

TECHNICAL BULLETIN

Avery Dennison® XTRM™ Film Series Installation Guide

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Introduction

Exterior XTRM™ film series (R Silver XTRM™, DR Grey XTRM™ SS Natural XTRM™) for glass substrate herald a new generation of extended life exterior window films, based on novel films and chemicals, and innovative coating technologies. This robust metallized polymeric based films deliver the exceptional solar quality of exterior reflective films, with the lifetime durability you'd expect from an interior film. With outstanding energy-saving performance and up to 15 year warranty, the XTRM™ films are ideal for energy efficiency projects where a long-term service period is critical to payback. The films are compatible with high-end glazing systems, enhancing the performance of even the most sophisticated glass units.

Product description

- High performance XTRM™ film for exterior vertical applications, rejects solar energy, and provides 99.9% UV block
- Total product thickness: 5 Mil, including scratch resistance coating and glossy release liner; net thickness on glass: 4 Mil
- Pressure sensitive adhesive for glass substrates
- Extremely durable polymeric base film laminate
- Newly developed SR coating to increase the film's longevity and prevent surface damage during installation and cleaning
- Up to 15 years*

Application

Exterior XTRM™ film series (R Silver XTRM™, DR Grey XTRM™ SS Natural XTRM™) are recommended for external use for commercial projects, on vertical architectural glass. For a complementary solution for horizontal and sloped glazing, use R SkyLite 20 XTRM™.

The main idea is to install the Poly product on glass in conditions that will help cure the adhesive faster to the surface as it has a relatively lower initial tack (in the first 24 hours) until it develops the strong adhesion strength to surface.

This can be achieved with both adding Ethanol to the wetting solution (as advised in details in our XTRM SkyLite guidelines) along with recommended installation takes place on hotter days (e.g outdoor temperature above 20 degrees during installation , direct sun exposure also helps speed up the process).

Important note relevant for all XTRM SkyLite installations (not just for this exception approval but in general - just even more relevant in this case) - make sure the outdoor temperature is not expected to drop below 5 Celsius degrees in the first 24 hours from installation. The reason for this is to ensure if there are some remaining water residues underneath the film from the installation, that they don't become frost and affect the adhesion strength developed.

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Instructions for Installation and Maintenance

A. Glass Preparation

- Surrounding air temperature during installation should be between 10°C-40°C
- Do not install in extremely windy or rainy weather!
- Use a wetting solution based on water and detergent-free soap (such as Johnson's 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.

B. Film Installation

Correct installation procedures are vital for maximum longevity! We recommend and offer detailed installation training. Before performing trial applications, please thoroughly study the installation manual, and be in contact with Hanita's technical department for training schedule and certification.

C. Highlights

Follow standard installation procedures, but pay particular attention to the following:

- Installation of Exterior XTRM™ film series (R Silver XTRM™, DR Grey XTRM™ SS Natural XTRM™) by certified installers only. We recommend a team of two installers for successful installation.
- Handling of the new film requires special attention – Do not fold or crease film towards the release liner! This could cause cracks.
- Pre cut film to window size: prepare the film straight from the box, cutting from the hardcoat side with a sharp blade, keeping film rolled with release liner out (SR coating inside).
- In slight windy conditions, using the "reverse roll" method (as described in detail below) will help ensure no folding of film occurs during installation.
- The Edge Tool is recommended for an accurate cut of the edges with a gap of 2-3mm from window frame.
- Use a good cutter blade to cut the film edges without hesitation. Any fringes or edge you leave on the film may cause the film to start to separate.
- Use a 6" heavy-duty safety film squeegee, applying firm pressure to work out the water from top to bottom, center to outside, similar to the installation of SF Clear 12 mil Safety film.
- Make sure to wipe dry excess water from the edges.
- Edge sealant must be used on all four edges, applied 24-72 hours after installation

D. Wetting Solution

The wetting solution should contain water with detergent-free soap (such as Johnson's Baby Shampoo). Use 4ml (~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.

E. Edge Sealing

External application of Exterior XTRM™ film series (R Silver XTRM™, DR Grey XTRM™, SS Natural XTRM™) metallized Exterior film 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 extremely long-term (12-15 years) external application on all four sides of the film. Avery Dennison® Edge Sealing Tape can be used as well. Profiles must be clean of paint, emulsions, etc prior installation and edge sealing process.

F. Joint seaming

If joint seaming is required, please use clear neutral edge sealant Dow Corning 791.

G. Step by Step Installation Guide

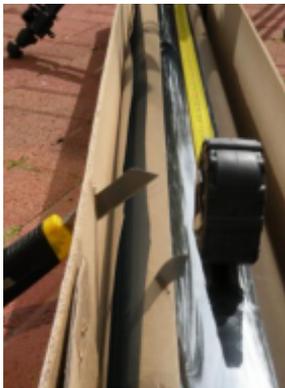


Step 1 - Recommended tools:

Spray bottle with wetting solution (1 liter tap water and 4 drops of detergent-free soap); Scraper; sharp knife; 6" heavy-duty safety film squeegee; Paper towels.

Step 2 - Glass 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 3 - Precut film: Precut film to window size, leaving 2cm overlapping edge all around: prepare the film straight from the box, cutting from the hardcoat side with a sharp blade. Make sure the film is rolled with release liner outside (SR coating inside).



Step 4 - Spray film: Spray film on both sides to avoid static (less dirt in installation) and flatten the film.



Step 5 - Window: Re-wet the window with a generous amount of wetting solution.



Step 6a - Using two pieces of adhesive tape, separate the release liner from the film.



Step 6b - Attention! Two installers are recommended to assure careful handling of film during installation.



Step 6 c - Make sure **NO FOLDING OF FILM TOWARDS RELEASE LINER** occurs, to avoid cracking!



Step 7 - Remove release liner from film and spray the exposed adhesive layer with plenty of wetting solution.



Step 8 - Position the film on the window with wet adhesive side on the glass.

Hint

In slight windy conditions, the "reverse roll" method may be helpful to ensure that no folding of film occurs during installation, replacing steps 7-8 above. More soap might be needed for better positioning of film on glass in this method.



Step 7 alternative - Separate release liner from the precut film (rolled with liner outside) and spray the exposed adhesive layer generously with wetting solution. Make sure to wet the window with plenty of wetting solution!



Step 8 alternative - The two installers position the film on the window with the wet adhesive side on the glass. While one installer supports the rolled film, the other pulls the release liner downwards from beneath.



Step 9 - 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 10 - Trim the edges of the film adjacent to the window frame, using the sharp knife and the Edge Tool.



Step 11 - Remove the cut-off trim.



Step 12- Wet the film surface again, and pressing hard with the squeegee, wipe out from the center until all the air bubbles and remaining water has been removed from the edges.



Step 13 - Wipe dry the edges of the film and the window using a card wrapped in paper towel.

Step 14 - Edge Sealing: Allow film to dry for 24 hours, then within 72 hours, complete by edge sealing on all four edges.

H. Maintenance

Outdoor films should be cleaned three 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. Films should be cleaned with a liquid, non-abrasive cleaner that contains neither solvents nor alcohol, and has a pH value between 5 to 9 (neither strongly acidic nor strongly alkaline). Recommended cleaning solution: water with a few drops of Johnson's Baby Shampoo. Installations in areas with heavy atmospheric pollution (such as in dense industrial zones) may require more frequent cleaning.

Warning: do not use cleaning solutions that contain ketones such as MEK or acetone. Avoid use of brushes and squeegees used in standard window washing.

I. Removal

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 Stanley 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 degree 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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