



Dual Color Film

Series 3635-200

Product Bulletin

Product Description

These perforated films are light management films to create durable, permanent channel letters, signs and displays.

Dual color films can create the special effect of a color/image by day (not lighted) and a different color by night (backlit). The films have a maximum transmission value of 15.9%.

Product Line	Illuminated signage	3635-210	white, perforated, matte, permanent adhesive. Special colors available on request.
		3635-222	black, perforated, matte, permanent adhesive (clear).

Product Characteristics

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

Physical & Application

Material	calendered vinyl (polymeric)	
Surface finish	matte	
Thickness (film)	110 µm (0.11 mm)	
Adhesive type	solvent acrylic, pressure-sensitive	
Adhesive appearance	white	
	3635-222	clear
Liner	Kraft paper	
Adhesion	approx. 13 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Application method	dry only!	
Applied shrinkage	< 0.4 mm	FTM 14
Application temperature	+16°C	minimum (air and substrate)
Service temperature	-60°C to +107°C	
Surface type	flat	
Substrate type	glass, PMMA, PC*, PETG*, ABS	

PC*, PETG*: Might require drying with heat before use

Graphic removal Hard to remove from supported substrates.

Storage

Shelf life 2 years from the date on the original box.
Up to 2 years unprocessed, or processed within 1 year of processing.

Storage conditions! +4°C to +40°C, out of sunlight, original container in clean and dry area.

Flammability

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

Durability

Unprocessed film	The following durability data are given for unprocessed film only!
3M™ MCST™ Warranty	In addition, 3M provides a warranty on a finished applied graphic within the framework of 3M™ MCST™ warranty program.
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.
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Vertical outdoor exposure	Zone 1	Zone 2	Zone 3
white/black	7 years	6 years	5 years

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
- 2nd surface to 3M™ Panaflex™ Awning and Sign Facing 945GPS and 3M™ Panagraphics™ III Wide Width Flexible Substrate not recommended.
 - low surface energy substrates or substrates with low surface energy coating.
 - other than flat surfaces.
 - stainless steel.
 - surfaces that are not clean and smooth.

- Important Notice
- 3M Commercial Graphics Division products are not tested against automotive manufacturer specifications!
 - Non vertical applications will have a significant decrease in durability!
 - Thermoforming of applied film is not recommended!
 - Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

Graphics Manufacturing

Graphic protection can improve the appearance, performance and durability of printed graphics. Any printed graphic exposed to abrasive conditions (including vehicles), harsh cleaners or chemicals must include graphic protection in order to be warranted.

When to use an overprint clear or overlamine

See instruction bulletin GPO 'graphic protection options' for further information about selection and use of protective overlaminates and printable clears.

[> Product Bulletin Graphic Protection Options <](#)

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 Inkjet Printing

Adequately Dry Graphics

A too high total physical ink amount on the film results in media characteristic changes, inadequate drying, overlamine lifting, and/or poor graphic performance. The maximum recommended total ink coverage for this film is 270%.

Inadequate drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty. Build enough time into your process to ensure adequate drying of the graphic.

Poorly dried film becomes soft and stretchy, and the adhesive becomes too aggressive. 3M recommends at least a minimum drying time of 24 hrs before further processing. Dry the graphic unrolled or at least as a loose wound roll standing upright.

Converting Information Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the 3M Product and Instruction Bulletins for your ink for limitations and proper usage. Graphic protection can improve the appearance, performance and durability of your graphic.

A clear coat also prevents chalking on unprinted films. Use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications given in the clear's Instruction Bulletin.

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' <](#)

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.

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



Commercial Graphics

Hermeslaan 7

1831 Diegem, Belgium

Responsible for this technical bulletin

3M Deutschland GmbH | Safety & Graphics Laboratory

Carl-Schurz-Str. 1 | 41453 Neuss, Germany

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