

# HP Support document

## HP Designjet 30, 90 and 130 Printers - Testing Results for Ink using Fine Arts Media and Laminating on HP Designjet 30, 90 and 130

---

### In this document:

- [Testing Results](#)
  - [Types of Tests Conducted](#)
  - [Waterfastness](#)
  - [Frequently Asked Questions](#)
- 

### Testing Results [Top of Page](#)

HP has evaluated 12 different media for the fine arts market. This document describes the tests and the results. At the end, is a frequently asked question section on this subject

Four different brands were evaluated:

- Arches Infinity Texture 230
- Arches Infinity Smooth 230
- Digital Arts Supplies Fine Arts Glossy Canvas
- Digital Arts Supplies DAS Geo Canvas
- Hahnemuhle Photo Rag 188
- Hahnemuhle Photo Rag Duo 196
- Hahnemuhle William Turner Textured 190
- Hahnemuhle William Turner Textured 310
- Hahnemuhle German Etching Board 310 / Lysonic Standard Fine Art

### Types of Tests Conducted [Top of Page](#)

HP applied the following tests:

- **Thickness/handling tests:**

The capability of the printer to pick a given media from the tray or from the roll taking into consideration its height and surface composition (this is what we call “picking”): This is to check whether you can use the media with these printers.

- **Recommended Print mode (Driver Settings):**

Which media should be selected in the driver in order to print at excellent Image Quality?

- **Color Profile:**

A color profile will guarantee that the color of the output is maximized for the media chosen. HP will develop a color profile for those media that pass the previous tests.

● **Waterfastness:**

This is a test to see whether a combination of ink and media is resistant to things like saliva or moisture on hands caused by humid conditions. By applying a post-coating treatment (in this case a liquid lamination using a spray), we can protect inkjet prints from damage, specifically, water and fading agents. All testing was performed using internal HP testing methods, "Indoor Water Resistance" as per ISO 18938.

**NOTE:** Each sample was sprayed, allowed to dry for up to 2 hours until a second coat was applied. Then the samples were allowed to "dry" for 24 hours prior to being subjected to the indoor water resistance test

The results:

- **Post-lamination:** Whether the media has a defect (curling, bleeding etc) after the application of the laminator
- **Wiping water:** Whether the laminator adds protection by spreading water on surface with a humid cloth
- **Water soak:** Whether the laminator adds protection to being permeated with water.

The laminators tested were:

- Lyson PrintGuard from Lyson (<http://www.lyson.com>)
- Clearjet from Clearstar Coatings (<http://www.clearstarcorp.com>)
- ClearShield from Clearstar Coatings (<http://www.clearstarcorp.com>)
- Bulldog Ultra Matte from Bulldog (<http://www.bulldogproducts.com/coating/bulldogcoating.htm>)
- Print Shield from PremierArt (<http://www.premierimagingproducts.com/prprprsp.html>)

○ **Lightfastness:**

How many years the print can last without losing color when it is exposed to external components like the sun, ozone, etc. The data is provided covers with glass and without glass usage. Samples "covered with glass" can be assumed to have a similar performance of samples laminated and not covered with glass when displayed.

- The recommendations after our tests were:

Media Name	Size	Picking		Media	Driver Settings	Print Quality	Lightfastness	
		Tray	Rear				without Glass	with Glass
Arches Infinity Smooth 230gr	B	Yes	Yes	HP Premium	Maximum (Best may work in some cases)	10.8 years	24.3 years	
	C	Yes	Yes	Heavy Weight coated				
	Roll	No						
Arches Infinity Textured 230gr	B	No	Yes	HP Premium	Best	12.1 years	31.9 years	
	C	No	Yes	Heavy Weight coated				
	Roll	No						
DAS Fine Arts Glossy	A5	No	No	N/A	N/A	N/A	N/A	
DAS Geo Canvas	A5	Yes	Yes	HP Coated	Best			
Hahnemuhle	B	Yes	Yes	HP	Best	11.8	31.6	

	Picking			Driver Settings		Lightfastness	
Photo Rag 188gr	C	Yes	Yes	Premium Heavy Weight coated		year	
	Roll	N/A					
Hahnemuhle Photo Rag 196gr	B	Yes	Yes	HP Premium	Best		
	C	Yes	Yes	Plus Photo and Proofing Gloss			
Hahnemuhle William Turner 190gr	B	Yes	Yes	HP Premium	Best	10.5 years	30.4 years
	C	Yes	Yes	Heavy Weight coated			
Hahnemuhle William Turner 310gr	B	Yes	Yes	HP Coated	Maxium (BEST may work in some cases)	11 years	29.4
	C	Yes	Yes				
Hahnemuhle German Etching 310gr	B	No	No	N/A	N/A	N/A	N/A
	C	No	No				
Hahnemuhle Tochon 285gr	B	No	No	N/A	N/A	N/A	N/A
	C	No	No				
	Roll	N/A					

## Waterfastness [Top of Page](#)

**Here are the results for 'Waterfastness'. In the Post-Lamination column, you will find the laminator that performed best for this paper type:**

Media Name	Post-Lamination	Wiping Water	Water Soak
Arches Infinity Smooth 230gr	PrintShield	Yes	No
Arches Infinity Textured 230gr	Bulldog Ultra Matte	Yes	Yes
DAS Fine Arts Glossy	No	No	No
DAS Geo Canvas	ClearShield	Yes	No
Hahnemuhle Photo Rag 188gr	Bulldog Ultra Matte	Yes	Yes
Hahnemuhle Photo Rag 196gr	Bulldog Ultra Matte	Yes	Yes
Hahnemuhle William Turner 190gr	Curl	Yes	Yes
Hahnemuhle William Turner 310gr	ClearShield	Yes	

Media Name	Post-Lamination	Wiping Water	Water Soak
Hahnemuhle German Etching 310gr	N/A	N/A	N/A
Hahnemuhle Tochon 285gr	N/A	N/A	N/A

In the following web site link, you will find related information for each media file: “How to print from Adobe PhotoShop” instructions, Media recommendations and ICC Color profiles:

[http://www.designjet.hp.com/downloads/iccmedia\\_profiles.html?pageseq=637848](http://www.designjet.hp.com/downloads/iccmedia_profiles.html?pageseq=637848)

Select the product hp designjet 30 or hp designjet 90 or hp designjet 130. There are also find ICC profiles for the following media:

- Lysonic Photo Gloss
- Lysonic Photo Matte
- Lysonic Soft Fine Art
- Ilford Smooth Gloss Paper
- Ilford Smooth Heavyweight Matte
- Ilford Smooth Pearl Paper

Finally, it is emphasized that these profiles and media recommendations are provided "AS IS" with no guarantees, warranty or support, expressed or implied.

## Frequently Asked Questions [Top of Page](#)

**What is the maximum and minimum media thickness I can use to print on an HP Designjet 30/90/130 series printer?**

Max Thickness	Normal Sheet/Media	Envelopes
Tray1	Up to 0.008 inches / 0.203 mm	Up to 0.015 inches / 0.381 mm Roll
Roll (only 90r, 30nr, 130nr)		N/A
Rear Path	Up to 0.015 inches / 0.381 mm	N/A

### How can I solve media curl?

You can remove the curliness of the media by using a manual method. Use the following procedure:

1. Take a tube (for instance, the core of an empty roll).
2. Look for a flat area as big as the print to be uncurled.
3. Place the print on the flat area, with the image upside down (make sure the ink is completely dry)
4. With downward force, roll the paper onto the tube and towards the center of the flat area
5. Once done, hold the print rolled for half a minute.
6. Unroll the tube.
7. Repeat these steps 2 or 3 times until the curl disappear.

When printing a high ink density prints in hp premium plus photo and proofing paper from a roll, I can see marks, like as if the media was folded, why is that?

It may happen that when printing high ink-density images (images with dark colors and/or big fill areas of the same color) in hp premium plus photo and proofing paper

some media marks appear. These media marks are almost invisible and you have to play with the light reflection to see them properly. The cause is based on two factors:

- When you have high-density images, the paper weighs more.
- When printing from roll, there is more tension on the paper
- This causes some media marks produced by the printer's roller, which produces a mark similar to folding the paper (although on a much minor scale)

#### Workaround

The workaround would be to use sheets, since the tension on the paper is less.

**NOTE: This problem is only seen when printing a high-density image.**

#### Lamination

How can I improve water fastness resistance and/or light fastness longevity for my prints?

Water fastness resistance and light fastness longevity can be improved by applying a protective material to the surface of the media. This protective material isolates the ink formulation contained in the media coating from outside influences such as air, humidity, atmospheric contaminants, UV light damage along with the abrasions, scuffing and fingerprints that always seem to occur with normal handling.

The type of protector will vary depending on the surface coating (glossy, semi-gloss, coated), also the type of ink (dye, pigmented) and the method of applying the protector. On this last topic, there are two main points:

1. Liquid lamination: This is recommended for media with higher media texture/tactile feel (like canvas). Liquid lamination can be applied with spray, roll, brush, meyer rod or machine.

Note on sprays:

They are a concrete method of liquid lamination. Its advantage is that it is easy to apply. Its inconvenience is that you have to take precautions due to health and environmental hazards involved:

- Do not allow direct contact with the skin: Wear a face mask and gloves whenever spraying
- Be aware they are highly inflammable
- Be aware you will need a well-ventilated area for indoor application

•••

2. Film Lamination: Recommended for media with no media texture/no tactile feel (such as a photographic finish). Usually this lamination is made by hot (thermally) or cold (adhesive, non-thermal) sealing of the media with a thin plastic (the thickness of the plastic may vary). Here the detail of the media may be lost, therefore is recommended for media without detail / texture.

In the following link, you will find a recommendation of which method you should apply for HP media:

<http://h41186.www4.hp.com/country/us/en/supplies/laminates.html?pageseq=916506>

For third party media, HP has tested some spray-on products. See previous question.

**NOTE: Information about lamination is extracted with permission from the book "Mastering Digital Printing, Second Edition" Thomson Course Technology PTR, 2005, ISBN: 1592004318**

Do you have a list of companies that provide lamination solutions?

Here you have a sample of companies offering this solution:

For liquid laminates:

- LYSON: [www.lyson.com](http://www.lyson.com)
- CLEARSTAR - [www.clearstarcorp.com](http://www.clearstarcorp.com)

- INKWARE - [www.inkware.com](http://www.inkware.com)
- SEAL - [www.sealgraphics.com](http://www.sealgraphics.com)
- NAZDAR - [www.nazdar.com](http://www.nazdar.com)
- NESCHEN - [www.neschenusa.com](http://www.neschenusa.com)
- ONE SHOT - [www.1shot.com](http://www.1shot.com)
- SUPER FROG - [www.superfrog.com](http://www.superfrog.com)
- BULLDOG: <http://www.bulldogproducts.com/coating/bulldogcoating.htm>

For film laminates:

- 3M - [www.3m.com](http://www.3m.com)
- Avery Graphics - [www.averygraphics.com](http://www.averygraphics.com)
- CODA - [www.codamount.com](http://www.codamount.com)
- Drytac - [www.drytac.com](http://www.drytac.com)
- GBC - [www.gbc.com](http://www.gbc.com)
- MacTac - [www.mactac.com](http://www.mactac.com)
- NESCHEN - [www.neschenusa.com](http://www.neschenusa.com)
- Oracal USA - [www.oracal.com](http://www.oracal.com)
- SEAL - [www.sealgraphics.com](http://www.sealgraphics.com)
- USI - [www.usi-laminate.com](http://www.usi-laminate.com)
- 

Does lamination affect the print color longevity?

Yes, it does. Lamination may affect color stability. Overall, we can say lamination improves longevity. Unfortunately, there is no rule of thumb for knowing how much it is affected. Many variables have to be taking into account.

Have HP tested the waterfastness on photographic media in the HP Designjet 30/90/130 series printers?

Yes. Testing has been done on HP Premium Plus Photo and Proof Semi-Gloss and HP Premium Plus Photo and Proof Gloss with:

- Bulldog Ultra Matte from Bulldog  
(<http://www.bulldogproducts.com/coating/bulldogcoating.htm>)
- ClearShield from Clearstart (<http://www.clearstarcorp.com>)

With excellent results, providing coverage for wiping and soak on water

Does lamination affect the appearance?

**NOTE: Information extracted with permission from the book "Mastering Digital Printing, Second Edition" Thomson Course Technology PTR, 2005**

Yes, it might. Even if the lamination does not affect print quality (as seen in previous question), it might affect appearance. However, this may be a benefit or a drawback depending on your intention. Sprays are usually used to protect, but sometimes they are also used to even out gloss differential and to punch-up or add depth to color intensity (increasing its gamut). The other benefit is that the media could be more flexible, allowing easier handling (for instance suitable for canvas type of media). In general, we can say:

- Gloss laminates tend to enhance colors (make them brighter or more vibrant). As with any shiny surface, glare can become a problem in well-lit areas.
- Satin/Luster laminate tends to not promote color changes when applied to a print.
- Matte laminates tend to dull the colors.

Liquid laminates come in the form of gloss, satin/luster and matte finishes. These same benefits can become drawbacks depending on your final goal.

Does lamination affect the print quality?

It could do. Not all laminations work smoothly with all sets of media and ink. Be aware a laminator might produce curling and bleeding among other print quality defects.

Make sure you know for sure if a lamination will work for a set of ink and media before buying or applying it.

**When applying lamination, how long do you have to wait until after the printer has finished printing?**

**It is essential that the image is completely dry before applying any form of lamination. The amount of time will depend on the type of ink, type of media and environmental conditions.**

**For example, film lamination, where heat is applied for lamination. If the ink is not dry, it will evaporate with the heating.**

**How long does it take a spray to dry?**

**This will depend for each media, ink and spray.**

**Can I use a lamination in very small jobs?**

**Yes, you can.**

**Can I use a lamination with large jobs?**

**Yes, you can.**

**I have an image on hp premium plus photo satin and/or the hp premium plus photo gloss and I need to laminate it, what do you recommend?**

**We recommend using Bulldog Ultra Aerosol Liquid Lamination:**

**<http://www.bulldogproducts.com/coating/bulldogcoating.htm>**

**This protector will work perfectly well for those media. It dries in 25 minutes (remember that first the print should be completely dry, then you can apply the spray), and once applied your print will be waterproof.**

**As a drawback, it has a strong solvent smell, especially as you apply it.**

#### **Content feedback**

To help us improve our content, please provide your feedback below.

1. How does the information on this page help you?

very helpful  somewhat helpful  not helpful

2. Was it easy to find this document?

easy  not easy

3. If you selected not easy for question 2, in which section did you expect to find it?

4. Comments: