



# Scotchcal™ ElectroCut™

## Graphic Film

### Series 7725SE

#### For Electronic Cutting and Screen Printing

### Description

Film series 7725SE are 2 to 3.8 mil, pressure-sensitive films designed for permanent graphics. Use these films to create unique, special effect films.

The transparent dusted crystal film and the five colors of frosted crystal film have transparent synthetic liners, which resist moisture absorption and static buildup for easier cutting and assembly, and are intended only for cut graphics. The fluorescent films, available in six colors, have a paper liner and can be screen printed or electronically cut.

### 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.

- Spaced and electronically-cut graphics
- Window graphics and internally-illuminated graphics (dusted and frosted crystal only)
- High visibility and weather resistant graphics (fluorescent colors only)
- Screen printed graphics (fluorescent colors only)

### Limitations of End Uses

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

### Unsuitable End Uses for This Film

- Screen printing on dusted or frosted crystal films
- Application of dusted or frosted crystal film between two sheets of glass
- Using fluorescent film where black light fluorescence is required

- Non-vertical applications
- Application to corrugated surfaces or surfaces with compound curves
- Graphics subjected to gasoline vapors or spills
- Thermoforming
- 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 (For use on fluorescent film only)

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

#### Graphic Protection Options

(For use on fluorescent film only)

- 3M™ Screen Printing Gloss Clear 1920DR

#### Other Products

- 3M™ Prespacing Tape SCPS-2
- 3M™ Premasking Tape SCPM-3

# Characteristics

## Physical Characteristics

Characteristic	Description
Film	Cast vinyl
Opacity	<b>Dusted Crystal:</b> translucent <b>Frosted Crystal:</b> translucent <b>Fluorescent:</b> glossy opaque
Thickness	<b>Dusted Crystal</b> <b>Without adhesive:</b> 2 mil (0.05 mm) <b>With adhesive:</b> 3 mils (0.8 mm) <i>nominal</i> <b>Frosted Crystal</b> <b>Without adhesive:</b> 3.8 mil (0.09 mm) <b>With adhesive:</b> 4.8 mils (1.2 mm) <i>nominal</i> <b>Fluorescent</b> <b>Without adhesive:</b> 3.25 mil (0.08 mm) <b>With adhesive:</b> 4 mils (1 mm) <i>nominal</i>
Colors	See Color Chart
Unique qualities	<b>Dusted Crystal</b> <ul style="list-style-type: none"> <li>• Low gloss eliminates glare</li> <li>• Uniform appearance of etched glass</li> </ul> <b>Frosted Crystal</b> <ul style="list-style-type: none"> <li>• Low gloss eliminates glare</li> <li>• Uniform appearance of sand-blasted glass</li> </ul> <b>Fluorescent</b> <ul style="list-style-type: none"> <li>• Activated by exposure to near-ultra-violet visible light, but not black light</li> <li>• Extremely conspicuous colors in daylight</li> <li>• High attention value under poor visibility, particularly at dawn or dusk</li> </ul>
Adhesive type	Pressure sensitive
Adhesive color	<b>Dusted and Frosted Crystal:</b> Clear <b>Fluorescent:</b> Gray
Liner	<b>Fluorescent:</b> Kraft paper, white <b>Dusted and Frosted Crystal:</b> Transparent synthetic
Tensile strength <i>minimum</i>	<b>Dusted Crystal and Fluorescent:</b> 5 pound/inch at 73°F (0.9 kg/cm at 23°C) <b>Frosted Crystal:</b> 3.5 pound/inch at 73°F (0.6 kg/cm at 23°C)

Characteristic	Description
Adhesion <i>24 hours after application</i>	<b>Acrylic, Glass</b> <b>Polycarbonate:</b> 4 pounds/inch (0.7 kg/cm)
Chemical resistance	Resists mild alkalis, mild acids, and salt  Excellent resistance to water <i>(this does not include immersion)</i>
Flammability	For films 7725SE-314, -324 and -331, the Flame Spread Index and the Smoked Developed Index are both 0.  Contact 3M at 1-800-328-3098 for more information.

## Application Characteristics

Characteristic	Description
Finished graphic application recommendation	<b>Graphic orientation:</b> Vertical <b>Surface type:</b> <b>Dusted and Frosted Crystal:</b> Flat <b>Fluorescent:</b> Flat with or without rivets
Finished graphic application recommendation <i>continued</i>	<b>Substrate type:</b> Glass, acrylic, polycarbonate; also aluminum and painted metal for fluorescent film  <b>Application temperature:</b> 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

Dusted Crystal No. Color	Frosted Crystal No. Color	Fluorescent No. Color
314 Dusted Crystal	323 Frosted Rose 324 Frosted Crystal 326 Frosted Mint 327 Frosted Blue Mist 331 Frosted Gold	404 Yellow Orange 405 Yellow 406 Green 407 Blue 413 Fuchsia 414 Red Orange

# Warranty Information

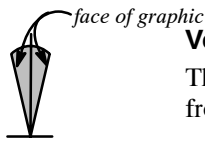
See the 3M Graphics Center Warranty Brochure for the complete warranty and remedy details. The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

## 3M™ MCS™ Warranty for Finished Graphics

Warranted Durability for Graphic Constructions in a Vertical Exposure										
Warranties shown in years	U.S. Exposure					U.S. Desert Southwest Exposure				
	No Printing			Ink Series 1900		No Printing			Ink Series 1900	
	Outdoor	Indoor (no direct UV light)	Inside of Exterior Window	Outdoor	Indoor (no direct UV light)	Outdoor	Indoor (no direct UV light)	Inside of Exterior Window	Outdoor	Indoor (no direct UV light)
<b>Graphic Protection</b>	<b>Film Colors:</b> Dusted Crystal 7725SE-314									
None	3	15	5	—	—	2	15	4	—	—
	<b>Film Colors:</b> Frosted Crystal 7725SE-323, 324, 326, 327, 331									
None	3	15	5	—	—	2	15	4	—	—
	<b>Film Colors:</b> Fluorescent 7725SE-404, 405, 406, 407, 413, 414									
None	1	5	—	—	—	0.75	5	—	—	—
1920DR	—	—	—	1	5	—	—	—	0.75	5

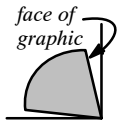
### Warranty Notes

#### Terms



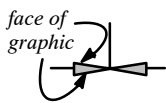
#### Vertical Exposure

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



#### Non-Vertical Exposure

The face of the graphic is greater than  $10^\circ$  from vertical and greater than  $5^\circ$  from horizontal.



#### Horizontal Exposure

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

Note: Film 7725SE is not warranted for non-vertical exposure.

**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.

**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
- 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.

### Application to Glass

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

### Harsh Cleaning

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.

## 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 0.375 inch (0.95 cm) for dusted and frosted crystal films, and 0.5 inch (12.7 mm) for fluorescent film. 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

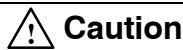
The application tape to use depends on the type of graphic produced. See Instruction Bulletin 4.3 for more details.

Tape	Dusted Crystal	Fluorescent	Frosted Crystal
Prespacing Tape SCPS-2	■	■	■
Prespacing Tape SCPS-53X			■
Premasking tape SCPM-3	■	■	

## Shelf Life, Storage and Shipping

Activity	Recommendation
Shelf life	<b>Total shelf life: 2 years</b> Up to 2 years unprocessed, <b>OR</b> process within 1 year <b>and</b> apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none"> <li>• 100°F (38°C) maximum</li> <li>• Out of sunlight</li> <li>• Clean dry area</li> <li>• Original container</li> <li>• Bring the film to print room temperature before using</li> </ul>
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

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:

- 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](http://www.3m.com/msds).
- 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.

### Attention: Authorized Graphics Manufacturers

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

1. Go to [www.3mgraphics.com](http://www.3mgraphics.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.3mgraphics.com](http://www.3mgraphics.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.
<b>Product Bulletins</b>		
3M™ Screen Printing Ink Series 1900 and Overprint Clear V10402	1900	2501
<b>Instruction Bulletins</b>		
Design of markings	2.1	5501
Screen printing with ink series 1900	3.12	6012
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
<b>Warranties</b>		
3M Graphics Market Center Warranty Brochure		9503

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### Bulletin Change Summary

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

Release H now includes Shelf Life, Shipping and Storage section.



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