



3M™ Envision™ Print Film

Series 48

3M™ Envision™ Print Film

Series 48C

Product Bulletin



Product Description

These non-PVC films offer great versatility making them perfect for indoor and outdoor signs and fleet graphics.

3M™ Envision™ Print Film 48 is qualified for inkjet printing with latex, solvent and UV inks, as well as UV screen printing.

These films are available with or without Controltac™ and Comply™ adhesive.

3M™ Controltac™ minimizes the initial contact area of the adhesive and allows the applicator to reposition the film during application.

This allows easier installation of large format graphics in a wide temperature range.

Product variants with Comply™ adhesive also have air release channels for fast and easy, bubble-free graphic installations.

Product Line	Inkjet printing	48-20	white, opaque, matte, permanent adhesive (grey).
		48-20R	white, opaque, matte, removable adhesive (grey).
		48C-20	white, opaque, matte, permanent adhesive (grey) with Controltac™ and Comply™ adhesive.
		48C-20R	white, opaque, matte, removable adhesive (grey) with Controltac™ and Comply™ adhesive.

Product Characteristics

These are typical values for unprocessed products.

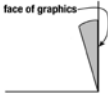
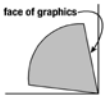
Contact your 3M representative for a custom specification.

Physical & Application

Material	non-PVC polymer	
Surface finish	matte	
Thickness (film)	80 µm (0.08 mm)	
Adhesive type	acrylic, pressure-sensitive	
	In addition: product variants with Comply™ adhesive have air release channels	
Adhesive appearance	grey	
Liner	back-sided Polyethylene coated paper	
Adhesion	approx. 16 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
	removable films of series	approx. 6 N/25 mm
Application method	wet or dry	
	versions with Comply:	dry only!
Applied shrinkage	< 0.4 mm	FTM 14
Application temperature	+10°C	for flat surfaces (minimum air and substrate)
Notice!	flat surfaces without rivets require a minimum application temperature of +10°C, versions with removable adhesive applied on flat surfaces without rivets require a minimum application temperature of +4°C	
Service temperature	-50°C to +90°C	
Surface type	flat to simple curved	

Substrate type	aluminum, glass, PMMA, PC*, ABS, paint <small>*Might require drying with heat before use</small>
Graphic removal	Removable without heat and/or chemicals from supported substrates. Statement given for removable versions only! No liability is given for ease or speed of removal of any graphic. Pay attention to adequate air and substrate temperature.
Storage	<p>Shelf life Use within two years from the date of manufacture on the sealed original box. Use within one year after opening the box.</p> <p>Storage conditions +4°C to +40°C, out of sunlight, original container in clean and dry area.</p>
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™ 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. Visit www.3mgraphics.com for getting more details about 3M's comprehensive graphic solutions.		
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.
	Non-vertical:		The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal.
	Interior:	Interior means an application inside a building without direct exposure to sunlight.	

Vertical outdoor exposure white	Zone 1 5 years	Zone 2 4 years	Zone 3 3 years
Non-vertical outdoor exposure white	Zone 1 5 years	Zone 2 4 years	Zone 3 3 years
Interior application interior	Zone 1 5 years	Zone 2 5 years	Zone 3 5 years

Limitations of End Uses

Graphics applied to

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

- 2nd surface to 3M™ Panagraphics™ III Wide Width Flexible Substrate.
- low surface energy substrates or substrates with low surface energy coating.
- other than flat or simply curved surfaces.
- painted or unpainted rough wallboards, gypsum boards and wallpapers.
- stainless steel.
- surfaces that are not clean and smooth.
- surfaces with poor paint to substrate adhesion.

Graphic removal from

- signs or existing graphics that must remain intact.

Graphics subjected to

- gasoline vapors or spills.

Important Notice

- 3M Commercial Solutions products are not tested against automotive manufacturer specifications!
- Due to increasing winding-tension towards the roll core, surface impressions might occur with rolls of a length of more than 200 m.

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 overlaminate

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, overlaminate 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.

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 printed films onto glass 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, VSG, ESG, 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 (ESG), approx. 40°C (float glass) or 110°C (TVG).

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.

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 Solutions

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