



# Graphic & Surface Protection Products

## Overlaminates and Clears for All Imaging Methods & Surfaces

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## 1. Graphic Protection Products

### A. Standard Overlaminates

These overlaminate films are approved for most digitally imaged or unprinted film and selected screen printed films.

#### (1) High Gloss Overlaminates

- 3M™ Scotchcal™ High Gloss Overlaminates 3648

#### (2) Gloss

- 3M™ Scotchcal™ Gloss Overlaminates 3640GPS
- 3M™ Scotchcal™ Gloss Overlaminates 8508
- 3M™ Scotchcal™ Gloss Overlaminates 8518
- 3M™ Scotchcal™ Gloss Overlaminates 8528
- 3M™ Envision™ Gloss Wrap Overlaminates 8548G
- 3M™ Scotchcal™ Gloss Overlaminates 8580
- 3M™ Scotchcal™ Graphic Film IJ10-114
- 3M™ Scotchcal™ Optically Clear Overlaminates 8914

#### (3) Luster

- 3M™ Scotchcal™ Luster Overlaminates 3619
- 3M™ Scotchcal™ Luster Overlaminates 3645
- 3M™ Scotchcal™ Luster Overlaminates 8509
- 3M™ Scotchcal™ Luster Overlaminates 8519
- 3M™ Scotchcal™ Luster Overlaminates 8524
- 3M™ Scotchcal™ Luster Overlaminates 8908

#### (4) Matte & Ultra-Matte

- 3M™ Scotchcal™ Matte Overlamine 3620
- 3M™ Scotchcal™ Matte Overlamine 3642GPS
- 3M™ Scotchcal™ Matte Overlamine 3647
- 3M™ Scotchcal™ Matte Overlamine 8520
- 3M™ Scotchcal™ Matte Overlamine 8909
- 3M™ Scotchcal™ Ultra-Matte Overlamine 8915

### B. Graphic and Surface Protection Films

- Scotchgard™ Graphic and Surface Protection Film 8991
- Scotchgard™ Removable Graphic and Surface Protection Film 8991R
- Scotchgard™ High Gloss Graphic and Surface Protection Film 8993

### C. Screen Print Liquid Clears

#### (1) Gloss

These clears are approved for most types of graphics, regardless of imaging platform.

- 3M™ Screen Print Dirt Resistant Gloss Clear 1920DR
- 3M™ Scotchlite™ Screen Printing Gloss Clear 4430R
- 3M™ Screen Print UV Gloss Clear 9740i
- 3M™ Screen Print UV Gloss Clear 9800CL
- 3M™ Screen Print Clear VI0402

#### (2) Matte

- 3M™ Screen Print Matte Clear 1930
- 3M™ Screen Print Low Gloss Clear 9730UV

### D. Digital Liquid Clears

- 3M™ Inkjet Protective Clear 8530

## 2. 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 [3M.com/MSDS](http://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.

### A. Air Quality Regulations

State Volatile Organic Compound (VOC) regulations may prohibit the use of certain cleaning chemicals with VOC's in graphic arts coatings and printing operations. For example, the California South Coast Air Quality Management District prohibits use of certain solvent-based solutions without a permit and other California AQMD's prohibit use of certain solutions without a permit or a regulatory exemption. Check with your State environmental authorities to determine whether use of this solution 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 have Warranty Periods given in Product Bulletin 8991.

### 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, 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.

## B. Additional Warranty Information

The [3M Commercial Graphics Warranty Brochure](#) at 3Mgraphics.com, along with the applicable film Product Bulletins, provide the details to any warranty offered for the 3M graphics products described in this bulletin.

## 4. Product Applications, Descriptions and Limitations of Use

Product Number	Applications											Description	Limitations of Use
	Fleet/Vehicle	Vehicle Wraps	Watercraft	Transit	Labels	Thermoformable	Signage	Awning	Smooth Walls	Textured Walls and Surfaces	Windows and Glass	Floor or Sidewalk	All Products: <ul style="list-style-type: none"> <li>Not for automotive OEM graphics.</li> <li>Not for graphics subjected to gasoline vapors, spills, such as gas pumps, automobile fuel tank ports, or top-feeding petroleum tankers</li> <li>Do not print on graphic protection products</li> <li>Do not use overlaminate films on screen printed graphics except 3645, 3647 and 3648, which are approved for floor and sidewalk graphics.</li> </ul>

### A. Standard Overlaminates

IJ10-114					■		■				■	For economy-grade graphics; see <a href="#">Product Bulletin PJ10/11</a>	
3619						■	■					Flexible, conformable, more durable	
3620						■	■					Matte version of 3619	
3640GPS						■	■	■				Highest protection from UV fading, dirt, graffiti; easy clean; thermoformable on plastic substrates; may use on UV digital films	Not for application to other 3M brand GPS films, solvent/latex printed digital films, Panagraphics III substrate or for graphics subjected to intentional or accidental abrasion
3642GPS						■	■	■				Matte version of 3640GPS	
3645											■	For floor and table and some vertical graphics; provides slip- and scuff-resistance. Scrubbable, waxable; see <a href="#">Instruction Bulletin 5.19</a>	
3647											■	For sidewalk signs; provides slip-, scuff- and foot traffic-resistance. Cut radii on sharp corners to help prevent premature lifting of applied graphics. Cut by hand, guillotine and cold steel rule die. Clean the graphics periodically for optimum skid resistance and appearance. See <a href="#">Instruction Bulletin 5.33</a> .	No exposure to vehicle traffic, snowplows, snow shovels, heavy equipment
3648											■	For floor graphics; provides slip-, scuff- and foot traffic-resistance. Scrubbable, waxable; see <a href="#">Instruction Bulletin 5.19</a>	<ul style="list-style-type: none"> <li>Indoor use only</li> </ul>
8508				■	■		■		■		■	For intermediate graphics. Apply at room temperature. Cut by hand, or cold or hot steel rule die.	<ul style="list-style-type: none"> <li>Heat and tension cause curling</li> <li>Excessive stretching causes a white appearance</li> <li>Not for use on applications that must be stretched during application</li> </ul>
8509				■	■		■		■		■	Luster version of 8508	
8518	■	■	■	■	■	■	■		■			8518, 8519, 8520: Resists fuel vapors; highly conformable 8518: Provides wet paint look	Using an application tape may result in loss of gloss.
8519	■	■	■	■	■	■	■	■	■			Luster version of 8518	
8520	■	■	■	■	■	■	■	■	■			Matte version of 8518	

Product Number	Applications											Description	Limitations of Use
	Fleet/Vehicle	Vehicle Wraps	Watercraft	Transit	Labels	Thermoformable	Signage	Awning	Smooth Walls	Textured Walls and Surfaces	Windows and Glass		
													All Products: <ul style="list-style-type: none"> <li>Not for automotive OEM graphics.</li> <li>Not for graphics subjected to gasoline vapors, spills, such as gas pumps, automobile fuel tank ports, or top-feeding petroleum tankers</li> <li>Do not print on graphic protection</li> <li>Do not use overlamine films on screen printed graphics except 3645, 3647 and 3648 which are approved for floor and sidewalk graphics.</li> </ul>
<b>A. Standard Overlaminates, continued</b>													
8524										■		For textured surfaces; conformable with high heat	<ul style="list-style-type: none"> <li>Use with film 8624 or IJ8624 only.</li> <li>See additional details in Section 7</li> </ul>
8528	■	■		■					■			Superior UV protection; longer term vertical durability; horizontal warranty	For inkjet printed films IJ160, IJ160C, IJ170Cv3, IJ180, IJ180C, IJ180Cv3, IJ8150
8548G	■	■	■	■	■	■	■	■	■	■	■	High performance non-PVC. Exceptional conformability and lifting resistance. Less prone to scratching. Superior UV and acid dew protection. Longer term vertical durability; horizontal warranty	For inkjet printed films IJ170Cv3, IJ180, IJ180C, IJ180Cv3, IJ380Cv3, 480Cv3
8580		■										Excellent conformability and lifting resistance. Handles differently: very stretchy for conforming over complex contours. Cold roll lamination methods are critical.	For inkjet printed film IJ380Cv3 and used only on vehicle wraps
8908	■			■			■		■		■	Non-vinyl: ecologically good choice. Ideal for films 3545C and IJ35E; specialty graphics	<ul style="list-style-type: none"> <li>No application to vinyl film applied to fleet, truck or vehicle graphics, or to reflective graphic film</li> <li>Use no application heat for premasked graphics</li> </ul>
8909	■			■			■		■		■	Matte version of 8908	
8914											■	Optically clear primarily for perforated window graphic film to protect and prevent moisture and contaminant collecting in film perforations, conformable	
8915	■	■	■	■			■		■			Ultra-matte version of 8518; reduces glare	

Product Number	Applications											Description	Limitations of Use
	Fleet/Vehicle	Vehicle Wraps	Watercraft	Transit	Labels	Signage - Backlit or Thermoformed	Signage - Non-backlit (Opaque)	Awning	Smooth Walls	Textured Walls and Surfaces	Windows and Glass	Floor or Sidewalk	
													All Products: <ul style="list-style-type: none"> <li>Not for automotive OEM graphics.</li> <li>Not for graphics subjected to gasoline vapors, spills, such as gas pumps, automobile fuel tank ports, or top-feeding petroleum tankers</li> <li>Do not print on graphic protection products</li> </ul>

## B. Graphic and Surface Protection Film

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 7.

8991												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"> <li>Not for cut film applications, flexible substrates, gypsum wallboard, poor paint adhesion, graphics printed with solvent based inks, porous or unsealed surfaces</li> <li>Not for vandalism or excessive product misuse that damages the substrate</li> <li>Not for gasoline vapors and spills that penetrate the edges of the film</li> </ul>
8991R												<ul style="list-style-type: none"> <li>Removable version of 8991</li> <li>May be used on glass for general protection</li> </ul>	<ul style="list-style-type: none"> <li>8991R is not removable from printed or unprinted graphic film</li> <li>See <a href="#">Product &amp; Instruction Bulletin 8991</a></li> </ul>
8993												<ul style="list-style-type: none"> <li>Graffiti-resistant</li> <li>Replaces overlaminates 639 and 8912</li> </ul>	<ul style="list-style-type: none"> <li>Not for cut film applications, flexible substrates, gypsum wallboard, poor paint adhesion, graphics printed with solvent based inks, porous or unsealed surfaces</li> <li>Flat surfaces only</li> <li>Not good for dry erase marker graffiti; not for plastics, glass, flexible substrates</li> </ul>

## C. Screen Print Liquid Clears

Note: May also be applied by roller coating.

Solvent-based													
1920DR												<ul style="list-style-type: none"> <li>Gloss, with dirt resistance</li> <li>Good choice for frequently washed vehicles</li> </ul>	Not for thermoforming. See <a href="#">Product Bulletin 1900</a> .
1930												Matte	See <a href="#">Product Bulletin 1900</a> .
VI0402												Gloss, gasoline resistance	See <a href="#">Product Bulletin 1900</a> .
UV-cured													
9730UV												Matte	See <a href="#">Product &amp; Instruction Bulletin UV Clears</a> .
9740i												<ul style="list-style-type: none"> <li>Gloss</li> <li>Suitable for petroleum environments if staining is not a concern</li> </ul>	Not for thermoforming. See <a href="#">Product &amp; Instruction Bulletin UV Clears</a> .
9800CL												<ul style="list-style-type: none"> <li>Gloss</li> <li>Suitable for petroleum environments if staining is not a concern</li> </ul>	<ul style="list-style-type: none"> <li>Use with ink series 9800 only</li> <li>Not for graphics made of multiple layers of ink that must be stretched during installation</li> <li>See <a href="#">Product Bulletin 9800</a></li> </ul>

## D. Digital Liquid Clears

8530												<ul style="list-style-type: none"> <li>Water-based clear, high luster gloss for inkjet printed graphics</li> <li>Apply with liquid laminator</li> <li>See <a href="#">Product Bulletin 8530</a>.</li> </ul>	<ul style="list-style-type: none"> <li>Not for full bus wraps</li> <li>Not for exposure to isopropyl alcohol or harsh cleaning chemicals or solvents</li> <li>Not for thermoforming</li> </ul>
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## 5. Application Surfaces, Physical and Performance Characteristics

Number	Expected Performance Life <i>In years</i>	Application Surfaces						Physical Characteristics					Performance Characteristics <i>See Conversion Values, page 9.</i>	
		Flat	Flat with rivets	Corrugated	Simple Curves	Compound Curves	Deep Channels & Concave Surfaces	Flexible Substrates	Material	Cast or non-Cast	Mils	Gloss	Liner	Lamination Temperature A 50-100°F B 50-90°F C 60-100°F

### A. Standard Overlaminates

IJ10-114	3	■							Vinyl	Non-Cast	3.1	Gloss	Polycoated	A	E
3619	9	■							Vinyl	Cast	2	Luster	Kraft paper	A	D
3620	9	■							Vinyl	Cast	2	Matte	Kraft paper	A	D
3640GPS	9	■			■			■	PVDF	n/a	1	Gloss	Kraft paper	C	D
3642GPS	9	■			■			■	PVDF	n/a	1	Matte	Kraft paper	C	D
3645	2	■							Vinyl	Cast	8	Luster	Kraft paper	A	D
3647	2	■							Vinyl	Cast	19	Matte	Kraft paper	A	D
3648	0.25	■							Vinyl	Non-Cast	4	Gloss	Kraft paper	A	D
8508	3	■			■				Vinyl	Cast	2.3	Gloss	Kraft paper	A	D
8509	3	■			■				Vinyl	Non-Cast	3	Luster	Kraft paper	A	D
8518	8	■	■	■	■	■			Vinyl	Cast	2	Gloss	Polyester	A	D
8519	8	■	■	■	■	■		■	Vinyl	Cast	2	Luster	Kraft paper	A	D
8520	8	■	■	■	■	■		■	Vinyl	Cast	2	Matte	Kraft paper	A	D
8524	7	■			■				Plastic	n/a	2	Luster	Kraft paper	A	D
8528	9	■	■	■	■	■		■	Vinyl	Cast	2	Gloss	Polyester	A	D
8548G	9	■	■	■	■	■	■		Non-PVC	n/a	2	Gloss	Polyester	A	D
8580	7	■	■	■	■	■	■		Vinyl	Cast	1	Gloss	Kraft paper	A	D
8908	1	■	■		■				Polyolefin	Non-Cast	2.5	Luster	Kraft paper	B	E
8909	1	■	■		■				Polyolefin	Non-Cast	2.5	Matte	Kraft paper	B	E
8914	8	■			■				Vinyl	Cast	2	Gloss	Polyester	A	D
8915	8	■	■	■	■	■			Vinyl	Cast	2	Ultra Matte	Kraft paper	C	D

### B. Graphic and Surface Protection

8991	3	■			■				Polyester	n/a	4	High gloss	Polycoated	C	D
8991R	3	■			■				Polyester	n/a	4	High gloss	Polycoated	C	D
8993	5	■							Polyester	n/a	1	High gloss	Kraft paper	A	F

### C. Screen Print Clear Coats

Number	Application Surfaces							Physical Characteristics			
	Flat	Flat with rivets	Corrugated	Simple Curves	Compound Curves	Deep Channels & Concave Surfaces	Flexible Substrates	Face Finish	Solvent or UV	Recommended Coating Thickness	Typical Coverage per U.S. gallon <i>See Conversion Values, page 9.</i>
1920DR	■	■	■	■	■			Gloss	Solvent	6 to 12 microns	1500-2500 feet <sup>2</sup>
1930	■	■	■	■	■			Matte	Solvent	6 to 12 microns	1500-2500 feet <sup>2</sup>
VI0402	■	■	■	■	■			Luster	Solvent	6 to 12 microns	1500-2500 feet <sup>2</sup>
9730UV	■	■	■	■	■			Matte	UV	6 to 12 microns	2500-5000 feet <sup>2</sup>
9740i	■	■	■	■	■			Gloss	UV	6 to 12 microns	2500-5000 feet <sup>2</sup>
9800CL	■	■	■	■	■		■	Gloss	UV	6 to 12 microns	2500-5000 feet <sup>2</sup>

### D. Digital Clear Coats

8530	■	■	■	■	■			High luster	Water base	6 to 20 microns	800-2500 feet <sup>2</sup>
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Additional Physical Characteristics, continued in Sections E, F, G.

E. Flammability	Product	
	All	Flammability test data may be available for the graphic product and application you require. Contact 3M for more information.
F. Chemical Resistance	8991 8991R	See Product Bulletin 8991 for complete details on the unique uses and application methods for this product.
	9740i 9800CL VI0402	Resists gasoline spills
	All Others (including clears above)	<ul style="list-style-type: none"> <li>Resists mild alkalis, mild acids and salt</li> <li>Excellent resistance to water</li> <li>Resists petroleum vapors</li> </ul>
G. Slip Resistance for Floor or Sidewalk Sign Graphics	3645 3647 3648	<p>The UL 410 Slip Resistance of Floor Surface Materials covers the testing of floor and finishing materials to determine if their minimum average and minimum individual static coefficients of friction (COF) meet or exceed the specified requirements with respect to slip resistance only. The floor surface materials covered by this standard include floor coverings (FCM), floor treatment materials (FTM) and walkway construction materials (WCM). The average static coefficient of friction for FTM, FCM, and WCM products shall be at least 0.50 and individual static coefficients of friction shall be at least 0.45 when tested in accordance with the requirements of this standard</p> <p><b>Method:</b> The floor samples were tested dry only. The slip resistance characteristics of the materials were measured in accordance with the established and standardized practice of Underwriters Laboratories Inc. and in accordance with the latest Standard of Slip Resistance of Floor Surface Materials, UL 410.</p> <p><b>Results:</b> An average slip resistance characteristic greater than 0.50 was recorded for each of the materials tested.</p>
	3647	Overlamine 3647 has been tested per ASTM E303, "Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester", and meets the requirements of the skid resistance values, or British Pendulum Number (BPN), as set forth in the proposed European norms prEN1341 and prEN1342 for pedestrian surfaces. Dry Surface: BPN = 95; Wet Surface: BPN = 40.
6. Important Note for all Solvent Inkjet Printed Graphics!		Inadequate drying can result in graphic failure including curling, increased outgassing, increased shrinkage and adhesion failure, which are not covered under warranty.
	<i>Adequately Dry Graphics</i>	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.
7. Applying Overlamine	All	Refer to <a href="#">Instruction Bulletin 4.22</a> for all lamination procedures.
	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	<p>Overlaminates 3640GPS or 3642GPS also can be applied with a hand or power drive roll laminator.</p> <p>For backlit applications, these overlaminates are commonly applied using the wet (detergent and water) application method. See <a href="#">Instruction Bulletin 5.7</a> for details.</p>
	8524	<p>Overlamine 8524 is designed for use only with 3M™ Scotchcal™ Graphic Film IJ8624 or 8624 for Textured Surfaces.</p> <p>When applying the overlamine, use the minimum amount of pressure needed and unwind tension to obtain good results. This helps reduce the chance of the overlamine tunneling as it is applied to the base film. If tunneling does occur, it will disappear when the graphic is applied with heat and pressure to a textured surface.</p>

Product	
8. Application Tape	<p><b>All</b> 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 Product Bulletin for the base film or flexible substrate you are using for additional recommendations.</p> <p>When winding processed graphics, do not wind too tightly or the film may block.</p> <p>When finishing rivets, do not apply heat to the graphic until the premasking tape is removed and then heat only enough to soften the film; too much heat will cause the overlaminate to lose gloss. Excessive heat will cause the overlaminate to curl.</p>
	<p><b>3645 3648</b> Overlaminates 3645 and 3648, when used as recommended, do not require a premasking or prespacing tape for application.</p>
	<p><b>3647</b> Overlaminate 3647 does not generally require an application tape. For die cut, prespaced graphics, 3M™ Prespacing Tape SCPS 53-X may be used.</p>
	<p><b>8518 8528</b> Some higher gloss overlaminate 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.</p>
	<p><b>8914</b> Do not use application tape for any graphics made with overlaminate 8914.</p>
	<p><b>8908 8909</b> Overlaminates 8908 and 8909 generally do not need an application tape, although 3M™ Premasking Tape SCPM-3 may be used.</p>
9. Maintenance and Cleaning	<p><b>All</b> 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 <a href="#">Instruction Bulletin 6.5</a>.</p>
10. Shelf Life, Storage and Shipping of Films	<p>Also see <a href="#">Instruction Bulletin 6.5</a>.</p>
A. Shelf Life	<p><b>8908 8909</b> <b>Total shelf life: 2 years</b> from the date of manufacture on the original box. Up to 2 years unprocessed, <b>OR</b> process within 1 years <b>and</b> then apply within 1 year of processing.</p> <p><b>IJ10-114</b> <b>Total shelf life: 1 year</b> from the date of manufacture on the original box.</p> <p><b>All Others</b> <b>Total shelf life: 3 years</b> 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.</p>
B. Storage Temperature	<p><b>8509 8518 8914 8915</b> 40° to 86°F (4° to 30°C)</p> <p><b>IJ10-114</b> 90°F (32°C) maximum</p> <p><b>All Others</b> 40° to 100°F (4° to 38°C)</p>
C. Storage Conditions	<p><b>All</b></p> <ul style="list-style-type: none"> <li>• Out of sunlight</li> <li>• Clean dry area</li> <li>• Original container</li> <li>• Bring the product to print room temperature before using</li> </ul>



## D. Shipping Finished Graphics

8524  
8991  
8991R  
8993  
All  
reflective  
graphics

Flat and racked is preferred. If rolling, roll printed side out on a core at least 6 inches (15 cm) in diameter or larger. All graphics with reflective base films must use this large a core. This helps prevent the liner and, if used, the application tape from popping off.

### All Others

Flat, or rolled printed-side-out on 5 inch (13 cm) or larger core. This helps prevent the liner and, if used, the application tape from popping off.

## 11. Conversion Values

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

## 12. 3M Related Literature

Before starting any job, be sure you have the most [current Product and Instruction Bulletins](#).

The information in 3M Product and Instruction Bulletins is subject to change. Current Bulletins are available at [3Mgraphics.com](http://3Mgraphics.com). The techniques described in these Bulletins are required when applying a 3M warranted graphic, but are also practical recommendations when using promotional materials for 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: <a href="http://www.3Mgraphics.com">www.3Mgraphics.com</a>		
Scotchgard™ Graphic and Surface Protection Film 8991 or 8991R	PB	8991
3M™ Screen Print Gloss Clear 1920DR, 1930 and V10402 - Applying screen printing clear 1920DR, 1930 and V10402	PB IB	1900 3.12
3M™ Screen Print UV Gloss Clear 9740i, Matte Clear 9730UV	PB-IB	UV Clears
3M™ Screen Printing UV Ink Series 9800 - Screen printing with UV ink series 9800 - line color	PB IB	9800 3.20
3M™ Inkjet Protective Clear 8530	PB	8530
Hot and cold roll lamination	IB	4.22
Application, wet method for translucent screen printed, thermal mass transfer and cut graphics	IB	5.7
Floor graphics	IB	5.19
Application and maintenance of sidewalk signs	IB	5.33
Storage, handling, maintenance, removal	IB	6.5

[3M Commercial Graphics Warranty Brochure](#)

## 13. Bulletin Change Summary

All revisions are identified by black bars in the margin. 3M recommends that you obtain and read this entire Product Bulletin GP-1, Release H, as there were numerous small changes, which include but are not limited to the following: Overlaminates 639 and 8912 are discontinued and replaced by 3M™ Scotchgard™ High Gloss Graphic and Surface Protection Film 8993. Overlamine 3648 is now warranted for selected short-term indoor floor graphics. The limitations for overlaminates 3619 and 3620 as previously stated in Section 4.A. have been removed; please contact your 3M representative if you have questions on approved uses for these overlaminates. Section 5.G. Regarding Slip Resistance, and Section 6, Applying Overlamine, have been substantially updated.

Also mentioned in 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 480Cv3; 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 Substrate; 3M™ Screen Print UV Ink Series 9800.



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