Solar Control, Safety and Security Window Films: **Tech Bulletin**

Ecolux™ Low-e Film Installation

Although traditional installation practices are acceptable, the unique design of Solar Gard Ecolux™ film can benefit from attention to specific areas of installation. This document provides a best practice approach to the handling and installation of Solar Gard Ecolux window film to ensure the best results are achieved.

Additional installation information you may find helpful:

- Architectural Film Installation Basics , PDF0257SGAIB
- Ecolux™ Installation Video

Film Handling

Due to the unique design of Solar Gard Ecolux special care should be taken when handling the film whether cutting, prepping or installing. It is critical to avoid kinks, folds or creases as it could damage the film leaving permanent white or cloudy marks in the film. Avoid over handling the film by using a sound approach to the installation process. Throughout this document we will reference the handling of the film in particular areas as it is one of the key components to a successful installation.

Steps

The basic process for installing Ecolux film is the same as traditional films with the exception of giving special attention to handling and solution removal. The steps are: Pattern, Prep, Install, and Finish.

1 Pattern

For best results, it is recommended to cut the Ecolux film on a Filmhandler. Cutting the film from the Filmhandler provides precise cuts which may reduce the amount of excess material extending over the glass area and frame. In most instances, it can provide two to three straight edges minimizing the cutting needed on the glass as well as reducing the amount of handling during positioning.

a. Place a new blade in the blade holder. Older blades can cause unnecessary resistance while passing through the blade holder which can damage the film.

b. Windows exceeding the height of the Filmhandler should be rolled up prior to pulling the remaining length. Excess length of material will tend to fold or kink if it is allowed to gather up on the floor. Cutting the film from the box should be done on a flat surface where the film can rest rather than off the end of a table. This will assist in supporting the material while it is rolled up. Roll the cut film with the liner in to a large diameter and then tighten to no less than two inches. Film that is not intended to be installed immediately should be rolled onto an empty core with the liner in. The core will put pressure on the liner preventing liner tunneling.

(TIP: Use a plastic or paper cylinder core to assist in rolling the film.)

2 Prep

a. Use standard prepping practices to prepare the glass for film installation (refer to PDF0257SGAIB).

3 Install

Ecolux film has a pressure sensitive adhesive. It is recommended as with other pressure sensitive films to spray mounting solution on the glass and the film ensuring both surfaces are thoroughly and evenly wet. Film Installation in direct sunlight should be avoided.

(TIP: Do not spray solution into the top edge as contaminants can flow down the window.)

a. Remove liner from the film. Film should not be drop rolled but reverse rolled to remove liner. Drop rolling the film could cause damage to the film when released to free fall. It is recommended that large windows be handled by two installers including liner removal and film positioning.

b. Depending on the liner removal method used check that no dry spots are on the window or the film and spray as needed. Any dry spots could prevent film slip and require the film to be lifted or moved forcefully. This type of lifting or movement can cause unwanted contact with the frame or gasket causing damage to or contamination in the film.

c. Apply the film to glass surface aligning any straight edges per the cutting method to the corresponding frame edges. The other edges of the film should overlap the frame. Avoid pushing the film into the corners or along deep frames as this may cause kinks or creases which may damage the film.

d. The film's surface is treated with an anti-smudge coating. Depending on your slip preference you may

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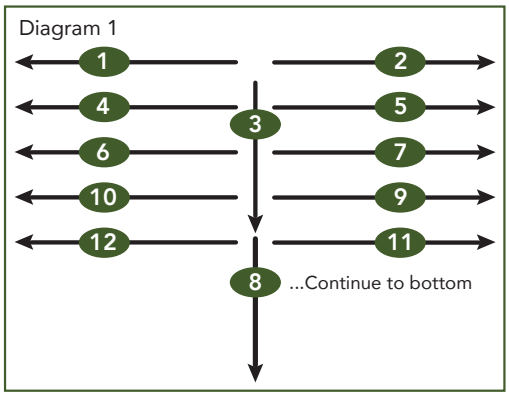
need to re-spray the surface of the film to create the amount of squeegee slip desired.

(TIP: Spray the surface of the film in a mist pattern. This will distribute more evenly across the surface.)

e. Proper use of the squeegee is essential to achieving professional results. For consistent pressure providing maximum moisture removal, we recommend the Unger stainless steel channel with a "sharp" Blue Power Max Blade (ST0578-6) on an Unger handle (ST0576). Use slow strokes applying a good amount of pressure through the entire pass. Use both hands and your body weight to your advantage and lean into the squeegee as you push. Squeegee strokes should overlap your previous pass 50 to 75% to prevent water trails following the strokes in the diagram 1. When squeegeeing towards an overlapped edge stop short leaving about 4" (10cm) not squeegeed. This will prevent contamination from the frame getting under the film.



f. Once the film is tacked to the window, use a utility knife or scissors to cut any overlapping corners at a 45 degree angle (Figure 1). This will prevent kinks or creases when pressing the film into the corners prior to cutting otherwise film may be damaged as seen in Figure 2.

g. Trim all overlapping material using a trim guide or freehand.

(TIP: A Filmhandler can provide 2-3 straight edges leaving only 1 or no corners to cut at a 45 degree angle.)

Figure 1

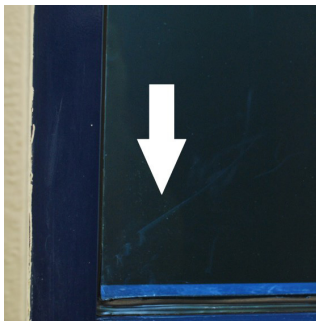


Figure 2

h. Spray solution on the film and squeegee the edges. Position the squeegee in a plowing angle and squeegee the edges so water moves to the films edge reducing the chance of contamination being picked up by the squeegee which could scratch the film. When proper squeegeeing technique is used a single squeegee pass is sufficient to install the film, reducing your installation time and physical effort. It will also reduce the drying period needed for the film.

Note: Ensuring maximum removal of the solution is essential to reduce the dry out period. Failing to properly squeegee the film can result in moisture retention bubbles that may have a white foggy/hazy appearance (Figure 3). These will dry, however the length of time depends on the amount of solution remaining and the environmental conditions.

Figure 3 demonstrates what may occur when proper squeegee technique is not utilized. Notice the area to the left of the line shows no signs of moisture retention while the area on the right has signs of moisture retention which will require long dry out periods.

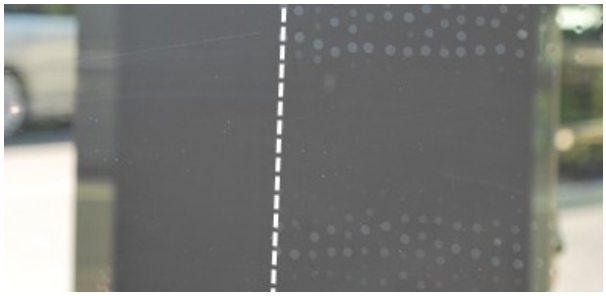


Figure 3

4 Finish

a. Using a five-way tool or hard card wrapped in a lint free towel systematically work around the window to dry the edges of the film and frame. Rotate towel frequently to reduce the chance of scratching due to contamination from the frame and maximize solution absorption.

b. Wipe dry the frame and film with a lint free soft cloth.

c. Step back and inspect your work. View the window at various angles to check for proper water removal and for contamination under the film. Immediately squeegee any excess solution out to the edge. Use a marking pencil to identify any contamination that needs removal. Carefully lift the film from a corner while spraying the adhesive. Pull away from the glass and reach underneath the film rather than folding the film back. Folding back the film may cause kinks or creases. Rinse the area and reapply the film.

Installation temperatures: Ecolux film should not be installed on single pane glazing when outdoor temperatures may fall below 40° F (5° C) or on Insulated glass units when the temperatures may fall below 10° F (-12° C). Installation completed in these weather conditions could lead to prolong drying periods specifically on windows not exposed to the sun.

Prior to recommending Solar Gard Ecolux to your customer refer to the Film to Glass Guide (PDF 0234) for any restrictions specifically when applying Ecolux to an existing Low-e glazing. Always use a Low-e emissivity meter (PN ST0748) to test an IGU to see if it has a Low-e coating and, if it does, whether the Low-e coating is located on surface 2 or 3.

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