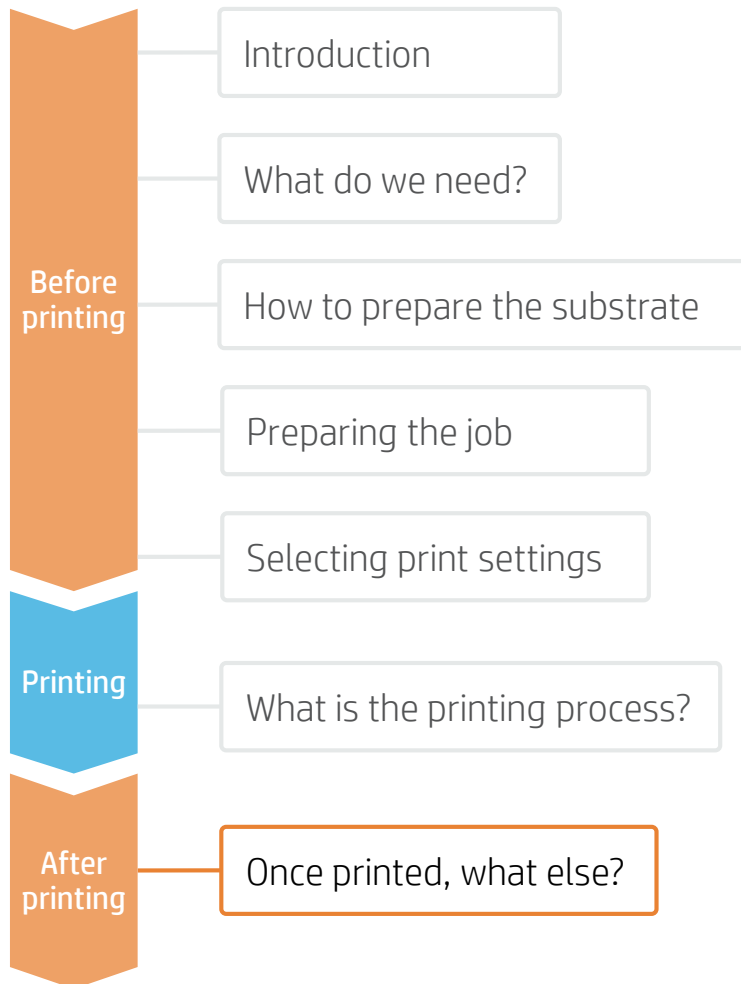
5. Select the ripped substrate and drag it to the printer job.



Press print

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Once printed, what else?

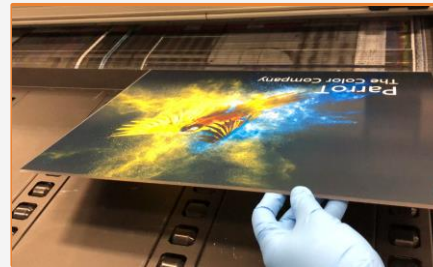


Here we present the most common and important post-processing steps for all materials.



For specific information about your material and detailed information on cutting, drilling, gluing, hot bending, and thermoforming, check the corresponding cookbooks:

- Acrylic: <https://hpllatexknowledgecenter.com/applications/how-print-acrylic-boards-pmma>
- PVC Foam Boards: <https://hpllatexknowledgecenter.com/applications/how-print-pvc-foam-board-hp-latex-r-series-printer>



1. Handling Samples

HP recommends using gloves when handling samples immediately after printing, as the panel will be hot. Use caution when loading or lifting sheets from the tables, as the media and ink can be scratched.

Some materials (like PVC) may present a slight waving immediately after printing. Let the samples rest on a flat surface for 5-10 mins to recover its original shape. If deformation is not acceptable after 10 mins, consider reducing the curing temperature and printing again.

NOTE: Ink adhesion may improve over 24 hours. However, it is possible to handle, machine, and finish samples immediately after printing.



2. Protect the Prints (Optional)

Apply film or liquid lamination to the prints for extra durability against chemicals (cleaning or sterilizing agents) and for long term use.

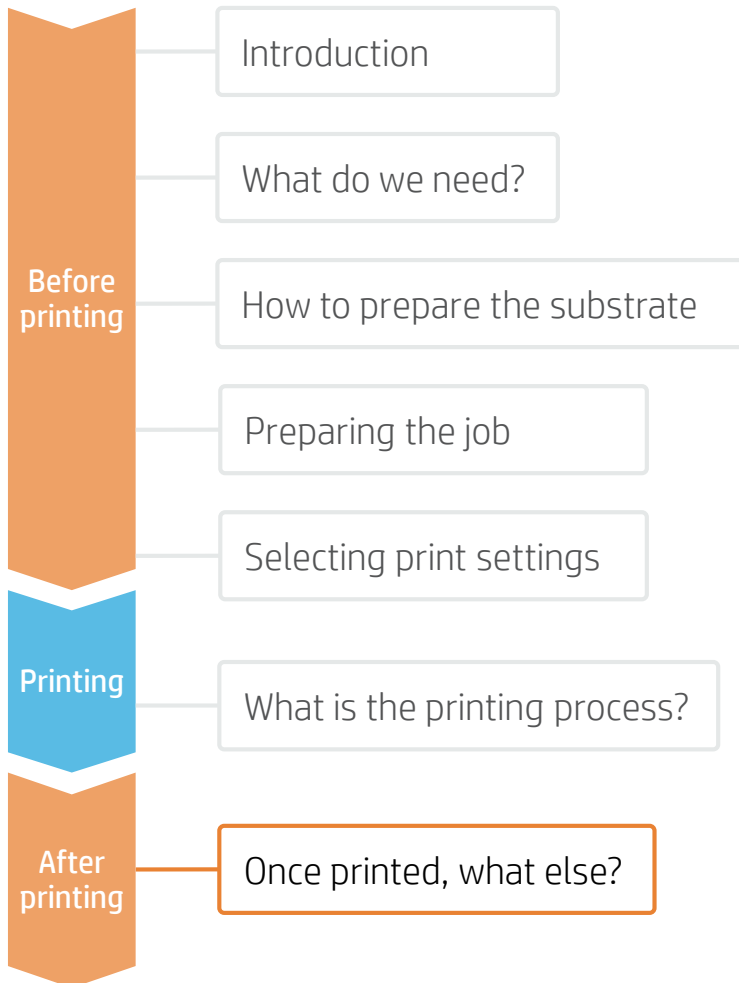
NOTE: Lamination can be performed immediately after printing. You do not need to wait.

NOTE: We recommend storing laminated rolls with the laminate facing outward.

How to produce Separation Panels with rigid materials



Once printed, what else?



3 a. Cutting with router

Cut the samples to the final dimensions if you have not done so previously.

NOTE: We recommend not cutting different materials with the same drill. Reserve drills to cut the same category of materials to get the most accurate cut. For further information on cutting tools and settings, check:

- ZUND cutters: <https://hpllatexknowledgecenter.com/blog/zund-cutting-systems-your-choice-cutting-rigid-substrates>
- SUMMA cutters: <https://hpllatexknowledgecenter.com/blog/hp-latex-r-series-printers-cutting-rigid-substrates-summa>



3 b. Cutting with laser

Acrylics printed on Latex can be cut using laser cutters. This process allows materials to have a smooth edge finish.

NOTE: In some cases, a “shadow” image may appear close to the edge when cutting printed samples. HP recommends leaving an unprinted border when cutting with laser.



4. Finishing the cut edge

If samples are not cut using a laser, there are different methods to finish the edge. Sanding, scraping, or flame polishing are possible finishing options.

HP recommends to polish acrylic boards avoiding the printed area.



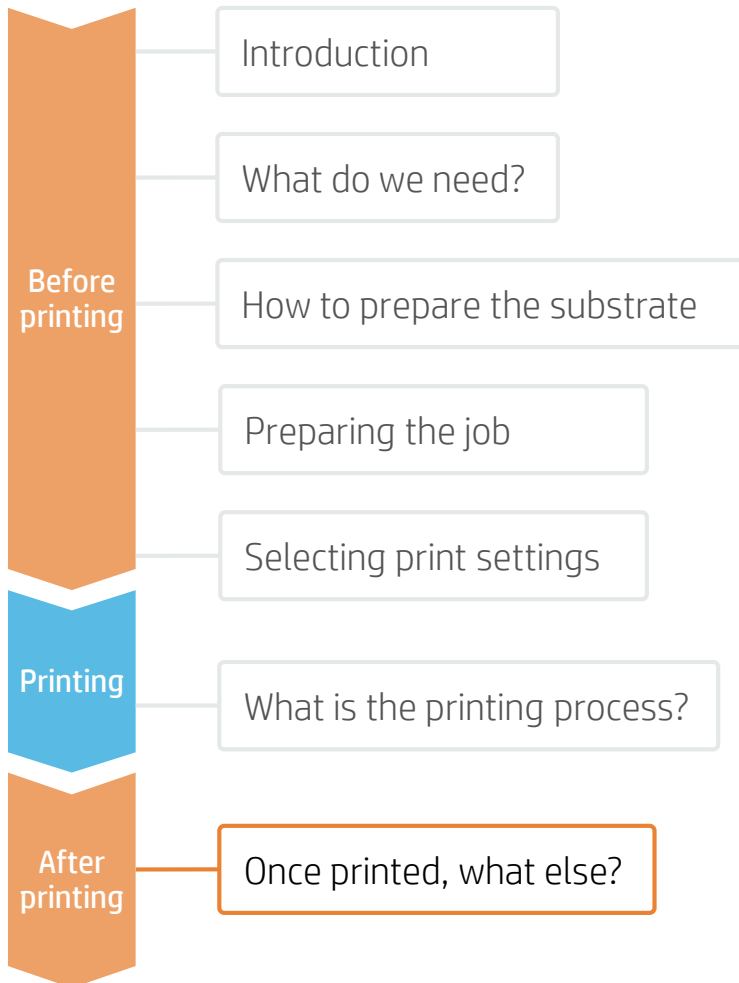
5. Substrate expansion

Many materials (Acrylic, PVC, Cardboard...) expand and contract with temperature changes. When installing acrylic panels, it's very important to consider media expansion to avoid boards cracking. Drill oversized holes to allow boards to absorb expansion.

For example: Acrylic expands approx. 0.075 mm/m/K (0,000045in/in/F).

How to produce Separation Panels with rigid materials

Once printed, what else?



6. Mount and install

Position legs, hangers, or other accessories and place them in their final location.

Make sure the panel is stable.

Most screens can be replaced, removed, stored, and transported easily, as many times as needed.



7. Cleaning and Maintenance

If screens need to withstand regular cleaning or contact with water and chemical agents, it is recommended to do the following:

- 1- Protect the prints, either with film or liquid lamination.
2. If not protected, clean with a dry soft cloth. In case extra cleaning is needed, we recommend to clean with water and a clean soft cloth only.

Acrylics do not support the use of alcohol, benzine, or brushes to clean them.



How to produce Separation Panels with rigid materials



Learn more at:

www.hplatexknowledgecenter.com

Partnership





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