



Scotchcal™ ElectroCut™ Graphic Film Series 7725

For Electronic Cutting, Thermal Transfer Printing and Screen Printing

Description

Film series 7725 are 2 mil, pressure-sensitive films designed for permanent graphics that may be prespaced and electronically cut, screen printed or used in narrow width thermal transfer printing systems. These films, which are the same color on both sides, have a transparent synthetic liner that resists moisture absorption and static buildup, lays flat for easier assembly of multicolor graphics, and allows superior cutting and weeding. This film series is available in 62 colors.

Recommended Types of Graphics and End Uses

These end uses are recommended for this film and may be covered by the 3M™ MCS™ Warranty. Certain restrictions may apply; 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
- Screen printed graphics

Limitations of End Uses

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

Unsuitable End Uses for This Film

- Application to stainless steel for fleet applications
- Application to corrugated surfaces or surfaces with compound curves
- Graphics subjected to gasoline vapors or spills
- Thermoforming
- Backlit signage (Use 3M™ Scotchcal™ Translucent Graphic Film Series instead)
- Use in Summa's SummaChrome™ or DuraChrome® printers or similar printers
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

Compatible Products

Refer to the durability tables for 3M™ MCS™ Warranty for the proper combination of materials and imaging options.

Inks

- 3M™ Screen Printing Ink Series 1900
line color only
- 3M™ Screen Printing UV Ink Series 9800
line color only

Graphic Protection Options

- 3M™ Screen Printing Gloss Clear 1920DR
- 3M™ Screen Printing Matte Clear 1930
- 3M™ Screen Printing Gloss Clear 9720UV
- 3M™ Screen Printing Matte Clear 9730UV
- 3M™ Screen Printing Gloss Clear 9800CL

3M Substrates

- 3M™ Panaflex™ Awning and Sign Facing Series 945GPS

Other Products

- 3M™ Prespacing Tape SCPS-2
- 3M™ Prespacing Tape SCPS-3 with HVA
- 3M™ Prespacing Tape SCPS-53X
- 3M™ Premasking Tape SCPM-3
- 3M™ Premasking Tape SCPM-44X

Characteristics

Physical Characteristics

Characteristic	Description
Film	Cast vinyl
Thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 2.5 to 3.5 mils (0.063 to 0.09 mm)
Colors	See Color Chart
Adhesive type	Pressure sensitive
Adhesive color	Clear
Liner	Transparent synthetic

Tensile strength <i>minimum</i>	5 pound/inch at 73°F (0.9 kg/cm at 23°C)
Adhesion <i>24 hours after application</i>	ABS, Acrylic, Acrylic enamel, Fruehauf painted panels, Polycarbonate, Urethane paints: 4 pounds/inch (0.7 kg/cm) Aluminum, alodine: 8 pounds/inch (1.4 kg/cm) Chrome: 5 pounds/inch (0.9 kg/cm) Polypropylene: 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	Film 7725 has been tested for flame spread per ASTM E84, "Surface Burning Characteristics of Building Materials," and meets the requirements of National Fire Protection Association Class A (1) (most fire-resistant class) as defined in NFPA 101, "Life Safety Code." Contact 3M at 1-800-328-3098 for more information.

Application Characteristics

Characteristic	Description
Finished graphic application recommendation	Graphic orientation: Vertical, non-vertical and horizontal Surface type: Flat with and without rivets; Simple curves
Finished graphic application recommendation <i>continued</i>	Substrate type: Panaflex substrate 945GPS, metal, glass, acrylic, polycarbonate, fiberglass, painted surfaces Application temperature: 40° to 100°F (4° to 38°C) <i>air and substrate</i>
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

Color Chart

No.	Color	No.	Color
7725-10	White	7725-66	Forest green
7725-11	Pearl grey	7725-77	Peacock blue
7725-12	Black	7725-85	Vista yellow
7725-13	Tomato red	7725-86	Robin egg blue
7725-14	Bright orange	7725-88	Violet
7725-15	Bright yellow	7725-89	Sandstone
7725-17	Vivid blue	7725-90	Antique white
7725-19	Deep mahogany brown	7725-96	Teal
7725-20	Matte white	7725-98	Dark violet
7725-22	Matte black	7725-99	Fawn
7725-23	Deep red	7725-103	Magenta
7725-24	Terra cotta	7725-105	Harvest gold
7725-25	Sunflower	7725-120	Satin aluminum
7725-27	Indigo	7725-130	Eggshell
7725-29	Russet brown	7725-131	Satin gold
7725-31	Medium grey	7725-139	Saddle brown
7725-37	Sapphire blue	7725-173	Salmon pink
7725-38	Royal purple	7725-176	Aqua
7725-39	Tan	7725-177	Shadow blue
7725-41	Dark grey	7725-186	Bright green
7725-46	Kelly green	7725-187	Wedgewood blue
7725-47	Intense blue	7725-193	Mauve
7725-48	Purple	7725-196	Apple green
7725-49	Beige	7725-197	Light navy
7725-53	Cardinal red	7725-263	Perfect match red
7725-54	Light orange	7725-273	Process magenta
7725-56	Dark green	7725-276	Bottle green
7725-57	Olympic blue	7725-307	Dark aqua
7725-58	Burgundy	7725-357	Bermuda blue
7725-59	Putty		
7725-63	Geranium		
7725-64	Apricot		
Transparent			
7725-114	Clear Enamel	Receptive	

Warranty Information

See the 3M Graphics Center Warranty Brochure for the complete warranty and remedy details. The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

3M™ MCS™ Warranty for Finished Graphics

Warranted Durabilities for Graphic Constructions in a Vertical Exposure												
warranties shown in years	No Printing			Ink Series 1900			Ink Series 9800			Ink Series 9800 Metallic		
Warranty shown in years	Vehicle	Out-door	Indoor	Vehicle	Out-door	Indoor	Vehicle	Out-door	Indoor	Vehicle	Out-door	Indoor
Graphic Protection												
Film Colors :7725-10, 12, 20, 22												
1920DR, air dry	–	–	–	5	5	5	–	–	–	–	–	–
1920DR, oven dry	–	–	–	6 ■	6 ■	6 ■	–	–	–	–	–	–
1930	–	–	–	2	2	2	–	–	–	–	–	–
9720UV	–	–	–	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	–	–	–	–	–	–	–	–	–
Film Colors : 7725-114, 120, 131												
1920DR, air dry	–	–	–	5	5	5	–	–	–	–	–	–
1920DR, oven dry	–	–	–	5 ■	5 ■	5 ■	–	–	–	–	–	–
1930	–	–	–	2	2	2	–	–	–	–	–	–
9720UV	–	–	–	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	–	–	–	–	–	–	–	–	–
Film Colors: All other colors of film series 7725												
1920DR, air dry	–	–	–	5	5	5	–	–	–	–	–	–
1920DR, oven dry	–	–	–	6 ■	6 ■	6 ■	–	–	–	–	–	–
1930	–	–	–	2	2	2	–	–	–	–	–	–
9720UV	–	–	–	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).

Formulas for Other U.S. Warranted Durabilities

Use the following formulas to determine other durabilities, based on a percentage of the U.S. Warranted Durability for vertical exposure

Exposure	Percentage of U.S. Vertical Exposure	Example
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

Legibility Warranty for Horizontal Exposure of Vehicle Graphics Requiring Legibility Only, in years

Refer to the definition of Horizontal Exposure. This orientation exposes graphics to the maximum sunlight and environmental conditions and is intended for use only on rooftops of commercially owned vehicles where identification from the air is needed.

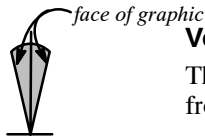
This warranty covers legibility only. Color change, loss of gloss, and chalking will occur and are not covered by warranty.

Film Colors 10, 11, 12, 13, 14, 15, 20, 22, 53

U.S. 5 years
U.S. Desert Southwest: 3 years

Warranty Notes

Terms



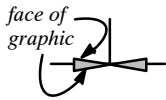
Vertical Exposure

The face of the graphic is $\pm 10^\circ$ from vertical.



Non-Vertical Exposure

The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal.



Horizontal Exposure

The face of the graphic is $\pm 5^\circ$ from horizontal.

Desert southwest exposure. Graphics exposed to solar energy more than half of the time in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas. A detailed map is available upon request.

Signs. Graphics applied outdoors and exposed to the elements.

Fleet vehicle. Straight trucks and trailers used in commercial fleets.

Standard vehicle. Buses, vans, automobiles, recreational vehicles.

Graphic Performance Life

The actual performance depends on the:

- Correct combination of 3M-recommended graphics products
- Ink formulation (screen printing)
- Adequate ink drying and UV curing (screen printing)
- Imaging (thermal mass transfer)
- Selection and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning or maintenance methods

Application Outside the U.S.

Contact the 3M organization for that country.

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.

Graphic Protection

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

Chalking

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

Application to Glass

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

Graphics that Require Protection to be Warranted

- Screen printed vehicle graphics require a clear to have a warranty against abrasion damage and loss of gloss.
- Graphics exposed to abrasive washing conditions, harsh cleaners or chemicals are not warranted.

Graphics Made with Components Not Sold or Recommended by 3M

The 3M MCS warranty does not cover finished graphics made with other manufacturers' inks, film, graphic protection and/or application tapes, except as noted in this Bulletin. The user is solely responsible for the graphic appearance, performance and durability of graphic constructions that include non-3M graphic products.

Warranty and Limited Remedy

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: 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 labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

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 manufacturers literature for details.

Fabrication

This Bulletin does not contain detailed processing or application procedures. Refer to the 3M Related Literature for further information.

Cutting

Minimum Cutting Heights

Based on cutting and weeding evaluations that used Helvetica medium upper case, the recommended minimum cutting height for text is 0.25 inch (0.64 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.

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.

Application Tapes


The application tape to use depends on the type of graphic produced. See Instruction Bulletin 4.3 for more details.

Film 7725	Graphic Protection						
	Refer to the Warranty tables on page 3 to determine whether the Graphic Protection option listed is approved for the ink series you are using with these films.						
	1920DR	1930	9720UV	9730UV	9800CL	Ink 9800, no clear	Unprinted film
Premasking Tape SCPM-3 with HVA use for prespacing	■	■					■
Prespacing Tape SCPS-2	■	■					■
Prespacing Tape SCPS-53X			■	■	■	■	
Premasking tape SCPM-3	■	■					■
Premasking Tape SCPM-44X			■	■	■	■	

Shelf Life, Storage and Shipping

Activity	Recommendation
Shelf life	Total shelf life: 2 years Up to 2 years unprocessed, OR process within 1 year and apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none"> • 100°F (38°C) maximum • Out of sunlight • Clean dry area • Original container • Bring the film to print room temperature before using
Shipping finished graphics	Flat, or rolled printed side out on 5 inch (13 cm) or larger core. These methods help to prevent the liner from wrinkling or popping off the liner.

Health and Safety

 Caution
<p>When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.</p> <p>To obtain MSDS sheets for 3M products:</p> <ul style="list-style-type: none"> • By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations. • Electronically, visit us at www.3M.com/MSDS. • By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501. <p>When using any equipment, always follow the manufacturers' instructions for safe operation.</p>

Attention:
Authorized Graphics Manufacturers

Visit our password-protected website for exclusive product information and services. Certain restrictions apply.

1. Go to www.scotchprint.com.
2. Select a country.
3. Click *Login* on upper left side of screen.
4. Click Register.
5. Enter authorization code: **CGD_SGN**.
6. Complete the information and submit.
An e-mail will be sent when your authorization is completed.

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, as well as a list of all Bulletins updated within the last three months, are available at www.scotchprint.com or through our Fax-on-Demand system. Any warranty, if offered, is based on information in the appropriate Bulletin(s) that was current at the time you purchased the 3M products. The following Product and/or Instruction Bulletins provide the information and processes you need to properly make the graphics described in this Bulletin.

Fax-on-Demand phone numbers:
United States or Canada: 1-800-364-0768
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
Product Bulletins		
3M™ Scotchcal™ Translucent Graphic Film Series 3630	3630	3009
3M™ Panaflex™ Awning and Sign Facing Series 945GPS	945	4006
3M™ Screen Printing Ink Series 1900 and Overprint Clear V10402	1900	2501
3M™ Screen Printing UV Ink Series 9800	9800	2513
3M™ Screen Printing Ink Series 9700UV	9700	2507
Instruction Bulletins		
Design of markings	2.1	5501
Screen printing with ink series 1900	3.12	6012
Screen printing with UV ink series 9800	3.20	6020
Screen printing with ink 9700UV	3.4	6004
Using 3M application tapes; premasking and prespacing for films	4.3	6503
Application, substrate selection, preparation and substrate-specific application techniques	5.1	7001
Application, general procedures for interior and exterior dry applications	5.5	7005
Storage, handling, maintenance, removal	6.5	8505
Warranties		
3M Graphics Market Center Warranty Brochure		9503

3M, ElectroCut, MCS, Panaflex and Scotchcal are trademarks of 3M Company.

Bulletin Change Summary

Added requirements about graphic protection on selected graphics.

This bulletin was updated to better organize the warranty information. Additional text changes are indicated by a black bar in the margin.

Release M now includes the Shelflife, Shipping and Storage section.



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Fax 1-651-736-4233

Fax-on-Demand ordering: 1-800-364-0768 US/Canada; 1-651-732-6506 International
Fax-on-Demand document: 3013
www.3m.com/graphics

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