

Release P, Effective February 2013 (*Replaces O, Jan 11*) See Bulletin Change Summary at end of Bulletin

Scotchlite™ Reflective Graphic Film

Series 680 680-10

for Screen Printing for Electrostatic or Screen Printing

1. Product Description

- A. Product Features and Advantages
- 7-mil, enclosed lens, retroreflective, engineer grade films that offer flexibility and versatility
- Available in 11 colors, including black (which reflects white)
- Similar daytime and nighttime appearance that retains most of its reflectivity when wet
- Excellent angularity
- · Pressure-activated adhesive for easy sliding and tacking
- Permanent
- · For vertical, flat, curved or corrugated surfaces, with or without rivets
- **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 <u>3M[™] MCS[™] Warranty</u>. Please read the entire Bulletin for details.
 - · Vertical commercial vehicle, railcar and bus graphics
 - Vertical non-regulated signs and striping
 - Vertical indoor and outdoor signage
- 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 both 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.

	Vehicle	Rail
Expected Performance Life. This is the estimated period of time the product s	hould perform satisfacto	orily.
Unprinted film with no graphic protection, applied to a flat vertical outdoor surface.	9 years Unwarranted Period	7 years Unwarranted Period
3M [™] MCS [™] Warranty. This is the maximum period of time 3M will warrant th	he finished graphic perf	ormance.
Printed film with the best 3M ink and graphic protection option, applied to a flat, vertical, vehicle type surface.	7 years Warranty Period	5 years Warranty Period

D. Limitations of End Uses

(1) Unsuitable End Uses for This Film This 3M product is not designed or recommended for the following uses. Please contact us to discuss other options.

- Do not apply this film on:
 - walls.
 - substrates with compound curves.
 - substrates without a clean, smooth surface or poor paint-to-substrate adhesion.
 - stainless steel.
 - unpainted metal other than aluminum: contact 3M Technical Service for details.
 - paint that is not fully cured.
 - FRP with a Tedlar® coating.
 - flexible substrates.
- Paint that is not thoroughly cured or dried. *Read the Important Note for Substrate Consideration* on page 8!
- Low surface energy substrates (some plastics, powder-coated paints, etc.)

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. See the Warranty Information section to determine which compatible products are

- E. Screen Printing
- F. Electrostatic Printing
- G. Graphic Protection

See the **Warranty Information** section to determine which compatible products are approved for your graphic construction.

- 3M[™] Screen Printing Ink Series 1900
- 3M[™] Screen Printing UV Ink Series 9800
- 3M[™] Scotchlite[™] Screen Printing Ink Series 2900
- Scotchprint® Toner Series 8700/8800
- 3M[™] Trident Transfer Paper
- 3M[™] Screen Print Gloss Clear 1920DR
- 3M[™] Screen Print UV Gloss Clear 9740i
- 3M[™] Scotchcal[™] Luster Overlaminate 8519
- 3M[™] Screen Printing Gloss Clear 9800CL
- 3M[™] High Gloss Graffiti Resistant Overlaminate 8912 not for use on rivets

H. Other Products

- 3M[™] Prespacing Tape SCPS-2
- 3M[™] Prespacing Tape SCPM-53X
- 3M[™] Premasking Tape SCPM-3
- 3M[™] Premasking Tape SCPM-44X
- 3M[™] Edge Sealer 3950

3. Characteristics

These are typical values for unprocessed product; processing may change the values. Contact your 3M representative for a custom specification.

A. Physical Characteristics

Characteristic	Value						
Material	Vinyl						
Thickness	With adhesive: 7 to 8 mils (0.18 to 0.20 mm)						
Film colors &	At -4° entrance ar	ngle and 0.2° observ	vation angle.				
typical retroreflection	Film Number 680-10 680-14 680-64 680-71 680-72 680-75 680-75 680-76 680-81 680-82 680-85	Color Name White Orange Gold Yellow Red Blue Light blue Green Lemon yellow Ruby red Black	Typical Coefficient of Retroreflection 100 20 70 65 20 10 10 20 75 15 30				
Retroreflection Definition	The typical coefficient of retroreflection defined is measured at a -4° entrance angle and a 0.2° observation angle. It is expressed in candlepower per foot-candle per square foot (candela/lux/square meter) per ASTM E810. The entrance angle is formed by a light beam striking the surface at a point and a line that is perpendicular to the surface at the same point.						
	An observation angle is formed by the light beam striking the reflective surface and returning to the observer. From 800 feet (249 meters), a motorist normally views a graphic at a 0.2° angle.						
Adhesive type	Pressure-activated	l, slideable					
Adhesive color	Clear with silver u	nderneath					
Liner	Polyethylene-coated paper						
Safety Standards	See Section 13 for ASTM, NFPA and AAR information.						
Chemical resistance	 Resists mild alkalis, mild acids, and salt Excellent resistance to rain <i>(not immersion)</i> Resists occasional fuel spills 						
Flammability	Call 1-800-328-3	908 for information					

B. Application Characteristics

racteristic	Value

Characteristic	Value
Finished graphic application	Surface type: Flat, with or without rivets; moderate curves, corrugations
recommendation	Substrate type: Aluminum, FRP, paint
	Graphic orientation: Vertical only
	Application method: Dry
	Application temperature: air and substrate
	 50° – 100°F (10° – 38°C) flat surfaces without rivets
	 55° – 100°F (13° – 38°C) flat, curved or corrugated surfaces with rivets

Continued on the next page.

Application Characteristics, Continued		Character	intin	Value			
Abbiics	ation Unaracteristics, Continue	u		ISUC	Value	C. O. merunda //meth. (d. d. Jur. Jur.)	
	-		Adhesion 24 hours after application Temperature range after application		FRP (Fiberg	6.0 pounds/inch (1.1 kg/cm) lass Reinforced Plywood): 3.0 lb/inch (0.5 kg/cm) minum panels: 4.5 pounds/inch (0.8 kg/cm)	
					-30° -+20)0°F (-34° − +93°C)	
4. D	efinitions						
A.	Exposure	U.S. Ver Exposur		fa	ace of graphic	The face of the graphic is +/- 10° from vertical.	
		U.S. Des Southwe Exposur	est	hours i	n Arizona, Ne	exposed to solar energy more than half of the daylight w Mexico and the desert areas of California, Nevada, Utah to reduced warranties. Click here for a <u>detailed map</u> .	
		U.S. Non-ver Exposur		face of	i graphic	For reflective films only: The face of the graphic is greater than 10° from vertical and greater than 45° from horizontal. This includes non-vertical surfaces of vehicle or fleet graphics.	
В.	Graphic Construction		The products used to make a graphic, which may include film and/or flexible substrate, graphic protection, ink, printer and application tape.				
C.	Graphic Protection	Overlam	inate films o	r clear c	pats used to	protect the graphic and/or change gloss.	
D.	Graphic Types	Indoor S	ligns	Stationary graphics applied indoors and not exposed to the elements.			
	As identified in Product Outdoor		Stationary graphics applied outdoors and exposed to the elements.				
Wá	arranty Matrices	OEM				e graphics produced for and used by original equipment also be called decals.	
		Vehicle	Types		e. Buses, van ed trailers.	s, passenger vehicles, delivery trucks, pickup trucks,	
				semi-tr		mi-Tractors and Semi-Trailers. Straight trucks, emi-trailers used for commercial business purposes.	
					ail cars and le tives or engir	ead cars of trains, light rail and subways, but not nes.	
5. W	arranty Information						
A.	Warranty Coverage Overview		all applicable and o Period stated in the purchased. The Wa constructions and a The following is ma implied warranty o		current 3M Pr e base film's arranty Period	graphic is based on the user(s) both reading and following oduct and Instruction Bulletins. 3M will honor the Warranty Product Bulletin that is current when the film was may be reduced and stipulations may apply for certain as covered in this Bulletin.	
					f merchantab	all other express or implied warranties, including any ility or fitness for a particular purpose or implied warranty g, custom or usage of trade.	
В.	3M Basic Product Warra	nty	shipment and to		eet the specit	free of defects in materials and manufacture at the time of ications stated in this Product Bulletin and as further set <u>ohics Warranty Brochure</u> .	
C.	Limited Remedy					ce of any 3M materials that do not meet this warranty with- ese 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 <u>3M Commercial Graphics Warranty Brochure</u> at 3Mgraphics.com, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

Rail Car and Lead Car Graphics

Indoor and Outdoor Signs

Vehicles

See Section 4.D. for further definition.

F. 3M[™] MCS[™] Warranty

Subject to Stipulations set forth in Section G.

Finished graphics constructed with the materials specified and the exposure specified in the Warranty Period, Section F.(1), are eligible for the $3M^{TM}$ MCSTM Warranty. For warranties for other exposures, see Section G.(1).

(1) Warranty Period

for Finished Graphics in a Standard U.S. Vertical Exposure

a. Screen Printing

Warranty Period for Vertical Finished Graphics, In Years

3M Ink	SOL	VENT 3	M Ink S	Series 2	900		/ENT 3N pries 19		ι	JV 3M li	nk Serie	es 980	0
	l. I	ine colo	or	4-c	olor	l.	ine colo	or	l. I	ine colo	r	4-c	olor
Graphic Protection	VEH	RAIL	OUT	VEH	OUT	VEH	RAIL	OUT	VEH	RAIL	OUT	VEH	OUT
1920DR	7	5	5	5	5	7	7	7	_	_	_	—	_
9740i	7	5	5	5	5	7	5	5	7	5	5	5	5
9800CL				_		—			5	5	5	5	5

b. Electrostatic Printing

Warranty Period for Vertical Finished Graphics, In Years

VEH

RAIL

OUT

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	3M Toner Series 8700		
Graphic Protection	VEH	OUT	
8519	5	4	
8912	5	4	
1920DR	5	4	

(2) Labor Reimbursement Remedy for Semi-Trucks, Semi-Tractors and Semi- Trailers 3M will reimburse up to 100% of the labor costs for the removal, remanufacture and reapplication of a graphic for *commercial semi-trucks, semi-tractors and semi-trailers (fleet vehicles) only* to the extent that 3M determines such amount is reasonable and necessary in the circumstances. This labor cost reimbursement will be determined by 3M on a case-by-case basis taking into account the expected amount of labor needed to make such repairs and other considerations.

G. General Warranty Stipulations for 3M[™] MCS[™] Warranty

(3) Application to Glass

(5) Graphics Made with

(6) Graphic Protection

6. Factors that Affect Graphic

Performance Life

(7) Rivets

(4) Application Outside the U.S.

Components Not Sold or

Recommended by 3M

These stipulations apply to the $3M^{TM}$ MCSTM Warranty. General provisions for these stipulations are covered in the <u>3M Commercial Graphics Warranty Brochure</u>.

(1) Reduced Warranty Period for Selected Graphic Exposures For each exposure shown below, multiply the Warranty Period (in years) in the applicable warranty, Section F.(1), for your graphic construction by the percentage shown for the intended graphic exposure. This is the reduced warranty.

If the Outdoor Graphic Exposure is:	Multiply Warranty Period by this Percentage:	Examples
Desert Southwest Vertical	70% (0.7)	0.7×7 years = 4.9 years
Non-vertical	0	0

- (2) Reduced Warranty Period for Graphics Exposed to Heat Long exposure to continuous high heat decreases the Warranty Period of this film by 2 years. High heat is a temperature above 150°F (65°C). It may occur in areas such as railroad locomotives, vehicle engine compartments, non-insulated tankers exposed to frequent internal steam cleaning, or compartments that carry hot cargo.
 - 3M accepts no liability for glass breakage when using this film for window graphics. See <u>Instruction Bulletin 5.1</u> for details.
 - Contact the 3M organization for that country.

The 3M[™] MCS[™] Warranty does not cover finished 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 and performance of graphic constructions that include any other products.

- Graphic protection can improve the appearance, performance and durability of your graphics. It is required for many warranted constructions. Refer to the Warranty Period tables for details.
- Any printed graphic exposed to abrasive conditions (including vehicles), harsh cleaners or chemicals must include graphic protection in order to be warranted. Abrasion damage and gloss loss are not covered.

This film may tent when applied over rivets. If the rivets are closely spaced, the film will likely bridge between rivets. Tented or bridged film may fail prematurely, which is not covered by any 3M warranty.

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

- The combination of graphics materials used
- Ink formulation
- Adequate 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



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

A. Screen Printing	Ink formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.
	• Ink series 1900 and some colors in ink series 9800 are opaque. Be aware that opaque ink can prevent the film from retroreflecting in the screen printed areas. Ink series 2900 and the transparent colors from ink series 9800 are good choices when retroreflection is important in the screen printed areas.
	• For graphics subjected to fuel vapors or occasional spills, use screen printing ink series 2900 and clear 1920DR.
	• Oven dry the last color and the clear when using solvent-based inks on graphics needed for any corrugated application.
B. Electrostatic Printing	An image is printed on electrostatic paper and transferred with heat and pressure to the film. Graphic protection is required.
	Refer to the 3M Related Literature section for Instruction Bulletins that discuss electrostatic printing methods.
C. Cutting	The following are common cutting methods for this film. See Instruction Bulletin 4.1 for details.
(1) Methods	Cold and hot steel-ruled die cutting
	Hot kiss cutting
	Drum-type electronic cutting
	Flat-bed electronic cutting
	Guillotine
	• Hand cut
	• Knifeless [™] Tape (<u>http://knifelesstechsystems.com/Home.aspx</u> for details)
(2) Minimum Cutting Sizes	• Use a minimum letter height of 1 inch (2.5 cm).
	• Use a minimum stroke width of 3/8 inch (1.0 cm).
	 Use a minimum radius for a point of 1/16 inch (1.6 mm).
	• For uniform color and brightness when making a graphic with multiple pieces of the film together, be sure the pieces are properly color matched. See <u>Instruction Bulletin 2.1</u> for details. Color-matched white film is available by special order at no extra charge. Contact your 3M sales representative.
	• Order "roll applicator splices" for roll striping. Butt splices may have a small gap.
(3) Weeding Considerations	• For the best results, weed the film within 24 hours of cutting it.
	• Perform weeding carefully. Removing the film from the liner reduces or may eliminate the slideability feature.
	Refer to Instruction Bulletin 4.1 for more details.
D. Liner Exchanging	Do not attempt to exchange the liner. This will compromise the slideability of the film, and could negatively impact adhesion or appearance of the applied graphic, which is not covered by any 3M warranty.
E. Application Tapes	
(1) When to Use Premasking Tape	 As an application aid to increase stiffness, and prevent stretching and damage during application.
-	• Graphics larger than 4 square feet (0.4 m ²).
	• Striping greater than 4 inches (10 cm) wide.
(2) When NOT to Use	Continuous rolls or striping wider than 12 inches (31 cm).
Premasking Tape	 Rolls wider than 12 inches (31 cm) that will be slit.

- (3) When to Use Prespacing Tape
- (4) How to Select an Application 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.

Determine whether you want to premask the graphic or prespace cut graphics. Then select the application tape that corresponds to the graphic protection used. See <u>Instruction Bulletin</u> <u>4.3</u> for complete details.

a. Screen Printing

	bolot ale tape based on what is on top of the graphic					
Application Tape	Screen Print Inks	1920DR	9740i, 9800CL			
Premasking SCPM-3	1900 2900		_			
Premasking SCPM-44X	9800					

--- = Use of application tape not recommended for this construction

b. Electrostatic Printing

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

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

Application Tape	Electrostatic Toners	1920DR	8914	8519, 8912
Premasking SCPM-3	8700			
Prespacing SCPS-2	0700			

— = Use of application tape not recommended for this construction

c. No Printing or Graphic Protection Premasking Tape SCPM-3Prespacing Tape SCPS-2

8. Application and Installation

A. Adhesive

Install the film using the dry application method.

Refer to the 3M Related Literature section, located at the end of this bulletin, for a list of the Instruction Bulletins that may be needed to apply or install this film.

This film has a pressure-activated adhesive that allows the film to slide easily on the substrate. Any pressure applied by hand, squeegee or application tool immediately bonds the film to the substrate and the slideability feature is lost. The film cannot be lifted and repositioned without damage.

B. Substrate Considerations

Important Note!

Some substrates such as under-cured polyurethane paint, fiberglass and some paint systems may continue to outgas for some time. Two-part polyurethane paints and screen print clears may stop curing when the air and surface temperatures are lower than $75^{\circ}F$ (24°C).

This film is not recommended for use on low surface energy substrates such as some plastics, powder-coated paint, etc. The user must assume responsibility for testing and approving these substrates.

C. Edge Sealing	• If needed or recommended, use edge sealer 3950.
	 Most graphics made with these films do not require an edge sealer, although certain applications may benefit from its use.
	 All processed and unprocessed graphics subjected to fuel vapors or occasional fuel spills do require edge sealer.
	• Edge sealing in the following applications is not required, but it may help keep the edges adhered when subjected to external sources such as abrasion and/or high pressure washing.
	- Graphics exposed to severe abrasion or high pressure washing.
	- Graphics applied to locomotives and rolling railroad stock.
	- Graphics applied to truck rollup doors.
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.)
	Refer to Instruction Bulletin 6.5 for details on pressure cleaning. Exceeding 3M's recommendations will void the warranty whether or not an edge sealer was properly used.
10. Removal	This film is a permanent film, which is not removable. Refer to Instruction Bulletin 6.5 for more information about permanent films.
11. Shelf Life, Storage and Shipping	
A. 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.
B. Storage Conditions	• 40° to 100°F (4° to 38°C)
for Unprocessed Film or	Out of sunlight
Unapplied Finished Graphics	Clean dry area
	Store unprocessed film in original container
	Cut sheets must lie flat
	Bring the film to print room temperature before using
C. Shipping Finished Graphics	Flat, or rolled printed side out on 6 inch (15 cm) or larger core. This helps prevent the application tape, if used, from popping off.
	See Instruction Bulletin 6.5 for details.
12. Health and Safety	
CAUTION	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 <u>3M.com/MSDS</u> , 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.

A. Standards This information is important for applications that are regulated by ASTM or NFPA® standards, for example, traffic control signs, emergency vehicles and certain railroad graphics. The user is solely responsible for determining and complying with all current and applicable local, state and federal regulations regarding the use and application of graphics materials.

- B. ASTM D4956-11a: Standard Specification for Retroreflective Sheeting for Traffic Control
 ASTM D-4956-11a covers flexible, non-exposed glass bead lens and microprismatic retroreflective sheeting designed for use on traffic control signs, delineators, barricades and other devices. For Type 1 sheeting it specifically covers these colors: white, yellow, orange, green, red, blue and brown. As defined in ASTM D-4956-11a, film series 680 are classified as Type I sheeting (section 4.2.1) with a Class 3 adhesive (section 4.3.3). For corresponding colors covered by ASTM D-4956-11a, the aforementioned films (except orange) meet the requirements specified in section 6.1.1 (minimum performance requirements for Type I
- C. NFPA® 1901: Standard for Automotive Fire Apparatus (2009 Edition) According to NFPA® 1901, section 15.9.3.3 specifies that all retroreflective materials required by section 15.9.3.1 and 15.9.3.2 shall conform to the requirements of ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, Section 6.1.1 for Type I sheeting. Section 15.9.3.3.1 specifies that colors not listed in ASTM D-4956 can be used on the front and sides of the fire apparatus as long as the sheeting has a minimum coefficient of retroreflection of 10 when measured with an observation angle of 0.2° and an

sheetina).

entrance angle of -4°.

	Red	Ruby Red	Yellow	Lemon Yellow	White	Blue	Light Blue	Green	Gold	Black
Color Number	72	82	71	81	10	75	76	77	64	85
Section 15.9.3.1 (Front & Sides)	•	•	•	•	•	•	•	•	•	•
Section 15.9.3.2 (Chevrons)	•	•	•	•						

D. AAR: Standard and Recommended Practices

13. 3M Related Literature

This product is approved for use by the Association of American Railroads (AAR), Safety and Operations, as listed in the Manual of Standards and Recommended Practices, Section L - Lettering and Marking of Cars, Specification M-947, Adhesive-Backed Films.

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. <u>Current</u> <u>Bulletins</u> 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

- Screen printing with ink series 1900- line color 3M™ Scotchlite™ Screen Printing UV Ink Series 2900 - Screen printing with Ink Series 2900 - Screen printing With Ink Series 2900 - 4-color 3M™ Screen Printing UV Ink Series 9800 - Screen printing with UV Ink Series 9800 - Screen printing with UV Ink Series 9800 - Screen printing With UV Ink Series 9800 - Screen Print UV Clears 9740i, 9730UV 3M™ Screen Print UV Clears 9740i, 9730UV 3M Graphic Protection Products 3M™ Trident Transfer Paper Hot and cold roll lamination Design of graphics Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	Туре	Bulletin No.
- Screen printing with Ink Series 2900 - 4-color- line color - 4-color3M™ Screen Printing UV Ink Series 9800 - Screen printing with UV ink series 9800 - 4-color- line color - 4-color3M™ Screen Print UV Clears 9740i, 9730UV3M Graphic Protection Products3M™ Trident Transfer PaperIHot and cold roll laminationIDesign of graphicsEdge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB IB	1900 3.12
- Screen printing with UV ink series 9800 - line color - 4-color 3M™ Screen Print UV Clears 9740i, 9730UV 3M Graphic Protection Products 3M™ Trident Transfer Paper Hot and cold roll lamination Design of graphics Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB IB IB	2900 3.18 3.19
3M Graphic Protection Products3M™ Trident Transfer PaperHot and cold roll laminationDesign of graphicsEdge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB IB IB	9800 3.20 3.21
3M™ Trident Transfer Paper Hot and cold roll lamination Design of graphics Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB-IB	UV Clears
Hot and cold roll lamination Design of graphics Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB	GP-1
Design of graphics Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	PB	Trident
Edge Sealer 3950 and 4150S, Edge Sealer Tape 8914	IB	4.22
	IB	2.1
Sheeting, scoring and film cutting	PB-IB	Edge Sealers
	IB	4.1
Using 3M application tapes; premasking and prespacing for films	PB-IB	4.3

Subject	Туре	Bulletin No.
Application, substrate selection, preparation, substrate-specific techniques	IB	5.1
Application, special applications and vehicles		5.4
Transferring and laminating electrostatically printed images		4.7
Application, general procedures for indoor and outdoor dry applications		5.5
Storage, handling, maintenance, removal		6.5
3M Commercial Graphics Warranty Brochure		1

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Tedlar is a registered trademark of e.i. DuPont Company. Knifeless is a trademark of Knifeless Tech Systems. All other trademarks are the property of their rightful owners.

14. Bulletin Change Summary 3M[™] Screen Print UV Clear 9740i directly replaces 3M[™] Screen Print UV Gloss Clear 9720i and 9720UV. Added a Performance Overview, which includes an Effective Performance Life value of 2 years. Reformatted the Warranty Information and Stipulations sections for better understanding of important terms used in Commercial Graphics Technical Literature. The Graphic Types definitions have been updated to align with the 3M Commercial Graphics Warranty Brochure. In Section 13.B., references to the ASTM standard have all been updated to say ASTM D4596-11a.



Commercial Graphics

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