

Commercial Solutions Division

3M™ Fasara™ Glass Decorative Film

Instruction Bulletin

Product Description 3M™ Fasara™ films are decorative glass and window films. These films can be used to control both light and privacy. Fasara™ films have been developed with focus on interior design.

Applying Fasara Glass Finishes to plastic application surfaces, such as acrylic and polycarbonate, is not recommended or warranted. Plastic materials may outgas, causing the finish to bubble or peel. Outgassing is the release of a gas as certain plastics or coated surfaces dry and cure. This occurs over a period of time, but not indefinitely. Product that is applied to a surface that is still outgassing will develop air bubbles in the product that may appear some time after the installation. 3M assumes no liability for bubbles that appear in the applied product due to outgassing.

- Tools**
- Squeegee (silicone coated surface, rubber hardness 80, thickness 6 mm or more, width 15 mm - 20 mm)
 - Cutter
 - Ruler
 - Aerosol can for aqueous solution of mild detergent

Preparation of Application Carefully clean the glass and frame before application to remove dust from the surface.
Prepare an aqueous solution of mild detergent with the following concentration:
Add 4 to 8 ml of mild detergent to 4 l of water (concentration: 0.1% - 0.2%)
4 l solution can be applied to approximately 30 m² of glass.

- High detergent concentration causes the squeegee and finish to slip, resulting in insufficient application pressure.
- Low detergent concentration causes the finish to stick or prevents the squeegee from traveling smoothly across the finish, which results in an inconsistent application and leaves excess water behind.

Application	Substrate	Flat glass only
	Recommended application temperature (minimum air and substrate)	+12°C - +38°C

Make sure the film is correct for the application (all films except Mat Crystal 2 and Milky Crystal are for indoor use only).

Handle with care since Fasara is thinner and folded more easily than regular interior decorating films.

1. Use the detergent water (see section “Preparation”) during application to make film alignment easier. Apply it evenly to the adhesive side and glass surface using the aerosol can.
2. Position the film onto the glass substrate. Due to the detergent water it is possible to slide with the film to the right position. Apply the entire film to the glass with even pressure.
3. Apply the aqueous solution again to the fixed film. Start the application using the squeegee from the middle to the left and right. Squeeze the water out.
4. Dry the whole application. Carefully dry the edges to avoid lifting.

Application Precautions

- Do not overlap the films. Overlapping applications are not covered by any product warranty of 3M.
- Striking the film surface with hard objects could damage it. Do not scratch it with metal or other objects.
- Do not apply stickers or seals to the film or write on it with markers.
- When jointing films, there could be a slight difference in appearance in color, etc., depending on the product lot. Do not use products from different lots next to each other.
- The surface of the film could be damaged by burrs on the ruler used during joint. Be sure to use a ruler that has no burrs. Further, take such measures as putting masking tape on the back of the ruler. Especially black films, scratches on black films are highly visible.
- Some types of glass on which a Fasara™ Glass Decorative Film has been installed may crack as a result of the high temperature caused by the glass's material properties and application conditions. To ensure a safe application, calculate the probability of this thermal crack prior to the installation.

Finishing the Application

The “residual water phenomenon” is that the moisture during application remains between the glass and the film even after application is completed and causes small water bubbles or clouding to form.

This phenomenon will disappear as the moisture evaporates, but this may take several days when the film is in the shade or the temperature is low. In case of the design Fasara, RE1SIAR and SH2SIIM, it takes time to dry out due to metallic membrane layer. This time can be shortened by squeezing out the water by using full pressure. Approximately 2 months may be needed for the dry out in winter season.

Note This does not apply when the film was not applied correctly.

Maintenance and Cleaning

If the surface of the film becomes dirty, leaving it could cause the film to deteriorate soon. In addition, dirt will lower the reflectance and other performance of the film. Regularly clean the film to maintain its performance. Pay attention to the following points when cleaning the film side of the glass.

1. Wipe in one direction with a soft cloth (do not wipe back and forth).

2. Carefully wash with the water using a rubber squeegee or a damp, soft cloth (do not wipe with a dry cloth).
 - If very dirty, use a mild detergent (Do not use ammonia based, chlorine based, or organic based detergents).
 - If there is sandy dust, metal dust, or gritty dust on the film, first carefully wash it off with a damp cloth. (If the film is rubbed up forcedly, it might be damaged.)
 - When using a rubber squeegee for window glass, be careful not to touch the film with the metal parts of the squeegee especially the edge and bolts. The film is about as hard as 2H pencil hardness.
3. Do not use a brush or polisher.
 - Using a brush, polish, a sponge containing polish, or a cloth dirty with sandy dust could scratch the film.
 - Do not use a cleaning compound, etc., because it could rub off the film surface.

Removal Remove Fasara™ Glass Decorative Film by lifting one edge and pulling it off at a sharp angle – about 135 degrees - with smooth, even tension. A scraper may be used to lift the edge and to remove adhesive residue on the surface without a heat gun and / or chemicals. It may also be helpful to cut the graphic into strips about 20 cm – 60 cm wide and then pull off each strip. Use a razor blade with safety handle.

Important Safety Remark

Application to glass with sunlight exposure

The application of dark pattern of 3M™ Fasara™ films onto glass with sunlight exposure can lead to glass breakage through thermal expansion of the glass. The local conditions must be examined for the danger of glass break by uneven heat absorption through sun exposure. Type of glass (insulation glass, float glass, VSG, ESG, etc.), glass dimension, joint condition, flexibility of the sealant, quality of the edge finishing, geographical orientation and partial shadow during sun exposure are the determining factors. A free non-applied framework of 4 mm around the entire window front can help to dissipate the absorbed warmth. According to common knowledge a thermal crack can occur at temperature differences of approx. 130°C (ESG), approx. 40°C (float glass) or 110°C (TVG).

Coldest place is usually under the framework in the embedded joined window part, the warmest place is typically on the darkest place in the format.

Because of the many above mentioned factors, glass breakage cannot be fully predicted, therefore 3M does not accept liability for glass breakage when using this film for window graphics.

3M specifically does not recommend using any of the following products on glass that may be at risk for thermal expansion:

Remarks

This bulletin provides technical information only.

Important Notice

All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

Additional Information

Visit the web site <http://www.3M.eu/ArchitecturalMarkets> for getting:

- additional instruction bulletins
- a complete product overview about materials 3M is offering.

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