



Scotchcal™ Series 7725 SE

Special Effects Film

Description

Applications and Uses

3M™ Scotchcal™ Special Effects Film Series 7725 SE is intended only for use with the following applications. Any other application is NOT warranted by 3M or covered by the worldwide 3M™ MCS™ (Matched Component System) Warranty unless 3M gives its prior written approval for the application.

- Dusted and frosted crystal films are intended for use in creating window graphics and internally-illuminated displays applied to flat, clear surfaces
- Fluorescent films are intended for screen printed, die cut, hot stamped, or electronically-cut graphics where high visibility markings and weather durability is needed
- Fluorescent films can be used on flat surfaces with or without rivets
- For interior and exterior applications

Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Screen printing on dusted or frosted crystal films
- Application of dusted crystal film between two sheets of glass
- Application to corrugated surfaces
- Application to non-vertical surfaces
- Exposure to petrochemical spills
- Using fluorescent films where black light fluorescence is required
- 3M Commercial Graphics Division products are not tested against automotive manufacturers' specifications and are, therefore, not warranted for use in fabricating graphics for automotive Original Equipment Manufacturers (OEM).

Characteristics of Dusted and Frosted Crystal Films

- Durable, dimensionally stable, translucent films
- Uniform colour in both reflected and transmitted light
- Low gloss eliminates glare
- Dusted crystal film 7725-314 has the uniform appearance of etched glass.
- Frosted crystal films 7725-323, -324, -326, -327, and -331 have the uniform appearance of sand-blasted glass.

Characteristics of Fluorescent Films

- Durable, dimensionally stable, glossy opaque films
- Activated by exposure to near-ultraviolet visible light
- Does not fluoresce under invisible ultraviolet light (black light)
- Fluorescent films 7725-404, -405, and -414 are extremely conspicuous under all daylight conditions and provide the high attention value desired under conditions of poor visibility, particularly at dawn or dusk.

Product Line

Property	Description		
Colours and product numbers	Dusted Crystal	Frosted Crystal	Fluorescent
	314 Dusted Crystal	323 Frosted Rose 324 Frosted Crystal 326 Frosted Green 327 Frosted Blue Mint 331 Frosted Gold	404 Yellow Orange 405 Yellow 414 Red Orange
Opacity	Translucent	Translucent	Glossy opaque
Liner	Transparent synthetic	Transparent synthetic	120 g/m ² , white kraft paper
Adhesive	Clear, pressure sensitive	Clear, pressure sensitive	White, pressure sensitive
Minimum application temperature *	4°C	4°C	4°C
Application surfaces	Flat only	Flat only	Flat, with or without rivets
Recommended substrates	Flat clear substrates such as glass, acrylic, or polycarbonate		Painted metal, aluminum, glass, acrylic, polycarbonate

*For applications nearing the minimum temperature range, please contact your local technical service representative to confirm suitability of application

Effective Performance Life

The effective performance life is based on field experience and exposure tests conducted throughout the United States. When the graphics are processed and used according to 3M recommendations, they should have the performance life shown in the charts below. The actual performance depends on the:

- Selection and preparation of the substrate
- Application methods
- Exposure conditions
- Cleaning methods

Warranted Durability

Film Series 7725 SE	Vertical Exposure ¹ face of graphic is vertical \pm 10°								
	Dusted Crystal			Frosted Crystal			Fluorescent		
	7725-314			7725-323 7725-324 7725-326		7725-327 7725-331	7725-404 7725-405		7725-414
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Unprinted									
Exterior exposure	5	3	2	4	3	2	2	2	1
Inside of outside window	7	5	4	7	5	4	n/a	n/a	n/a
Interior (no direct UV light)	15	15	15	15	15	15	5	5	5
Printed with 3M™ Screen Printing Ink Series 1900 with Overprint Clear 1920									
Outside exposure	NR	NR	NR	NR	NR	NR	2	1	9 months
Interior (no direct UV light)	NR	NR	NR	NR	NR	NR	5	5	5

¹ Non-vertical applications must be on a test and approval basis to determine acceptability. 3M does not warrant non-vertical exposures.

Zone 1 = Northern & Central Europe; Zone 2 = Mediterranean Europe; Zone 3 = Middle East and Northern Africa;
NR = Not Recommended; n/a = not applicable.

Fabrication

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

Caution

Prevent personal injury due to slipping. Transparent liners can be slippery and difficult to see on walking surfaces. Immediately dispose of the waste liner.

Minimum Cutting Heights

The minimum height recommended for text when using 3M™ Scotchcal™ Special Effects Film Series 7725 SE is 9.5 mm for dusted and frosted crystal film and 12.7 mm for fluorescent film. This is based on cutting and weeding evaluation using upper case Helvetica medium copy. Users are encouraged to do their own evaluation for the specific heights and design detail required for a particular job. The variable characteristics of electronically controlled cutting equipment warrants that users verify their specific requirements.

Factors that affect cutting quality and capability that the user needs to consider are:

1. Sharpness of knife blade: dull blades create a serrated look on the edge of the cut film.
2. Weight on knife blade:
 - Ideal weight will result in a slight scoring of the liner.
 - Too light a weight will cause incomplete cutting through film and adhesive.
 - Excessive weight results in cut liner, blade dragging which will accelerate blade wear.
3. Temperature and relative humidity are minor considerations, but extremes, as well as rapid fluctuations, are to be avoided.
4. Stock film should be stored in the same environment as the cutting equipment.
5. Stroke width of characters, style of serifs or extensions and small details of scanned or digitized artwork.
6. Minimum recommended stroke width is 1.0 mm when applied film is exposed to cleaning or other physical stress.

Weeding

For film series 7725 SE, 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.

Kiss and Die Cutting

1) Die Cutting

Only steel rule dies which have vertical bevels are recommended. The vertical bevel has to face the graphic and not the side which will be weeded. Shaped bevels bear the risk of tearing the film, especially when several layers are being cut.

Note: The release rubbers glued onto the ply wood should not exceed the knife at a maximum height of 0.5mm.

2) Cold Kiss Cutting

Steel rule dies have to be used for kiss cutting Scotchcal 7725 Series films. It is recommended that a sheet made out of steel be used as a support during kiss cutting. Note: The stripping rubbers mounted close to the die must not exceed the height of the knife by more than 0.5mm.

3) Hot Kiss Cutting

Etched zinc or magnesium as well as steel rule dies can be used for hot kiss cutting of Scotchcal 7725 Series films.

Hot Stamping

Films may be hot stamped using material available from several suppliers. Assurance of performance must be obtained from the foil manufacturer.

Premasking/Prespacing

Conditions	3M Application Tapes	
	Fluorescent	Frosted and Dusted
General premasking	SCPM-19	SCPS-2
General prespacing	SCPS-100	SCPS-2

Product Data

The values given are typical for 3M™ Scotchcal™ Special Effects Film Series 7725 SE. For a custom specification, submit a request to your 3M sales representative.

Physical Properties

Property	Metric Units
Thickness (ISO 4593)	0.08 to 0.12 mm
Tensile strength (minimum) (ISO 1184-1983)	<i>at 23°C</i>
Dusted & Fluorescent	22N/25 mm
Frosted	15N/25 mm
Applied shrinkage (FTM-14)	<0.3 mm
Service temperature range	-29° to +80°C

Adhesion

Acrylic (FTM-1)	17N/25 mm
Polycarbonate	17N/25mm
Glass	17N/25mm

Note: ISO refers to standards of the International Standards Organisation. FTM (Fimat Test Methods) refers to test methods listed by Fimat, the Association of European Tape Manufacturers

Chemical Resistance

- Resists mild acids, mild alkalis, and salts
- Excellent water resistance

Flammability

Film 7725SE-324 Frosted Crystal has undergone fire testing and meets the following classifications:

BS 476 Part 6 I_i=0
 I_{max}=0
BS 476 Part 7 Class 1
BS6853 1999 Class 1A
GMRT 2120 August 1998
LUL E1042A3

Shelf Life, Shipping, and Storage

- The shelf life of the film is 2 years and should be applied within 2 years of receipt of the film if unprocessed. Processed film should be applied within 1 year of processing and within 2 years of receipt of the film.
- Store the film in a clean, dry area, out of direct sunlight, and at less than 38°C.

- Ship the finished graphic lying flat or in a roll. To roll the graphic, wrap it film-side out onto a core that is 15 cm or larger in diameter. These methods help prevent the film and premask from wrinkling or popping off the liner.

Related 3M Literature

Listed below is related 3M technical literature that may be of interest.

Subject	Instruction Bulletins
Design of markings	2.1
Premasking and prespacing	4.3
Surface preparation	5.1
Application <ul style="list-style-type: none">• Translucent film to flat glass	5.7
Storage, maintenance, and removal	6.5
3M™ MCS™ Warranty Bulletin	

Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

Important Notice to Purchaser

The 3M products described in this publication are covered by a 3M warranty and limitation of liability.

3M's warranty provides that if 3M finds that goods are defective in material or workmanship they will be replaced or the price refunded at 3M's option but note that 3M does not accept liability for other direct losses (except for personal injury or death) or consequential losses relating to defective products or from information supplied by 3M.

Purchasers and users of 3M products, and not 3M supplying companies, are always solely responsible for deciding on the suitability of the 3M product for their required or intended use.

Technical Assistance

For help on specific questions relating to 3M Commercial Graphics Division Products, contact your local Technical Service Representative.

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