

# Information on Avery Dennison® Perforated Window Films

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### Introduction.

Avery Dennison Perforated Window Films are designed for use on flat, transparent surfaces such as windows or glass doors. It has a continuous hole pattern perforated into the film in order to provide a graphic visible from one side, but can be seen through from the other. This bulletin provides imaging and application techniques for these films. Testing should be performed prior to application to ensure proper adhesion of graphics to window substrates. If there are any low surface energy coatings present on the substrates (i.e. silicone), loss of adhesion may occur.

### Product Description.

Avery Dennison Perforated Window Film is comprised of a perforated calendered white on black face film utilising a transparent adhesive. For backing you can choose between a perforated siliconized paper laminated on stable paper liner or a white PET liner.

### Image Protection.

After printing the Perforated Window Film, the graphic needs to be overlaminated or clear coated to protect the image. In order to protect graphics printed on Perforated Window Film, the end-user needs to clearly identify what the total visual impact of the graphics should be. These guidelines will help clarify the benefits that each clearcoat/overlamine option provides.

The images should be overlaminated with Avery Dennison Digital Overlamine Film, either DOL 4000 or DOL 4100 (for the details please see the separate datasheet for this product) can be used, using a regular laminator where tension and pressure can be controlled.

Avery Dennison DOL 4100 is only recommended for 100% flat windows. Avery Dennison DOL 4000 can be used for either flat or slightly curved windows, such as vehicle rear windows.

Also refer to Technical Bulletin 5.4 – This bulletin handles the processing tips for Avery Dennison Digital Overlamine Films.

### Application.

- Clean the window thoroughly with Avery Dennison Surface Cleaner.  
**Note: Follow all safety instructions supplied Avery Dennison regarding the use of Surface Cleaner. See Material Safety Data Sheet for health, safety, and handling information.**
- Measure the decal to be applied and be sure the graphic fits into the window with a clearance around any rubber gasket. At no time should the graphic touch or overlay any window mouldings. Loss of adhesion causing material failure can occur if material overlaps mouldings.
- Use low tack tape (i.e. masking tape) at the top of the image to position into place on the window while the liner is still attached.
- Flip the graphic up using the low tack tape as a hinge and start removing the liner from the graphic. Flip the graphic back down and start applying squeegee pressure on the film creating adhesive contact to the window, removing the liner as you go. Start the squeegee action in the middle of the image and squeegee from one side to the other. Continue this process from the top of the decal down using overlapping strokes and removing the liner as you go. If needed, the graphic can be adjusted carefully after pressure to realign the material or take out wrinkles, material must be re-squeegeed after repositioning.

**NOTE: Wet application methods are not recommended for perforated window film graphics. Water will be trapped in perforations causing vision to be obscured when looking through graphics.**

- If panels meet edge to edge in the window, trim edges carefully to form a butt seam. Do not overlap seams or edges. Trimming should be done prior to application. Cutting film on windows may permanently scratch the window.
- All exposed edges and seams must be sealed with edge sealer. This will prevent water and contaminants from getting under the film and obstructing viewing or contaminating the adhesive. Sealer should be applied carefully to completely seal the edges and also to minimise the distortion caused by the sealer from the viewing side of the graphic. Follow all directions of sealer manufacturer to prevent improper application of edge sealer. Use a 6mm brush to apply sealer in order to have greater control and make a neater application.

## TECHNICAL BULLETIN 5.12

### Removal Instructions.

In order to remove overlaminated Avery Dennison Perforated Window Film with minimum damage to substrates, the following methods are recommended. Surfaces treated with abrasion resistant or anti-reflection coatings may experience some degradation, and as a result, could be affected during removal.

#### Heat Removal

- Heat one corner of the marking with a heat gun. Use caution to prevent material or window from becoming overheated. Follow all manufacturers' instructions for use of heat source equipment.
- Insert a razor blade, or knife under the corner to loosen the marking, be careful not to damage the substrate. Grasp the lifted edge and pull up and away from the substrate with a slow even rate at an angle less than 90°. Keep even pressure and heat the area of film immediately ahead of the area being removed.
- If adhesive residue or edge sealer is left on the substrate, follow the instructions below for additional removal tips.

#### Chemical Removal

- The use of chemicals for removal of Perforated Window Film which has been clear coated is possible. Such systems can be used on overlaminated material, but the process may not be as effective. Read all instructions as supplied by any chemical removal system manufacturer and pre-test any product with substrate and surrounding materials to ensure compatibility. Obey all safety, handling, and health precautions supplied by the chemical manufacturer.

**NOTE:** If adhesive or edge sealer remains after removal of the film, these may be removed by using Avery Dennison Adhesive Remover. Please check Technical Bulletin 1.10 Adhesive Remover for how to use. Other non-flammable citrus-based removers are available, and can be used. Follow all instructions from manufacturer.

**CAUTION: Extreme caution should be used to avoid fracturing, shattering, or cracking of glass substrates. DO NOT overheat. Use caution with flammable products. Do not use heat gun, heat lamp, open flames or other electric equipment in close proximity to solvent mixtures, vapours, or residues. Follow all manufacturer's instructions and review health and safety information.**

### Printing results in general.

After printing the Perforated Window Film, the result might look, in first instance, disordered. This is caused by the fact that ink is also sprayed into the holes of the film. This ink lands onto the backing layer that due to its physical conditions does not always spread the ink evenly. After removing the backing this phenomenon will disappear.

The solvents of the ink used will also cause a certain shrinkage, which will show as distortion of the print.

After removing the backing this phenomenon will disappear.

### Drying after Printing.

The drying time of the print depends on the type of ink used. The film needs to be dried properly before applying the overlaminate Film DOL 4000 or DOL 4100. Allow the print to dry for at least 24 hours (depending ink type up to 72 hours) before starting further processing. Ensure that a proper method of drying is used, so that all printed material has had the possibility for the solvents to evaporate or outgas.