

# TECHNICAL BULLETIN

## Avery Dennison® Exterior Window Films

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### Introduction

Avery Dennison® Exterior Window Films are polymeric flexible laminates with an abrasion resistant hardcoat optimized for outdoor architectural application. A flexible, multilayer construction combines with the exceptional scratch resistant coating to provide an extremely robust product, warranty-backed to weather harsh external conditions for extended periods.

Avery Dennison® Exterior Window Films offer a universal solution to installation on modern glass systems, minimizing the risk of thermal breakage or seal failure, and increasing the efficiency of high performing, reflective, tinted, laminated, or Low E glass. The films maximize rejection of solar energy, and enhance the exterior appearance of the building.

### PRODUCT DESCRIPTION

- Flexible multilayer construction
- Unique scratch resistant coating for exterior application
- Optimized pressure sensitive adhesive systems
- 99% UV block
- Wide range of Exterior products

### Product Application

#### Glazing type

Avery Dennison® Exterior Window Films are suitable for external application to tinted, laminated, double glazed or Low Ecoated glass, and for use at sites where access for standard internal installation is difficult or prohibited. The films can be applied without fear of glass breakage, and outperform similar films applied internally.

Avery Dennison® Exterior Window Films increase the efficiency of high performing, reflective, tinted, laminated, or LowE glass. For example, the combined effect of reflection of the Near IR by the film, together with the reflection of the Far IR radiation by the LowE glass, results in lower emissivity levels than those provided by the Low E coating alone.

Avery Dennison® Exterior Films are not recommended for use on textured, hydrophobic or other externally coated glass panes.

### Film Features and Benefits

**Universal application** – Suitable for exterior installation on modern glass systems

- Negligible risk of thermal shock
- Increased functionality of high performing glass
- Uniform, modern appearance for all window types in building

**Extended longevity** – A unique, resilient hardcoat, and flexible product construction reduce mechanical, physical and chemical stresses within the laminate, extending the viable lifetime of the film:

- Durability tested by field and accelerated testing methods (ie outdoor exposure, standard weathering equipment, and proprietary extreme condition simulation)
  - Durability up to 7 years

### Simple cleaning and maintenance

- Easy-clean scratch resistant coating
- Easy-wipe graffiti-resistant coating

## Installation and Maintenance

### Glass Preparation

Surrounding air temperature during installation should be between 5°C-40°C.

- Do not install in extreme windy or rainy weather!
- Use wetting solution based on water and detergent-free soap (such as Baby Shampoo).
- 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 particles.

### Film Installation

#### 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.

#### Edge Sealing

External application of Exterior films requires a neutral silicone edge sealant for external use (such as Dow Corning 995 or 885, GE Max 5000, or an equivalent neutral silicone sealing agent for external application) on all four sides of the film. Profiles must be clean of paint, emulsions, etc prior installation and edge sealing process

#### Joint seaming

If joint seaming is required, please use neutral edge sealant Dow Corning 1199. The use of any chemicals for cleaning should be done with caution. Refer to the manufacturers Material Safety Data Sheet and follow all instructions and guidelines.

### Installation



**Recommended Tools:** Spray bottle with wetting solution (liter tap water and 4 drops of detergent-free soap); Scraper; Cutter knife; 6" heavy-duty safety film squeegee; Paper towels.



**Step 1 Glas preparation:** Clean the window thoroughly with soapy water and scraper. Be extra diligent in the **cleaning and preparation of window and frame** to minimize dirt and blemishes under the film.



**Step 2:** Spray film on both sides to avoid static (less dirt in installation) and flatten the film.



**Step 3:** Re-wet the window with a generous amount of wetting solution



**Step 4:** Using two pieces of adhesive tape, separate the release liner from the film.



**Step 5:** Attention! **Two installers are recommended** to assure careful handling of film during installation



**Step 6:** Remove release liner from film and spray the exposed adhesive layer with plenty of wetting solution.



**Step 7:** Position the film on the window with wet adhesive side on the glass.



**Step 8:** Using a 6" heavy-duty safety film squeegee, wipe from the center with firm downward and outward movements, removing water and air bubbles trapped between the film and the glass.



**Step 9:** Trim the edges of the film adjacent to the window frame, using the Stanley knife and the Edge Tool.



**Step 10:** Remove the cut-off trim.



**Step 11:** 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.



**Step 12:** Wipe dry the edges of the film and the window using a card wrapped in paper towel.



**Step 13:** Allow film to dry for 24 hours, then within 72 hours, complete by edge sealing on all four edges

## Maintenance

Outdoor films should be cleaned four times a year in order to maintain the appearance and clarity of the film. This is particularly important on all sloped or horizontal installations, since the accumulation of dirt and precipitation can cause problems. Installations in areas with heavy atmospheric pollution (such as in dense industrial zones) may require additional cleaning.

To ensure maximum film life, do not use ammonia-based cleaning materials to prepare the glass for installation, or abrasive cleaning materials to clean the film surface

Films should be cleaned with a liquid, non-abrasive cleaner that contains neither solvents nor alcohol, and has a pH value between 4 and 10 (neither strongly acidic nor strongly alkaline), such as water with a few drops of Johnson's Baby Shampoo.

## Removal of window film

Film removal will be easier and more effective if the surrounding air temperature is between 15°C - 30°C. We recommend removing the film by delicately scoring the film (without touching the glass!) into strips of ~5 cm width with a Cutter knife, and carefully starting removal of the film at the edge using a window film scraper. Remove the film strip from the surface by peeling slowly and smoothly at a 90° angle, in a continuous movement.

Some adhesive residue may remain on the glass after removing the film, and can be removed by gently wiping the adhesive traces (not the entire surface) with a non-abrasive cloth or pad dipped in IPA (iso-propanol) or denatured alcohol (ethanol).

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