

# Printing On Synthetics - How To Avoid Disappointment

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Have you ever been less than impressed by the outcome of digitally printable synthetic substrates? If so, you're not alone.

Producing quality results on synthetic substrates is a matter of compatibility - a perfect marriage between printing equipment and the materials used to print. Just as all digital printing equipment is not created equally, individual synthetic substrates have their own unique qualities. While one piece of equipment may deliver great results on a certain substrate, another may not. Why? Here it is in a nutshell.

Digital printing equipment can essentially be divided into two technologies: HP Indigo and production toner.

HP Indigo equipment uses *indirect* heat during the printing process.

Because of this, they're compatible with substrates that are not considered heat stable - provided these substrates have been treated, if necessary, to ensure they're receptive to viscous HP Indigo inks (also known as liquid toner). By rights substrates should be tested and approved by HP and HP has outsourced this task to [The Rochester Institute of Technology's Print Applications Lab](#). Without getting too technical, HP Indigo equipment uses indirect heat in the print process so substrates that aren't heat stable can be printed with minimal hassle and issues.

Keep in mind, though, that no two substrates and no two applications are alike, so even if your supplier claims your substrate of choice is suitable for an HP Indigo press, the only way you can be 100% sure of compatibility is to conduct a print and application test.

Production toner technology uses *direct* heat during the printing process.

With production toner technology - manufactured by the likes of Xerox, Konica Minolta, Ricoh, Canon and Kodak - substrates come into direct contact with a piece of equipment called a fuser. For this reason, the substrates used need to be heat stable.

That said, the level of heat stability required depends on the speed of the production toner equipment. The faster the equipment prints, the less time it spends in direct contact with the fuser and the less exposure it has to direct heat. Generally speaking, presses running at speeds of 90 pages per minute and faster will have fewer issues with synthetic media, but again, there's only one way to ensure success: do a test run.

When in doubt, opt for polyester.

Vinyl (PVC) isn't considered to be a heat-stable substrate and requires a special coating or treatment in order to be digitally printable. On the other hand, Polyester (PET), which can be a more expensive option, is stable enough to withstand the heat generated by digital printing equipment, making it a safe choice for slower functioning production toner equipment - even desktop laser printers. However, you should not always allow price to affect your choice of substrate. While coated PVC materials may be more cost effective, as the application of a coating or treatment is a simple albeit low-tech solution, they do not outperform a more expensive PET.

The bottom line: test before you buy

At the end of the day, it's the only way to ensure digitally printed synthetics meet your expectations.

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