

Madico Exterior Film Installation and Care Instructions

Madico's Premium Exterior Scratch Resistant Films (E PS SR) are surface coated with an extremely hard acrylic coating for easy installation using conventional window film installation methods. Due to the extraordinary hardness of this coating, special care must be taken during installation to avoid creasing the film. The below guidelines are suggested practices to insure proper installation of these products. Installation of exterior films is not recommended on extremely windy days and must not be conducted when temperatures fall below 40 °F (5 °C). Therefore, Madico advises the following storage, handling, installation, and care instructions for optimum film performance.

Storage and Handling

- Films must always be kept dry when not being fitted to the glass.
- Optimum storage temperature is between 40 °F (5 °C) to 100 °F (38 °C). Storage for prolonged periods outside this range will damage the window film or its coatings
- Store the material in a climate-controlled room for a minimum of 24 hours before application
- Heavy gauge polyester films can cause injury in the form of cuts. Madico recommends using cut-resistant gloves when handling these films.
- Keep unrolled window film within the protective polyester sleeve and within the box
- Keep the unrolled window film on the core suspended in the box by the square end caps that prevent the material from sliding or "telescoping" off the core
- Retain roll box for storage purposes

Equipment

- Application solution, Madico 30-1-1 Window Solution Concentrate (Part # 516602)
- Spray container, Stainless Steel 5 Gallon Sprayer (Part # GT101-N)
- Squeegee, 6" Pro Squeegee (Part # GT062)
- Edge guide tool, 5-Way Trim Guide (Part # GT190WHITE)
- Trimming Knife, Olfa[®] "Silver" Stainless Steel Knife (Part # GT126)
- Pressure-sensitive tape, available locally
- Cut-resistant gloves, available locally
- Razor scraper, 6" Triumph[®] Scraper (Part # GT107)
- Paper towels (lint free towels are best), available locally
- Film handler (for roll products) (Part # GT910 & GT911)
- Edge sealing compound, available locally, DOWSIL[®] 790, 794, 795, or 796 structural silicone or GE Silicones SCS1200 or SCS 2000 Silpruf[®] silicone sealant
- Edge sealing application equipment, available locally, Light Weight Sausage Gun

Application Solution

Residual applicator solution under the film is one of the greatest but least recognized causes of film re-installations. These microscopic particles prevent the adhesive and film from making direct contact with the glass and provide a starting point for bubbles, fingering, wash boarding, demetallization and other types of deterioration. Using proper applicator solution in the right concentration, along with the correct squeegee techniques with the proper squeegee will help prevent these problems.

Madico supplies 30-1-1 Window Solution Concentrate (gallon jug part # 516602) to be used as a window cleaner, application solution, and a squeegee lubricant. This solution has been tested and found to be neutral to both the films and adhesives that Madico uses. However, proper concentration is critical. Water evaporates from between film and glass quite easily, but the soapy portion of the solution can leave some residue. To minimize this, the recommended dilution is 30 parts distilled water to one-part solution. **Never** use more solution (>1 part per 30 parts water) than this and use less if possible. In fact, use as little of the concentrated solution as possible while still maintaining the ability to move the film on the glass.

If this mounting solution is not available, a suitable alternative is Johnson's® Baby Shampoo (or generic equivalent). One fluid ounce to one gallon of water (7 mL per liter of distilled water) works well.

Product Installation

The below are guidelines and suggested practices to ensure proper installation of these products.

Installation of films is not recommended in dusty environments or when temperatures fall below 40 °F (5 °C)

Film Preparation

- Take the film out of the box.
- Remove end plugs and protective sleeve. Save plastic sleeve to protect film when job is completed. Replace end plugs and put film back into box.
- Set box in front of window so that release liner, which protects the adhesive, faces installer.
- Measure window glass from inside the frame.
- Film length and width should be pre-cut at least 1/4 inch narrower than window dimensions.
- If possible, have assistant hold cut film
- Proceed to Preparation of Windows (next step)

Preparation of Windows

Cleaning the window completely and thoroughly is the single most important step.

- Wash window with solution and squeegee.
- Wet window with solution and then scrape the entire surface with a razor scraper.
- Wash and squeegee again.
- Wipe edges carefully with paper towel.
- Make sure that all loose dirt is removed. Repeat cleaning process if necessary.
- Proceed to Application of Film to Windows (next step)

Application of Film to Windows

Release Liner Removal

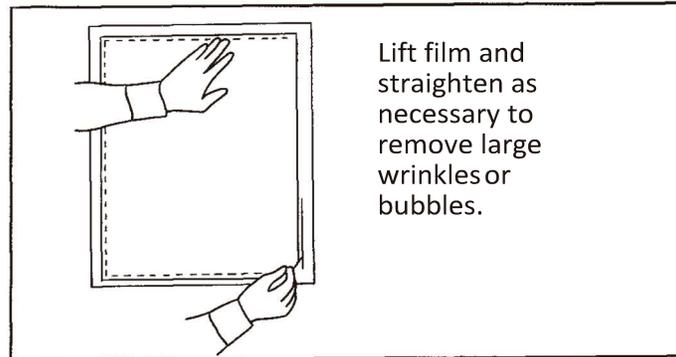
"PS" adhesive is pressure sensitive and sticks to anything with which it comes in contact. During application, the release liner must be removed. Protect the film and exposed adhesive during the entire installation procedure. Do not let it touch anything but the glass on which it is to be installed. Beware of particulates being blown in high winds.

- As you pull the liner off the film, begin to spray adhesive surface with the mounting solution, completely soaking exposed adhesive. Continue pulling down on clear release sheet while spraying solution on adhesive. Solution will neutralize adhesive, preventing it from sticking to anything. Once initial removal of liner begins, try to pull it down evenly across the film. Removal will be easier. Discard release liner.
- With adhesive surface completely exposed, spray one final time with solution to ensure that 100 percent of adhesive is wet.
- Discard release liner (backing sheet)
- Proceed to Film Application (next step)

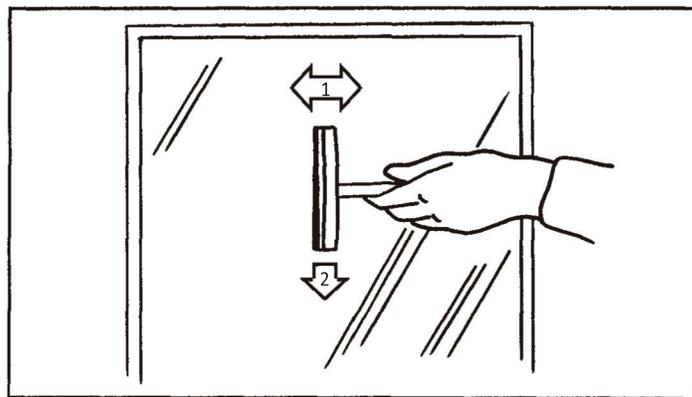
Film Application

- Soak the window thoroughly with solution
- Holding the film at uppermost corners, being careful not to allow film to touch the ground or any other surface, place the film on window with adhesive side against glass. Care must be taken to avoid bending or creasing the film.
- Since the applicator solution has made the window surface slippery, you can now slide film so that one edge of the film has approximately 1/8 inch (3 mm) gap between the film and the frame. This gap is necessary to facilitate proper edge sealing of the film.

- If necessary, lift film to remove large wrinkles or bubbles. If properly done, this edge will not have to be trimmed. Properly sized, pre-cut films leave enough gap (up to 3 mm) at all edges so it can be positioned / centered into place.



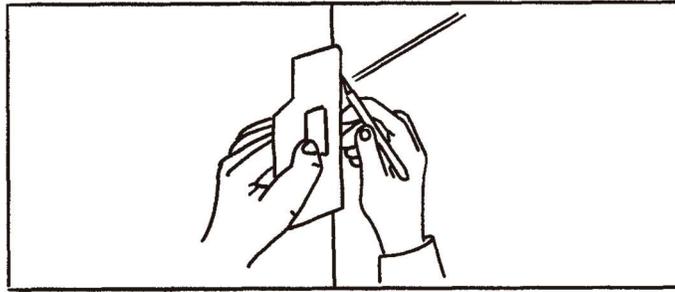
- Soak the side of the film facing you with Solution.
- Beginning at center of window, squeegee once across top to right side of window.
- Going back to top center, squeegee across to left hand edge of the window, then squeegee each half of the window in straight, smooth, downward overlapping strokes working from center out to edge of the window until all excess applicator solution has been squeegeed out from under film and film is lying flat.
- It is important to apply ample pressure to remove all the water and solution from under the film.
- However, squeegee will not float across a dry surface, so be sure to re-lubricate with applicator solution as needed.



Film Trimming

- This step is only necessary if film was not pre-cut to size. If film has been cut to size please proceed to Final Squeegee step (Next step)
- Butt your edge guide tool against window frame, perpendicular to glass (see diagram).

- With trimming knife and new, sharp blade, trim excess film using edge guide tool to provide a narrow straight-line border. Do bottom and side before top, so that trimmed film will not get in your way.



- Start trimming operation from corner but do not finish cutting into corner.
- Remove and discard all film scraps.

Final Squeegee

- Once film is completely trimmed, spray the surface once more with applicator solution. Repeat squeegee operation as described in the Film application step.
- Finally, using several folded paper towels, wipe around edges of film to completely remove all excess water.
- Heavy gauge films require repeating this procedure until all visible moisture is evacuated from between the film and glass surface.

Large Glass Panels

- With larger windows, two technicians are sometimes necessary
- It is important that when the release liner is removed, and the adhesive is exposed, that a full, even flow of solution on both the film and glass surface is there before the film is positioned on the glass.
- Squeegeeing on larger windows is the same as above. Use EVEN, OVERLAPPING, FIRM PASSES. Heavy gauge films require repeating this procedure until all visible moisture is evacuated from between the film and glass surface.

Film Drying Time

Madico exterior glazing films require sufficient time to dry, allowing full adhesion of the film to the glass surface. Cold, Rainy, and cloudy weather conditions can prolong the drying process. Warm weather and direct sunlight exposure will shorten the drying time. Small water beads and a slightly cloudy look are common and may appear during this period. If slow drying occurs, do not be alarmed since it is the part of the natural curing process. Water bubbles will disappear. A few small particles or “points” may remain. They are visible only from the outside. Inherent to film adhesives, these points are light reflections.

Edge Sealing

All exterior film applications must be edge sealed to prevent moisture ingress under the film. It is recommended to begin the edge sealing process after the film has cured, typically between 5-7 days after installation in warm weather and 10-14 days in cool weather.

Precleaning

- Cleaning the film, frame, and gasket before applying sealant will enhance adhesion

Edge Sealing

- Only DOWSIL® 790, 794, 795, or 796 structural silicone or GE Silicones SCS1200 or SCS 2000 Silpruf® silicone sealant may be used. SCS-1200 Clear is recommended when visual quality is an issue.

- Film should be sealed to the glass and window frame. A bead of sufficient size must be used to overlap the film a minimum of ⅛ inch (3 mm) and then cover the ⅛ inch (3 mm) gap between the film and the frame, and contact the glazing gasket or bead to ensure a watertight seal.
- The overall thickness of the silicone bead (above the film) MUST BE a minimum of ⅛ inch (3 mm)

Care and Maintenance

- For best cleaning results, do not clean the film for 30 days after installation.
- Do not use:
 - Brushes of any kind, pure ammonia, industrial strength cleaners, cleaning solutions that contain abrasive materials, coarse paper towels, napkins, tissue, or newspapers.
 - Wiping or sweeping should not be used to clean.
 - **Brushes or abrasives must never be used.**
- Madico recommends hosing or power washing with a mild soap solution
 - Use a low to moderate pressure for power washing
 - Use a minimum distance of at least 8 inches (20 cm) with consistent sweeping motion
 - Avoid pointing the nozzle in one location
 - Following cleaning, rinse with clean water using a hose with moderate pressure
- Alternatively, household liquid cleaning solutions such as Windex®, Ajax®, or similar window cleaning solutions may be safely used.
- For stubborn stains, a foam paint roller with soapy water used in conjunction with the power washer may be used.
- A conventional window washer squeegee may be used.

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