

## Overview

This bulletin describes the wet application method for applying films to a variety of flat surfaces including 3M™ Flexible Substrates in order to create backlit illuminated signage. The application technique described in this bulletin is NOT recommended for *any* vehicle applications, or for applications to compound-curved, textured, rough, or ribbed surfaces.

Installers should also read and understand the product bulletins for any 3M products they are using, including both films and flexible substrates, prior to beginning an installation.

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## Compatible Products

Users should refer to the product bulletins for the base film or substrate they are using for complete details about graphic construction options, recommended uses, and warranty periods.

### Cut Film Decoration

- [3M™ Scotchcal™ Translucent Graphic Film Series 3630](#)
- [3M™ Blockout Film 3635-20b](#)
- [3M™ Blockout Film 3635-22b](#)
- [3M™ Diffuser Film 3635-30](#)
- [3M™ Diffuser Film 3635-70](#)
- [3M™ Day/Night Film 3635-91](#)
- [3M™ Scotchcal™ Light Enhancement Film 3635-100](#)
- [3M™ Chrome Graphic Film 3635-110](#)
- [3M™ Envision™ Diffuser Film 3735-50](#)
- [3M™ Envision™ Diffuser Film 3735-60](#)
- [3M™ Scotchcal™ ElectroCut™ Graphic Film 7125](#)
- [3M™ Scotchcal™ ElectroCut™ Graphic Film 7725](#)
- [3M™ Scotchcal™ Translucent Film IJ3630-20](#)
- [3M™ Scotchcal™ Graphic Film IJ3650-114](#)
- [3M™ Scotchcal™ Graphic Film IJ3690LF-114](#)
- [3M™ Envision™ Translucent Film Series 3730](#)
- [3M™ Envision™ Translucent Film IJ3730-50](#)
- [3M™ Envision™ Translucent Film IJ3730-60](#)

### 3M Substrates

- [3M™ Panagraphics™ III Wide Width Flexible Substrate](#)
- [3M™ Envision™ Flexible Substrate FS-1](#)
- Other 3M films: See the film's product bulletin for any film-to-film application restrictions.

## Non-3M Substrates

- Glass
- Acrylic
- Polycarbonate
- Copolyester sign sheet
- Butyrate
- Fiberglass

## Graphic Protection Options

- [3M™ Scotchcal™ Luster Overlamine 3619](#)
- [3M™ Scotchcal™ Matte Overlamine 3620](#)
- [3M™ Scotchcal™ Gloss Overlamine 3658G](#)
- [3M™ Scotchcal™ Matte Overlamine 3660M](#)
- [3M™ Scotchcal™ Gloss Overlamine 8518](#)
- [3M™ Scotchcal™ Luster Overlamine 8519](#)
- [3M™ Scotchcal™ Matte Overlamine 8520](#)
- [3M™ Scotchcal™ Ultra Matte Overlamine 8915](#)

## Building Codes

### NOTE

Users are responsible for determining and complying with all applicable building codes affecting the use of materials in sign face applications, including flammability standards. Contact local building code officials for information on flammability requirements.

## Tools and Materials

- Smooth, nick-free 3M™ Applicator PA-1 (blue or gold)
- 3M™ Air Release Tool 391X
- 3M™ High Performance Masking Tape 232
- Sharp knife or razor blade in a safety holder
- Clean, cool water
- Small container of baby shampoo containing no lotions, soaps, oils, waxes, or enzymes (such as original Johnson's® baby shampoo)
- Small container of mild, non-concentrated detergent containing no lotions, soaps, oils, waxes, or enzymes (such as original Dawn® Dishwashing Liquid)
- Isopropyl alcohol
- Spray bottles
- Clean, lint-free cloths

## Application Temperature

Ensure the film, substrate, and air temperatures are within the application temperature range specified in the film's product bulletin. The typical temperature range is 60°F to 100°F (16°C to 38°C) prior to starting film application. Lower temperatures inhibit good adhesion and increase the risk of graphic failures. Higher temperatures soften the film, making it more difficult to install without wrinkles.

## Application Tape

Users should review their films' product bulletin and [3M Instruction Bulletin Application: 3M™ Application Tapes for Graphic Films](#) for details on selecting and using application tapes, since the choice of application tape depends upon the graphic's construction.

- Premasking tape is NOT required for film applied with the wet application method. If premasking of the film is desired, users should choose a premasking tape compatible with their graphic. See ["If the film DOES have application tape on it:" on page 7](#) for additional important details.
- Installers making graphics with multiple letters or symbols, or with intricate shapes, should apply a prespacing tape to the graphic.
- Use a compatible prespacing tape when applying graphics that are prespaced on a liner.

## Registration Marks

If the film is not premarked for registration, users can make their own registration marks with a lead pencil, marking pen, or small pieces of masking tape to help align graphics on surfaces prior to application. Registration marks may also be created via computer-cut graphics.

**NOTE**

Do NOT use chalk, chalk line, or a grease pen. Film will NOT adhere to chalked areas or those marked with a grease pen.

## Color Matching

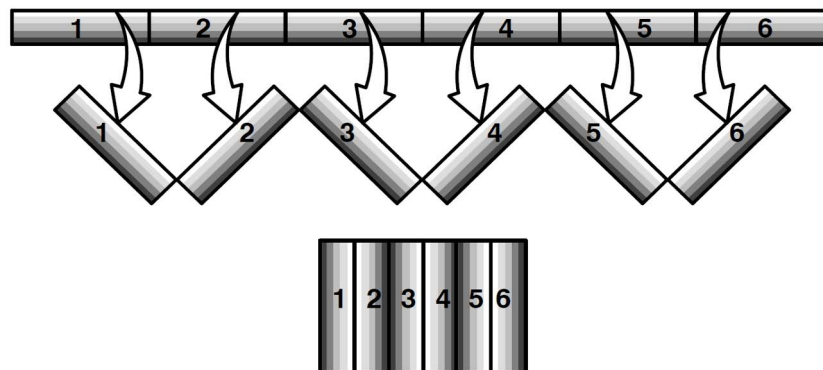
Whenever two or more pieces of the same color translucent film are seamed together as a continuous band of color, they should be matched to ensure uniform daytime color and transmitted nighttime appearance.

A graphic or sign must use material from a single roll or lot to achieve identical color matching.

In general, translucent film from a roll can be matched as shown in Figure 1. The dark line represents one edge of the film.

**NOTE**

The matching edges are always swung to meet each other. Panels 1 and 2 are a matched set. Panels 1, 2, and 3 are matched, etc. By following this method, users can match as many sheets from a roll as are required for any size sign. Do NOT assume exact color matching between different run numbers.



**Figure 1.** Color Matching

## Substrate Considerations for Backlit Signs

### General Substrate Preparation

**NOTE**

Always read the container label and safety data sheets before handling any chemical products.

If cabinets or channel letters are excessively oily, greasy, or dirty, clean or degrease them prior to applying film. Clean whenever it is unclear whether cleaning is necessary. Installers who are retrofitting existing cabinets or channel letters should also clean the components to remove dirt and corrosion.

Clean the substrate whenever it is unclear whether cleaning is necessary.

## Usage on Glass

### WARNING

A glass surface covered by a film with areas of high opacity or dark-colored ink will absorb more heat than other glass surfaces when exposed to sunlight. Heat absorption can create thermal expansion that could result in glass breakage or cracking.

To reduce the risks of personal injury and/or property damage associated with glass breakage, do NOT use a film with areas of high opacity or dark-colored ink on glass surfaces with significant exposure to sunlight.

### NOTE

Glass breakage is NOT covered under any 3M warranty.

## Polycarbonate

Oven dry all polycarbonate substrates according to the manufacturer’s recommendations before applying film. Polycarbonate that is not oven dried may emit moisture that can cause the film to bubble.

## Film Applied Over Other Film

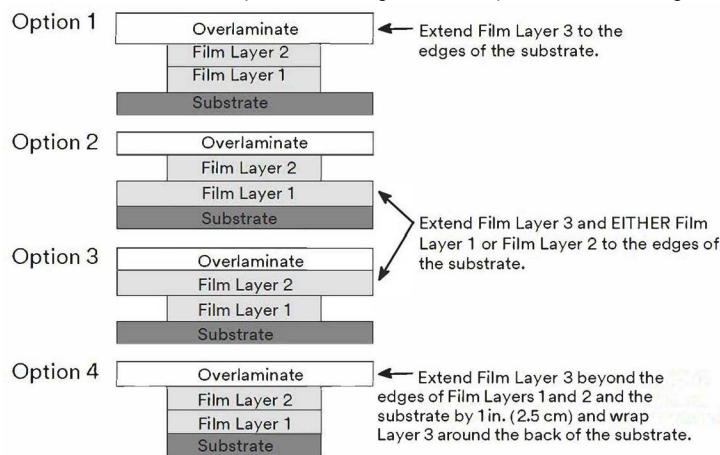
### NOTE

This section does NOT apply to film overlaps.

### NOTE

A third layer of film on any one surface is warranted only if the top layer is an overlaminate specifically recommended in the base film or films’ product bulletin. Additionally, no more than two layers of any film can be even with the substrate’s edges. See Figure 2.

- NEVER place an overlap over an existing overlap, as doing so creates four layers of film.
- A new opaque film graphic can be applied over one layer of existing film as long as the existing film is in good condition and is prepared as directed.
- NEVER apply translucent graphic film over an existing graphic or film.
- Do NOT apply new film over more than one layer of existing film, except as shown in Figure 2.



**Figure 2.** Three Film Layer Constructions

## 3M Flexible Substrates

Sign facing can be mechanically tensioned either before or after film is applied. When applying the film before tensioning, extend the film beyond the point where the substrate will contact and be secured around the attachment hardware to ensure the film does not lift during tensioning. 3M recommends applying the graphic to an installed and tensioned substrate when film extends to the substrate's edges. This prevents a scalloped appearance occurring where sign face clamps are installed. Scalloping is normally visible only when lines run in the same direction as the edge of the sign and within about 1 ft (0.3 m) of the visible opening.

- A dry film application method is usually used for small (narrow stroke width, nominally 0.5 in. [1.3 cm]) prespaced legends or logos.
- Do NOT overspray paint onto a film applied to 3M flexible substrates.
- Refer to [3M Product Bulletin FS-1](#) or [3M Product Bulletin PIII](#) for additional application information specific to the sign facing. Only use the films recommended in the 3M™ Flexible Substrate's product bulletin.

## Sign Boxes and Frames

Rubbing of retainers or other parts of a sign body may tear the film, causing light leaks. Such damage can be reduced by removing a 1/8 in. (3.2 mm) or wider border of film, or by applying clear protective tape to the graphic's edges.

## Solution Preparation

### Prepare Cleaning Solution

Prepare a cleaning solution of 1/3 tsp (1.6 ml) of non-concentrated detergent per one quart (0.95 l) of clean, cool water. The detergent must NOT contain any lotions, soaps, oils, waxes, or enzymes.

After mixing the cleaning solution, pour it into a spray bottle. This solution will be used to clean the substrate.

### Clean and Prepare the Substrate

All surfaces must be considered contaminated and MUST be cleaned prior to applying film. Refer to [3M Instruction Bulletin Application: Substrate Selection and Preparation](#) for detailed instructions.

### Prepare Slip Solution for Film Application

Prepare a slip solution of 1 tsp (5 ml) of baby shampoo per one quart (0.95 l) of clean, cool water. The detergent must NOT contain any lotions, soaps, oils, waxes, or enzymes.

After mixing the slip solution, pour it into a spray bottle. This solution is essential for wet application of film.

## Key Application Tips

- **Cleaning the work area.** Ensure the work surface and surrounding areas are properly cleaned to avoid contaminating the graphics.
- **Temperature.** Ensure the film, air, and surface temperatures are at least 60°F (16°C) and are within the application temperature specified in the film's product bulletin. Applying graphics at or near the minimum application temperature will cause the adhesive bond to develop more slowly. Applying graphics at or above the maximum application temperature will cause the film to soften, making it difficult to install without wrinkles.
- **Handling paper liners.** Do NOT allow paper liners to get wet before removing them. A wet liner is difficult to remove. Refer to the film's product bulletin to identify the liner's construction.
- **Air bubbles.** Puncture air bubbles with an air release tool or pin as shown in [Figure 7 on page 7](#). Do NOT use a knife or razor blade. Bubbles and wrinkles may be acceptable on film applied to the interior of sign cabinets and channel letters where it is not viewed by the public as long as the film is adhered properly.
- **Removing application tape.** Always remove application tape at an angle as close to 180 degrees as possible and immediately re-squeegee the film after removal.
- **Cutting and weeding.** Cut and weed soon after application as adhesion builds with time. See the ["Cutting and Weeding" section on page 9](#).
- **Direct sunlight.** Keep newly fabricated sign faces out of direct sunlight for at least 24 hours. This allows any remaining moisture to dry evenly without wrinkling the film.
- **Seams and overlaps.** Seams can be made using the overlap method. See the ["Film Overlaps" section on page 8](#).

- **Squeegeeing tools and techniques.** Use firm overlapping strokes from a smooth, undamaged 3M™ Plastic Applicator PA-1 to push slip solution out from under the film. Re-squeegee the graphic after two hours. A large window squeegee may be used to remove slip solution from large areas of film.
- **Application of Large Clear Window Graphics**
  - Clean the glass surface with cleaning solution (see the [“Prepare Cleaning Solution” section on page 5](#)) and a GT107A scraper to remove any debris and pits.
  - Apply slip solution to the glass surface and apply the liner side of the film to the glass surface using the GT122 Blue Max Squeegee with handle.
  - Trim the graphic so it is at least 1/16 in. (1.6 mm) away from the caulk line using the GT190 White 5-Way Trim Guide.
  - Remove the trimmed graphic from the window.
  - Remove the liner from the film surface.
  - Apply slip solution to the glass surface, the film’s adhesive, and on top of the film’s surface. Then position the graphic adhesive-side down on the glass surface.
  - Starting in the middle of the film and working out toward the edges, “plow” the squeegee to remove the slip solution.
  - Wipe the entire surface dry.
  - Re-squeegee the graphic after 24 hours.

## Wet Application Procedure

### Apply the Film

#### NOTE

For installations with multiple pieces of film read the [“Film Overlaps” section on page 8](#) before starting the application.

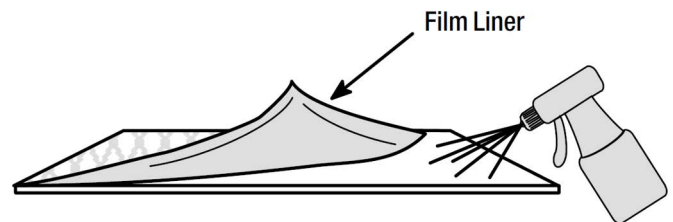
#### NOTE

Keep paper liners dry until ready to remove them.

#### NOTE

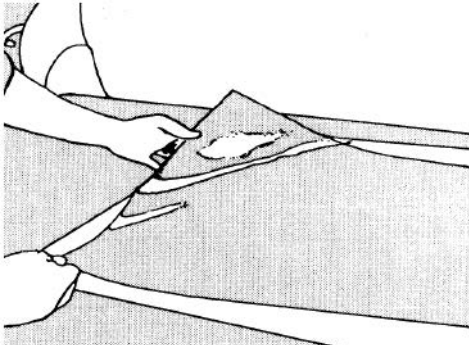
Depending upon the size of the graphic, more than one installer may be necessary to complete this process, especially after Step 8.

1. Lay the substrate application-side up on a clean surface.
2. Spray the substrate with cleaning solution.
3. Rinse the substrate with clean water.
4. Dry the substrate with a clean, lint-free cloth.
5. Saturate a clean, lint-free paper towel with a 70% isopropyl alcohol solution.
6. Wipe a small area of the substrate, about 2 ft<sup>2</sup> to 3 ft<sup>2</sup> (0.19 m<sup>2</sup> to 0.28 m<sup>2</sup>).
7. Dry it with another clean, lint-free paper towel immediately. Do NOT allow the solvent to evaporate.
8. Lay the film liner-side up in a dry location near the cleaned substrate.
9. Lift one corner of the liner while spraying slip solution onto the exposed adhesive. See Figure 3.
10. Remove the rest of the liner while continuing to spray slip solution. By the time the liner is completely removed, the entire adhesive surface should be wet. Apply additional slip solution as necessary.
11. Place the film adhesive-side down on the wetted substrate and correctly align any registration marks. See Figure 4.

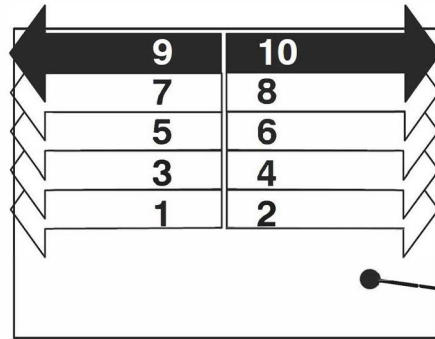


**Figure 3.** Lift Corner, Spray Slip Solution

12. Use a 3M™ Plastic Applicator PA-1, with light, overlapping strokes to smooth out wrinkles in the film. Work from the center of the film out to the edges. See Figure 5.



**Figure 4.** Align Registration Marks

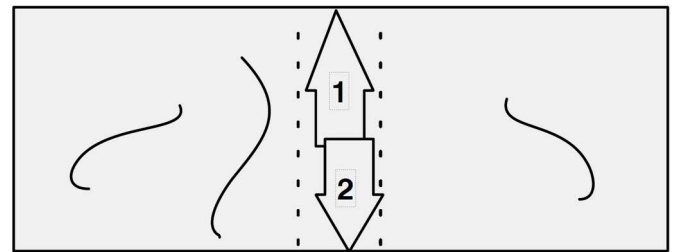


Numbers show a typical stroking sequence from the center to the top of the graphic. Overlap each stroke by 50 percent.

Film

**Figure 5.** Overlapping Strokes

13. To smooth out wrinkles on a large section of film:
- Use a large window squeegee and very light pressure to smooth out the entire graphic. Start at the center of the graphic and work toward the edges in the order shown in Figure 6. The film should be flat on the substrate and most of the water should be pushed out after this step is completed.
  - Use the 3M™ Plastic Applicator PA-1 and firm, overlapping strokes to re-squeegee from the center of the graphic to the edges. All of the water and as many bubbles as possible should be removed after this step is completed.
  - Wipe the entire surface dry.
14. If the film does NOT have application tape on it:
- Spray the entire top of the film with more slip solution.
  - Use the 3M™ Plastic Applicator PA-1 to apply firm pressure to the entire graphic, starting in the center and working toward the edges in overlapping strokes.
15. If the film DOES have application tape on it:
- Use the 3M™ Plastic Applicator PA-1 to apply firm pressure to the entire graphic, beginning in the center and working toward the edges in overlapping strokes.
  - Wait 15 to 20 minutes (depending on the substrate temperature) for adhesion to build.



**Figure 6.** Squeegeeing Large Piece of Film

### NOTE

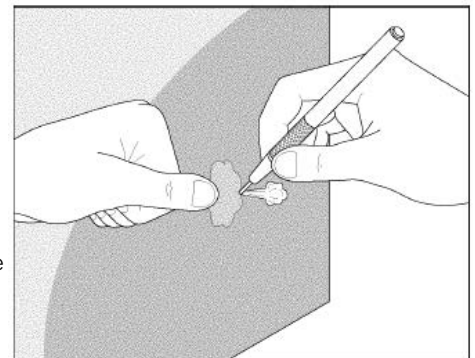
Do NOT leave application tape on the graphic for more than 24 hours after application.

- Begin at a corner and carefully pull the application tape away from the film at an 180 degree angle.
- Firmly re-squeegee all edges of the film.

### NOTE

Removing the application tape loosens the adhesive at the graphic's edges, particularly when the graphic is applied at or near the minimum application temperature. Installers must re-squeegee the edges after removing application tape.

16. For 3M™ Scotchcal™ Light Enhancement Film 3635-100, remove the film's protective top covering. If the covering was removed before this point, clean all film surfaces with a wet, non-abrasive cleaner free of dyes, strong solvents, and alcohol, and having a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). Always test the cleaner on a small inconspicuous area first.



**Figure 7.** Removing Trapped Air

17. Remove any remaining bubbles from the film:
  - a. Puncture the film at one end of the bubble with an air release tool or a pin. Do NOT use a razor or knife.
  - b. Push the trapped air or slip solution toward the puncture with a thumb. See Figure 7.
18. If necessary, cut and weed the graphics within 90 minutes as described in the [“Cutting and Weeding” section on page 9](#). The adhesive bond builds with time and weeding becomes more difficult after 90 minutes.
19. Keep the newly applied graphic out of direct sunlight for at least 24 hours.
20. Spray the top of the film with slip solution and re-squeegee the film, paying special attention to the graphic’s edges.

**NOTE**

Failure to re-squeegee the film after 24 hours may cause the edges of the graphic or even the entire graphic to lift off the substrate. The potential for this problem increases if the graphic is pressure washed at any point.

**NOTE**

A graphic’s final adhesion develops slowly if it is applied at or near the minimum application temperature and then immediately put into service in winter weather.

## Film Overlaps

3M recommends using an overlap rather than a butt joint when joining pieces of film, since butt joints can result in light leaks. The overlap will leave a barely noticeable darker line when viewed at shorter distances, but it is nearly invisible from normal viewing distances. The recommended overlaps are:

- **Film Series 3632GPS:** 3/16 in. to 1/4 in. (4.8 mm to 6.4 mm)
- **All other films:** 1/8 in. to 3/16 in. (3.2 mm to 4.8 mm)

**NOTE**

In a horizontal seam the upper panel should overlap the lower panel.

## Planning for a Seam

**NOTE**

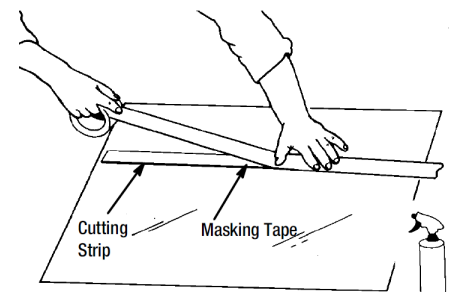
Plan the sign face so the seam is at least 18.1 in. (46 cm) away from any attachment hardware that is perpendicular (at right angles) to the seam.

## Materials Needed

- 2 in. (5.1 cm) wide 3M™ High Performance Masking Tape 232
- A cutting strip made from scrap plastic:
  - **Width:** 1 in. to 1.5 in. (2.5 cm to 3.8 cm)
  - **Thickness:** 1/4 in. (6.4 mm), resulting in an 1/8 in. (3.2 mm) overlap
  - **Length:** As long as the seam
- Sharp knife or razor blade in a safety holder
- Straight edge

## Procedure

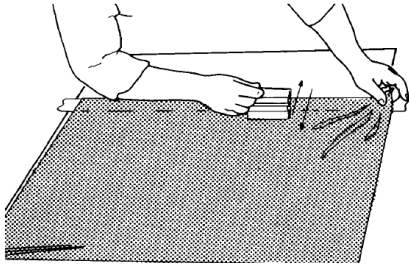
1. Determine where the film overlap will occur.
2. Lay the cutting strip on the sign surface at the film overlap location.
3. Tape the cutting strip to the sign surface with 2 in. (5.1 cm) 3M™ High Performance Masking Tape 232. See Figure 8.
4. If the film pieces are premasked, remove the premasking tape from the overlapped region (approximately the first 1 in. [2.5 cm] along each of the overlapped edges).
5. Using the [“Wet Application Procedure” on page 6](#), apply the first piece of film, ensuring it overlaps the cutting strip. See Figure 9.



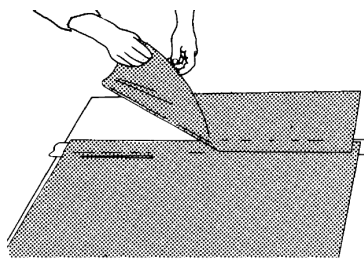
**Figure 8.** Applying the Cutting Strip



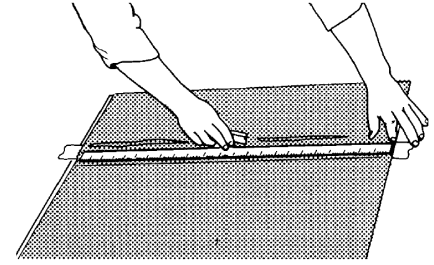
6. Apply the second piece of film, ensuring it is wide enough to overlap the full width of the cutting strip. See Figure 10.
7. Squeegee the film pieces together.
8. Use a straight edge and a sharp knife or razor blade in a safety holder to cut along the entire length of the overlap through both layers of film. See Figure 11.



**Figure 9.** Applying First Piece of Film

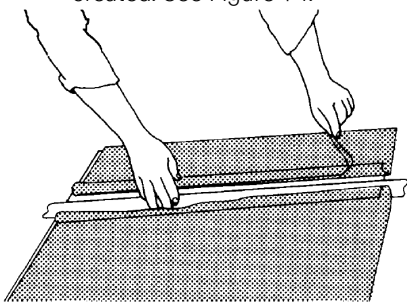


**Figure 10.** Applying Second Piece of Film

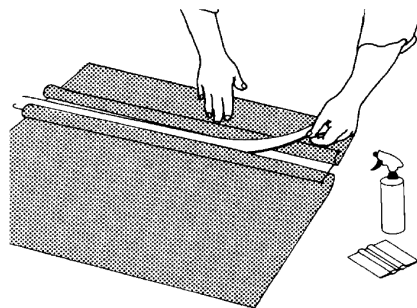


**Figure 11.** Cut Overlap

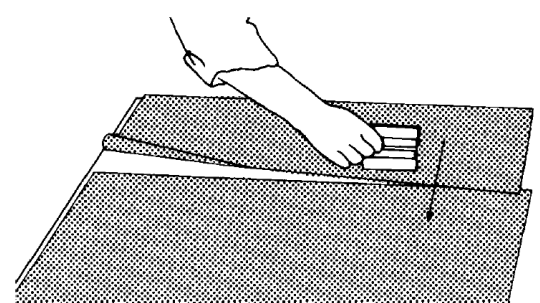
9. Remove the top film weed.
10. Fold back the overlapped film so the bottom film weed can be removed.
11. Remove the bottom film weed. See Figure 12.
12. Remove the cutting strip. See Figure 13.
13. Apply slip solution to the area previously under the cutting strip.
14. Squeegee the first piece of film onto the substrate and then squeegee the second piece of film. A natural overlapped seam will be created. See Figure 14.



**Figure 12.** Remove Excess Film



**Figure 13.** Remove Cutting Strip



**Figure 14.** Squeegee the first piece of film, then the second.

## Cutting and Weeding

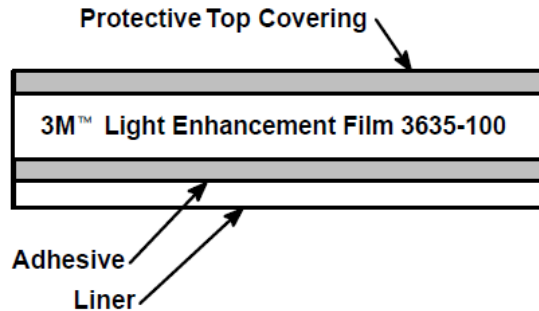
Cutting and weeding of graphics should be completed prior to their application to help prevent damage to the substrate. However, if necessary, installers can cut and weed up to 90 minutes after application. The adhesive bond builds with time, and weeding becomes more difficult after 90 minutes.

- Cut with a conventional fixed or swivel graphic knife or a sharp razor blade in a safety holder.
  - Installers can trace patterns onto applied films with chalk or carbon dust. Some carbon papers and marking pens permanently mark the film, so test their suitability before using them.
  - Avoid or minimize over-cuts to eliminate or reduce light leaks.
1. To weed, carefully hold a corner of the excess film at a 90 degree angle and pull it away with sharp, short jerks.
  2. If necessary, users can warm the work surface slightly to reduce film adhesion and make weeding easier. This also reduces the amount of adhesive left on the substrate.
    - a. Heat the work surface with a low-wattage heat gun set to 100°F (38°C) for about 10 seconds.
    - b. Lay the back of the graphic or substrate on the heated surface.
    - c. If necessary, users may also briefly heat the film.
  3. Use a thumb or finger to rub off any adhesive residue left on the substrate.
  4. If the film extends all the way to the edge of the substrate, the user must determine if the thickness of the film (4 mils to 5 mils [0.1 to 0.13 mm]) may interfere with the clamp hardware.

## Special Considerations for 3M™ Light Enhancement Film 3635-100

3M™ Light Enhancement Film 3635-100 (“3635-100”) is an opaque, matte white film with low absorption and high efficiency for the diffuse reflection of light. 3635-100 can be applied to the interior surfaces of lighted cabinets to increase light output. This may increase the sign luminance, reduce hot spots, and/or reduce the amount of power required to illuminate a sign or channel letter faces.

3635-100 can be applied to cabinet components and channel letters before, during, or after assembly of the cabinet or channel letter. The light enhancement film’s top covering helps protect the front surface during the manufacturing process. Test the film in the manufacturing process to ensure proper results. Some alteration of processes may be required to successfully use light enhancement film for specific applications.



**Figure 15.** 3635-100 Film Profile

There are several key elements to designing a successful application with light enhancement film. These elements are common to all adhesive-backed vinyl film applications, with extra consideration to be given to the light enhancement film’s high performance front surface. They are:

- Selecting the substrate
- Preparing the substrate before applying the film
- Applying the film (before or after the manufacturing process)
- Preparing the final graphic assembly for startup
- Cleaning, repair, and maintenance

3635-100 should cover all possible interior opaque surfaces in single sided, internally illuminated cabinets. It can be used in interior and exterior applications.

### Substrate Selection

3635-100 is most efficient when the total sign face is 10% to 35% transmissive and has a low rate of absorption. Refer to [3M Product Bulletin 3635-100](#) for examples of constructions that fall within this range.

3635-100 may be applied to most smooth substrates used in the sign industry today. Two exceptions are:

- Low surface energy plastics such as polypropylene
- Paints with non-stick additives such as silicone

In addition, certain substrates have some limitations:

- Painted surfaces must be fully cured
- Steel must be properly coated to prevent corrosion
- Polycarbonate substrates may require drying by baking before use. Refer to the manufacturer’s instructions.

#### NOTE

Some solar-grade coatings may cause adhesive failure and must be checked lot by lot. Refer to [3M Product Bulletin 3635-100](#) or contact 3M for assistance. The light enhancing characteristics of 3M™ Light Enhancement Film 3635-100 are minimized if dark colored rigid plastic faces are used. This is due to the very high rate of light absorption and low rate of reflectivity of such faces. 3M recommends testing sign faces before reducing the number of lighting components.

## 3635-100 in the Cabinet Assembly Process

- **Dry application of film (recommended method):** Application of 3635-100 and all other box/channel letter assembly can take place immediately.
- **Wet application of film:** After using a wet (detergent and water) application method, wait at least 24 hours with the materials at room temperature before conducting any further processing in order to allow the adhesive to set.
- **Do NOT remove the protective top covering** until the cabinet assembly is complete. This covering provides some protection for the light enhancement film's high efficiency front surface.

## Test Manufacturing Processes

Each manufacturer has unique equipment and processes for building light boxes and channel letters. 3M recommends testing light enhancement film in a given process prior to manufacturing.

3635-100 has been successfully pre-applied in the following processes:

- Coil stock put through channel letter machines
- Router cutting
- Plasma cutting
- Water jet cutting
- Plastic thermoforming
- Roll forming
- Stapled through, stamped, etc.

### Tolerances on Automated Equipment

When setting up tolerances on automated processing equipment, always adjust for the total thickness of the applied light enhancement film construction. This includes the protective covering, which is 0.0085 in. to 0.0095 in. (0.22 mm to 0.24 mm) thick.

### Welding Considerations

Plasma cutters and welders may require the removal of a small piece of light enhancement film from an edge of the substrate to allow the arc to initiate. Remove film from these areas to obtain the best bond and avoid burning or browning the film with heat. If this occurs, remove the damaged film, properly clean the surface, and patch the area with a new piece of light enhancement film. Test the manufacturing process first if any welding or other high temperature joining or processing is involved.

### Routing Considerations

Position the substrate so the film is on the opposite side of the router bit's spiral. This results in the film being sheared rather than ripped. When using an upward spiral bit, position the substrate film side down, and when using a downward spiral bit, position the substrate film side up.

## Applying 3635-100

The two most frequently used application methods are hand application and automated roll lamination. 3635-100 may be applied with a wet or dry hand application method. Roll lamination is a dry process.

## 3635-100 Cleaning and Maintenance

### Cleaning

3635-100 can be cleaned with almost any cleaner, such as the kind used for high quality painted surfaces. The cleaner must be wet; non-abrasive; free of dyes, strong solvents, and alcohol; and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). Always test the cleaner on a small inconspicuous area first.

3635-100 should be cleaned at least once per year, and more frequently in dirty environments, to maintain peak efficiency.

### Patching 3635-100

Restore efficiency to damaged 3635-100 applications by patching the film. If the cabinet is also damaged, the damaged area must be smooth, clean, and in sound mechanical condition.

1. Clean the damaged surface.
2. Cut a piece of light enhancement film to cover the area.
3. Apply the piece over the damaged section.
4. Squeegee the edges of the patch.

## Health and Safety

### Tools and Equipment Usage

When using any equipment, always follow the manufacturer's instructions for safe operation.

### Chemicals

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety, and environmental information.

[Follow this link to obtain SDS sheets for 3M products.](#)

[Follow this link to obtain information about substances of very high concern \(SVHC\) for EU products.](#)

### Ergonomics

Any activity performed for a long period of time in an awkward position or with a high amount of force is potentially a risk for causing musculoskeletal strain, pain or injury. When applying or removing graphics, follow these practices to improve comfort and avoid injury:

- Alternate your tasks during the application.
- Schedule regular breaks.
- Perform stretches or do exercises to improve circulation.
- Avoid awkward reaching.

### Ventilation

Always provide adequate ventilation to remove emissions that may result from the use of heat. Failure to provide adequate ventilation can result in operator exposure.

## Warranty Information

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