



Royal Sovereign Lamination

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Introduction

With proper webbing of the laminator, issues like film drift, wrinkling, bubbles and other defects can be eliminated which can be a direct result of operating the laminator. The steps below will help the operator to be aware of mistakes, correct problems, or start the webbing process over before committing to laminating a print. Our goal is to spend a little extra time in the beginning in order to help eliminate issues in the end. The last thing we want to do is reprint a job because it was lost in the lamination process.

Royal Sovereign Laminators are supplied with a top Release Liner Take-Up which is used as a separator for Pressure Sensitive films. These films are comprised of a sandwich made up a three layers, film, adhesive and release liner. During the laminating process, the release liner must be separated from the adhesive-backed film before it reaches the nip of the main film rollers. In doing so, the film's adhesive is exposed in order for it to be applied to the surface of your graphic.

Steps toward successful lamination

Remove the feed table, document guide and clear safety cover from the laminator.

Load and center the laminate on the top supply shaft and separate the release linear from the lamination film. Tape the release linear to the take-up shaft core. Use three to four pieces of tape in this process so that the release liner is securely fastened to the core while making sure that film is tight against the idler roller and take-up core. The exposed laminate should be draped over the top and bottom feed rollers.

Open the laminator feed rollers to the proper gap so that they will accept the thickness of a leader board. This roller adjustment is accomplished by adjusting the handle on the right side of the laminator. A stiff substrate about 3mm thick will work the best. Push the leader board evenly through the laminate and into the laminating rollers. The leader board should be as wide or wider than the lamination film that is loaded on the laminator and at least twelve inches wide. This will assure even tension on the width of the film. The laminate should be tight against the top roller at this point.

Replace the feed table, document guide and clear safety cover.

Run the laminator several inches so that the leader board catches into the rollers and pulls the film down over the top roller.

Check that the release liner is pulling evenly over the take-up core and the lamination film is taught over the top lamination roller. Run the laminator until about four to five inches of the leader board is exposed. At this point tape the leading edge of your job to the leader board assuring that it is centered and straight. It is best to have the laminate and printed media to be the same width or the laminate slightly narrower than your printed media. If your printed media is rolled on a core you can place it on the bottom supply shaft of the laminator to ensure that it will feed straight and evenly into the laminator before taping to the leader board.

Run the laminator until the leader board passes through the rollers. Stop the laminator and adjust the roller pressure to the appropriate setting for the printed media that you will be running through the laminator. In most cases you will want to use the lamination setting.

If during the lamination process you see the laminate forming vertical wave lines running down the top lamination roller, tighten the brake pressure slightly on the laminator to increase tension on the roll of lamination film.

Glossary of Terms

Adhesion

The holding of two substrates by surface attachment.

Abrasion Resistance

The ability of a film to withstand rubbing without showing scuff marks.

Adhesive

(Noun) A substance capable of holding materials together by surface attachment, in this case acting as the mechanism which attaches film to a graphic arts media. (Adjective) Type of bonding interaction between a thermal adhesive and the surface of a graphics media or film to which it is laminated.

Brake

The amount of hold back tension that is placed onto the supply roll of film during the lamination process.

Bond Strength

Refers to one of three conditions:

1. Anchor strength of adhesive to the substrate in laminating film
2. The anchor strength of the laminating film to the product that has been laminated
3. The strength of adhesive-to-adhesive bond when two layers of film are laminated together.

Cast Vinyl

A premium vinyl lamination film used in the vehicle wrap industry because of its high durability and conformability characteristics.

Conformability

The ability of film to fit snugly or make essentially complete contact with the surface of an irregular surface without creasing or folding.

Core

The cardboard tube to which the laminate or adhesive is wound too. The size is referred to the inside diameter of the tube.

Decaling

The process in which the image has laminate on the top side and an adhesive on the bottom forming a sticker.

Delamination

Most commonly referred to as the separation of the lamination film from the substrate that it was originally adhered to in the finishing process.

Dimensional Stability

The ability to retain its shape with temperature and or humidity shifts.

Encapsulation

A finishing term when the end product is totally encased with the lamination film on the top and bottom side and usually at least at 1/8 of an inch of lamination film bleeds past the image on all sides. The image is totally sealed with lamination film on the top, bottom and particularly the sides.

Film Gauge

Refers to the total thickness of a particular film construction including its individual layers. The gauge is measured with a micrometer. The unit of measure is in thousandths of an inch (mils) or microns.

Film Ratio

Or Film-To-Adhesive Ratio or Thickness Ratio. Ratio of the thickness of the base film to the thickness of the adhesive layer in a laminating film.

Flush Cut

The trimming of the excess lamination film from the edges of the laminated image.

Gap

The amount of distance between the top and bottom feed rollers of a lamination machine.

Glossy

The surface of the lamination film having a shiny or glass like appearance.

Lamination

A product made by bonding together two or more layers of material and the process of bonding them.

Leader Board

A narrow piece of rigid material used in webbing the laminator.

Matte

A type of lamination film having a dull or none reflective surface. Used when the low reflectivity from lighting is required of the image.

Micron

A measurement of thickness of material. 25 micron is equal to 1 Mil.

Mil

The term used for the thickness of lamination film. In measurement, 1 thousandth of an inch.

Examples: 1 Mil = .001", 3 Mil = .003", 10 Mil = .010"

Nip

On a lamination machine, the contact point of the top and bottom lamination rollers.

Polyester

Thermoplastic Polymer used as the base film of many laminates. Also known as Polyethylene Terephthalate. It is produced from chemical substances found mainly in petroleum. Often referred to as PET.

Pressure Sensitive

Lamination film or adhesive that is applied to the image by the use of pressure and not heat.

PVC

Short for Polyvinyl Chloride. One of several films used as the base of laminates or adhesives. Commonly referred to as "vinyl".

Ratio

A number that corresponds to the thickness of the film base vs. the adhesive.

Example: 5 mil laminate with a ratio of 3/2 would be 3 mil base film thickness and 2 mil adhesive thickness.

Release Liner

A paper stock coated on the inside with a silicone layer used with pressure sensitive laminates and adhesives.

Satin

A middle reflectance laminate surface between glossy and matte. Sometimes also referred to Pearl of Luster.

Silvering

A term used when air is trapped between the laminate and the image during finishing, giving it a metallic or silver look. Caused by insignificant pressure or tack of the adhesive when using pressure sensitive films.

Sled

A board used to start the laminate through the lamination machine. Also used as a carrier board when only face laminating an image.

Splice

How film ends are jointed together to make a straight continuous web.

Textured

A type of lamination film having embossed surface pattern. Examples would be the look of canvas, leather, artists brush strokes, or weave.

Web

The term used when routing the lamination film through the machine.

Tips

A laminator can be used to apply Application Tape. The Application Tape would be webbed almost identically in the same fashion as you would with lamination films. The laminator will apply the tape evenly and with consistent pressure.

Silvering in laminate can be reduced on the initial run through the laminator by adding additional pressure, slowing down the laminator and or adding heat (only with thermal or heat assist laminators). The longer you let a solvent print out-gas prior to the lamination process the amount of silvering may be reduced. After lamination only time will remove silvering from your image.

The release liner left over from your lamination film can be used to wrap mounted prints, drop cloths for painting, slip sheets in-between metal signs or a substitute for Kraft paper if used in the lamination process.