

# Avery Dennison®

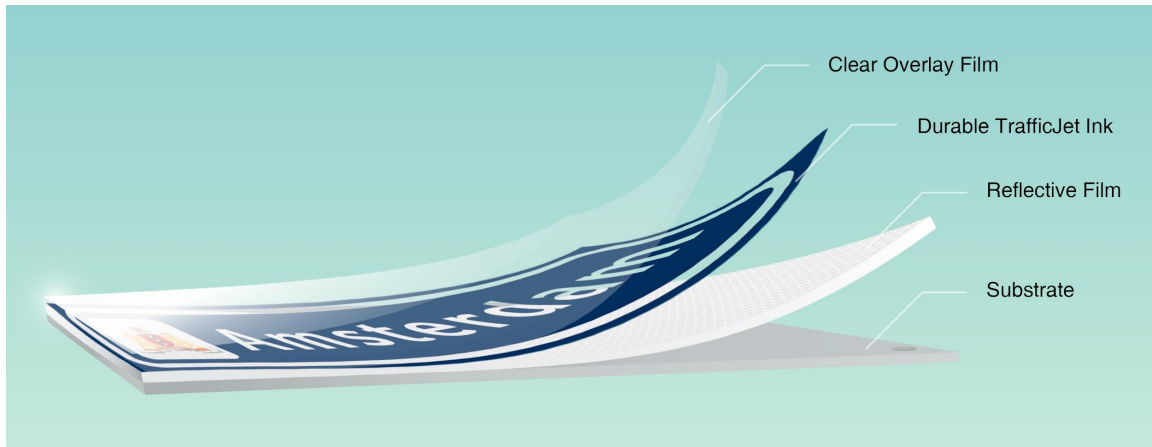
## Tips for Applying Protective Overlay

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This bulletin provides recommendations for the application of Avery Dennison OL-1000 and OL-2000 clear protective overlay films. Please follow the proper operating and safety procedures recommended by the laminator manufacturer.

### Contents

- Laminating Equipment
- Laminator Set-Up Tools
  - Nip Impression Paper
- General Guidance
  - Lamination using a Graphics Finishing Laminator with Roll to Roll Capability
  - Lamination of Sheeted Prints using a Graphics Finishing Laminator
  - Lamination of Sheeted Prints using a Manual Squeeze Roll Laminator
- Laminating Gap Adjustment
- Application Startup
- Troubleshooting



### IMPORTANT (Eco-Solvent inks)

It is important that the printed media is fully cured and dried prior to laminating. Laminating a print before it is fully cured and dried can cause signs to fail (adhesion failures, separation of the laminate from the media, etc.) and void the sign performance warranty.

In certain areas, the minimum recommended drying time is 12 hrs for OL-2000 and 2 hrs for OL-1000 of free exposure to air between the printing and laminating process.

For best drying results, lay the prints flat and exposed to air (not stacked) or unroll and release tension in the printed roll to create air space over the face of the sheeting in the roll. Allow the roll to stand vertically and preferably elevated on a grid to allow for improved airflow and evaporation of the ink solvent.

## **Laminating Equipment**

To properly apply Avery Dennison protective overlay films, a laminator is recommended. The information contained in this bulletin applies to the use of Avery Dennison OL-1000 and OL-2000 clear films with the proper equipment.

For specific information regarding equipment, follow the manufacturer's instructions or consult with the manufacturer's technical service department.

## **Laminator Set-Up Tools**

In addition to the setup procedures and tools recommended by the laminator manufacturer, it is recommended that the nip pressure and footprint of the laminator be monitored.

## **Nip Impression Paper**

Nip impression paper is a wax transfer paper used to determine the evenness of the nip footprint across the width of the laminating rolls. If the footprint is inconsistent (too heavy on the edges, too heavy in the middle, or too heavy on one side), poor toner transfer, poor toner bond, or wrinkles may result. Nip impression paper can be obtained from this source:

### **Beloit Manhattan Division**

P. O. Box 155, Ivy Park  
Clarks Summit, PA 18411  
Phone: (717) 587-5111

## **Recommended Product**

“Nip Impression Kit for Covered Rolls”

## General Guidance

The following general recommendations apply to laminating Avery Dennison printed films with Avery Dennison OL-1000 and OL-2000 clear overlay films. For specific instructions relating to equipment operation, please refer to the instructions provided by the laminator manufacturer.

### Recommended settings for the Kala laminator

#### OL-1000 and OL-2000

- No heat or a little above room temperature in case you see silvering
- Low tension (brake) to prevent stretching of the overlay and adding tension into the finished product
- Relatively high pressure (Kala 5), but be careful not to damage the prisms
- Speed between 1-4

#### OL-1000UV and OL-2000UV

- Heat around 113F / 45C
- Low tension (brake) to prevent stretching of the overlay and adding tension to the finished product
- Relatively high pressure (Kala 5), but be careful not to damage the prisms
- Speed between 1-3
- It is **strongly** recommended to only apply OL-1000UV and OL-2000UV with a Roll to Roll laminator that is also able to apply the heat recommended

### Lamination using a Graphics Finishing Laminator with Roll to Roll Capability

To laminate printed Avery Dennison films roll to roll, mount the printed film on the bottom roll unwind and follow laminator manufacturer recommendations for unwinding from the bottom shaft. Pull the printed film through the front nip (image side up). Continue pulling the web evenly through the back pull rolls. Close the back pull roll nip and apply 50PSI (350kPa).

Mount the Avery Dennison OL-1000/OL-2000 clear overlay film on the top unwind and web according to the laminator manufacturer recommendations. Pull the release liner away from the overlay film and adhesive. Attach the liner to the upper rewind shaft to accumulate the delaminated liner. Pull the overlay film and adhesive evenly through the front nip until the web is wrinkle free with even tension across the web. Close the front nip and adjust the pressure to 50PSI (350kPa). Start running the laminator at 1.0FPM (0.3 m/min). Cut away the overlaminated film and adhesive before it reaches the back nip.

As the laminated film passes through the back roll nip, inspect the web for signs of wrinkling, waviness, bubbles, etc. If problems are evident, stop and correct them before proceeding. Once the laminated film looks good, increase the speed to 4 FPM (1.2 m/min.).

### Lamination of Sheeted Prints using a Graphics Finishing Laminator

To hand feed printed sheets into the laminator, web the Avery Dennison OL-1000/OL-2000 overlay as instructed in this section. Use a length of release liner beneath the print to protect the bottom roll from contacting the adhesive. The liner can also be used as a leader to begin sheet feeding.

Once the Avery Dennison Overlay Film has passed through the front nip, close the front nip and adjust the pressure to 50 PSI (350 kPa). Start running the laminator at a speed of 1.0 FPM (0.3 m/min). Cut away the non laminated clear film between front and back nips.

When the Avery Dennison Overlay Film is feeding evenly, begin feeding printed sheets into the nip, taking care to align the sheets evenly with the overlay. Increase the running speed as desired. Adjust the overlay unwind brake to maintain the minimum tension required to keep the overlay free from wrinkles. As the sheets exit the back pull roll nip, cut between the sheets.

### Lamination of Sheeted Prints using a Manual Squeeze Roll Laminator

These applications are driven by a hand crank and can be run by one or more operators. They are intended for the individual application of signs.

## Laminating Gap Adjustment

This procedure may vary from application to application depending on such factors as flatness and material thickness. When common materials are being used, keep a record of the optimum settings to duplicate during future runs.

1. Raise the top roller to create a gap larger than the thickness of the printed sheeting.
2. Place the printed sheeting between the opened laminating rollers.
3. Slowly lower the top roller until it evenly touches the substrate from edge to edge. Continue to lower the roller one half turn to obtain adequate pressure.

## Application Startup

1. With the overlay face down, peel back one to two inches of the release liner, folding it to expose the adhesive.
2. Turn the sheeting over and carefully align the sign face with the substrate. Press the exposed adhesive side down slowly onto the substrate. Work from the center towards the outer edges.
3. Feed the adhered section into the squeeze roller up to the folded portion of the release liner.
4. Drape the remaining sheeting over the top roll and peel back the remaining portion of the release liner, while feeding in the remainder of the sign blank.
5. Carefully trim all excess material downward at an angle with a sharp utility blade. Make sure to not chip or damage the reflective sheeting.

## Troubleshooting

Problem	Possible Cause	Solution
Wrinkles in film going into nip.	Tension is too low.	Increasing unwind brake setting on affected web.
	Uneven feeding of the web.	Cut web and rethread according to steps described.
	Uneven tension across the web.	Reduce unwind brake setting momentarily and then increase to bring tension back up.
Mottle or air bubbles in laminated graphic (“silvering”).	Not enough pressure at nip.	Increase pressure. See <u>corresponding section</u> of this document.
	Running too fast.	Reduce speed in 0.5 FPM (0.15 m/min.) increments.
	Uneven footprint in nip.	Check graphic if mottle has consistent repeat in roll direction or is heavier on one side, problem may be in laminator setup or laminator rolls. Refer to instruction manual or contact laminator manufacturer.
Mottle in adhesive coat.		Check pattern if it is consistent across web or decreases in repeat as roll unwinds, problem may be adhesive related. Try slower speed or higher pressure.
Wrinkles in the laminate after laminating onto the sheeting.	Winding the laminated sheeting with the face in.	Always wind laminated sheeting with the face out and do not make the windings smaller than the diameter of a core.

The above Avery Dennison literature provides information to the user for proper application, storage and other requirements. Please refer to Product Data Bulletins or your local Avery Dennison Representative for warranty information. Find the latest information on the Avery Dennison website, [www.reflectives.averydennison.com](http://www.reflectives.averydennison.com). We encourage you to check our website periodically for updates.

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For technical questions, please contact:

North America: [reflective.tech.na@averydennison.com](mailto:reflective.tech.na@averydennison.com)  
 Europe, Middle East & Africa: [reflective.tech.eu@eu.averydennison.com](mailto:reflective.tech.eu@eu.averydennison.com)  
 Asia Pacific: [reflective.tech.ap@ap.averydennison.com](mailto:reflective.tech.ap@ap.averydennison.com)  
 South America: [reflective.tech.sa@averydennison.com](mailto:reflective.tech.sa@averydennison.com)