



Changeable Window Graphic Film

IJ61

For Inkjet Printing with UV, Solvent and Latex Inks and Screen Printing

1. Product Description

A. Product Features

- 3-mil clear vinyl film
- Accepts inkjet inks brilliantly, while unprinted areas remain clear
- Pressure-sensitive adhesive
- Changeable

B. Suggested Uses

The user is responsible for determining the product's suitability for the intended application. This product should be used on a test-and-approve basis.

- Interior and exterior building windows and dividers
- Non-regulated vehicle windows
- Simulated perforated window film (see Section NO TAGE.)
- Use white ink or laminate this film to 3M™ Scotchcal™ Graphic Film 50-10 (white) to add visual dimension and opacity to second surface graphics

C. Expected Performance Life

Expected Performance Life as a good faith estimate of how long the product may perform satisfactorily based on 3M testing. Note, there is no warranty associated with this estimate.

1 year in a vertical exposure with typical usage

Note: 3M Product and Instruction Bulletins provide practical recommendations for using this product in a way that maximizes performance, but using other 3M products or procedures with this film does not change the terms of the warranty.

D. These Uses are Not Recommended

- Application to windows that have built-in heating, defrosting elements or wipers
- Application to substrates with coatings such as anti-reflection and scratch resistance; such coatings may be damaged during film removal
- Application to low surface energy substrates or substrates with low surface energy coating
- Graphics subjected to gasoline vapors or spills

E. Be Aware of All Laws and Regulations

Some states have laws or regulations requiring minimum light transmission that may limit or preclude the use of this product on regulated vehicle windows, which may include passenger vehicles and vans. The user is responsible for determining and complying with all applicable standards.

F. Additional Safety Considerations

- 3M Commercial Graphics policy is not to support applications of this window graphic film when a driver's view is obstructed, which may include non-vertical windows, and/or where local laws prohibit its use.
- Do not use on applications that in any way restrict the safe operation of emergency window exits.
- Do not use on any regulated vehicle window.
- 3M accepts no liability for glass breakage when using this film for window graphics.

2. Characteristics

A. Physical Characteristics

All values are typical for unprocessed film and are not for use in specifications. Contact your 3M representative for a custom specification.

Characteristic	Value
Material	Calendered vinyl
Color	Clear
Finish	Gloss
Film thickness	Without adhesive: 3 mil (0.08 mm) With adhesive: 4 mil (0.10 mm)
Adhesive type	Pressure-sensitive
Adhesive color	Clear
Liner	Polyethylene-coated paper

B. Application Characteristics

Characteristic	Value
Finished graphic application recommendations	Surface type: Flat and simple curves Substrate type: Transparent substrates such as acrylic, glass and polycarbonate Application temperature: <i>air and substrate</i> 40° to 100°F (10° to 38°C)
Application method	Wet for best results, but may be dry applied
Finished graphic exposure temperature	-30° to +150°F (-25° to +65°C)
Graphic removal	Up to 6 months, from glass, acrylic, polycarbonate; may require heat

3. Definitions

A. Exposure Types

U.S. Vertical Exposure



face of graphic

The face of the graphic is +/- 10° from vertical.

4. Warranty Information

A. Warranty Coverage Overview

This film is covered by the 3M Basic Product Warranty. It has been tested and is believed to be a good product when used as recommended in this Product Bulletin. However, there is no assurance or guarantee for the following:

- printability.
- visual appearance.
- fitness for use.
- removability or changeability.
- damage to the substrate.
- durability.

B. 3M Basic Product Warranty

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade.

This 3M Product is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin and as further set forth in the [3M Commercial Graphics Warranty Brochure](#).

C. Limited Remedy

3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive.

D. Loss of Gloss

Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

E. Application to Glass

3M accepts no liability for glass breakage when using this film for window graphics. See [Instruction Bulletin 5.1](#) for details.

F. Additional Limitations

See the [3M Commercial Graphics Warranty Brochure](#) at 3Mgraphics.com, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

5. Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO SELLER'S PRODUCTS OR SERVICES. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought including breach of contract, breach of warranty, negligence, strict liability, or any other legal or equitable theory.

6. Fabrication

A. All Printing Methods

This film has been optimized to perform well with a variety of inkjet printers and inks as well as screen printing inks and processes. It is the graphic manufacturer's responsibility to determine the film's suitability for use with their printers and inks.

To maximize the film performance:

- Thoroughly dry the ink and film or properly cure the ink before storing or installing a graphic.

B. Inkjet Printing Only

- Be aware that using sheeting film on a flat-bed inkjet printer may produce printing defects.
- The typical maximum ink limit is 250%.
- Always build enough time (minimum of 48 hours) into your process to ensure complete drying of the graphic. Poorly dried film may become soft and stretchy, and the adhesive may become too aggressive. This can cause difficulty when applying an overlaminate, rolling or applying the graphic. See the ink's Instruction Bulletin for more details.
- If you are storing sheeted and stacked finished graphics for an extended period of time, leave an unprinted margin (about 1/4 inch) to allow for possible shrinkage before trimming the graphic.

C. Cutting Recommendations

- Cold steel rule die
- Razor blade
- Sharp knife

D. Application Tapes

3M application tape may help with the application of a graphic. Use 3M™ Premasking Tape SCPM-3 to protect cut graphic parts from scratching or damage during application.

E. Perforated Window Film Simulation

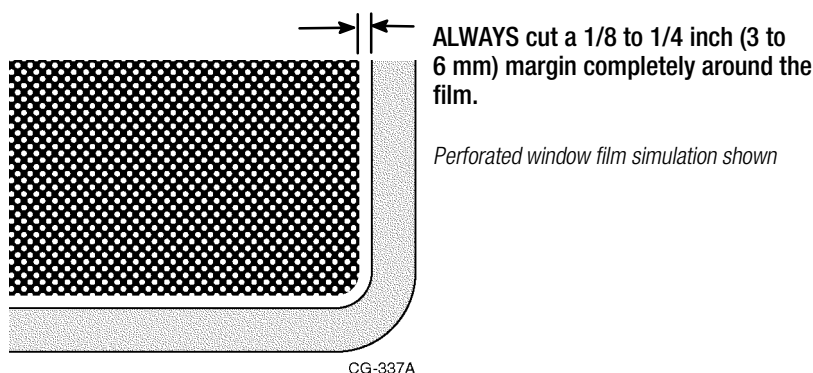
For tips on producing perforated window film simulation on this film, see the Contra Vision website at www.contravision.com.

Contra Vision Ltd is the owner of certain patents for one-way vision and other see-through graphic products. When producing the one-way vision or perforated window film simulation, graphic manufacturers need a license and can register and obtain a license online at www.contravision.com "Online Licensing."

7. Application

- A wet application method is recommended. The film may exhibit some hazing but this should disappear within 24 to 48 hours. See 3M [Instruction Bulletin 5.7](#).
- A dry application method can be used if necessary.
- Always cut away a margin of 1/8 to 1/4 inch (3 to 6 mm) all around the graphic. See FIGURE 1.

FIGURE 1
Leave a Space All Around the Window



8. Maintenance and Cleaning

Use a cleaner designed for high-quality glass surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline).

9. Removal

- The graphics should remove without heat. However heat may be used to assist in removing the film. Use caution to avoid breaking the glass. Remove at your own risk.
- Substrates with coatings such as anti-reflection and scratch resistance may be damaged during removal.

10. Shelf Life, Storage and Shipping

Activity	Recommendations
Shelf life	Total shelf life: 6 months Up to 6 months unprocessed, <i>OR</i> up to 3 months processed and applied within 3 months of processing
Storage conditions	<ul style="list-style-type: none">• 90°F (32°C) maximum• Out of direct sunlight• Clean, dry area• Original container• Bring film to room temperature before using.
Shipping finished graphics	Flat: may be separated by paper Roll: printed side out on 6 inch (15 cm) diameter or larger core

11. Health and Safety



When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information. To obtain MSDS sheets for 3M products go to 3M.com/MSDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

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

12. 3M Related Literature

Before starting any job, be sure you have the most current Product and Instruction Bulletins.

The information in 3M Product and Instruction Bulletins is subject to change. [Current Bulletins](#) are available at 3Mgraphics.com. The following applicable Bulletins provide information and processes you need to properly make the graphics described in this Bulletin. Additional Bulletins may be needed as indicated in the 3M Related Literature section of other 3M components you use.

IB = Instruction Bulletin

Subject	Type	Bulletin No.
Application, substrate selection, preparation and substrate-specific application techniques	IB	5.1
Scoring and cutting	IB	4.1
Using 3M application tapes; premasking and prespacing for films	IB	4.3
Application, wet method for translucent, screen printed and cut graphics	IB	5.7
Application, general procedures for indoor and outdoor dry applications	IB	5.5
Storage, handling, maintenance, removal	IB	6.5
3M Commercial Graphics Warranty Brochure		go to www.3Mgraphics.com/Warranties

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13. Bulletin Change Summary

New and modified content is marked with a black bar in the margin. Added inkjet printing with latex inks and screen printing as possible printing platforms. Updated format of Product Description and Warranty Information sections.



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