

3M™ Envision™ Print Film 48 and 48C

Product Bulletin

Product Description



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

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 3M™ Controltac™ and 3M™ Comply™ adhesives. Controltac minimises 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.

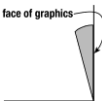

Product Line	Inkjet printing	48-20	white, opaque, matte, permanent, pressure-sensitive adhesive (grey).
		48-20R	white, opaque, matte, removable, pressure-sensitive adhesive (grey).
		48C-20	white, opaque, matte, permanent, pressure-activated adhesive (grey) with Comply and Controltac.
		48C-20R	white,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

Product Characteristics

Physical & Application

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

Material	non-PVC polymer
Surface finish	matte
Thickness (film)	80 µm (0.08 mm)
Adhesive type	Acrylic 48C product variants also have Comply adhesive air release channels
Adhesive appearance	grey
Liner	Polyethylene coated paper
Adhesion (films with permanent adhesive)	16 N/25 mm FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Adhesion (films with removable adhesive)	6 N/25 mm
Application method	wet or dry. NB: For films with Comply adhesive, use only a dry application method.
Applied shrinkage	< 0.4 mm FTM 14
Minimum application temperature	+4°C or +10°C for flat surfaces (minimum air and substrate) – see note below:

	Important Notice	Films with the Controltac and Comply features and/or films with permanent adhesive, applied to flat surfaces without rivets require a minimum application temperature of +10°C. Films with a removable adhesive only 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	aluminium, glass, PMMA, PC*, ABS, paint *Might require drying with heat before use, refer to Bulletin 5.1 Substrate Selection, Preparation and Substrate-specific Application Techniques for guidelines
	Graphic removal	Removable without heat and/or chemicals from supported substrates. Statement given for removable versions only. Removable with heat from most substrates within the warranty period at 10°C (50°F) minimum (air and substrate) <ul style="list-style-type: none"> Use a removal angle of <90° for optimal results No liability is given for ease or speed of removal of any graphic.
	Important Notice	Permanent versions of film might leave adhesive residue on the substrate after removal. Please use 3M adhesive remover if needed.
Storage	Shelf life	The shelf life for unprocessed film is 2 years from the date of manufacture (i.e. the date marked on the original packaging). Process within 1 year of manufacture and apply within 3 months of processing
	Storage conditions	Store in the original container at temperatures of +4°C to +38°C, out of sunlight, in a clean and dry area. Bring the film to room temperature before use.
Flammability		These products are certified to European test standards EN13501-1 for Buildings and EN45545-2 for Rail. NB It is the end-user's responsibility to ensure that these standards are acceptable for their intended application.
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 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 Mediterranean area without North Africa, South Zone 2 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.

- application to flexible substrates, including 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.
- coarse or textured surfaces such as painted or unpainted plasterboard, gypsum boards, unsealed plaster and wallpapers.
- stainless steel.
- surfaces that are not clean and smooth.
- surfaces with poor paint to substrate adhesion.

Graphic removal from Graphics subjected to Important Notice

- signs or existing graphics that must remain intact.
- petroleum vapours or spills.
- 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 100m.

Graphics Manufacturing

When to use an overprint clear or overlamine Shipping finished graphics

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.

See bulletin: 3M UK Commercial Graphics Overlaminates for further information about selection and use of protective overlaminates and printable clears.

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

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

3M recommends a minimum drying time of 24 hours before further processing takes place, so please ensure that sufficient time is included in your conversion process to ensure that graphics are completely dry. The graphic should be dried unrolled or stood upright in a loosely wound roll. Failure to ensure that graphics are adequately dry could cause:

- Increased shrinkage
- The film to become soft and stretchy
- Curling of graphics
- The adhesive to become aggressive and/or adhesion failure
- Cause the laminate to silver
- May cause loss of adhesion of laminate

Graphic failure due to insufficient drying time is not covered by the 3M warranty.

Application

Refer to bulletin 4.3 3M(TM) Application Tapes Premasking and Prespacing for Films for more information regarding the selection and use of application tapes for this product.

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.

Remarks

Important notice

This bulletin provides technical information only.

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.

Additional Information

Visit the web site of your local subsidiary at www.3M.co.uk/graphicsolutions for:

- further information about 3M™ MCS™ Warranty and 3M™ Performance Guarantee
- additional instruction bulletins
- a complete product overview of 3M graphic films

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