

TECHNICAL BULLETIN 5.14

Preparation and Application of Avery Dennison® Window Films

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Introduction

The following illustrated instructions are a generic guideline to the indoor installation of Digital Printable Window Films.

PRODUCT DESCRIPTION

The following Technical Bulletin is applicable for the application of MPI 1440 Ultra Clear and SF100 Ultra Clear Window Films. These Polyurethane and Polyester based Window Films are suitable to be printed with various Digital Wide Format Printers the application on Windows for residential, commercial and architectural projects.

Printing

For details on the specific printer platforms recommended, please check our Product Data Sheets or our ICS Warranty documents for the individual printer manufacturer.

Always use dedicated ICC profiles from our website graphics.averydennison.eu for optimal results.

Especially for MPI 1440 Ultra Clear, the ICC profile provided takes the specific vacuum settings required for HP Latex printers into account. With lower temperature and vacuum and slightly increase Latex Optimizer level setting, optimal print results and workflow can be achieved.

In case of static build up in the film it is recommended to put extra care into creating a clean environment during printing. Remove potential dust particles from the printer and unprinted media prior to printing. Ensure relative humidity of about 50% (+/- 5%) in the print room. In the winter or during use of air conditionings during the summer, relative humidity can be significantly lower and lead to issues with static build up.

Loading instructions for MPI 1440 Ultra Clear for HP Latex printers

When loading material into an HP Latex printer, standard vacuum settings used may lead to improper feeding and potential contact between the substrate and the print head. This can be avoided by following these instructions:

- Load the print film in the printer using the manual setting instead of the standard setting.
- When loading, feed the print film through the printer / curing unit, so you can pull the material out of the printer.
- Keep the material under tension by holding the left and right side with your hands during the process.
- Follow the required instructions on the printers display for loading transparent materials.
- Feed the printer with sufficient material to attach it to a core and use the take-up reel system to ensure tension during the printing process.
- Use edge holders to avoid unwanted contact between the substrate and the print head.

Note: Although prints dry sufficiently and in adheres well to the print film, it is recommended to handle to printed film with care. Furthermore, window films are always recommended to be overlaminated. Next to improving the optical clarity and ease of handling during installation, this will also prevent damaging the graphics during installation. Please refer to our Product Data Sheets for further input on recommended overlaminates.

Lamination

After printing and proper drying the window films it is recommended to over laminate them. Due to its

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ultra-clarity, it is recommended to use MPI 1440 Ultra Clear for the overlamination. Please refer to TB 5.4 Processing Tips for Avery Dennison DOL Films.

In case of static build up in the film it is recommended to put extra care into creating a clean environment during lamination. Remove potential dust particles from the laminator and printed media prior to lamination. A cleaning roll may provide additional support in default free lamination.

Note: For cleaning fingerprints etc. from MPI 1440 Ultra Clear it is *not* recommended to use fluids that contain hard solvents (such as Isopropyl Alcohols or IPA). Use of these fluids on the surface of the overlaminant may cause loss of gloss or accelerate degradation, especially when the surface is afterwards processed (stretched or pressure applied). Therefore, we recommend the use of our Wrap Care Cleaner or use 10% washing up liquid diluted in water and rinse with clean water afterwards. Use of non-recommended cleaning substances may result in permanent matt spots on the surface of the film.

Application

Safety and Handling

The use of chemicals for cleaning should be done with caution.

Glass Preparation

- Use wetting solution based on water and detergent-free soap
- Use only non-abrasive cloth and soft squeegees to clean the glass.
- Use a new scraper blade to clean the glass surface from dirt, dust or any other small particle

Wetting Solution

The wetting solution should contain water with detergent-free soap (such as Baby Shampoo). Use 4cc (~4 drops) soap per liter of water for slip solution. Any soap-free soap used should not contain additives such as lanolin or silicone that may affect adhesive bond strength.

Installation Guidelines Recommended

Tools:

- 0,5 liter spray bottle with distilled water and 3 drops of detergent-free soap (slip solution)
- Small rubber squeegee
- Stainless steel knife
- Ruler
- Two pieces of adhesive tape
- Scraper
- Lint-free paper towels

Step 1 :

- Clean the window and frame thoroughly with soapy water solution) and



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Step 2:

- Open the window film, place it on the wet window and cut the film to the size of the window, leaving 2 cm overlapping edge around.
- Alternatively, measure the window and cut film to dimensions + 2 cm each side.
- Remove the film from the window, and thoroughly clean window once more. Re-wet the window, using lots of water.



Step 4:

- Place wet adhesive side of the film on to the glass.



Step 6:

- Trim the edges of the film adjacent to the window frame, using the ruler and cutter.



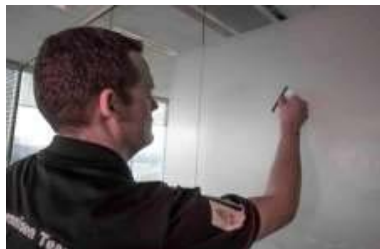
Step 3:

- Thoroughly wet the film on both sides (get some help from another person at this stage).
- Rewet the glass surface.
- Using two pieces of adhesive tape, separate the backing liner from the film and spray the exposed adhesive with plenty of water.



Step 5:

- Using the squeegee, wipe out from the center with firm downward and outward movements, removing water and air bubbles trapped between the film and the glass.



Step 7:

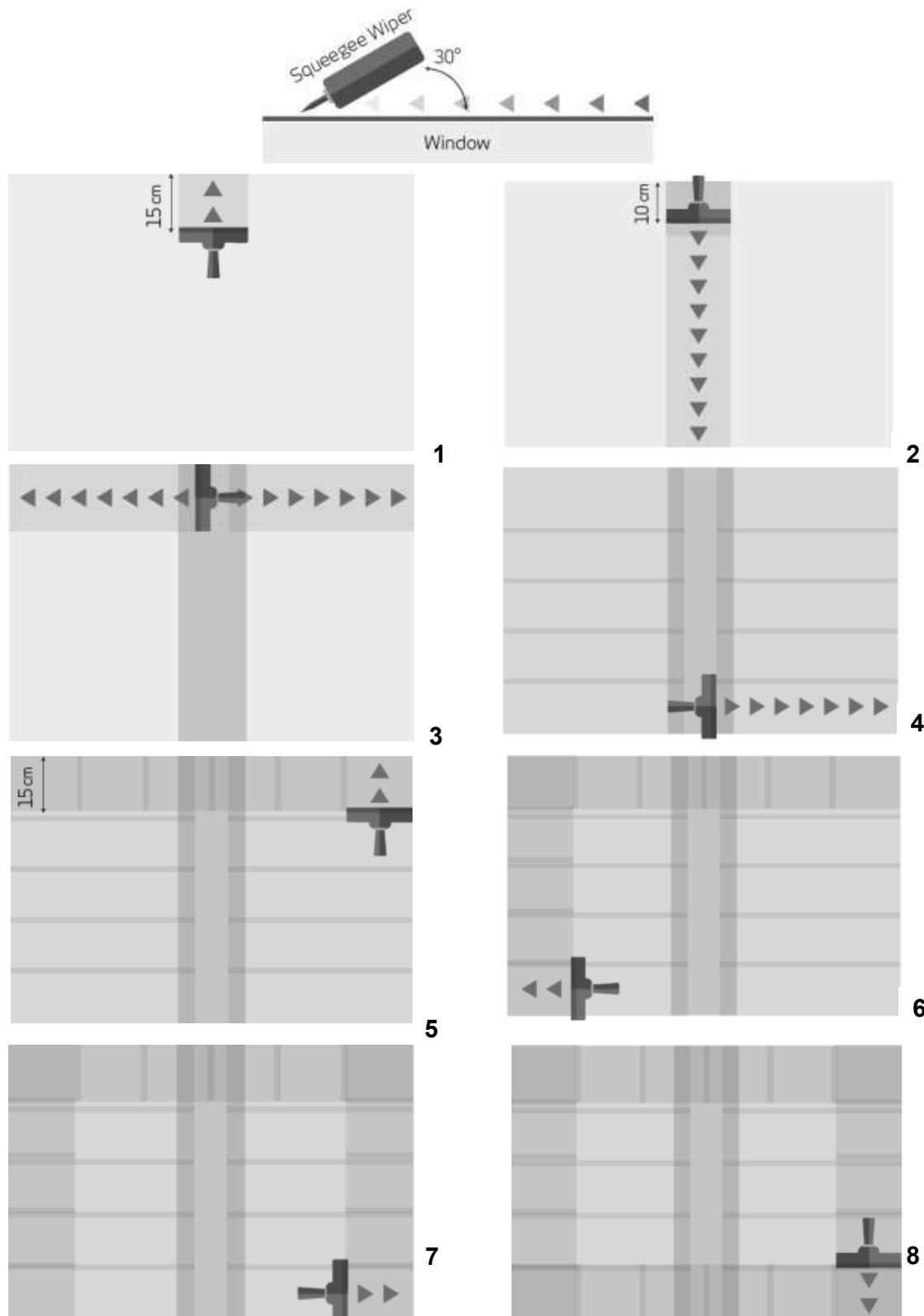
- Wet the film surface again, and pressing hard with the squeegee, wipe out from the center until all the air bubbles and remaining water have been removed from the edges.
- Wipe dry the edges of the film and the window, using the paper towels



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Allow the film to dry for 24 hours before touching the window.

Recommended Squeegee Technique



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Note: Printed graphics cause a different temperature rise and distribution across the window surface. This may lead to glass breaking. Avery Dennison is not liable for any type of glass breakage.

After Installation

BE PATIENT while your new film dries. Although most Avery Dennison films dry within a few days, drying time can be increased due to ambient temperature, film thickness, and presence of sunlight. Do not clean windows for 30 days after installation to allow mounting adhesives to adhere properly.

Do not try to “pop” bubbles and release retained water as this could void your warranty.

CLEAN your glass windows using a 10% washing up liquid diluted in water and rinse with clean water afterwards. As with all window surfaces, use soft cloths to clean window film rather than paper towels which could scratch the surface over time.

Maintenance

The installation procedure used a special solution of detergent and water, followed by squeegeeing to remove the excess water. However, the drying process is still continuing, and it will take several weeks to complete. In the meantime, there will be some bubbling and smearing, which is normal, but these blemishes will disappear after about four weeks. Within this time, the adhesive will complete its polymeric bonding process, and the moisture will disappear, leaving the windows perfectly clear.

Advise customer not to try to remove the bubbles by popping or pressing them; depending on the film type and local weather conditions; the bubbles will disappear by themselves within weeks. The warmer the weather, the shorter the drying period. Fogging and optical distortions may be present, but they too will disappear during the drying process.

Cleaning Instructions

- Use 10% washing up liquid diluted in water and rinse with clean water afterwards. Do not use ammonia solution. Wipe with synthetic sponge, very soft cloth or chamois leather.
- Rinse with clean water, and wipe off with a squeegee. Final traces of water can be removed with absorbent paper.
- **Remember:** Always tell client to inform window cleaners that film is installed, and to make sure they follow the above instructions. Use of a vapor cleaner is not recommended.

For general instructions on maintaining and cleaning graphics, please refer to Technical Bulletin 1.6.

Note: For cleaning fingerprints etc. from MPI 1440 Ultra Clear it is *not* recommended to use fluids that contain hard solvents (such as Isopropyl Alcohols or IPA). Use of these fluids on the surface of the overlaminate may cause loss of gloss or accelerate degradation, especially when the surface is afterwards processed (stretched or pressure applied). Therefore, we recommend the use of our Wrap Care Cleaner or use 10% washing up liquid diluted in water and rinse with clean water afterwards. Use of non-recommended cleaning substances may result in permanent matt spots on the surface of the film.

Removal of window film

1. Carefully and gently cut vertical stripes 15 cm apart on the entire film surface, without touching the glass.
2. Slowly peel each section individually, from top to bottom
3. Use a wide scraper or razor blade and plenty of soapy water to scrape any remaining adhesive from the window.

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