



 **TRENDVISION**

UV-LED Curable Inkjet Ink



Lim Kheng Tee (TRENDVISION President), Dr. Nicholas Hellmuth (FLAAR Reports founder and President) and Pablo M. Lee (FLAAR Reports ink evaluation manager) at TRENDVISION factory and office.

TRENDVISION UV LED Curable Inkjet Ink

The development of LED curing technology for UV inks has revolutionized the field of digital printing, opening new opportunities for printing different materials and substrates. LED curing avoids the extreme heat of curing with mercury lamps. Plus LED lamps last longer (and do not have all the mercury of the super-hot style curing systems).

Two evaluators from FLAAR Reports had the opportunity to visit TRENDVISION headquarters in Zhuhai, China for a full day visit. During this visit we had free access to all the factory and to the demo rooms where we could observe the testing of UV LED-cured ink on different substrates.



TRENDVISION Technology was established at Zhuhai, China in 2004 with the main mission of manufacturing inkjet ink, developing improved ink chemistries, acquiring high efficiency in manufacturing and rigorous managing processes with excellent services. This ink chemistry and production technology company in southern China offers a wide variety of ink products compatible with desktop inkjet printers, and wide format digital printers (UV-LED, solvent and textile ink). For desktop inkjet printers this is one of the largest and most complete ink factories we have seen so far anywhere in the world. TRENDVISION makes inks for every brand and model of desktop printers (for home and for office) that we can imagine

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Pablo M. Lee (FLAAR Reports), Lim Kheng Tee (TRENDVISION President) and Dr. Nicholas Hellmuth (FLAAR Reports) at TRENDVISION demo room.



Dr. Nicholas Hellmuth, FLAAR Reports at TRENDVISION factory visit. 2016



Pablo M Lee, FLAAR Reports inks specialist at TRENDVISION factory visit. 2016

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During the visit to the factory we could observe that the ink manufacturing process is mostly automated, thus largely eliminating a lot of the possibility of failure due to human error.



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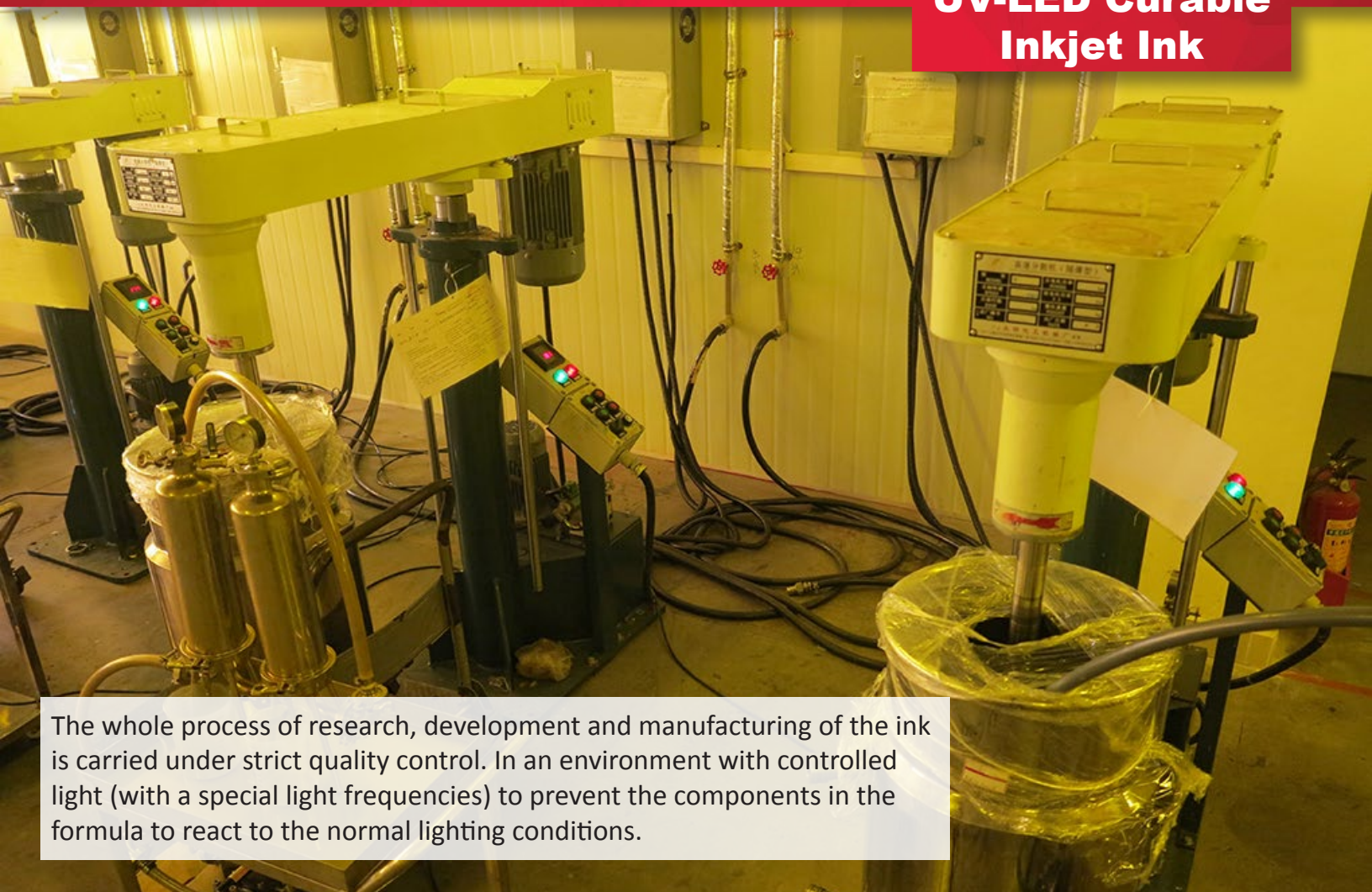


As you can see on this and following pages, the ink company granted us access to the entire factory.

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The whole process of research, development and manufacturing of the ink is carried under strict quality control. In an environment with controlled light (with a special light frequencies) to prevent the components in the formula to react to the normal lighting conditions.



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We have been to ink companies world head-quarters and factories in Germany, Switzerland, USA, Singapore, China, Taiwan, and Korea. So we have a bit of experience. What counts is not necessarily the size of the factory (we have visited small factories which focus on one or two kinds of inks that do an excellent job). Plus we have been to gigantic factories (in Germany we were in Building 60-something; in other words, 60+ buildings at this single location).



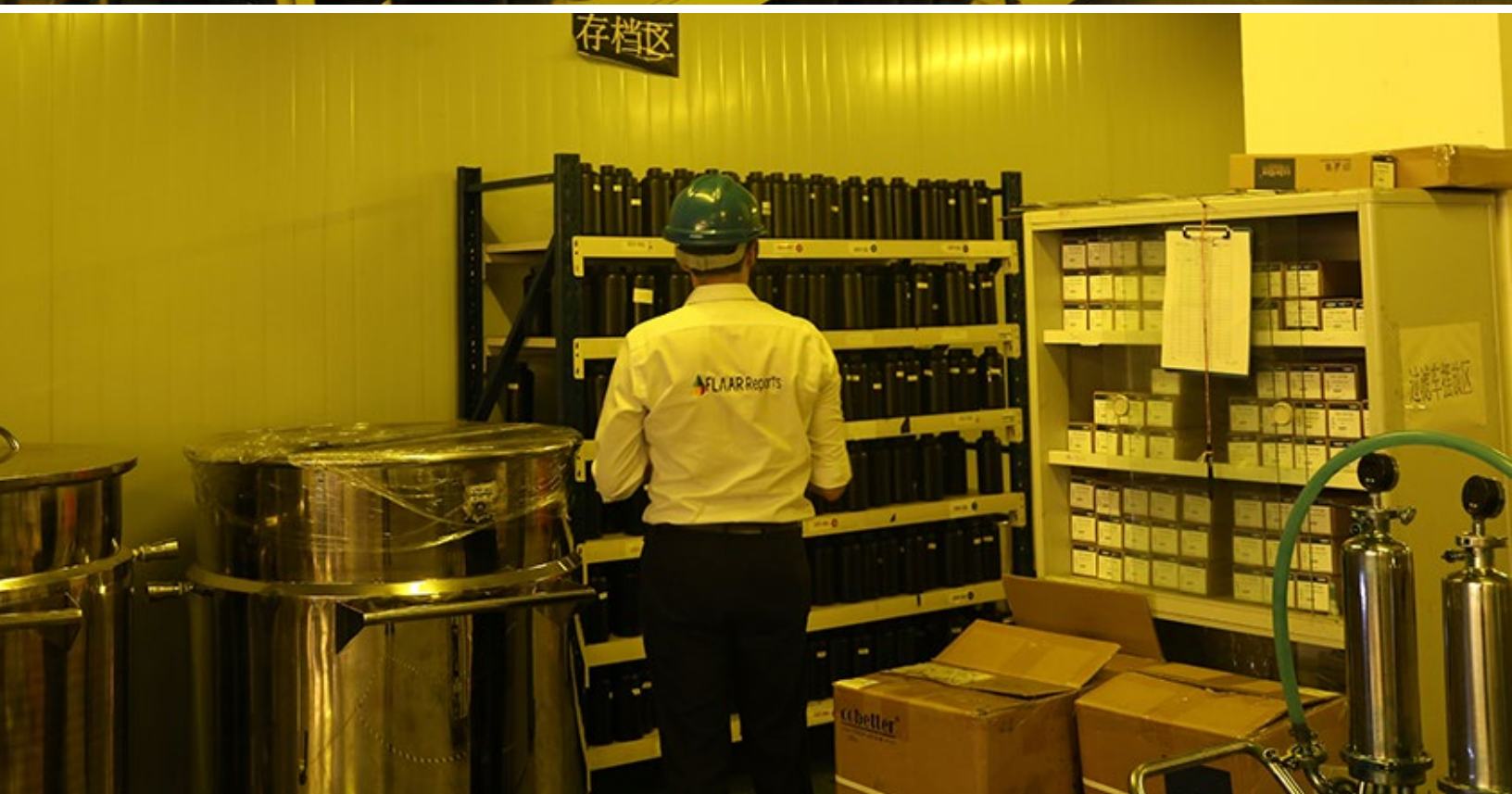
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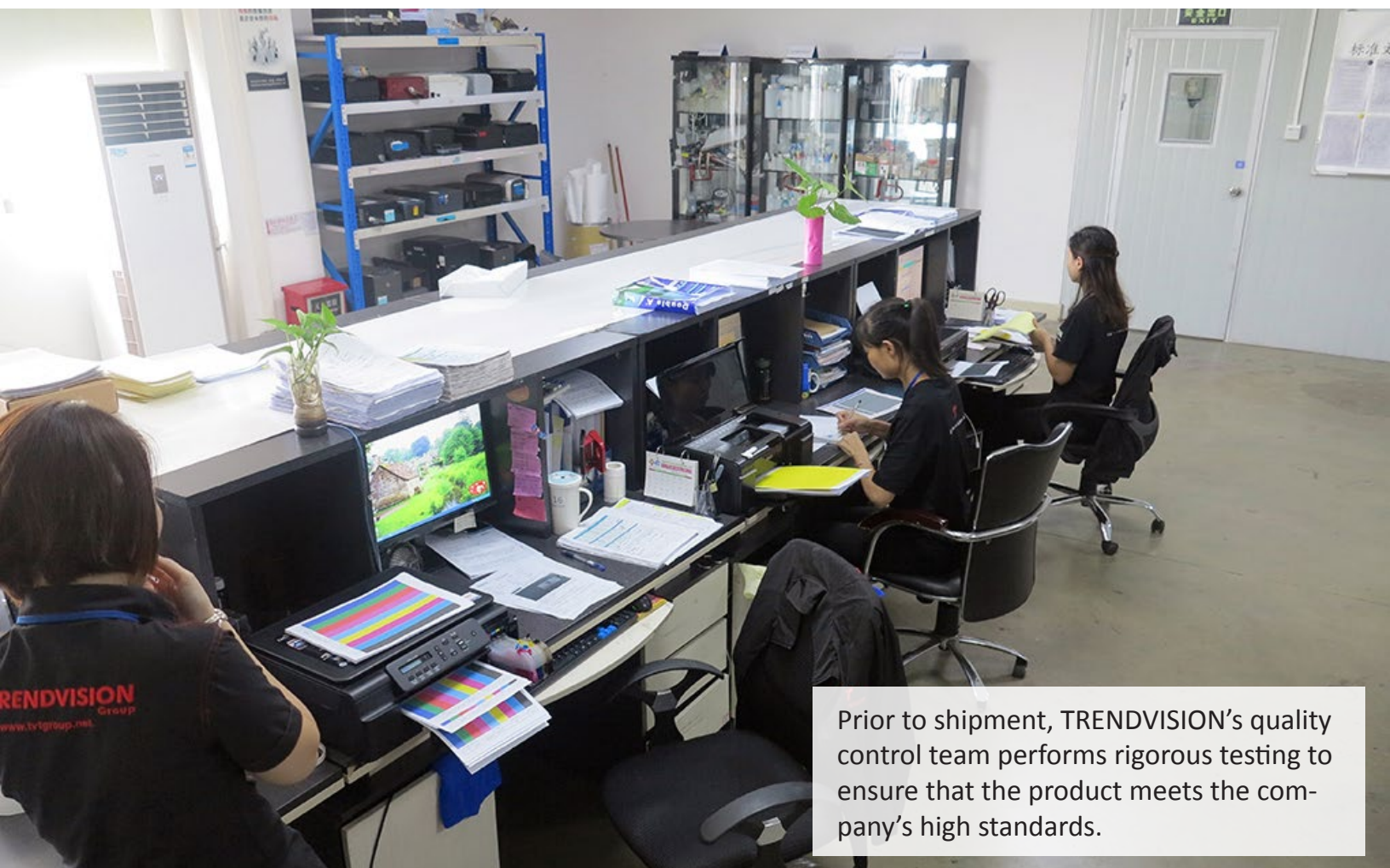
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Prior to shipment, TRENDVISION's quality control team performs rigorous testing to ensure that the product meets the company's high standards.

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The UV-LED inkjet printing has some advantages over conventional UV inkjet:

Low energy consumption

The UV-LED unit consumes approximately 60 W of electricity compared to the total consumption of the conventional UV lamps which is about 1.2 KW / lamp.

Size reduction

The use of a LED lamp as a light source for curing involves a reduction in the overall size of the printer, since it does not require as big a cooling or ventilation units, and thus the power supply can be smaller.

Longer life

The life of a conventional UV lamp is usually around 1,000 hours, compared to the life of a UV-LED is 10,000-15,000 hours.

Wide range of printing substrates

With the UV-LED technology, the temperature is significantly decreased, thus avoiding overheating the substrate, making possible printing onto many materials that would be vulnerable to heat emitted by conventional super-hot lamps.

All these advantages of LED-curing are the reason why companies around the world are gradually switching to LED-curing. Efi VUTEK is the most visible example, since over 80% (or more) of their models use LED-curing.

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LED-cured UV ink is more people friendly

Mercury arc lamps use mercury, one of the most poisonous materials in the world. So LED curing lamps are less noxious to the environment. Also a LED curing lamp will last potentially over a year(s). Mercury arc lamps wear out quickly and have to be replaced.

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LED-curing generates much less heat

The LED-UV curable inkjet inks can be widely applied to print on various media by curing with less heat than mercury arc lamps. With less heat you don't cause paper curling, distortion or heat damage to fragile kinds of media material.

With less heat you need less air-conditioning expenses. So there are many advantages to LED curing.



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LED UV 墨水应用方案 LED UV Ink Application Solution

High quality inks are an important part of the process for achieving an enduring, realistic and accurate printing. The UV curable inks once cured offer high quality and durability even in outdoor environments.

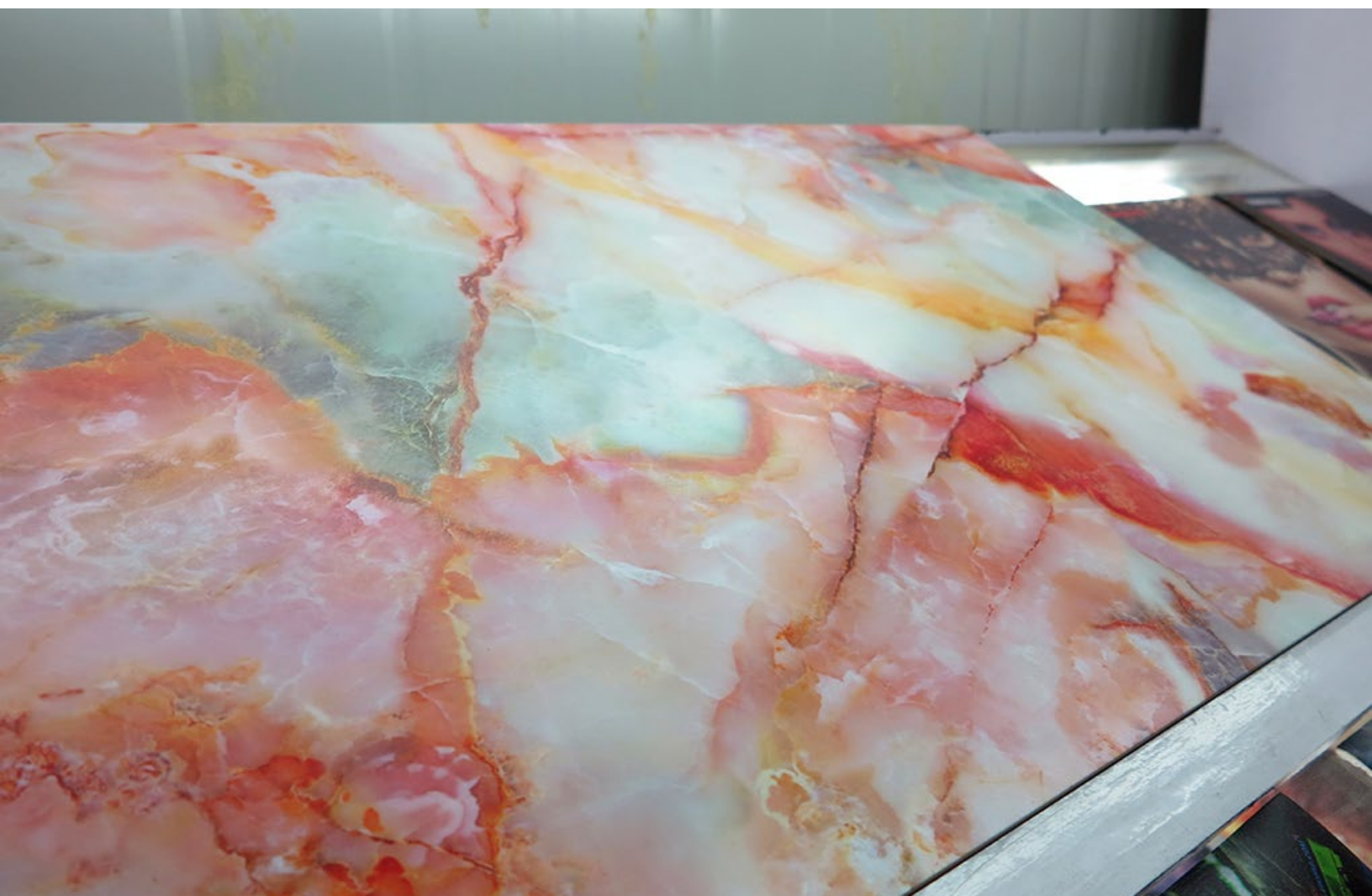
Although laminating may still help in many applications, what can really benefit many signage or graphic images is "coating." A coater adds a surface finish which is visual rather than the largely protective and sealing nature of a laminate.

You, the end-user, can select precisely what kind of surface appearance you prefer (even if the ink and media by themselves don't offer this finish). We visited one print shop in the USA where the owner said "my coater is my secret weapon to win business because my competitors have not yet bought a coater."



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UV 打印(玻璃展示)



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Printing on plastic, acrylic, metal, wood, glass, crystal, porcelain, etc.

When printing on any slippery smooth surface, realize that it may be best to use a really good primer and/or a post printing protective coating.

The settings you use on your printer (via your RIP software) also need to be understood, as each setting (for ink quantity or manner of jetting) may affect the final results (in other words, the printer software is also responsible for final quality, as is color management software).



Alternative pre-treatment may be useful for glass, ceramics, or other materials. Yes, you can print on all these materials with no pre-treatment, but to provide better adhesion and more scratch resistance, it helps to have pre-treatment. This is also pertinent for materials which get folded, as ink tends to break at the fold.

If you use your prints for a trade show or any other use for just a short time, then you can expect better performance. But materials which will be cleaned by the building's cleaning team, with various cleaning chemicals, may be affected because the cleaning team may be a bit rough on the surfaces.

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What counts, in addition to the ink chemistry, is the dedication and focus of the president, CEO, and managers to produce a good ink to help distributors, print shops, and OEM printer manufacturers to have a good product at a reasonable and viable cost.

We also take note of which companies avoid fostering misleading PR releases; PR claims by PR agencies are often the most revealing about problems and issues of an ink and the company. Greenwashing is one of the most obvious of misleading claims of an ink company (and decorating their booth with plastic flowers and floor covering of fake grass). Yes, LED ink is less noxious than mercury arc curing lamps, but be realistic and reasonable in blowing greenwashing claims out of proportion.

Visiting a factory is a good way for us at FLAAR Reports to better understand the capabilities, experience, and dedication of a company. We also learn a lot when we visit print shops that are using inkjet printer and toner printer products.

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