

HP LATEX TECHNOLOGY

# Thermofforming



Expand into value-added applications



# Say YES to high-value forms



## HP Latex technology brings new opportunity for legacy process

Beginning with the signage and display graphics segment, the rise of digital technology has provided the opportunity for short-run, full color work onto a wide array of substrates; for the industrial segment, it has changed the models under which certain products are made; for the commercial printing segment, digital has delivered higher customization, shorter print runs, and tighter messaging.

Driving much of this change is inkjet technology. Starting more than two decades ago as an option for low-durability, short-lived signage solutions, inkjet has, through ongoing developments in technology and ink formulations, blossomed into a technology that can serve numerous markets for numerous purposes, all the while providing opportunity among new and existing print applications.

Recent developments in HP's water-based HP Latex Inks, coupled with the unique capabilities of HP's R Series Latex printers, have opened new opportunities in thermoforming—a legacy process given new energy by digital printing. It gives graphics producers and industrial printers the opportunity to pivot toward new areas of interest, and to access specialized revenue streams. According to Thomas Giglio, North American Latex Business Lead for HP Graphics Solutions Business, "Thermoforming, while not a large market, is a small, blue ocean."

## What is thermoforming?

For those who are new to it, thermoforming is a process in which a rigid sheet of plastic is heated to a temperature that allows the plastic to stretch. The heated plastic is laid over a three-dimensional form and—drawn down by either gravity, vacuum, blow forming, or mechanical means—is stretched to match the shape of the form. The formed plastic is then cooled, retaining its new shape. For printed applications, the printing takes place before the thermoforming process is done.

# Key markets and applications

## OUTDOOR SIGNAGE

For outdoor signage applications, thermoforming can add a literal, three-dimensional “pop” to logos, messaging, and other design elements, providing not only a more compelling visual display, but also a significant “value-add” over basic two-dimensional signage. Gas stations and fast-food signage are excellent examples. HP Latex technology enables to create stunning large signs with deep draw designed to resist color density loss due to stretching of the media.

## INDUSTRIAL AND AFTERMARKET

This segment includes the printing and thermoforming of parts that either comprise (OEM) or enhance (aftermarket) products. Examples include formed, plastic fenders of all-terrain vehicles, custom add-on windscreens for cars and trucks, and custom-printed shower enclosures for recreational vehicles—a new opportunity for customization in a highly-competitive market. HP Latex Inks enable high-quality plastic manufacturing and a deep draw, with reduced iterations.

## WHY EXPANDING INTO DIGITAL THERMOFORMING?



### Growing cross-industry demand

Thermoformed plastics for printing market in North America recorded demand of 5,156.4 tons in 2018, and is projected to reach 6,978.7 tons by 2025, ascending at a CAGR of 4.2% over the forecast period.<sup>1</sup>



### Better net profitability

Thermoformed printed applications command a higher price than traditional ones, leading to a lower price competition due to the lower number of players in the market. Moreover, the lower printing costs of digital printing are expected to increase profit margins and drive better net profitability.<sup>1</sup>



### Increased projects opportunities

The cost-effective short-run printing of thermoformed parts offers extensive print customization, thereby increasing the time to market and beating deadlines.<sup>1</sup>

## BACKLIT DISPLAYS

Backlit displays can be wholly formed or embellished using thermoforming and can be integrated into elements such as arcade and gaming machines. As the name implies, backlit displays require some sort of light source (usually electrical) to illuminate the thermoformed display from behind. HP offers the possibility to create backlit displays that are capable of grabbing customers’ attention with vibrant colors and high-opacity white.<sup>2</sup>

## POINT-OF-PURCHASE DISPLAYS

Innovative point-of-purchase (POP) displays utilize thermoforming to present branding in three dimensions, increasing the sensory “punch” of a printed product, while increasing interest and visibility for the product highlighted. With HP Latex technology, you can create brilliant POP displays with eye-catching details and rich colors.



## HP solutions for thermoformers

HP offers three inkjet printers as a part of the HP Latex R Printer series that are uniquely suited to the needs of thermoformers, providing solutions and expertise that help ease the journey of digital conversion and create a path toward innovation and success. The HP Latex R1000 flatbed printer offers a print width of 64 inches. The HP Latex R1000 Plus Printer adds a roll-to-roll capability, white ink, which is essential for second-surface and backlit printing applications, and an expanded warranty plan. The HP Latex R2000 Plus Printer takes all the benefits of the HP Latex R1000 Plus Printer and expands the print width to a full 98 inches. All HP Latex R Printer series come standard with white ink.

To learn more about the HP Latex R series printers and how they can be used to transform thermoformed products and the companies that produce them, visit [hp.com/us-en/printers/large-format/latex-thermoforming.html](https://hp.com/us-en/printers/large-format/latex-thermoforming.html).

### Benefits of printing with the HP Latex technology

- The glossiest of whites<sup>2</sup> that resists yellowing over time.
- Rich colors designed to resist color density loss when stretched into deep-draw forms.
- No longer curing time or cut-out decals overlaying, shortening print processing and opening new businesses.
- Produce odorless prints<sup>3</sup> and tap into decorative prints with water-based HP Latex Inks.



**The HP Latex R Printer allows us to print on many different substrates that we weren't allowed before. It's a game changer.**

Ben Zaccagnino, Co-Owner, United Visual Branding

United Visual Branding, a sign company located in Oldsmar, Florida, currently utilizes HP Latex Technology for some of its thermoformed signage products. Among the advantages they have experienced are easy access to second-surface printing, odorless prints,<sup>3</sup> and faster turn times due to HP Latex Ink prints that come off the printer completely dry. This allows HP Latex users to move printed pieces straight into finishing. According to Lisa Gerstner, the company's Production Manager, using HP inkjet technology allows the company to print directly to the substrate and then thermoform. She estimates the change has enabled United Visual Branding to cut its production time in half by removing certain manual processes.

Learn more at: [largeformat.hp.com/us/story/united-visual-branding-uvb](https://largeformat.hp.com/us/story/united-visual-branding-uvb).

<sup>1</sup> Copyright © 2019 Grand View Research, Inc., USA. Thermoformed Plastics for Printing Market. Market estimates and forecasts to 2025.

<sup>2</sup> Glossiest white based on internal HP testing in January, 2018 compared to leading competitive printers with CMYK configuration under \$350,000 USD. Based on level of gloss at 60 degrees on a rigid material (acrylic). Tested using Glossmeter BYK micro-TRI-gloss (20°, 60°, 85°), compatible with ISO 2813 and ASTM D523 relative to glossiness measure.

<sup>3</sup> There is a broad set of media with very different odor profiles. Some of the media can affect the odor performance of the final print.