

The Art of Laminating Part 2 - Understanding your materials

This is part two of a three-part series on Laminating.

By [Daniel Keegan](#)

Though the laminator plays a major roll in a finished product, the material that you print on is your controlling factor. This can affect the type of laminator used or to be purchased along with the type of laminates to be used. Although a large production facility may have the need for multiple laminators, each is setup for a specific task. The smaller operations will generally utilize a single multi-use laminator to cover all the bases.

As stated above, the materials that you run through your printer can control the type of laminates to use. If you are just getting started in the digital printing industry, there are several considerations that must be looked into and there are goals that should be set for the future of your business. Whether you have a digital printer or are about to purchase one, there is a need to determine what printable materials might be available for that printer and what materials you intend to use. This will assist in your decision making process for a laminator. Are you targeting a specific market or willing to attack any project that comes though the door? If you are unsure, figure a worst-case scenario and save all materials. One day you are laminating a paper material and the next day it may be a plastic material, each with a different requirement in laminates. The price point on laminates may cause the need to switch back and forth from a hot laminate, which is the least expensive, to a cold laminate. It is all about being able to cut costs, saving time and money, along with providing your customer with the best product. Remember that a satisfied customer will always come back for more! Plus, that satisfied customer will spread the word on what a great job you did and there is no marketing method better than "the word of mouth".

Lets take a look at how the laminates react with the various types of materials. Virtually all materials will accept a cold laminate. The disadvantage may be in the cost per square foot of cold laminate used. For example, a 3-mil gloss cold laminate may run in the neighborhood of \$0.40 to \$0.65 per square foot. Whereas the hot laminates of the same thickness may run anywhere from \$0.07 to \$0.15 per square foot. Unlike the cold laminate, a hot laminate can only be applied to certain types of materials due to the fact that heat is being used to activate the adhesives. The standard hot laminate activates the adhesives between a temperature of 220 and 250 degrees. However, the laminate manufacturers did develop what is called the "Low-Temp" hot laminates, which activate at temperatures between 160 and 200 degrees.

Any material that is plastic based such as adhesive backed vinyl, scrim or poly banner materials, backlit films, some photo gloss materials, along with some resin coated materials will have a tendency to warp or distort due to the heat required for hot laminates. These materials are cold-laminate-only materials. Most paper based materials such as the bond papers and most photo gloss and photo matte materials will accept hot laminates without a problem. However, there are several materials that have a heavy texture to them such as canvas, artist papers and cloth type materials that will not accept either hot or cold laminates. For these materials the liquid laminates or clear coats are the ideal solution if the print must have protection. It is always wise when looking into a new print material, to ask the salesman or manufacturer as to what type of lamination the material will accept. Those that are new to digital printing may have the impression that they do not need to laminate or only need to use one type of laminate, which is possible in some niche markets, but lamination is inevitable. Why pass up the opportunity to put a couple extra bucks in your pocket? There are companies out there that specialize in lamination only. Once your clients find out that you have lamination capabilities, you might be surprised at how much the machine gets used. Encapsulation, sealing an image between a top and bottom layer of laminate, is often requested. This process can be done with cold laminates, but 90% of the time hot laminates are used. Someone may have an old map, poster, photographs, and reports or even color Xerox copies that they want laminated. The opportunity is there if you want it!

A laminate affects the look of a print...

There are three basic finishes for a laminate whether hot or cold. They are:

Gloss laminates have a tendency to enhance (make brighter or more vibrant) colors. As with any shiny surface, glare can become a problem in well-lit areas.

Satin/Luster laminates are considered "low-glare" and are neutral or no color changes when applied to a print.

Matte laminates are considered "no-glare" and can dull the colors.

Liquid laminates come in the form of either gloss or matte finishes.

The use of the various finishes may vary depending upon your client's needs and how the digital prints are to be used. For example, most vehicle wraps use a gloss laminate to make the graphics look as though they were painted on and waxed. Trade show exhibitors usually prefer their graphics to have a satin/luster or textured Lexan laminate so not to degrade any colors and keep the glare to a minimum so everything is still legible. A matte laminate might be used in a courtroom, for presentations, or were there might be intense lighting and flash bulbs going off.

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The above laminates are typical, but there are also many specialty laminates. Clear and textured Lexan laminates are very popular in the trade show and photography industries. Then there are the non-slip floor laminates for those who wish to produce interior use floor graphics. Non-slip concrete laminates exist for those outdoor special events. There are opaque laminates that are used as a backing material and mounting laminates that can allow you to apply a print first surface or second surface. There are probably as many laminates available as there are digital printing materials these days. One manufacturer may not produce everything you need, but they try very hard to do so. Some of the manufacturers are:

For film laminates

3M - www.3m.com

DuraLAM+ - www.unicadigital.com

As for the liquid laminates, a liquid laminator is the ideal situation for application. Though many have found a work-around or temporary solutions for the use of this type of laminate, the liquid laminator is tough to beat. Some liquid laminates come in the form of aerosol cans for the occasional user. For the heavy user, they are available in quarts to 55-gallon drums. This liquid can be manually applied by brush, foam roller, lambs, wool mop or spray gun. Though with these methods an even coating is difficult to attain. The manufacturer has performed extensive testing and can provide the recommended coating thickness for specific materials as related to their use. The manual method does work, but how do you know if enough was applied or if too much was applied. The amount may, and generally does, affect the drying time. It never hurts to experiment though!

Speaking of drying times. One of the biggest mistakes made by digital print producers is not allowing the print adequate drying time prior to the application of any form of lamination. The drying/curing time for digital prints may range from 4 to 24 hours, depending on whether aqueous or solvent-based inks are used. The heat platens and drying fans can only get a certain amount of moisture or solvent out of the print. This can have costly repercussions both financially and to your reputation, so use caution and don't try to rush something that cannot be rushed.

When talking to a laminate salesperson or manufacturers representative, it is a must to ask questions and attempt to explain what your needs are or what you intend to do with the laminate. They have access to all the answers or can get them and can point you in the right direction. If you need the specifications for the UV properties or the adhesives used, they can help. Whenever possible, try to get a list of references in your region that you could contact or a sample of the laminate so that you can run a few tests of your own.