

Specialty Overlaminates

3M™ Anti-Graffiti Solutions

1. Specialty Overlaminates

- (1) Cleanable
 - 3M™ Scotchcal™ Gloss Overlamine 8528
 - 3M™ Scotchcal™ Gloss Overlamine 3658G
 - 3M™ Scotchcal™ Matte Overlamine 3660M
- (2) Superior Cleanability
 - 3M™ Scotchcal™ Gloss Overlamine 3640GPS
 - 3M™ Scotchcal™ Matte Overlamine 3642GPS
- (3) Graffiti-Resistant
 - 3M™ Scotchcal™ Graphics and Surface Protection Film 8991
 - 3M™ Scotchcal™ Removable Graphics and Surface Protection Film 8991R
 - 3M™ Scotchcal™ High Gloss Graphics and Surface Protection Film 8993
 - 3M™ Scotchcal™ Matte Graphics and Surface Protection Film 8995
- (4) Anti-Graffiti
 - 3M™ Anti-Graffiti Film AG-4
 - 3M™ Anti-Graffiti Film AG-7

Warranty Information:

Warranty and Limited Remedy

The following is made in lieu of all other express or implied warranties, including any implied warranty or condition of **merchantability** or fitness for a particular purpose or implied warranty or condition arising out of a course of dealing, custom or usage of trade: all 3M products are 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. 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. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labour or non-3M material charges.**

See the *3M Graphics Market Center Warranty Brochure* at 3Mgraphics.com, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

Warranty Coverage Overview

Both the warranty coverage and the durability of each graphic are based on the user(s) reading and following all applicable and current 3M Product and Instruction Bulletins. 3M will honour the Warranted Durability stated in the Warranted Durability Table in the base film or substrate Product Bulletin that is current when the film was purchased. Warranted durabilities may be reduced and stipulations may apply for certain constructions and applications, as covered in the Product Bulletin.

2. 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/MSDS, or by mail or in case of an emergency, call 1-800-364-3577 or 651-737-6501.

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

A. Air Quality Regulations

Volatile Organic Compound (VOC) regulations may prohibit the use of certain cleaning chemicals with VOCs in graphic arts coatings and printing operations. Check with your environmental authorities to determine whether use of these products may be restricted or prohibited.

3. Warranty Information

All 3M graphic protection products are covered by the 3M Basic Warranty.

A Warranty Period may be offered based on the graphic construction and application details. Always refer to the Product Bulletin for the 3M base film or flexible substrate you are using to determine if the graphic protection product you want to use is recommended and what, if any, Warranty Period is offered. The only exception is for Scotchgard™ Graphic and Surface Protection Film 8991 and 8991R, which has Warranty Periods in its Bulletin.

A. 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, LABOUR, 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.

B. Additional Warranty Information

The 3M Graphics Warranties Brochure at 3Mgraphics.com, along with the applicable film's 3M Product Bulletins, provide the details to any warranty offered for the 3M graphics products described in this Product Bulletin.

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4. Product Applications, Descriptions and Limitations of Use

Product Number	Applications						Description	Limitation of Use
	Fleet/Vehicle/Transit	Labels	Signage/Wayfinding	Smooth Walls	Windows/Glass	Street Furniture		
A - CLEANABLE								
3658G		X	X			X	Gloss; high protection from UV fading and dirt; easy to clean.	For inkjet printed films IJ170Cv3, IJ180, IJ180C, IJ180Cv3, IJ380Cv3, LX480Cv3/SV480Cv3
3660M		X	X			X	Matte version of 3658G.	
B - SUPERIOR CLEANABILITY								
8528	X			X	X		Superior UV protection; longer term durability; horizontal warranty.	For inkjet printed films IJ160, IJ160C, IJ170Cv3, IJ180, IJ180C, IJ180Cv3, IJ8150
3640GPS		X	X			X	Gloss; high protection from UV fading and dirt; easy to clean.	Not for application to other 3M™ Brand GPS films, solvent/latex printed digital films, or for graphics subjected to intentional or accidental abrasion For inkjet printed films IJ170Cv3, IJ180, IJ180C, IJ180Cv3, IJ380Cv3, LX480Cv3/SV480Cv3
3642GPS		X	X			X	Matte version of 3640GPS.	

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4. Product Applications, Descriptions and Limitations of Use (continued)

Product Number	Applications						Description	Limitation of Use
	Fleet/Vehicle/Transit	Labels	Signage/Wayfinding	Smooth Walls	Windows/Glass	Street Furniture		
3642GPS		X	X			X	Matte version of 3640GPS.	All Products: <ul style="list-style-type: none"> • Not for automotive OEM graphics • Not for graphics subjected to gasoline spills, such as gas pumps, automobile fuel tank ports or top-feeding petroleum tankers • Do not print on graphic protection products
C - GRAFFITI-RESISTANT								
Note: Before applying these films to solvent-printed graphics, ensure sufficient ink drying to reduce the risk of outgassing and lifting issues; see Section 6, page 5.								
8991	X	X	X	X	X		Extra thickness and special hardcoat provide superior substrate and surface protection from stains, abrasion, gouges, UV light, graffiti; easy to clean.	<ul style="list-style-type: none"> • Not for cut film applications, flexible substrates, gypsum wallboard, poor paint adhesion, graphics printed with solvent-based inks, porous or unsealed surfaces • Not for vandalism or excessive product misuse that damages the substrate • Not for gasoline vapours and spills that penetrate the edges of the film • 8991R is not removable from printed or unprinted graphic film • See PB- IB 8991
8991R	X	X	X	X	X		Removable version of 8991; may be used on glass for general protection.	<ul style="list-style-type: none"> • 8991R is not removable from printed or unprinted graphic film • See PB- IB 8991
8993	X	X	X	X				<ul style="list-style-type: none"> • Not for cut film applications, flexible substrates, gypsum wallboard, poor paint adhesion, graphics printed with solvent based inks, porous or unsealed surfaces • Flat surfaces only • Not good for dry erase marker graffiti; not for plastics, glass, flexible substrates
8995		X	X	X			Protect graphics and surfaces from graffiti scratches and gouges.	<ul style="list-style-type: none"> • Not for cut film applications, flexible substrates, gypsum wallboard, poor paint adhesion, graphics printed with solvent based inks, porous or unsealed surfaces • Flat surfaces only • Not good for dry erase marker graffiti; not for plastics, glass, flexible substrates
D - ANTI GRAFFITI								
AG4/AG7					X		Optically clear film for protection of windows, glass, mirrors, metal surfaces; Resists damage from glass etching solutions and sharp objects puncture. In case of vandalism, film can be taken off with no damage.	

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5. Application Surfaces, Physical and Performance Characteristics

Product Number	Expected Performance (Years)	Application Surfaces						Physical Characteristics					Performance Characteristics <i>See conversion values, page 9</i>	
		Flat	Flat with Rivets	Corrugated	Simple Curves	Compound Curves	Flexible Substrates	Material	Cast or Non-Cast	Thickness (Mils)	Gloss	Liner	Lamination Temperature A 50-100°F (10-38°C) B 50-90°F (10-32°C) C 60-100°F (15.5-38°C)	In-use Temperature Range D -65 – +225°F (-54 – +107°C) E -40 – +150°F (40 – +42°C) F -30 – +200°F (-34 – +93°C)
3640GPS	9	X			X		X	PVDF	N/A	1	Gloss	Kraft paper	C	D
3642GPS	9	X			X		X	PVDF	N/A	1	Matte	Kraft paper	C	D
3658G	9	X			X		X	Vinyl	Cast	2	Gloss	Kraft paper	A	D
3660M	9	X			X		X	Vinyl	Cast	2	Matte	Kraft paper	A	D
8528	9	X	X	X	X	X	X	Vinyl	Cast	2	Gloss	Polyester	A	D
8991	3	X			X			Polyester	Extruded	4	High Gloss	Poly-coated	C	D
8991R	3	X			X			Polyester	Extruded	4	High Gloss	Poly-coated	C	D
8993	5	X						Polyester	Extruded	1	High Gloss	Kraft paper	A	F
AG4		X						Polyester	Extruded	4	Gloss	Poly-coated	C	D
AG7		X						Polyester	Extruded	7	Gloss	Poly-coated	C	D

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Recommended Compatible Products

	3658/3660	8528	3640/3642	8991	8991R	8993	8995	AG4/AG7
DIRECT SURFACE								
Glass					X			X
DIGITAL PRINTING MEDIA								
IJ180	X	X	X	X		X	X	
IJ180CV3	X	X	X	X		X	X	
IJ380CV3	X	X	X	X		X	X	
LX480CV3	X	X	X	X		X	X	
SV480CV3	X	X	X	X		X	X	
INKS								
Solvent/ Eco-Solvent	X	X						
Latex	X	X		X	X	X	X	
UV Inks	X	X	X					

For the most current information on these base films, please see Product Bulletins.

OEM inkjet inks and printers for the 3M Performance Guarantee

See the 3M Performance Guarantee Matrix for a complete list of compatible OEM Inkjet Inks and Printers that are approved by 3M for use with the base film covered in the Bulletin and used for the creation of a graphic that may be eligible for the 3M Performance Guarantee.

	Product	
Flammability	All	Flammability test data may be available for the graphic product and application you require. ASTM E84 test reports are available on the On-line Product Catalogue at 3Mgraphics.ca (select a product and view its Literature tab) or call 3M at 1-800-328-3908.
Chemical Resistance	8991 8991R	See Product Bulletin 8991 for complete details on the unique uses and application methods for this product.
	All Others	<ul style="list-style-type: none"> Resists mild alkalis, mild acids and salt Excellent resistance to water Resists petroleum vapours

6. Important Note for All Solvent Inkjet Printed Graphics

Adequately Dry Graphics

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

Always build enough time into your process to ensure adequate 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 the graphic and applying the film. See the ink's Instruction Bulletin for more details.

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	Product	
7. Applying Overlaminates	All	Refer to IB 4.22 for all lamination procedures. These overlaminates also can be applied with a hand or powered drive roll laminator.
	Digitally Printed Graphics	Digitally printed UV-cured graphics should be applied with the hot roll method to reduce silvering. All other digitally printed graphics are normally overlaminated using the cold roll method.
	3640GPS 3642GPS 3658G 3660M	These overlaminates also can be applied with a hand or power drive roll laminator. For backlit applications these overlaminates are commonly applied using the wet (detergent and water) application method. See Instruction Bulletin 5.7 for details.
8. Application Tape	All	May be used to add stiffness for easier application, hold cut graphics together while applying, or to protect graphics from scratching and other damage during application. Many graphics with an overlaminate do not require application tape. See the 3M Product Bulletin for the base film or flexible substrate you are using for additional recommendations. When winding processed graphics, do not wind too tightly or the film may block.
	3658G 8528 3642GPS	Some higher gloss overlaminates are more susceptible to scratching during application. Using an application tape protects against scratching but the adhesive may dull the gloss somewhat. When the graphic is not protected by an application tape, always use edge protection on the squeegee, such as a paper liner or soft PTFE tape.
9. Maintenance and Cleaning	All	Use a cleaner such as the kind used for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents or alcohol, and have a pH value between 3.0 and 11.0 (neither strongly acidic nor strongly alkaline). Also see IB 6.5.
10. Shelf Life, Storage and Shipping of Films	Further details IB 6.5.	
A. Shelf Life	All	Total shelf life: Three years from the date of manufacture on the original box. Up to three years unprocessed or process within two years and then apply within one year of processing
B. Storage Temperature	All	40° to 100°F (4° to 38°C)
C. Storage Conditions	All	<ul style="list-style-type: none"> • Out of sunlight • Clean dry area • Original container • Bring the product to print room temperature before using
D. Shipping Finished Graphics	All	Flat and racked is preferred. If rolling, roll printed side out on a core at least 6 inches (15 cm) in diameter or larger. A six-inch core is mandatory for all graphics with reflective base films to prevent their liners and, if used, the application tape from coming off.

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Product

11. Conversion Values

Temperature	Area
50 – 100 °F (10 – 38°C)	1000 – 1200 feet ² (92 – 111 m ²)
50 – 90 °F (10 – 32°C)	800 feet ² (75 m ²)
60 – 100 °F (15 – 38°C)	2500 feet ² (232 m ²)
-65 – +225 °F (-54 – +107°C)	2500 – 3000 feet ² (232 – 279 m ²)
-40 – +150 °F (-40 – +66°C)	1200 – 1600 feet ² (92 – 149 m ²)
-30 – +200 °F (-34 – +93°C)	750 – 800 feet ² (70 – 75 m ²)
	2500 – 3500 feet ² (232 – 325 m ²)

12. Bulletin Change Summary

Black bars in the margin indicate a change or addition. None.

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 available at 3Mgraphics.ca. The techniques described in these Bulletins are required when applying a non-warranted graphics. 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.
Base Films and Substrates Please visit our website for the Product Bulletins: www.3Mgraphics.ca		
Scotchgard™ Graphic and Surface Protection Film 8991 or 8991R	PB	8991
3M™ Screen Print Gloss Clear 1920DR, 1930 and VI0402 - Applying screen printing clear 1920DR, 1930 and VI0402	PB IB	1900 3.12
3M™ Screen Print UV Gloss Clear 9749i, Matte Clear 9730UV	PB IB	UV Clears
3M™ Inkjet Protective Clear 8530	PB	8530
Hot and cold roll lamination	IB	4.22
Storage, handling, maintenance, removal	IP	6.5
3M Commercial Graphics Warranty Brochure		

14. Products Mentioned in This Bulletin

These films are referenced by their product number within this Bulletin: 3M™ Controltac™ Graphic Film IJ160-10 and IJ180; 3M™ Controltac™ Graphic Film with Comply™ Adhesive IJ160C, IJ170Cv3, IJ180C and IJ180Cv3; 3M™ Envision™ Wrap Film LX480Cv3 and SV480Cv3; 3M™ Envision™ Flexible Substrate FS-1; 3M™ Scotchcal™ Clear View Graphic Film IJ8150; 3M™ Scotchlite™ Graphic Film IJ680; 3M™ Scotchlite™ Graphic Film with Comply™ Adhesive IJ680; 3M™ Panagraphics III Wide-Width Flexible Substrate; 3M™ Screen Print UV Ink Series 9800, 3M™ Screen Print Ink Series 1900.

