

3M Commercial Graphics

3M™ Scotchcal™ Clear View Graphic Film IJ8150



A Clear Advantage For Windows

Finally! Optical clarity in a durable and conformable film for inkjet and screen printing.

- **Vehicle Graphics**
- **Building Window Graphics**
- **Point of Purchase Graphics**

Discover the advantages of a highly transparent film from 3M.



Discover the advantages of a highly transparent film from 3M.

3M™ Scotchcal™ Clear View Graphic Film IJ8150 is a cast vinyl film with optical clarity that allows new approaches to graphics for windows. Unprinted areas permit a completely clear view through glass. When you need an image, the film's structure allows optimum print quality and opens up numerous opportunities for use. The film is also easy to apply.

■ A clear advantage . . . for vehicle graphics

New possibilities for graphics on all types of vehicles. Stretch your imagination for vehicle windows that allow one-way vision graphics without a perforated window film.*

■ A clear advantage . . . for building window graphics

Creative graphics on building windows. Combine multiple design elements into one larger graphic.

■ A clear advantage . . . for point of purchase

Use this highly transparent film at the point of sale when designing display windows and dividing walls, mobile displays, directional and informational signs, glass refrigerated displays and much more. Clear view film IJ8150 offers easy removability, making it a great option for promotions and short term applications.

*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."

Advantages and Benefits:

- Special graphic effects are possible — for example, prints using white ink
- One-way vision achievable due to perforated window film simulation
- Less cutting needed because you can combine your independent design elements into one piece
- Optimized for wet application, making it very easy to install
- A 2 mil cast PVC film with conformability to compound curves as seen on vehicle windows
- The one-sheet solution that slashes removal time and effort
- Offered with the 3M Performance Guarantee or 3M™ MCS™ Warranty
- An effective performance life of seven years
- Compatible with digital and screen printing systems
- Features a special liner that prevents static charge or discharge during processing



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1. Product Description

A. Product Features

- 2-mil optically clear, vinyl film
- Pressure-sensitive adhesive
- For screen printing and solvent, latex and UV Inkjet printing
- Conforms to simple curves and mild compound curves as found on vehicle windows
- Removable without heat

B. Recommended Types of Graphics and End Uses

When constructed and used as described in this Bulletin, these types of graphics and end uses may be warranted by the [3M™ MCS™ Warranty](#) or the [3M Performance Guarantee](#). Please read the entire Bulletin for details.

- Building windows and dividers, interior and exterior
- Non-regulated vehicle windows

C. Performance Overview

3M tests the performance of both individual products and finished graphic constructions. This table shows the best performance expected from this product without a Warranty Period and with a Warranty Period.

For detailed graphic construction and application options along with specific Warranty Periods, please see the Warranty Information, Section 5.

Expected Performance Life. This is the estimated period of time the product should perform satisfactorily.	
Unprinted film with no graphic protection, applied to a flat vertical outdoor surface.	7 years Unwarranted Period
3M™ MCS™ Warranty. This is the maximum period of time 3M will warrant the finished graphic performance.	
Printed film with the best 3M ink and graphic protection option, applied to a flat, vertical outdoor surface.	5 years Warranty Period
3M Performance Guarantee. This is the maximum period of time 3M will warrant the performance of the 3M materials used.	
Printed film with the best ink and graphic protection option, applied to a flat, vertical outdoor surface.	3 years Warranty Period

D. Limitations of End Uses

This 3M product is not designed or recommended for the following uses. Please contact us to discuss other options.

(1) Unsuitable End Uses for This Film

- Application to windows that have built-in heating, defrosting elements, wipers, or tinted or protective films
- 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

(2) 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.

(3) 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. Compatible Products

This section provides a list of products that are approved by 3M for use with the base film covered in this Bulletin, and used for the creation of a graphic that is covered by the 3M™ MCS™ Warranty or 3M Performance Guarantee. Refer to the Product and Instruction Bulletins listed in 3M Related Literature at the end of this Bulletin for more information about the compatible products.

A. Inkjet Products for 3M™ MCS™ Warranty

(1) Solvent Inkjet Inks

Ink Series	Printer
• 3M™ Piezo Inkjet Ink Series 1500v2	EFI™ VUTEk® 150, 2360/3360, 3300/5300 and 3000/5000 Printers
• 3M™ Piezo Inkjet Ink Series 4400	HP Scitex XL1200 and XL1500 Printers
• 3M™ Piezo Inkjet Ink Series 4800	HP Scitex TJ8300, TJ8350 Industrial Presses
• 3M™ Piezo Inkjet Ink Series 6200	Agfa :Jeti 3312, 3318, 3324, 5024 [Gandinovations] Printers
• SIIT GX 3M Ink Series	Seiko I Infotech ColorPainter™ H Series H-74s H2-74s, H-104s, H2-104s Printers

(2) Latex Inkjet Inks

• HP 3M LX600 Specialty Latex Ink	HP Scitex LX600, LX800, LX820, LX850; Designjet L65500 Printers
• HP LX610 Latex Ink, a 3M™ MCS™ Warranty Component	HP Scitex LX600, LX800, LX820, LX850; Designjet L65500 Printers

(3) UV Inkjet Inks

• 3M™ Piezo Inkjet Ink Series 2200UV	EFI™ VUTEk® PV200 Printer
• 3M™ Piezo Inkjet Ink Series 2700UV	Durst Rho 160R and 351R Printers
• 3M™ Piezo Inkjet Ink Series 2800UV	EFI™ VUTEk® QS2000, QS3200, QS3220 and QS220 Printers
• 3M™ Piezo Inkjet Ink Series 5400UV	HP Designjet H35000/45000 Printers
• EFI™ VUTEk® GSr 3M™ Premium UV Inks	EFI™ VUTEk® GS5000r and GS3250r Printers
• EFI™ VUTEk® GS 3M™ Premium UV Inks	EFI™ VUTEk® GS2000, GS3200 and GS3250 Printers, including GS Pro Series
• Mimaki LF-200 Ink Series*	Mimaki UJV-160, JFX-1631 and 1615R Printer

*Manufactured by 3M.

(4) Graphic Protection

- 3M™ Scotchcal™ Gloss Overlamine 8518
- 3M™ Scotchcal™ Luster Overlamine 8519
- 3M™ Scotchcal™ Matte Overlamine 8520
- 3M™ Scotchcal™ Gloss Overlamine 8528 *with horizontal vehicle warranty! See page 9.*
- 3M™ Scotchcal™ Optically Clear Overlamine 8914
- 3M™ Scotchcal™ Ultra Matte Overlamine 8915
- 3M™ Screen Print UV Gloss Clear 9740i
- 3M™ Screen Print Dirt Resistant Gloss Clear 1920DR

B. Inkjet Products for 3M Performance Guarantee

- For the most current information, please click here: [3M Performance Guarantee Matrix.](#)

C. Screen Printing Products for 3M™ MCS™ Warranty

- (1) Screen Printing Inks
 - 3M™ Screen Printing UV Ink Series 9800
 - 3M™ Screen Printing Ink Series 1900

- (2) Graphic Protection
 - 3M™ Screen Print Matte Clear 9730UV
 - 3M™ Screen Print UV Gloss Clear 9740i
 - 3M™ Screen Print UV Gloss Clear 9800CL (with UV 9800 ink series only)
 - 3M™ Screen Print Dirt Resistant Gloss Clear 1920DR
 - 3M™ Screen Print Matte Clear 1930

3. Characteristics

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

A. Physical Characteristics

Characteristic	Value
Material	Cast vinyl
Color	Optically clear
Film thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 3-4 mil (0.08-0.10 mm)
Adhesive type	Pressure-sensitive
Adhesive color	Clear
Liner	Transparent synthetic
Chemical resistance	<ul style="list-style-type: none"> • Resists mild alkalis, mild acids, and salt • Excellent resistance to water (<i>does not include immersion</i>) • Resists occasional fuel spills
Flammability	Call 1-800-328-3908 for information

B. Application Characteristics

Characteristic	Value
Finished graphic application recommendations	Surface type: Flat, without rivets, simple curves and mild compound curves Substrate type: Transparent substrates such as acrylic, glass, polycarbonate Application temperature: <i>air and substrate</i> 50° to 100°F (10° to 38°C) Application method: wet is preferred
Finished graphic exposure temperature	-65° to +150°F (-54° to +65°C)
Graphic removal	Removable without heat for the Warranty Period from recommended substrates. See Removal, Section 11, for important procedures.

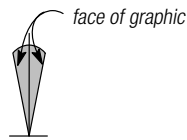
4. Definitions

A. Adhesive

Pressure Sensitive Adheres upon contact; is not slideable or repositionable.

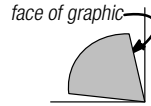
B. Exposure

U.S. Vertical Exposure



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

U.S. Non-vertical Exposure



The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal. This includes non-vertical surfaces of vehicle wraps or fleet truck and trailer graphics.

U.S. Horizontal Exposure



The face of the graphic is +/- 5° from horizontal.

U.S. Desert Southwest Exposure

Any outdoor graphic exposed to solar energy more than half of the daylight hours in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas is subject to reduced warranties.

C. Graphic Types

As identified in Product Warranty Matrices

Indoor Signs

Stationary graphics applied indoors and *not* exposed to the elements.

Outdoor Signs

Stationary graphics applied outdoors and exposed to the elements.

Vehicles

Buses, vans, passenger vehicles, delivery trucks, pickup trucks, enclosed trailers. Certain restrictions may apply as noted in the applicable Product Bulletin.

D. Graphic Construction

The products used to make a graphic, which may include film and/or flexible substrate, graphic protection, ink, printer and application tape.

E. Graphic Protection

Overlaminated films or clear coats used to protect the graphic and/or change gloss.

5. Warranty Information

A. Warranty Coverage Overview

The warranty coverage for each graphic is based on the user(s) both reading and following all applicable and current 3M Product and Instruction Bulletins. 3M will honor the Warranty Period stated in the base film's Product Bulletin that is current when the film was purchased. The Warranty Period may be reduced and stipulations may apply for certain constructions and applications, as covered in this Bulletin.

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.

B. 3M Basic Product Warranty

This 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. Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED ABOVE), 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, SERVICES or THIS BULLETIN. 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.

E. 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.

F. 3M Performance Guarantee

Subject to Stipulations set forth in Section H., below

Graphics constructed with the 3M materials specified and in the exposure specified in the Warranty Period Table, Section 5.F.(1), are eligible for the 3M Performance Guarantee. This warranty only covers the performance of the recommended 3M products used in the graphic construction when imaged with the printers and OEM inks listed in the most current version of the [Performance Guarantee Printer and Ink Matrix](#) at 3Mgraphics.com. The Matrix may also list certain restrictions for using the film covered in this Bulletin. For warranties for other exposures, see Section 5.H.(1).

Warranty Period for 3M Performance Guarantee, Vertical Exposure, in Years

(1) Warranty Period Table for 3M Product Performance in a Standard U.S. Vertical Exposure

Film	Graphic Protection	VEH, IN, OUT	Inks and Printers**
IJ8150	8518, 8519, 8520, 8528*, 8915, 8914	3	See the Performance Guarantee Printer and Ink Matrix at 3Mgraphics.com
	1920DR, 9740i	3	

*For the Horizontal Warranty with overlamine 8528, which is only available for vehicle graphics, please see section 5.H.(2) below.

**Some of the graphic protection products and graphic types may not be approved for this film on certain printing platforms. Always refer to the Performance Guarantee Matrix.

G. 3M™ MCST™ Warranty

Subject to Stipulations set forth in Section H., below

Finished graphics constructed with the materials specified and the exposure specified in the Warranty Period Tables, Section 5.G.(1), are eligible for the 3M™ MCST™ Warranty. For warranties for other exposures, see Section 5.H.(1), below.

(1) Warranty Period Tables for Finished Graphics in a Standard U.S. Vertical Exposure

See Section 4. for detailed Graphic Type definitions:

- VEH = Vehicle Graphics
- OUT = Outdoor Signs
- IN = Indoor Signs

a. Inkjet Printing

Warranty Period for Finished Graphics, Vertical Exposure, in Years

SOLVENT PRINTERS and INKS	EFI™ VUTEK® 150, 2360/3360, 3300/5300, 3000/5000			HP XL1200, XL1500			HP Scitex T.J8300 and T.J8350 Industrial Presses		
	3M Ink Series 1500v2			3M Ink Series 4400			3M Ink Series 4800		
Graphic Protection	VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
8518, 8519, 8520, 8914	3	3	8	3	3	8	3	3	8
8528*	3/2	3	8	3/2	3	8	3/2	3	8
8915	3	3	8	3	3	8	3	3	8
1920DR	3	3	5	—	—	—	3	3	5
9740i	3	3	8	3	3	8	3	3	8
None	—	—	2	—	—	2	—	—	2

* Overlamine 8528: first number represents the vertical warranty and the second number the horizontal warranty on vehicle graphics. Please see Section H.(2).

a. Inkjet Printing, *continued...*

Warranty Period for Finished Graphics, Vertical Exposure, in Years

SOLVENT PRINTERS and INKS	Agfa :Jeti 3312, 3318, 3324, 5024			SIIT ColorPainter H Series H-74s, H-104s, H2-74S and H2-104s		
	3M Ink Series 6200			GX 3M Ink Series		
Graphic Protection	VEH	OUT	IN	VEH	OUT	IN
8518, 8519, 8520, 8914	3	3	8	3	3	8
8528*	3/2	3	8	3/2	3	8
8915	3	3	8	—	—	—
1920DR	3	3	5	3	3	5
9740i	3	3	8	3	3	8
None	—	—	2	—	—	2

LATEX PRINTERS and INKS	HP Designjet L65500; Scitex LX600, LX800, LX820, LX850			HP Designjet L65500; Scitex LX600, LX800, LX820, LX850		
	HP 3M LX600 Latex Ink			HP LX610 Latex Ink		
Graphic Protection	VEH	OUT	IN	VEH	OUT	IN
8518, 8519, 8520, 8914	3	3	5	3	3	5
8528*	3/2	3	5	3/2	3	5
8915	3	3	5	3	3	5
1920DR	2	2	3	2	2	3

UV PRINTERS and INKS	EFI™ VUTEK® PV200			Durst Rho 160R & 351R			EFI™ VUTEK® GS2000, GS3200, GS3250		
	3M Ink Series 2200UV			3M Ink Series 2700UV			3M Ink Series 2800UV		
Graphic Protection	VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
8518, 8519, 8520, 8914, 8915	3	3	8	3	3	8	3	3	8
8528*	3/2	3	8	3/2	3	8	3/2	3	8
1920DR	—	—	—	—	—	—	—	—	—
9740i	3	3	8	3	3	8	3	3	8
None	—	—	2	—	—	2	—	—	2

UV PRINTERS and INKS	HP Designjet H35000/45000			EFI™ VUTEK® GS500r, GS3250r			EFI™ VUTEK® GS2000, GS3200, GS3250 & GS Pro		
	3M Ink Series 5400UV			GSr 3M Premium UV Inks			GS 3M Premium UV Inks		
Graphic Protection	VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
8518, 8519, 8520, 8914, 8915	3	3	8	3	3	8	3	3	8
8528*	3/2	3	8	3/2	3	8	3/2	3	8
1920DR	—	—	—	3	2	5	3	2	5
9740i	3	3	8	3	3	8	3	3	8
None	—	—	2	—	—	2	—	—	2

* Overlamine 8528: first number represents the vertical warranty and the second number the horizontal warranty on vehicle graphics. Please see Section H.(2).

a. Inkjet Printing, *continued...*

Warranty Period for Finished Graphics, Vertical Exposure, in Years

UV PRINTERS and INKS	Mimaki UJV-160, JFX-1631 and 1615R		
	Ink Series LF-200		
Graphic Protection	VEH	OUT	IN
8518, 8519, 8520, 8914, 8915	3	3	8
8528*	3/2	3	8

* Overlamine 8528: first number represents the vertical warranty and the second number the horizontal warranty on vehicle graphics. Please see Section H.(2).

b. Screen Printing

Warranty Period for Finished Graphics, Vertical Exposure, in Years

SCREEN PRINTING	No Ink	Ink Series 1900			Ink Series 9800, non-Metallic			Ink Series 9800, Metallic		
		VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
Graphic Protection	None	VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
1920DR	—	5	5	8	—	—	—	—	—	—
1930	—	2	2	3	—	—	—	—	—	—
9740i	—	5	5	8	5	5	8	5	5	8
9730UV	—	3	3	8	3	3	8	—	—	—
9800CL	—	—	—	—	5	5	5	5	5	5
None	3	—	—	—	—	—	—	—	—	—

NOTE: No horizontal warranty is offered for screen printed graphics using this film.

H. General Warranty Stipulations for 3M™ MCS™ Warranty and 3M Performance Guarantee

These stipulations apply to both the 3M™ MCS™ Warranty and 3M Performance Guarantee. General provisions for these stipulations are covered in the [3M Commercial Graphics Warranty Brochure](#) at 3Mgraphics.com.

(1) Reduced Warranty Period for Other Graphic Exposures

For graphics oriented in a non-vertical or desert southwest, outdoor exposure, multiply the Warranty Period (in years) for your graphic construction as shown in the applicable Warranty Period Table, Section 5.G.(1) or 5.F.(1), by the percentage shown for the intended graphic exposure.

If the Graphic Exposure is:	Use this Percentage of U.S. Vertical Exposure, Warranty Period	Calculation Examples
U.S. Non-vertical	50% (0.5)	0.5 x 3 years = 1.5 years
Desert Southwest Vertical	70% (0.7)	0.7 x 3 years = 2.1 years
Desert Southwest Non-vertical	35% (0.35)	0.35 x 3 years = 1.05 years
Horizontal (most constructions)	0%	0

(2) Horizontal Warranty with Overlamine 8528 ONLY

Inkjet printed film IJ8150 with overlamine 8528 only:
U.S. - 2 years; Desert S.W. = 1.4 years

(3) Abrasion and Loss of Gloss

Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear. However, to help maintain the appearance of your graphic, use the recommended graphic protection whenever:

- it is required for the construction and end use as shown in the Warranty Period tables.
- the graphic, including printed vehicle graphics, is exposed to abrasive conditions, harsh cleaners or chemicals.

(4) **Sheeted Film**

3M does not warrant inkjet printing on sheeted film because material handling can contaminate the film's surface and affect print quality.

(5) **Applications Outside the U.S.**

Contact the 3M organization for that country.

(6) **Application to Glass**

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

(7) **Graphics Made with Components Not Sold or Recommended by 3M**

The 3M™ MCS™ Warranty does not, under any circumstances, cover graphics made with inks, film, graphic protection and/or application tapes that are not sold or recommended by 3M.

The user is solely responsible for the graphic appearance, performance and durability of graphic constructions that include any non recommended or qualified products.

6. Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by all of the following.

- The combination of graphics materials used
- Ink formulation
- Complete ink drying or curing
- Selection, condition and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning or maintenance methods

7. Graphics Manufacturing



CAUTION

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

A. Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

(1) **Total Ink Coverage**

The maximum recommended total ink coverage for this film is:

- 270% when printed with all approved 3M solvent inkjet inks.
- 280% when printed with all approved 3M UV inkjet inks and latex ink.

Do not exceed the recommended total ink coverage for the ink series used on this film. Too high a total physical ink amount on the film results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance. Refer to the Product & Instruction Bulletin for the 3M ink system being used or the Performance Guarantee Matrix for OEM inks for additional details about total ink coverage.

(2) **Completely Dry Graphics**

Important Note!

Incomplete drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty.

Always build enough time 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 overlamine, rolling or applying the graphic. See the ink's Instruction Bulletin for more details.

B. Cutting Methods

- Cold steel rule die
- Sharp knife
- [Knifeless™ Tape](#)

C. Application Tapes

(1) When to Use Premasking Tape

- Use as an application aid to increase stiffness, and prevent stretching and damage during application.
- Use when little or no liner is exposed.

(2) When to Use Prespacing Tape

- Hold cut and weeded letters or graphics in registration after removing the film liner.
- Protect cut graphic parts from scratching or damage during application.
- Use when large amounts of liner are exposed.

(3) How to Select a Tape

Determine whether you want to premask the graphic or prespace cut pieces of film such as letters. Then locate the graphic protection used on your graphic in the table below, and use the corresponding tape. See [Instruction Bulletin 4.3](#) for complete details.

EXAMPLE: To premask a film protected with overlamine 8519, use tape SCPM-3.

Select the tape based on what is on top of the graphic

Tape	None	8519 8520 8915	8518 8528 8914	9740i 9730UV 9800CL	1920DR 1930
Premasking SCPM-3	—	■	—	—	■
Premasking SPCM-44X	—	—	—	■	—

— = Use of this application tape is not recommended in this construction.

D. Perforated Window Film Simulation

For tips on producing perforated window film simulation or other see-through effects 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."

8. Application and Installation

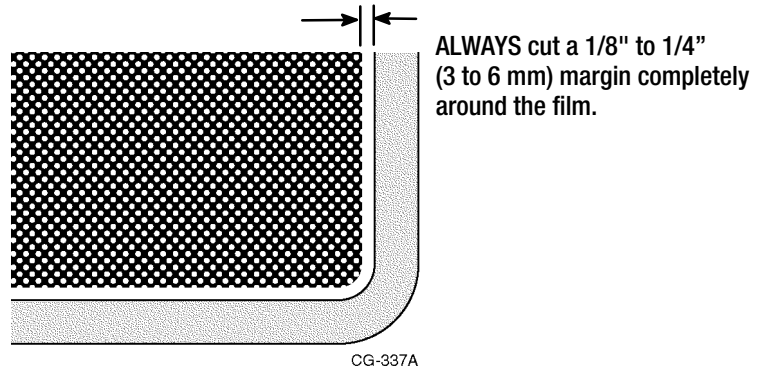
A. Wet Application Method

We recommend using a wet installation method. When using the wet method, some hazing may occur that should disappear within 48 hours. Allow the graphic to remain in an environment that is within the application temperature range for at least 24 hours, and then resqueegee the edges.

B. Cut a Margin Around Film on Windows

1. Always cut away a margin of 1/8 to 1/4 inch (3 to 6 mm) all around the graphic. See FIGURE 1 on page 12.
2. Do NOT apply the any film to any rubber gaskets or parts on the buses.
3. Do NOT allow any film to overlap the openings for any emergency window exits.
4. For complete application details, please refer to the most current release of the following 3M Instruction Bulletins.
 - Always use a wet application method. Refer to [Instruction Bulletin 5.7, Application: Wet Method for Translucent, Screen Printed and Cut Graphics](#)
 - [Instruction Bulletin 5.4, Application: Special Applications and Vehicles](#), specifically the "Vehicle and Store Windows" section.

FIGURE 1
Leave a Space All Around the Window



9. Maintenance and Cleaning

Use a cleaner designed for high-quality painted 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).

10. Removal

- No heat or chemicals are typically needed for removal. The ease and rate of removal depends on several factors. See [Instruction Bulletin 6.5](#) for details.
- Heat may be used to soften the adhesive and assist in removing the film. Exposing the graphic to natural environmental heat rather than using a heat gun or torch is recommended. Always use caution to avoid breaking glass. Remove at your own risk.

11. Shelf Life, Storage and Shipping

Activity	Recommendations
Shelf life	Total shelf life: 3 years from the date of manufacture on the original box. If you <u>do process</u> the film, do so within 2 years and apply within 1 year. If you <u>do not process</u> the film, apply it within 3 years.
Storage conditions	<ul style="list-style-type: none"> • 40-100°F (4-38°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

12. 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.

13. 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.

Bulletin types: PB = Product Bulletin; PB-IB = Product & Instruction Bulletin; IB = Instruction Bulletin

Subject	Type	Bulletin No.
3M™ Piezo Inkjet Ink Series 1500v2	PB-IB	1500
3M™ Piezo Inkjet Ink Series 2200UV	PB-IB	2200UV
3M™ Piezo Inkjet Ink Series 2700UV	PB-IB	2700UV
3M™ Piezo Inkjet Ink Series 2800UV	PB-IB	2800UV
3M™ Piezo Inkjet Ink Series 4400	PB-IB	4400
3M™ Piezo Inkjet Ink Series 4800	PB-IB	4800
3M™ Piezo Inkjet Ink Series 5400UV	PB-IB	5400UV
3M™ Piezo Inkjet Ink Series 6200	PB-IB	6200
EFI™ VUTEk® GS 3M™ Premium UV Inks	PB-IB	GS
EFI™ VUTEk® GSr 3M™ Premium UV Inks	PB-IB	GSr
SIIT GX 3M Ink Series	PB-IB	GX
Mimaki Ink Series LF-200	PB-IB	LF-200
HP 3M LX600 Specialty Latex Ink	PB-IB	LX600
HP LX610 Latex Ink, a 3M™ MCST™ Warranty Component	PB-IB	LX610
3M™ Screen Printing Ink Series 1900 and Overprint Clear VI0402	PB	1900
- Screen printing with ink series 1900 - line color	IB	3.12
- Screen printing with ink series 1900 - 4-color	IB	3.11
3M™ Screen Printing UV Ink Series 9800	PB	9800
- Screen printing with UV ink series 9800 - line color	IB	3.20
- Screen printing with UV ink series 9800 4-color	IB	3.21
3M Graphic Protection Products	PB	GP-1
3M™ Screen Print Gloss Clear 1920DR	PB	1900
- Applying screen printing clear 1920DR	IB	3.12
3M™ Screen Print UV Clears 9740i, 9730UV	PB-IB	UV Clears
Scoring and cutting	IB	4.1
Hot and cold roll lamination	IB	4.22
Using 3M application tapes; premasking and prespacing for films	IB	4.3
Application, substrate selection, preparation and substrate-specific application techniques	IB	5.1
Application, special applications and vehicles	IB	5.4
Application, wet method	IB	5.7
Storage, handling, maintenance, removal	IB	6.5
3M Commercial Graphics Warranty Brochure	Go to 3Mgraphics.com/warranties	

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14. Bulletin Change Summary

Modified and new content is marked with a black bar in the margin. HP LX610 Latex Ink, a 3M™ MCST™ Warranty Component, is now listed as a compatible product. GS inks now are compatible with GS Pro Series printers. Use of sheeted film for inkjet printing is not recommended.

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