

# Laminating One Way Vision

11 April 2019

**IMPORTANT:** Performing a test prior to actual production can minimise costly errors and help to ensure the success of your project.

## *What is an Overlamine?*

It is a thin optically clear film or liquid which is applied to the perforated One Way Vision film. Clear Focus CurvaLam is a cast vinyl overlamine film and is ideally suited for vehicle windows and rear windscreens. For flat building and shop windows, an appropriate acrylic based liquid laminate may be suitable. However, we recommend not to laminate if applying to one of our monomeric perforated vinyls, such as EconoVue.

## *Why Overlamine?*

The use of an overlamine provides UV protection, moisture resistance, increased image life and an attractive finish. An overlamine also prevents the film's holes from filling with water when it rains or when the window graphics are washed.

For shop window applications, there is no real need to overlaminate, because graphics should be considered short term in these situations. Advertising campaigns are typically less than a year. Replacing the advertisements at least every year will keep the shop front fresh and interesting for customers, lowering the risk of them from tuning out when they see your advertisement regularly. Our monomeric perforated vinyls are priced economically to facilitate regular new advertising campaigns.

## *Which Overlamine?*

Clear Focus Imaging Inc (CF USA) manufactures three optically clear, pressure-sensitive ("cold") overlaminates for use with its perforated window graphics films. At this stage, we only import CurvaLam into Australia and New Zealand.

- **CurvaLam**, is a 76 micron cast conformable pressure-sensitive (cold) PVC overlamine, is designed specifically for perforated window graphics to be installed for use on simple to moderate curved surfaces of vehicle windows and rear windscreens. We recommend the use of CurvaLam with our polymeric PVC window films, such as PromoVue, AutoVue, SuperVue and ClassicVue, because the products' chemical composition and physical properties are so similar. Please note that any of our laminated polymeric One Way Vision films can also be applied to building and shop windows.
- **PromoLam**, is a budget 33 micron cast conformable pressure-sensitive (cold) PVC overlamine, is designed specifically for perforated window graphics to be installed for use on simple curved surfaces of vehicle windows and rear windscreens. We do not currently import this film.
- **ClearLam**, is a 38 micron polyester overlamine, is designed for small-format graphics to be mounted on flat surfaces of building and shop windows only. It can be laminated to our monomeric One Way Vision films, such as EconoVue. ClearLam does not match with our polymeric PVC window films. Being a polyester film, considerable skill and experience is required to handle this film. We do not currently import this film.

- **A liquid laminate**, maybe used on any of our One Way Vision films, excluding SunSecure. **We do not recommend overlaminating our monomeric perforated vinyls.** If however you decide to proceed at your own risk, ensure the liquid laminate is acrylic based and thinned down with water as per the manufacturer's recommendations. We suggest thinning the laminate with water, so the holes do not clog up. Plus do not saturate the film when applying the liquid laminate, as the liner will become soaked, making it virtually impossible to remove when it comes time to apply the film to the window. In our tests, using a spray gun to apply the laminate was more effective than rolling or brushing the laminate. **Test prior to production.**

If you use another brand of overlaminate, be sure to test prior to actual production to confirm compatibility and to ensure adequate visibility through the film's perforations. Please note **we do not warrant our One Way Vision film when another brand of overlaminate is used.** Nor do we warrant our overlaminate films if they are applied to another brand of perforated or solid vinyl.

#### *When to Overlamine?*

1. Allow at least 5 days for the inks to dry and outgas before applying an overlaminate. Not required when using UV-cure or latex inks.
2. The printed substrate must be cool. Never apply with heat.
3. It is recommended to use a cold press laminating machine. Laminating by hand either on a bench or after installation on a window is not recommended.
4. After applying an overlaminate, let the graphics sit for at least 24 hours to allow the overlaminate's adhesive to bond adequately to the vinyl film.

#### *Recommendations*

We recommend using a cold laminator machine (electric or manual) to laminate One Way Vision. We do not recommend applying the laminate onto One Way Vision that has already been applied to a window. CurvaLam stretches easily and you may find that if you apply onto a window that has One Way Vision on it, will crinkle and crease very easily. Once CurvaLam has been deformed in this fashion, it cannot be repaired.

We recommend using the dry application method for applying laminated One Way Vision to a window. We do not recommend wet application method. The water (or any other chemical) will be trapped in the perforations under the laminate. This will decrease the One Way Vision effect and alter the printed image perceptually. In addition, in cases where the window is hot, the liquid trapped in the holes will turn into a gas and expand, and in some cases, expand rapidly causing the laminate to rupture, to pop where the hole is.

#### *How to Overlamine?*

Laminating is as much an art as a science. Laminating and installing are challenging because streaks and marks caused by uneven pressure applied by laminator rollers or manually by hand or squeegee can occur yet be difficult to see until after the graphic is installed. To prevent post-lamination issues (e.g., tunnelling, wrinkling, etc.), make sure there is proper tension on the laminator unwind/rewind rollers so that neither the overlaminate nor the film is stretched during the lamination process. Also ensure that there are no uneven areas on the laminator rollers (caused, e.g., by bowing of the nip rollers) or other problems that could cause streaks or marks.

1. When using a cold laminator (recommended method), proper tension control is important to prevent wrinkles and tunnelling from occurring. Do not stretch either the window graphics film or the overlaminate during lamination as this can result in tunnelling and/or wrinkles. Do not laminate by hand, always use a cold press laminator, preferably a flat-bed laminator.
2. Ensure the rollers are in excellent condition. Do not laminate if flattened, nipped or misaligned.
3. Ensure the rollers in the laminating machine are aligned horizontally, vertically and in the Z-axis. Streaks, creases and marks in the laminate can be caused by uneven pressure applied by laminator rollers.
4. The printed substrate must be at ambient room temperature, that is 24°C.

5. Do not use any other brand of film overlamine, only use Clear Focus matching laminate film. Refer to Recommended Overlaminates information sheet.
6. Do not use heat.
7. Avoid stretching the laminated graphic during installation. The vinyl has a memory and, if stretched, may return to its original shape, causing the film to lift off the glass later. In addition, make sure there is proper tension on the laminator unwind/rewind rollers so that neither the overlamine nor the film is stretched during the lamination process.
8. Ensure the compression rollers have enough gap to allow the One Way Vision and overlamine films to pass through without overt compression but not too much gap, otherwise the laminate will not bond to the perforated vinyl.
9. Laminate slowly. Stretching the laminate film or substrate film will most likely result in failure.
10. After laminating, let the graphics sit for at least 24 hours before application.

If using a liquid laminate:

1. When using a liquid laminate, verify with the liquid laminate manufacturer that their product is compatible for perforated PVC window films, maintains the film's one-way visibility and is suitable for the intended application.
2. Ensure the liquid laminate is acrylic based and thinned down with water as per the manufacturer's recommendations. It is preferable to spray as this will give an even coat, but a new paint brush or roller may be used to coat the perforated vinyl with the watered down liquid laminate. Test a small size sample first prior to production. Allow to dry before rolling up the graphic, shipping or installing onto a window.
3. In cases where glass curvature is extreme (e.g., Beetle or PT Cruiser window), test the overlamine on a piece of window graphics film prior to actual production/installation to ensure adequate conformance, or use a liquid laminate.

#### *Installing Laminated (CurvaLam) One Way Vision onto a Vehicle Window/Windscreen*

1. Do not install onto a hot window. Ensure the glass has cooled down and is at a tepid temperature.
2. Start in the centre of the window and install from the centre outward to the edges of the glass.
3. Peel back part of the release liner and make a V-shaped cut in it (from the top edge of the liner toward the centre) to keep the liner out of the way during installation. **Be careful not to cut the film!**
4. Avoid stretching the PVC film during installation. The film has a memory and, if stretched, may return to its original shape, causing it to lift off the glass later.
5. Avoid using an overlamine on window graphics to be installed on surfaces with compound curves. For such applications we recommend a clear coat/liquid laminate. Even a conformable overlamine such as CurvaLam adds more thickness & rigidity, making it harder to install the graphics on windows with extreme curves.
6. If you must laminate the graphics (e.g., to prevent the film's holes from filling with water when it rains), leave the outside edge, approximately 6-7mm around the graphics unlined. That way the centre portion of the graphics will be laminated and the unlined edges will be more pliable and will conform more easily at the edges, where the curvature of the glass is more pronounced.
7. If a heat gun is used to install graphics around curves, do not exceed 120°C and apply heat for only a few seconds at a time. Applying too much heat and tension during installation can stretch the film out of shape and deform the holes, as well as negatively impact the film's adhesive properties.
8. If the edges of the film have been handled a lot or have been stretched, both of which can adversely affect the film's adhesive, an edge sealer will help prevent them from lifting.

#### *Overlamine Tips*

1. If, after lamination, it is necessary to roll the graphics, be sure to roll them loosely with the printed/laminated side out.

2. When shipping graphics, lay them flat between layers of cardboard or other protective material, or roll the graphics with the printed/laminated side out onto a core that is large enough in diameter to prevent the liner and overlamine from wrinkling or tunnelling. Use a shipping tube whose diameter is large enough to easily accommodate the loosely rolled graphics.
3. To clean the graphics after laminating, spray a non-abrasive, non-solvent cleaner on a cloth, then wipe surface. Do not allow solvents to come in contact with vinyl, as they can adversely affect adhesion.
4. After applying a laminated perforated vinyl film to a window, it may not be possible to see through it. There may appear to be squeegee marks all over the graphic. This is normal and to be expected. The visibility will improve over time and may take up to 4 weeks to reach optimum visibility. During this period, the more sun the window gets, the sooner the squeegee marks will disappear.