

Guide to Installation and Maintenance of Avery Dennison Architectural Window Film for Glass

Instructional Bulletin #7.00 (Revision 3)

Dated: 08/20/24

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1.0 General Introduction

All window film professionals have their methods of installation, the result of experience, skill and familiarity with the films, techniques and tools that they use. The purpose of this document is not to educate in the art of installation, but to impart installation and maintenance advice concerning Avery Dennison Architectural Window Films. The following illustrated instructions are a generic installation guide.

2.0 Product Description

Avery Dennison interior films are polyester-based with a removable clear PET release liner. Interior solar control films have a Water Activated (WA) adhesive. The Safety, Exterior and Decorative films have a Pressure Sensitive (PS) adhesive. Films are available in a wide range of light transmissions and performance levels and as security laminates. Films deliver 99% UV block and have exceptional clarity and levels of cleanliness. All Architectural Films wound onto the core with “liner-in”.

3.0 Product Application

Avery Dennison interior films are recommended for internal use on vertical applications, sloped or horizontal architectural glass, for residential and commercial projects. Some applications do require pre-approval. See the [Film-to-Glass](#) Recommendation sheet for details.

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4.0 Installation Instructions

4.1 Recommended Tools

- Hand spray bottle or pressurized spray canister
- Heavy-duty squeegee
 - similar to the 6" Blue Max Channel squeegee with the green quick-release Unger handle
- Olfa knife with 58-degree stainless steel blades
- Straight-Edge
- Two pieces of adhesive tape
- Glass cleaning scraper
 - similar to the Black triumph glass cleaning scraper with stainless-steel blades
- Lint-free paper towels



4.2 Glass Preparation

- Use a wetting solution based on water and detergent-free soap (such as Johnson's Baby Shampoo). Use 4cc slip agent to 1-liter water.
- For glass with caked on dirt and grime, use a new scraper blade to free the glass surface from dirt, dust or, any other small particles.
- Use a wetting solution, non-abrasive cloth and soft squeegees for final clean of the glass.

4.3 Application Solution

The application solution should contain water with detergent-free soap (such as Johnson's Baby Shampoo).

- Use 4cc (~4 drops) per liter of water for the slip solution.
- In hot environments it may be necessary to use more baby shampoo. Up to 10cc may be necessary if the water is evaporating too quickly
- Any slip agent used should not contain additives such as lanolin or silicone that may affect adhesive bond strength.

4.4 Installation of Films

4.4.1 Water-Activated Adhesive

Many Avery Dennison Architectural Window Films are available with a Water Activated Adhesive (WAA) instead of the pressure-sensitive adhesive. WAA-based films are often considered more suitable for single-person installation since they are dry and non-tacky until saturated with water. They also give exceptional clarity when viewed on glass, since the dry adhesive lowers static build-up when the liner is removed, thus reducing levels of airborne contamination that may be trapped under the applied film. Avery Dennison recommends saturating the adhesive with a wetting solution, and allowing the adhesive several minutes to react to the liquid; during this period, you may prepare the next film for installation, and then return to the initial film for squeegeeing. When installing WAA-based films, specific attention needs to be paid to:

- Thorough cleaning of edges
- Longer saturation time before water removal with squeegee
- Longer curing time
- Longer initial period without window cleaning (~3 weeks)

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- Keeping rolls in a moisture-free environment (leave silica gel in box, and rolls wrapped in original packing)

4.4.2 General Installation Tips

The instructions below are general instructions for Installing Water Activated (WAA) and Pressure Sensitive (PS) adhesive-based Solar Control & Thin Safety Films (up to 7 mil, interior installation only).

Follow above step-by-step installation up to step 6. For efficient and speedy one-person installation, we recommend using the “California Roll / Reverse Roll” method illustrated in [Section 4.4.3](#).

1. Clean the window thoroughly with Slip agent/water and scraper. Squeegee dirty water and thoroughly wipe the perimeter of the window with a microfiber or good quality paper towel. We recommend J&J Baby shampoo as the slip component.



2. For trimming glass to fill before removing the release liner. Spray the window with clean water. Place an oversized piece of film on the wet window.



3. Cut the film to the size of the window, leaving 3/4" (2 cm) overlapping edges all around. Alternatively, measure the window and pre-cut film out of the box or on a Film Handler.



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4. If the film was pre-cut on the window, remove the film from the window, and thoroughly clean the window once more.



5. Re-wet the window, using plenty of slip solution.



6. If the installation is taking place in an extremely dry region it may be necessary to wet the film on both sides (get help from another person at this stage) to reduce static. Rewet the glass surface.



7. Using two pieces of adhesive tape, separate the backing liner from the film removing the liner completely

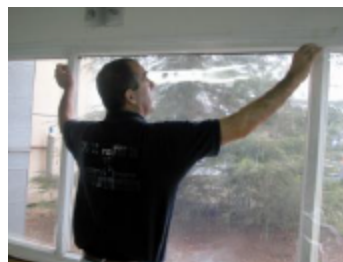


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8. Spray the exposed adhesive with plenty of slip solution.



9. Place the wet adhesive side of the film onto the glass.



10. Using the squeegee, squeegee out from the center with firm downward and outward movements leaving at least 1/4 inches (5 mm) squeegeed from the frame edge, removing water and air bubbles trapped between the film and the glass.



13. Trim the edges of the film adjacent to the window frame, using an Olfa knife and if needed you can use a straight-edge as an edge guide



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14. 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.



15. Wrap a lint-free paper towel around the edge of the hard card and "bump" around the edge of the installed film. Wipe dry the edges of the film and the window using paper towels.



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

4.4.3 California Roll

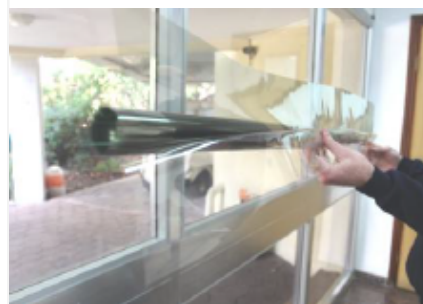
The "California Roll" / "Reverse Roll" method is an installation method of removing the liner which protects the adhesive of the Avery Dennison architectural films which can be useful when a second person isn't available to assist with the installation. This method uses the weight of the rolled-up piece of film and gravity (when using a film with a water-activated adhesive WAA) or to manually roll the film with a pressure-sensitive adhesive (PS) and single-handedly remove the protective liner from the film.

For this liner removal method, it is important to understand that Avery Dennison Architect Method of film liner removal, once the film is pulled from the roll to the width and length desired the roll of film must then be rolled back up with the liner facing out.

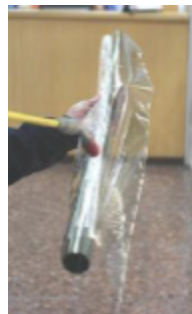
When it is time to install the rolled-up film, spray the entire surface of the glass with the slip solution, also spray the top of the film with the slip solution, peel the release liner back from the adhesive side, and press it to the wet top surface of the roll of film, (it will stick). Firmly hold the top edge of the film roll at the top of the window to be tinted and with a flick off the wrist allow the film to un-roll, place the unrolled sheet of film - now with the adhesive exposed - onto the wet surface of the glass. If the liner did not roll completely off, or once it can be manually unrolled and near the bottom of the glass surface, pull the remaining liner still protecting the adhesive off while the exposed adhesive is now resting against the wet glass.

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1. Carefully roll pre-cut film with the release liner facing out, with a 6 inch section remaining unrolled.



2. Spray both sides of the exposed 6 inches with the wetting solution.



4. Spray the exposed adhesive layer with plenty of wetting solution on the clean glass.



5. Hold the rolled film firmly in your fingertips, separating the liner from the film.



6. Firmly holding the film edge, gently throw the roll towards the ground. The release liner will peel itself off the film, and appear on the opposite side

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7. Complete film installation as described in [Step 10 in Section 4.3.2](#)



4.4.4 Preventing Scratching

The scratch resistant coating, while quite robust, is still a coating on a plastic sheet, and could be damaged during the installation without proper tools and care. It is not a good idea to squeegee while the film is dry; this could damage the scratch resistant coating.

To prevent scratching during installation, be sure to use a clean squeegee that has an undamaged edge with a good amount of slip solution to lubricate the film, the squeegees, and hard cards.

To complete the final press out it is best practice to wrap the hard card with a good quality paper towel to press out any areas as well as the edges.

As a final precaution it is possible to utilize the release liner that was removed from the film prior to installation as a protective barrier between the squeegee and the surface of the film when squeegeeing.

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4.4.5 Exterior film installation

A two person crew is recommended for exterior work as the film could be affected by the wind or elements.

Preparation

- Try to prepare the film as much as possible before going on site. the material is pre-cut, be sure to use a film handler for the best accuracy and yield.
- For best accuracy it is a good practice to measure the windows from different positions.
- Cut the film with a 1/16" to 1/8" gap around the edges to allow the Silicone Building Sealant to seal the film to the glass, not just the framing.
- Check window edges for existing old silicone.
- Speak with the customer about trimming, removing and replacing the silicone. Additional cleaning time needs to be taken into consideration for this. The film can be reverse rolled if needed.



Cleaning

It is very important to do a thorough cleaning of the glass. Any dirt or debris left behind will show under the film. The air temperature during installation should be between 40°F-80°F.

Note: A large amount of water will be required during the cleaning and installation process for the exterior window film.

- Start with 4 cc of Baby shampoo to 1 QT of water, distilled water recommended, or a reverse osmosis system for bigger projects.
- Wet glass with a mist of your soapy water.
- Using a Triumph Scraper or scrubby pad on a wet glass surface to remove any stuck on particles.
- Re-spray and squeegee after scraping with glass using your window squeegee.
- Using a lint free paper towel to wipe around the edges to remove any remaining dirty water and residue.
- Check for dirt below the rubber, potential rubber removal and rinsing especially from top especially outside

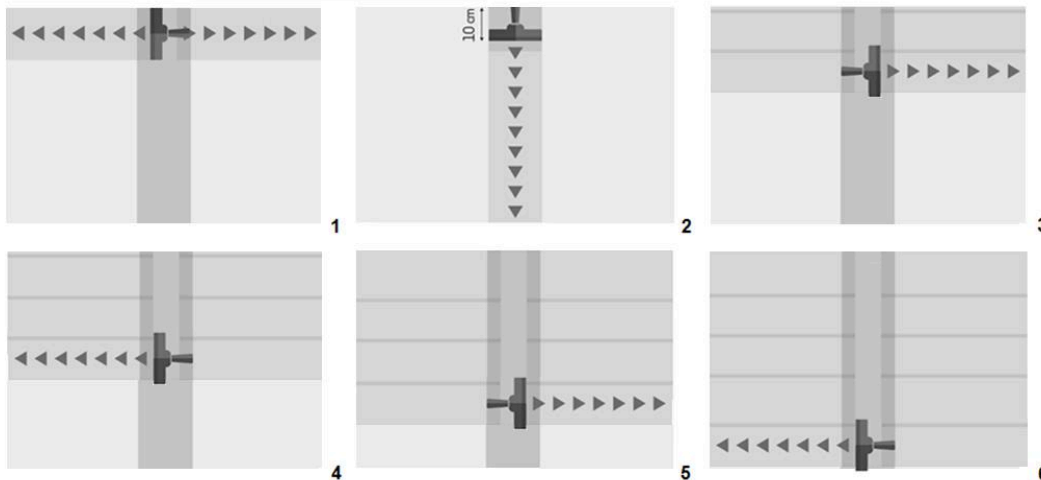


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Application

During the water removal sequence be sure not to squeegee all the way to the edge if the glass, going to the edge creates a wicking effect that can suck dirt back under film.

- Thoroughly wet the film on both sides (get some help from another person at this step).
- Re-wet the glass surface.
- Separate the release liner from the film and spray the exposed adhesive with plenty of water.
- Place the wet adhesive side of the film onto the glass.
- NOTE: Do not touch the adhesive layer with dry fingers
- Use a 6" heavy-duty safety film squeegee, applying firm pressure (similar to applying 8 or 12 mil security film).
- Work out the water side to side and from top to bottom Following the guide below for the correct water removal sequence.

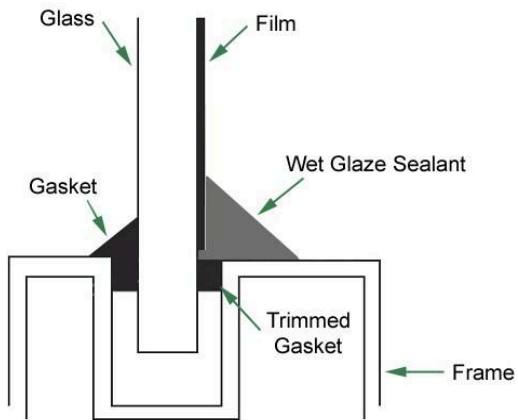


- Conduct an inspection after completing the installation look for lifted edges and any dirt that could be removed from beneath the film
- Allow the film to cure for at least 24 hours before removing the Cap sheet (if one is present) and applying edge sealant.

4.4.6 Exterior Edge Sealing

- Allow film to dry for 24 hours, then within 72 hours, complete with edge sealing for exterior XTRM pro skylight films.
- Do not forget to remove the Cap sheet (masking layer) before sealing the film.
- For XTRM pro window film application where pooling of water can happen. Avery Dennison requires a neutral silicone edge sealant to be used.
- All other vertical exterior products require edge sealing such as Dow Corning 795 or 885, or an equivalent neutral silicone sealing agent for external application

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4.4.7



4.4.7 Standard Film Edge Sealing

Some specific products, (Spectrally Selective), and applications within a distance of 10 miles (16km) from the sea as well as horizontal applications may require edge sealing. In such cases, use Dow Corning 795, 995 or 1199 (clear) or an equivalent neutral silicone sealing agent authorized by Avery Dennison's Technical Support (800-282-8379) on all four sides of the film.

4.4.8 After Installing

BE PATIENT while the new film dries. Although most Avery Dennison Architectural Films dry within a few days, drying time can be increased due to ambient temperature, film thickness, and the 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** the installed film with a quality glass cleaner or a solution of one (1) tablespoon of liquid dish soap per quart of clean water. As with all window surfaces, use soft cloths to clean window film rather than paper towels which could scratch the surface over time.

5.0 Care and Maintenance

5.1 General information and Drying Period

The installation procedure used a special solution of detergent and water, followed by squeegeeing to remove the excess water. However, the drying process is 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 clear.

Advise customers 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.

5.2 Cleaning instructions

Although all Avery Dennison Architectural films have excellent scratch resistance, it is preferable not to use abrasive products.

- Use 10% liquid soap diluted in water to clean windows. Do not use an ammonia solution. Wipe with a 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 clients to inform window cleaners that film is installed, and to make sure they follow the above instructions. The use of a Steam cleaner is not recommended.

5.3 Removal of window film

- Slowly peel each section individually, from top to bottom,
 - For thicker films such as security or anti graffiti film it is a good practice to carefully score vertical strips 6 in (15 cm) apart on the entire film surface, without touching the glass. This makes removal easier.
- Use a wide scraper or razor blade and plenty of soapy water to scrape any remaining adhesive from the window.