Commercial Solutions Division

3M™ Diffuser Film

3635-30, 3635-70

Product Description

3M™ Diffuser Film 3635-30 and 3M™ Diffuser Film 3635-70 are light managing films to create durable permanent channel letters, signs and displays.
They control brightness and light distribution within light boxes without hotspots.

Films 3635-30 and 3635-70 are recommended for fluorescent lighting applications and provide 30% resp. 60% light transmission.
Remark: For LED applications we recommend 3M™ Envision™ Diffuser Film 3735-50 and 3M™ Envision™ Diffuser Film 3735-60 which provide 50% resp. 60% light transmission.

Product Line

Illuminated signage	3635-30	white, translucent, semi-matte, permanent adhesive.
	3635-70	white, translucent, semi-matte, permanent adhesive.

Product Characteristics

These are indicative values for unprocessed products.
Contact your 3M representative for a custom specification.

Physical & Application

Material	cast vinyl	
Surface finish	semi-matte	
Thickness (film)	50 µm (0.05 mm)	
Adhesive type	pressure-sensitive	
Adhesive appearance	clear	
Liner	Kraft paper	
Adhesion	15 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Application method	wet or dry	
Applied shrinkage	< 0.3 mm	FTM 14
Application temperature (minimum air and substrate)	+16°C	for flat surfaces
	+16°C	for curved to corrugated surfaces, with and without rivets
Service temperature (after application)	-44°C to +77°C	(not for extended periods of time at the extremes)
Surface type	flat to simple curved	
Substrate type	glass, PMMA, PC*, PETG* *Might require drying with heat before use	
Graphic removal	Fair to remove with heat and/or chemicals from supported substrates. No liability is given for ease or speed of removal of any graphic. Pay attention to adequate air and substrate temperature.	

The values above are the results of illustrative lab test measurements and shall not be considered as a commitment from 3M.

Storage

Shelf life	Use within two years from the date of manufacture on the sealed original box. Use within one year after opening the box.
Storage conditions	+4°C to +40°C, out of sunlight, original container in clean and dry area.

The shelf life as defined above remains an indicative and maximum data, subject to many external and non-controllable factors. It may never be interpreted as warranty.

Flammability

Flammability standards are different from country to country. Ask your local 3M contact for details, please.

Durability

The durabilities mentioned in the table below are the results of illustrative lab tests. The values show the best performance expected from these products, provided that the film will be processed and applied professionally according to 3M's recommendations.
The durability statements do not constitute warranties of quality, life and characteristics.
The durability of products is also influenced by:

- the type of substrate and thorough preparation of the surface (with 3M™ Surface Preparation System)
- application procedures
- environmental factors
- the method and the frequency of cleaning

Unprocessed film

The following durability data are given for unprocessed film only!

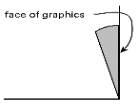
Climatic zones

Graphic durability is largely determined by the climate and the angle of exposure. Find below a table showing the durability of a product according to the angle of exposure and the geographical location of the application.

Zone 1	Northern Europe, Italy (north of Rome), Russia
Zone 2	Mediterranean area without North Africa, South Africa
Zone 3	Gulf area, Africa

Exposure types

Vertical:



The face of the graphic is ±10° from vertical.

Vertical outdoor exposure white	**Zone 1**	**Zone 2**	**Zone 3**
	10 years	7 years	5 years

3M™ Performance Guarantee and MCS™ Warranty

In addition, 3M provides a guarantee/warranty on a finished applied graphic within the framework of 3M™ Performance Guarantee and/or 3M™ MCS™ warranty programs.

For detailed graphic construction and application options along with specific Warranty periods, please see the Warranty matrices and Warranty information on 3M Graphic Solutions/Warranties.
Visit www.3mgraphics.com for getting more details about 3M's comprehensive graphic solutions.

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs to recommend other products.

Graphics applied to

- low surface energy substrates or substrates with low surface energy coating.
- other than flat or moderate curved/corrugated surfaces.
- stainless steel.
- surfaces that are not clean and smooth.
- first surface applications that are not covered by a UV-resistant film as 3M™ Scotchcal™ Translucent Graphic Film Series 3630 and 3M™ Scotchcal™ Translucent Graphic Film IJ3630-20.

Important Notice

- 3M Commercial Solutions products are not tested against automotive manufacturer specifications!
- Non vertical applications will have a significant decrease in durability!
- 3M accepts no liability for glass breakage. See instruction bulletin 5.1 for details.

Graphics Manufacturing

Whenever two or more pieces of the same translucent graphic film are seamed together as a continuous band of colored graphic film, they should be matched to assure uniform daytime and night appearance.

Matching

Material from a single roll or lot must be used on a single graphic or sign for identical matching.

Exact match between different run numbers should not be assumed.

Shipping finished graphics

Flat, or rolled film side out on 130 mm (5 inch) or larger core. These methods help to prevent the liner from wrinkling or application tape, if used, from popping off.

Converting Information

There are unique health and safety considerations that must be understood prior to vacuum forming faces using translucent films.

Thermoforming

Refer to Instruction Bulletin 5.16 'Thermoforming' for special recommendations, limitations and processing requirements when forming with applied films.

>Instruction Bulletin 5.16 'Thermoforming'<

Elongation limit

Forming of applied film on sheets should not exceed 50% elongation.

Application

See product bulletin ATR ‘application tape recommendations’ for information about selection and use of suitable application tapes for this product, please.

> Product Bulletin Application Tape Recommendations <

Refer to Instruction Bulletin 5.1 ‘select and prepare substrates for graphic application’, for general application information.

>Instruction Bulletin 5.1 'select and prepare substrates for graphic application'<

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline).

Refer to Instruction Bulletin 6.5 ‘storage, handling, maintenance and removal of films and sheetings’, for general maintenance and cleaning information.

>Instruction Bulletin 6.5 'Storage, Handling, Maintenance and Removal of Films and Sheetings'<

Important Safety Remark

Application to glass

The application of colored or printed film onto glass with sunlight exposure can lead to glass breakage through thermal expansion of the glass. The local conditions must be examined for the danger of glass break by uneven heat absorption through sun exposure. Type of glass (insulation glass, float glass, LSG, toughened safety glass, semi-tempered glass, etc.), glass dimension, joint condition, flexibility of the sealant, quality of the edge finishing, geographical orientation and partial shadow during sun exposure are the determining factors. Light color designs and application on the outside of the window are to be preferred. A free non-applied framework of 4 mm around the entire window front can help to dissipate the absorbed warmth. According to common knowledge a thermal crack can occur at temperature differences of approx. 130°C (toughened safety glass), approx. 40°C (float glass) or approx. 110°C (semi-tempered glass). Coldest place is usually under the framework in the embedded joined window part, the warmest place is typically on the darkest place in the format. Because of the many above mentioned factors, glass breakage cannot be fully predicted, therefore 3M does not accept liability for glass breakage when using this film for window graphics.

Remarks

This bulletin provides technical information only.

Important notice

All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

As outdoor graphics age, natural weathering occurs causing a gradual reduction in gloss, slight color changes, some lifting of the graphic at the edges or around rivets, and ultimately a minor amount of cracking.

These changes are not evidence of product failure and are not covered by a 3M warranty.

Additional information

Visit the web site of your local subsidiary at www.3Mgraphics.com for getting:

- more details about 3M™ MCS™ Warranty and 3M™ Performance Guarantee
- additional instruction bulletins
- a complete product overview about materials 3M is offering

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