



# 3M™ Scotchcal™ ElectroCut™ Graphic Film Series 7125

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

## For Electronic Cutting, Thermal Transfer Printing and Screen Printing

### 1. Product Description

- 2-mil cast vinyl in 61 colors
- Pressure-sensitive, permanent adhesive
- Same color on both sides
- The blue paper liner on 7125-10 and 7125-20 provides easier visibility when weeding; other film colors have a white paper liner
- Superior cutting as small as 0.375 inch (0.95 cm) and weeding
- Ideal for prespaced and electronically cut, screen printed or used in narrow width thermal transfer printing systems

### 2. 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 eligible for the [3M™ MCS™ Warranty](#). Please read the entire Bulletin for details.

- Prespaced and electronically-cut graphics
- Commercial and industrial graphic applications, including emblems, vehicle graphics, labels, striping, general signage, two-way window markings
- Thermal transfer printed graphics

### 3. Performance Overview

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

For detailed graphic construction and application options along with specific Warranty Periods, please see the Warranty Information, Section 4.

<b>Expected Performance Life.</b> This is the estimated period of time the product should perform satisfactorily.	
Unprinted film with no graphic protection, applied to a flat vertical outdoor surface.	8 years Unwarranted Period
<b>3M™ MCS™ Warranty.</b> This is the maximum period of time 3M will warrant the finished graphic performance.	
Printed white film with the best 3M ink and graphic protection option, applied to a flat, vertical, vehicle surface.	6 years Warranty Period

### 4. Limitations of End Uses

#### A. Do not use the film for these end uses

3M does not normally warrant other uses or applications, but please contact us to discuss your needs or let us suggest other 3M products.

- Non-vertical applications
- Application to corrugated surfaces or surfaces with compound curves
- Application to stainless steel for fleet applications
- Graphics exposed to petroleum products or fumes
- Thermoforming
- Backlit signage (Use one of the 3M™ Scotchcal™ Translucent Graphic Film Series instead)
- Use in Summa's SummaChrome™ or DuraChrome™ printers or similar printers

## 5. Compatible Products

This Bulletin provides details about the base film, **recommended construction options, warranted durability and warranty limitations for the constructions shown in the Warranted Durability Tables.** Additional specific information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this bulletin.

### A. Screen Printing Ink

- [3M™ Screen Printing Ink Series 1900 \(Solvent\) line color only](#)
- [3M™ Screen Printing UV Ink Series 9800 line color only](#)

### B. Graphic Protection

- [3M™ Screen Print Gloss 1920DR](#)
- [3M™ Screen Print Matte Clear 1930](#)
- [3M™ Screen Print UV Gloss Clear 9800CL](#)
- [3M™ Screen Print Matte Clear 9730](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)

### C. Other Products

- [3M™ Premasking Tape SCPM-3](#)
- [3M™ Premasking Tape SCPM-44X](#)
- [3M™ Prespacing Tape SCPS-2](#)
- [3M™ Prespacing Tape SCPS-53X](#)

## 6. 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	Description
Film	Cast vinyl, glossy finish
Opacity	Opaque
Thickness	<b>Without adhesive:</b> 2 mil (0.05 mm) <b>With adhesive:</b> 2.5 to 3.5 mils (0.063 to 0.09 mm)
Color	See Chart, below
Adhesive type	Pressure sensitive
Adhesive color	Clear
Liner	<b>Films 7125-10, 7125-20:</b> Blue kraft paper <b>All other colors:</b> White kraft paper
Tensile strength	5 pound/inch at 73°F (0.9 kg/cm at 23°C) <i>minimum</i>
Adhesion 24 hours after application	<b>ABS:</b> 4 pounds/inch (0.7 kg/cm) <b>Acrylic:</b> 4 pounds/inch (0.7 kg/cm) <b>Acrylic enamel:</b> 4 pounds/inch (0.7 kg/cm) <b>Fruehauf painted panels:</b> 4 pounds/inch (0.7 kg/cm) <b>Polycarbonate:</b> 4 pounds/inch (0.7 kg/cm) <b>Urethane paints:</b> 4 pounds/inch (0.7 kg/cm) <b>Aluminum, alodine:</b> 8 pounds/inch (1.4 kg/cm) <b>Chrome:</b> 5 pounds/inch (0.9 kg/cm) <b>Polypropylene:</b> 3 pounds/inch (0.5 kg/cm)
Chemical resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water ( <i>this does not include immersion</i> )
Flammability	Flammability Test Reports on product catalog for 7125 films: ASTM E84 test report or go to the On-line Product Catalog at <a href="http://3Mgraphics.com">3Mgraphics.com</a> . All other test reports: call 1-800-328-3908.

## B. Color Chart

Number	Color	Number	Color	Number	Color
7125-10	White	7125-46	Kelly green	7125-99	Fawn
7125-11	Pearl gray	7125-47	Intense blue	7125-103	Magenta
7125-12	Black	7125-48	Purple	7125-105	Harvest gold
7125-13	Tomato red	7125-49	Beige	7125-114	Clear
7125-14	Bright orange	7125-53	Cardinal red	7125-120	Satin aluminum
7125-15	Bright yellow	7125-54	Light orange	7125-130	Eggshell
7125-17	Vivid blue	7125-56	Dark green	7125-131	Satin gold
7125-19	Deep mahogany brown	7125-57	Olympic blue	7125-139	Saddle brown
7125-20	Matte white	7125-58	Burgundy	7125-176	Aqua
7125-22	Matte black	7125-59	Putty	7125-177	Shadow blue
7125-23	Deep red	7125-63	Geranium	7125-186	Bright green
7125-24	Terra cotta	7125-64	Apricot	7125-187	Wedgewood blue
7125-25	Sunflower	7125-66	Forest green	7125-193	Mauve
7125-27	Indigo	7125-77	Peacock blue	7125-196	Apple green
7125-29	Russet brown	7125-85	Vista yellow	7125-197	Light navy
7125-31	Medium gray	7125-86	Robin egg blue	7125-197	Perfect match red
7125-37	Sapphire blue	7125-88	Violet	7125-263	Process magenta
7125-38	Royal purple	7125-89	Sandstone	7125-273	Process magenta
7125-39	Tan	7125-90	Antique white	7125-276	Bottle green
7125-41	Dark gray	7125-96	Teal	7125-307	Dark aqua
		7125-98	Dark violet	7125-357	Bermuda blue

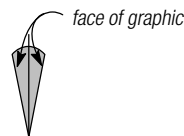
## C. Application Characteristics

Characteristic	Description
Finished graphic application recommendation	<p><b>Graphic orientation:</b> Vertical, non-vertical and horizontal</p> <p><b>Surface type:</b> Flat with and without rivets; Simple curves</p> <p><b>Substrate type:</b> Metal, glass, acrylic, polycarbonate, fiberglass, painted surfaces</p> <p><b>Application temperature:</b> 50° to 100°F (10° to 38°C) <i>air and substrate</i></p> <p><b>Application method:</b> Wet</p>
Applied film shrinkage	0.010 inch (0.3 mm) <i>maximum</i>
Finished graphic exposure temperature	-40° to +225°F (-40° to +107°C)
Graphic removal	None, permanent

## 7. Definitions

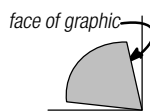
### A. Exposure Types

#### U.S. Vertical Exposure



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

#### U.S. Non-vertical Exposure



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

#### U.S. Horizontal Exposure



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

#### U.S. Desert Southwest Exposure

Any outdoor graphic exposed to solar energy more than half of the daylight hours in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas is subject to reduced warranties. [Click here](#) for a detailed map.

- B. 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** Overlamine films or clear coats used to protect the graphic and/or change gloss.
- D. Graphic Types**
  - Indoor Signs** Stationary graphics applied indoors and *not* exposed to the elements.
  - Outdoor Signs** Stationary graphics applied outdoors and exposed to the elements.
  - OEM** Labels and decorative graphics produced for and used by original equipment manufacturers. May also be called decals.
  - Vehicles**

**Vehicle.** Buses, vans, passenger vehicles, delivery trucks, pickup trucks, enclosed trailers.

**Straight Trucks, Semi-Tractors and Semi-Trailers.** Straight trucks, semi-tractors and semi-trailers used for commercial business purposes. Excludes air shields.

**8. Warranty Information**

- A. Warranty Coverage Overview**

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

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade.
- B. 3M Basic Product Warranty**

This product is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin and as further set forth in the [3M Graphics Warranties Brochure](#).
- C. Limited Remedy**

3M will replace or refund the price of any 3M materials that do not meet this Warranty within the specified time periods. These remedies are exclusive.
- D. Limitation of Liability**

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED ABOVE), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO SELLER'S PRODUCTS, SERVICES or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought including breach of contract, breach of warranty, negligence, strict liability, or any other legal or equitable theory.
- E. Additional Limitations**

See the [3M Graphics Warranties Brochure](#) at 3Mgraphics.com, which gives the terms, additional limitations of the Warranty, if any, and limitations of liability.
- F. 3M™ MCS™ Warranty**

Subject to Stipulations set forth in Section G, below

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

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

Veh = Fleet, Standard and Recreational Vehicle Graphics  
 Out = Outdoor Signs  
 In = Indoor Signs

*Warranty Period In Years*

Imaging	No Printing			Ink Series 1900			Ink Series 9800			Ink Series 9800 Metallic		
Graphic Type	Veh	Out	In	Veh	Out	In	Veh	Out	In	Veh	Out	In
<b>Graphic Protection</b>	<b>Film Colors: 7125-10, 12, 20, 22</b>											
1920DR, air dry	—	—	—	5	5	5	—	—	—	—	—	—
1920DR, oven dry	—	—	—	6 ■	6 ■	6 ■	—	—	—	—	—	—
1930	—	—	—	2	2	2	—	—	—	—	—	—
9740i	—	—	—	6	6	6	6	6	6	5	5	5

9730UV	—	—	—	3	3	3	3	3	3	—	—	—
9800CL	—	—	—	—	—	—	5	5	5	5	5	5
None	8	7	7	—	—	—	—	—	—	—	—	—
<b>Film Colors: 7125-114, 120, 131</b>												
1920DR, air dry	—	—	—	5	5	5	—	—	—	—	—	—
1920DR, oven dry	—	—	—	5 ■	5 ■	5 ■	—	—	—	—	—	—
1930	—	—	—	2	2	2	—	—	—	—	—	—
9740i	—	—	—	5	5	5	5	5	5	5	5	5
9730UV	—	—	—	3	3	3	3	3	3	—	—	—
9800CL	—	—	—	—	—	—	5	5	5	5	5	5
None	5	5	5	—	—	—	—	—	—	—	—	—
<b>Film Colors: All other colors of film series 7125</b>												
1920DR, air dry	—	—	—	5	5	5	—	—	—	—	—	—
1920DR, oven dry	—	—	—	6 ■	6 ■	6 ■	—	—	—	—	—	—
1930	—	—	—	2	2	2	—	—	—	—	—	—
9720i	—	—	—	6	6	6	6	6	6	5	5	5
9730UV	—	—	—	3	3	3	3	3	3	—	—	—
9800CL	—	—	—	—	—	—	5	5	5	5	5	5
None	6	6	6	—	—	—	—	—	—	—	—	—

- Warranty requires oven drying the last color of ink series 1900 and screen print 1920DR for 2 hours at 150°F (65°C).

## G. General Warranty Stipulations for 3M™ MCS™ Warranty

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

### (1) Reduced Warranty Period for Non-vertical Graphics

For other graphic exposures, multiply the Warranty Period (in years) for your graphic construction as shown in the applicable Warranty Period tables, Section F(1), by the percentage shown for the intended graphic exposure. See page 3 for the graphic exposure definitions.

If the Graphic Exposure is:	Use this Percentage of U.S. Vertical Exposure, Warranted Durability	Calculation Examples Based on Indoor Warranty Periods
U.S. Non-vertical	50% (0.5)	0.5 x 5 years = 2.5 years
Desert Southwest Vertical	70% (0.7)	0.7 x 5 years = 3.5 years
Desert Southwest Non-vertical	35% (0.35)	0.35 x 5 years = 1.75 years
Horizontal	0%	0

### (2) Opacity

This film can be used on opaque surfaces but has less hiding power than a film with a colored adhesive. Consider this characteristic when selecting and preparing the substrate.

### (3) Abrasion and Loss of Gloss

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

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

### (4) Application to Glass

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

### (5) Application Outside the U.S.

Contact the 3M organization for that country.

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

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

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

**(7) Printed Vehicle Graphics**

Screen printed vehicle graphics require a clear to be warranted

**(8) Harsh Washing**

Graphics exposed to abrasive washing conditions, harsh cleaners or chemicals are not warranted.

**(9) Clears that Haze**

Clears 1930 and 9730UV may haze, which is not covered by the warranty.

**(10) Chalking**

Chalking for unprinted film colors 20, 263, 273 and 286 as they age is considered normal and acceptable wear. Chalking can be removed by normal graphic cleaning methods.

**9. Factors that Affect Graphic Performance Life**

The actual performance life of a graphic is affected by:

- the correct combination of 3M-recommended graphics products.
- the ink formulation (screen printing).
- adequate ink drying and/or UV curing.
- the selection and preparation of the substrate.
- the surface texture.
- application methods.
- the angle and direction of sun exposure.
- the environmental conditions.
- the cleaning or maintenance methods.

**10. Graphics Manufacturing**



**CAUTION**

---

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

---

**H. Thermal Transfer Printing**

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

This film can be imaged with narrow width thermal transfer printing systems. Refer to the equipment manufacturer's literature for details.

**I. Screen Printing**

Refer to the ink's Product and Instruction Bulletins.

- Screen Printing: 3M™ Screen Printing Solvent Ink Series 1900 Line Color and Screen Print Clear VI0402. [3M Instruction Bulletin 3.12](#)
- Screen Printing: 3M™ Screen Printing Solvent Ink Series 1900 Four Color. [3M Instruction Bulletin 3.11](#)
- Screen Printing: 3M™ Screen Printing UV Ink Series 9800, Line Color. [3M Instruction Bulletin 3.20](#)
- Screen Printing: 3M™ Screen Printing UV Ink Series 9800, Four Color. [3M Instruction Bulletin 3.21](#)

**J. Cutting**

Based on cutting and weeding evaluations that used Helvetica medium upper case, the recommended minimum cutting height for text is 0.375 inch (0.95 cm). Because of the differences in electronically-controlled cutting equipment and font characteristics, users should determine their own cutting and weeding capability.

These factors can affect cutting quality and ability:

- **Sharpness of the knife blade.** Dull blades create a serrated look to the cut edge of the film.
- **Weight on the knife blade.** The ideal weight slightly scores the liner. Too little weight does not cut completely through the film and the adhesive. Excessive weight cuts the liner. It also causes the blade to drag, accelerating wear and eventually creating a serrated cut edge on the film.
- Temperature and relative humidity are minor considerations, but avoid extreme or rapidly fluctuating conditions.
- Store the film in the same environment as the cutting equipment.
- Consider the stroke width of characters, style of serifs or extensions, and small details of scanned or digitized artwork.
- The minimum recommended stroke width is 0.040 inch (1.0 mm) when film is exposed to cleaning or other physical stress.

## K. Weeding

The excess film should be weeded (removed) as soon after cutting as practical. This is to minimize the effect of possible adhesive flow 24 or more hours after cutting.

## L. Application Tapes

The application tape to use depends on the type of graphic produced. See [3M Instruction Bulletin 4.3](#) for more details.

### (1) When to Use Premasking Tape

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

### (2) When to Use Prespacing Tape

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

### (3) Use This Tape

Determine whether you want to premask the graphic or prespace cut pieces of film such as letters. Then locate the graphic protection used on your graphic in the table below, and use the corresponding tape. See [3M Instruction Bulletin 4.3](#) for complete details.

**EXAMPLE:** To premask a film that includes clear 1920DR, use premasking tape SCPM-3.

Application Tape	Graphic Protection			
	1920DR 1930	9730UV 9740i 9800CL	Ink 9800, no clear	Unprinted film
Premasking SCPM-3 with HVA use for prespacing	■			■
Premasking SCPM-3	■			■
Premasking SCPM-44X		■	■	
Premasking SCPM-53X		■	■	
Prespacing SCPS-2	■			■

## 11. Application

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

- Application, general procedures for indoor and outdoor dry applications. [3M Instruction Bulletin 5.5](#).
- Application: wet method for translucent, inkjet, screen printed and cut graphics. [3M Instruction Bulletin 5.7](#)

## 12. Shelf Life, Storage and Shipping

### A. Shelf Life

**Total shelf life: 3 years** from the date of manufacture on the original box. If you do process the film, do so within 2 years and apply within 1 year. If you do not process the film, apply it within 3 years.

## B. Storage Conditions

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

## C. Shipping Finished Graphics

Flat (may be separated by paper), 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.

See [3M Instruction Bulletin 6.5](#) for details.

## 13. Health and Safety



---

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](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.

---

## 14. Bulletin Change Summary

Modified and new content is marked with a black bar in the margin. The opacity of this film was incorrectly stated as translucent: it is opaque. The Related Literature Section has been replaced by links to related literature throughout this Bulletin.



### Commercial Solutions

3M Center, Building 220-12E-04  
St. Paul, MN 55144 USA  
General & Technical  
1-800-328-3908  
Fax 1-651-736-4233

[www.3Mgraphics.com](http://www.3Mgraphics.com)

### 3M Canada

PO Box 5757  
London, Ontario  
Canada N6A 4T1  
General 1-800-265-1840  
Fax 519-452-6245

### 3M México S.A. de C.V.

Av. Santa Fe No. 55  
Col. Santa Fe, Del. Alvaro Obregón  
México D.F. 01210  
General 5255-5270-0400  
Fax 5255-5270-2277

### 3M Puerto Rico, Inc.

350 Chardon Avenue  
Suite 1100  
San Juan, PR 00918  
General 787-620-3000  
Fax 787-620-3018

*3M, ElectroCut, MCS, and Scotchcal are trademarks of 3M Company. All other trademarks are the property of their respective owners.*

©3M 2015. All rights reserved.