

Product Description

- Lower initial tack when compared with IJ180Cv3 and IJ180mC-10
- For solvent, UV, and latex inkjet printing
- 2-mil, white, cast vinyl film with a luster finish
- Lesser removal capabilities when compared to film IJ180Cv3 and IJ180mC-10

Product Features

- Lower initial tack
- Easier liner release
- Excellent hiding power
- Pressure-activated adhesive for easy sliding, tacking, snap-up and repositioning
- Flexible; conforms to compound curves, corrugations and rivets
- Many finished graphic constructions can be stretched up to 130% (i.e., a 10 inch [25 cm] piece of film can stretch to 13 inches [33 cm]) without primer or relief cuts and maintain lift resistance; see "Stretchability" on page 6
- Non-visible air release channels for fast, easy, bubble-free installations
- Expected Performance Life of 10 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

Recommended Types of Graphics and End Uses

- Wraps for vehicles, straight trucks, semi-trucks and semi-trailers; emblems or striping
 - Horizontal vehicle wraps when protected with 3M overlaminates 8528, 8548G or 8549L
- Walls, indoor and outdoor graphics and signs, including point-of-purchase and displays
- Watercraft graphics (above the static water line only)
- Bus graphics
- Small format original equipment manufacturer's (OEM) decorative and identification graphics, cautionary and safety labeling

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.

Recommended Compatible Products

See 3M.com/graphicswarranties for a complete list of compatible 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 may be eligible for the 3M™ MCS™ Warranty or 3M Performance Guarantee.

Graphic Protection

- [3M™ Scotchcal™ Gloss Overlamine 8518](#)
- [3M™ Scotchcal™ Luster Overlamine 8519](#)
- [3M™ Scotchcal™ Matte Overlamine 8520](#)
- [3M™ Scotchcal™ Gloss Overlamine 8528](#)
- [3M™ Envision™ Gloss Wrap Overlamine 8548G](#)
- [3M™ Envision™ Luster Wrap Overlamine 8549L](#)
- [3M™ Wrap Overlamine Series 8900](#)
- [3M™ Scotchcal™ Luster Overlamine 8908](#)
- [3M™ Scotchcal™ Matte Overlamine 8909](#)
- [3M™ Scotchcal™ Ultra Matte Overlamine 8915](#)
- [3M™ Screen Print Gloss Clear 1920DR](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Screen Print UV Gloss Clear 9760LX](#)
- [3M™ Piezo Inkjet Protective Clear 8530](#)

Quick Links

- [3M Graphics Warranties](#)
- [Technical Information Selector](#)
- [Safety Data Sheets \(SDS\)](#)
- [Flammability \(ASTM E84 Reports\)](#)
- [Videos](#)

Some of these links lead to web-based resources that are not product-specific.



Application Tapes

See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommended for your film or finished graphic.

Other Products

- [3M™ Edge Sealer 3950](#)
- [3M™ Edge Sealer Tape 8914](#)
- [3M™ Vehicle Channel Applicator Tool VCAT-2](#)
- [3M™ Roller S \(small hard roller\)](#)
- [3M™ Roller L \(large hard roller\)](#)
- [3M™ Scotchgard™ Paint Protection Film SGH6](#)

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made with all 3M Graphics Products, including 3M Ink purchased through a qualified 3M Distributor or 3M Printing Partner, may register to be recognized with a Certificate of 3M™ MCS™ Warranty. Only graphic manufacturers having a current Certificate of 3M™ MCS™ Warranty are eligible to extend this warranty to their customers.

Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Cast vinyl
Film Color	White, opaque
Thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 3–4 mil (0.08–0.10 mm)
Adhesive	Pressure-activated (slide, tack, snap-up, reposition)
Adhesive Color	Gray
Liner	Polyethylene-coated paper
Adhesion, Typical 24 hours after application	ABS 4–5 pounds/inch (0.72–0.89 kg/cm) Acrylic enamel 3–4 pounds/inch (0.54–0.72 kg/cm) Aluminum, anodized 7–8 pounds/inch (1.26–1.43 kg/cm) Aluminum, etched 5–6 pounds/inch (0.89–1.08 kg/cm) Chrome 4–5 pounds/inch (0.72–0.89 kg/cm) Fruehauf pre-painted panels 3–5 pounds/inch (0.54–0.89 kg/cm)
Tensile Strength	5 pounds/inch at 73 °F (0.9 kg/cm at 23 °C)
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (<i>does not include immersion</i>) Resists occasional fuel spills
Flammability	Go to the online Product Catalog at 3M.com/graphics or Call 3M at 1-800-328-3908

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	<p>Surface type: flat, with and without rivets, simple curves, compound curves, and corrugations</p> <p>Substrate type: ABS resins, aluminum, chrome, glass, fiberglass reinforced plastics, paint (check adhesion to powder-coated or water-based paints), fiberglass with gel coat</p> <p>Application method: Dry</p> <p>Application temperature: air and substrate</p> <ul style="list-style-type: none"> • Flat without rivets: 40–100 °F (4–38 °C) • Curves or corrugations with rivets: 50–100 °F (10–38 °C) • Compound curves and/or watercraft: 60–90 °F (16–32 °C)
Applied Shrinkage	0.015 inches (0.4 mm)
Temperature Range After Application	-65 to +225 °F (-60 to +107 °C) (not for extended periods of time at the extremes)
Graphic Removal	Removable with heat and/or chemicals, but not warranted for removal. This product may not remove similarly to IJ180Cv3-10. See 3M Instruction Bulletin 6.5 for details.

Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at 3M.com/graphicswarranties includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- [3M Graphics Warranties Selector](#)
 - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- [U.S. Desert Southwest Region Map](#)
 - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

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

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the [3M Graphics Warranties Bulletin](#).

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3M.com/graphicswarranties.

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 IN THE 3M GRAPHICS WARRANTIES BULLETIN), 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 3M'S GRAPHICS 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.

Warranty Period Matrices

The warranty period for eligible graphics is as stated in the in effect at the time that the film was purchased.

3M™ MCS™ Warranty Period Matrices - UV Printer/Ink Combinations

Table A. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Printer/ Ink	EFI™ VUTEK® GS3250LXr, GS5250LXr*, and GS5500LXr* Printers including Pro and UltraDrop Series Using EFI™ VUTEK® GSLXr 3M™ Superflex UV Ink (*Warranty includes white ink)			
	EFI™ VUTEK® GS2000*/GS3250* LX Printers including Pro and UltraDrop Series Using EFI™ VUTEK® GSLX 3M™ Superflex UV Ink (*Warranty includes White Ink)			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	3	2	5
8528	7/2	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	-	-	-	-
9740i	5	2	2	5
none	-	-	-	-

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

* To better define printers that have white ink.

Table B. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Printer/ Ink	EFI™ VUTEK® GS5000r*, GS3250r Using GSr 3M™ Premium UV Inks *Warranty includes white ink			
	EFI™ VUTEK® GS2000*, GS3200*, GS3250* including Pro Series Using EFI™ 3M™ SuperRange Ink Warranty excludes white ink			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	3	2	-	5
9740i	5	3	2	8
none	-	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

* To better define printers that have white ink.

Table C. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	EFI™ VUTEK® GS3250/ GS5250/GS5500 LXR including Pro and UltraDrop Series Using EFI™ 3M™ SuperRange Ink Warranty excludes white ink			
	EFI™ VUTEK® GS2000/GS3250 LX including Pro and UltraDrop Series Using EFI™ 3M™ SuperRange Ink Warranty excludes white ink			
	EFI™ VUTEK® H1625 Using H1625 LED Series 3M™ Inks			
	EFI™ Pro 16H LED Using EFI™ Pro 16h - 3M™ Ink (Warranty excludes White Ink)			
	EFI™ Quantum® 3 and 5, VUTEK 3r and 5r Printers Using EFI™ - 3M™ SuperRange XF Ink (Warranty excludes White Ink)			
	Durst Rho 312R, 320R, and 512R Printers Using Durst Rho Roll 3M™ Premium UV Inks (excludes white ink)			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	5	3	2	5
8528	5/2	3	2	5
8548G/ 8549L	5/2	3	2	5
8900	3/1	-	-	-
1920DR	-	-	-	-
9740i	3	2	2	5
none	-	-	-	-

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.
* To better define printers that have white ink.

Table D. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	EFI™ R3225 UV Using EFI™ R3225 3M™ UV Inks			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	5	4	2	8
8528	5/3	4	2	8
8548G/ 8549L	5/2	4	2	8
8900	3/1	-	-	-
1920DR	3	2	-	5
9740i	5	3	2	8
none	-	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.
* To better define printers that have white ink.

Table E. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Graphic Protection	EFI™ VUTEK® QS2000 / QS3200 / QS3220 / QS220 Printers Using 3M™ Piezo Inkjet Ink Series 2800UV (Warranty includes white ink)			
	EFI™ VUTEK® PV200 Printers Using 3M™ Piezo Inkjet Ink Series 2200UV (Warranty includes white ink)			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	-	-	-	-
9740i	5	4	2	8
none	-	3	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.
 * To better define printers that have white ink.

Table F. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Graphic Protection	Mimaki UJV500-160 Printer Using Ink Series LUS-200 Manufactured by 3M			
	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	5	4	2	8
8528	5/3	4	2	8
8548G/ 8549L	5/2	4	2	8
8900	3/1	-	-	-
1920DR	3	2	-	5
9740i	5	3	2	8
none	-	-	-	-

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.
 * To better define printers that have white ink.

3M™ MCS™ Warranty Period Matrices - Latex Printer/Ink Combinations

Table G. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	HP Latex 3500/3600 Printers Using HP & 3M™ 891 Latex Ink			
	HP Latex 3000/3100/3200 Printers Using HP 881 Latex Ink, a 3M™ MCS™ Warranty Component			
	HP Latex 1500 Printers Using HP 881 Latex Ink, a 3M™ MCS™ Warranty Component			
	HP Latex 560/570 Printers Using HP 831/HP 871 Latex Ink, a 3M™ MCS™ Warranty Component			
	HP Latex 360, 365, 370, 375 Printers Using HP 831/HP 871 Latex Ink, a 3M™ MCS™ Warranty Component			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528 8548G, 8549L	7/2	4	2	8
8900	3/1	-	-	-
9760LX	5	3	-	5
1920DR	2	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table H. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	HP Designjet L65500, Scitex LX600, LX800, LX820 and LX850, and Latex 820 and 850 Printers Using HP LX610 Latex Ink, a 3M™ MCS™ Warranty Component			
	HP Designjet L26100, L26500, L28500 and Latex 210, 260, and 280 Printers Using HP 792 Latex Ink, a 3M™ MCS™ Warranty Component			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	6	4	2	8
8528 8548G, 8549L	6/2	4	2	8
8900	3/1	-	-	-
9760LX	-	-	-	-
1920DR	2	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table I. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

HP Designjet L65500, Scitex LX600, LX800, LX820 and LX850, and Latex 820 and 850 Printers Using HP 3M LX600 Specialty Latex Ink				
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	5	4	2	7
8528, 8548G, 8549L	5/2	4	2	7
8900	3/1	-	-	-
9760LX	-	-	-	-
1920DR	2	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

3M™ MCS™ Warranty Period Matrices - Solvent Printer/Ink Combinations

Table J. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

EFI™ VUTEk® 150, 2360/3360, 3300/5300, 3000/5000 Printers Using 3M™ Piezo Inkjet Ink Series 1500v2				
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	3	3	2	5
9740i	5	4	2	8
8530	2	2	-	3
none	-	2	-	2

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table K. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Graphic Protection	Epson SureColor® S40600, S60600 Printers Using Epson® - 3M™ UltraChrome® GS3 Ink			
	Epson SureColor® S80600 Printers Using Epson® - 3M™ UltraChrome® GS3 Ink and Epson® - 3M™ UltraChrome® GS3 Ink with Red (excludes white, silver, orange and red)*			
	OKI Data Infotech ColorPainter™ E-64s Printers Using 3M™ SX Ink Series from OKI			
	OKI Data Infotech ColorPainter™ H3-104s Printers Using 3M™ SX Ink Series from OKI			
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	5	3	2	8
8528	5/3	3	2	8
8548G/ 8549L	5/2	3	2	8
8900	3/1	-	-	-
1920DR	3	2	2	5
9740i	-	-	-	-
8530	-	-	-	-
none	-	2	-	2

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table L. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

Graphic Protection	EFI™ VUTEk® 150, 2360/3360, 3300/5300, 3000/ 5000 Printers Using 3M™ Piezo Inkjet Ink Series 1500v2			
	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	3	3	2	5
9740i	-	-	-	-
8530	-	-	-	-
none	-	2	-	2

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table M. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

OKI Data Infotech ColorPainter™ H-74s, H-104s, H2-74s and H2-104s, W-54s and W-64s Printers Using 3M™ GX Ink Series from OKI				
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	3	3	2	5
9740i	5	4	2	8
8530	-	-	-	-
none	-	2	-	2

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table N. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

HP Scitex TJ8300 and TJ8350 Industrial Presses Using 3M™ Piezo Inkjet Ink Series 4800				
Graphic Protection	VEH	OUT	Water	IN
8518, 8519, 8520, 8915	7	4	2	8
8528	7/3	4	2	8
8548G/ 8549L	7/2	4	2	8
8900	3/1	-	-	-
1920DR	3	3	2	5
9740i	5	4	2	8
8530	2	2	-	3
none	-	2	-	3

Note: For overlaminate 8528 or 8548G or 8549L or 8900, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

3M Performance Guarantee

Table O. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	HP Designjet 8000, 9000, 10000 Printers with HP 790 Series Inks (For CMYK Colors Only)			
	HP Scitex TJ & XL solvent inks			
	Roland Advancejet with EcoXtreme i Series Inks (for CMYK Colors Only)			
	Mimaki all with SS21/MS/HS/SS2			
	Oki H2 with GX(has restriction on no 8915 overlam)			
	Oki 64 with EG			
	EFI™ Vutek 150 with UV6			
	AGFA printers			
Graphic Protection	VEH	Water	OUT	IN
8518, 8519, 8520, 8915	3	3	2	3
8528	3/3	3	2	3
8548G/8549L	3/2	3	2	3
1920DR	3	3	-	3
9740i	3	3	2	3

Note: For overlaminates 8528 or 8548G or 8549L, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Table P. Warranty Period for Finished Graphics in a Standard U.S. Vertical Exposure.

	Durst Rho 500R Printer with Rho Roll v3 UV Ink (for CMYKLcLm Colors Only)			
	Epson SureColor® S30670, S50670, S30675, S50675 with UltraChrome® GS2 Ink (For CMYK Colors Only)			
	Epson SureColor® S70670, S70675 with UltraChrome® GSX Ink (For CMYKLcLmLkOr Colors Only)			
	Epson SureColor® S80600 Printers Using Epson® - 3M™ UltraChrome® GS3 Ink and Epson® - 3M™ UltraCh- rome® GS3 Ink with Red (For CMYKLcLmLk Colors Only)			
	Epson Stylus® Pro GS6000 Printer with UltraChrome® GS Ink (for CMYKLcLm Colors Only)			
	HP Latex 1500, 3000, 3100 Printers with HP 881 Latex Inks (for CMYKLcLm Colors Only)			
	HP Latex 310, 315, 330, 335, 360, 365, 370, 375, 560 and 570 Printers with HP 831 Latex Inks (for CMYKLcLm Colors Only)			
	HP Latex 3500 Printers with HP 3M 891 Latex Inks (for CMYKLcLm Colors Only)			
	HP Latex 360, 365, 370, 375, 560, and 570 Printers with HP 871 Latex Inks (for CMYKLcLm Colors Only)			
	HP ScitexTJ200, TJ210 UV inks			
	Mimaki JV3& JV5 with ES Ink			
	Mimaki Latex LX100, LX101			
	Mutoh Valuejet 1608 Printers with MUBIO Series Inks (for CMYK Colors Only)			
	Mutoh Valuejet 1324, 1624, 1638 Printers with Eco-Ultra™ Series Inks (for CMYK Colors Only)			
	Mutoh Valuejet 1628X, 1638X Printers with Eco-Ultra™ Series Inks (For CMYK Colors Only)			
	Mutoh Valuejet 1204, 1304, 1614, 1618 Printers with Eco-Ultra™ Series Inks (for CMYK Colors Only)			
	RICOH Pro L4100 with L4160 Latex Ink (for CMYK Colors Only)			
	Roland® SOLJET Pro II Series Printers with Eco-Sol Max Series Inks(for CMYKLcLm Colors Only)			
	Roland® SOLJET Pro III Series Printers with Eco-Sol Max Series Inks (for CMYKLcLm Colors Only)			
	Roland® VersaCAMM® Series Printers with Eco-Sol Max Series Inks(for CMYK Colors Only)			
	Roland® SOLJET Pro 4 XR/XF-640 Printers with Eco-Sol Max 2 Inks (for CMYKLcLm, LK Colors Only)			
	Roland SOLJET® EJ-640 Large Format Digital Printer with EJ Inks (for CMYKLcLm,Lk Colors Only)			
	Oki E, M, H3 with SX ink			
	EFI™ VUTEK all UV ink			
Graphic Protection	VEH	Water	OUT	IN
8518, 8519, 8520, 8915	3	3	2	3
8528	3/3	3	2	3
8548G/8549L	3/2	3	2	3
1920DR	3	3	-	3

Note: For overlaminates 8528 or 8548G or 8549L, the first number represents the vertical durability and the second number the horizontal durability on vehicle graphics.

Additional Limitations

Additional warranty limitations may apply. Please see the 3M Graphics Warranties Bulletin at [3M.com/graphicswarranties](https://www.3m.com/graphicswarranties) for information on reduced warranties for other exposures, limitations of liability, and additional warranty terms and limitations.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics materials used.
- 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.

Graphics Manufacturing



CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Inkjet Printing

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

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.
- **280%** when printed with all approved 3M latex inkjet inks.
- **250%** when printed on the Mimaki JV5 Series printer with HS ink series ([3M Performance Guarantee](#)).

NOTE: This product will not be included in these matrices, but restrictions around ink laydown and other parameters can be followed from other films.

Do not exceed the recommended total ink coverage for the ink series used on this product. Having too high a total physical ink amount on the product results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance. For additional details about total ink coverage, refer to the 3M Product and Instruction Bulletin for 3M inks or the [3M Performance Guarantee Matrix](#) for OEM inks.

Completely Dry Graphics



IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application Tapes

There are two types of application tapes. See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommended for your film or finished graphic.

Premasking Tape

Increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Prespacing Tape

Holds cut and weeded letters or graphics in place during application and after removing the film liner, while preventing stretching and damage. Use when large amounts of liner are exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- [3M Instruction Bulletin 5.36](#). Application Techniques for Automobiles, Vans and Buses. Complete the 3M Pre-Installation Inspection Record found in this Instruction Bulletin prior to manufacturing or applying a graphic to an automobile, van, or bus.
- [3M Instruction Bulletin 5.37](#) A Guide to Understanding and Applying Graphics to Common Smooth and Textured Wall Surfaces
- [3M Instruction Bulletin 5.4](#). Application, Fleet Trucks.
- [3M Instruction Bulletin 5.42](#). Application, Special Considerations for Watercraft. Complete the 3M Pre-Installation Inspection Record found in this Instruction Bulletin prior to manufacturing or applying a graphic to a watercraft.
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Product and Instruction Bulletin V-Tools](#). 3M™ Vehicle Channel Applicator Tools.

IMPORTANT NOTE

UV inkjet inks may crack if too much heat is used during graphic application to complex curves and deep contours as well as around rivets. When using heat during application, make sure the film surface temperature does not exceed 212° F (100° C). For best results, **always do a test application** of a printed graphic to determine how much heat can be used without damaging the image.

3M recommends using additional heat in the post-application process for vehicle graphics. During this process, 3M only recommends using a heat gun to make sure the film surface temperature reaches a minimum of 200° F (93° C) and does not exceed 225° F (107° C), or the lowest specified maximum temperature for any other component.

Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- smooth sliding into position on a substrate;
- fast finger tacking to check position; and
- easy snap-up and repositioning when you need it.

The **snap-up and reposition feature is lost:**

- when firm pressure with a squeegee or other application tool is applied.
- at application temperatures above 100° F (38° C) even if only light finger pressure was used for tacking.
- if any part of the film is removed from the original liner and reapplied to the same or another liner.
- solvent from inkjet ink has not completely dried or cured, which affects both slideability and snap-up.

Working with Air Release Channels

Air release channels allow trapped air to exit through the edges of the graphic.

- The channels will be damaged and effective air removal affected if you remove and attempt to change liners or reapply the same liner.
- For the best results, always work from the center out to the edges of the graphic to allow trapped air to exit through the air release channels. If the channels are closed off by firm pressure and air is trapped, use an air release tool to aid in removing air bubbles. See [3M Instruction Bulletin 5.4](#) for details.

Stretchability

Many finished graphic constructions can be stretched without primer or relief cuts and maintain lift resistance.

- For Automobiles, Vans and Buses, see [3M Instruction Bulletin 5.36](#) for details and exceptions.
- For Straight trucks, semi-trucks and semi-trailers, see [3M Instruction Bulletin 5.4](#) for details and exceptions.

3M™ Tape Primer 94

3M recommends that where the film will be stretched, particularly on the edges of the film, use primer to maximize a graphic's bond to its substrate.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

Removal

This product can be removed with the aid of heat and/or chemicals, but is not warranted for removal. This product may not remove similarly to IJ180Cv3-10, and may leave more than 30% adhesive residue. See [3M Instruction Bulletin 6.5](#) for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 3 years** from the date of manufacture on the original box.

If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 3 year maximum from the manufacturing date.

Storage Conditions

- 40° to 100 °F (4° to 38 °C)
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to room temperature before use

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.

Health and Safety

CAUTION

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to [3M.com/SDS](https://www.3m.com/SDS), 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 manufacturer's instructions for safe operation.

Commercial Solutions

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1-800-328-3908
[3M.com/Graphics](https://www.3m.com/Graphics)

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