



3M™ Envision™ Print Wrap Film

LX480Cv3

3M™ Envision™ Print Wrap Film

SV480Cv3

Product Bulletin

Product Description

Use 3M™ Envision™ Print Wrap Film LX480Cv3 for Latex and UV inkjet printing.
Use 3M™ Envision™ Print Wrap Film SV480Cv3 for solvent, eco-solvent and UV inkjet printing.
LX480Cv3 and SV480Cv3 are qualified for UV and solvent screenprinting.



This high performance non-PVC and phthalate-free film offers great conformability for a wide range of long term applications, such as indoor and outdoor signs, fleet, vehicle graphics, watercraft, textured walls and graphics exposed to occasional spills of petroleum products.

Due to its excellent conformability it allows even fleet and vehicle graphics installation on recesses and deep channels.

To protect graphics 3M recommends using the non-PVC and phthalate-free 3M™ Envision™ Gloss Wrap Overlaminates 8548G or 3M™ Envision™ Luster Wrap Overlaminates 8549L. LX480Cv3, SV480Cv3, 8548G and 8549L offer several environmental benefits. They contain no added chlorine or halogens and are manufactured using 58% less solvents than standard cast films. LX480Cv3, 8548G and 8549L are made in part of bio-based material. For more information about these benefits, please visit 3Mgraphics.com/Sustainability.

3M™ ControTact™ 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.

3M™ Comply™ are air release channels allowing fast and easy, bubble-free application of films.

Product Line	Screen and inkjet printing	LX480Cv3	white, opaque, glossy, permanent adhesive (grey) with Comply™v3 adhesive.
		SV480Cv3	white, opaque, glossy, permanent adhesive (grey) with Comply™v3 adhesive.

Product Characteristics

Physical & Application

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

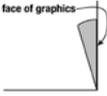
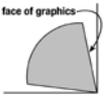
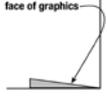
Material	non-PVC polymer	
Surface finish	glossy	
Thickness (film)	50 µm (0.05 mm)	
Adhesive type	solvent acrylic, pressure-sensitive, repositionable	
Adhesive appearance	grey	
Liner	double-sided Polyethylene coated paper	
Adhesion	approx. 20 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Application method	dry only!	
Applied shrinkage	< 0.1 mm	FTM 14
Application temperature minimum (air and substrate)	+10°C	for flat surfaces
	+10°C	for curved to corrugated surfaces with and without rivets
	+16°C	for surfaces with deep channels
Service temperature	-60°C to +107°C	
Surface type	flat to curved, incl. rivets and deep corrugations	
	use for walls:	moderately-textured surfaces and simple curved architectural elements

Substrate type	aluminum, glass, PMMA, PC*, ABS, paint <small>*Might require drying with heat before use</small>
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.
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.

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 MCST™ Warranty In addition, 3M provides a guarantee/warranty on a finished applied graphic within the framework of 3M™ Performance Guarantee and/or 3M™ MCST™ 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.
	Horizontal:		The face of the graphic is ±5° from horizontal.

Interior: Interior means an application inside a building without direct exposure to sunlight.

	Zone 1	Zone 2	Zone 3
Vertical outdoor exposure white	12 years	10 years	8 years
Non-vertical outdoor exposure white	6 years	5 years	4 years
Horizontal outdoor exposure white	3 years	2.5 years	2 years
Interior application interior	12 years	12 years	12 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 | <ul style="list-style-type: none">- flexible substrates incl. 3M™ Panagraphics™ III Wide Width Flexible Substrate.- low surface energy substrates or substrates with low surface energy coating.- mortar joints deeper or higher than 3.1 mm and square-cut or undercut mortar joints.- painted or unpainted wallboards, gypsum boards and wallpapers.- stainless steel.- surfaces with poor paint to substrate adhesion.- watercraft when the graphic is applied below the static water line.- watercraft graphics that are not edge sealed.- vehicles which will be subject to stone chip damage.- surfaces that are not clean. |
| Graphic removal from | <ul style="list-style-type: none">- signs or existing graphics that must remain intact.- vehicles which do not have the original OEM paint applied. |
| Graphics subjected to Important Notice | <ul style="list-style-type: none">- gasoline vapors or spills.- 3M Commercial Solutions products are not tested against automotive manufacturer specifications!- Graphics printed with UV inkjet inks and applied on recesses or deep channels will show ink cracking in the stretched areas. Some UV inks will show a change of gloss. Ask your local 3M representative for UV ink solutions from 3M which can be used for recessed or deep contour applications. |

Tips for successful textured wall applications

This film is designed to be effective on many of the most common moderate textures found in public stadiums, arenas and similar environments.

Notice

- Due to the wide variation in substrate texture, we encourage you to verify that the film and 3M techniques described in this Bulletin and Instruction Bulletin 5.37 are suitable for each of your applications.

[> Instruction Bulletin 5.37 'Application, Maintenance and Removal of Textured Wall™ Films' <](#)

- Use an installer trained in 3M's techniques and with access to the required 3M tools
- Test each different textured surface you are considering at each location. See the instructions below.
- Film is more susceptible to lifting from deep or undercut mortar joints than shallow ones (about 3 cm deep). Instruction Bulletin 5.37 discusses the various types of mortar joints.
- In most cases, minor lifting does not detract from the impact of your customer's message, nor from the overall durability of the graphic.

Edge lifting, which is usually most noticeable at mortar joints, may be susceptible to picking and tearing if the graphic is at pedestrian level and within reach.

- Water may accumulate behind graphics applied to unsealed substrates, resulting in water bubbles that cause lifting.

Test Application Instructions	3M testing shows that the following test, which uses a small piece of film, is adequate for judging good adhesion to and appearance on textured surfaces. One of the following applicator tools will be needed for this test
Tools needed	3M™ Textured Surface Applicator TSA-1. Do not attempt this test using a standard squeegee. You will not be successful. Industrial heat gun with an electronic readout, capable of achieving and sustaining > 500°C Approximately 0.5 m ² of film Heat and burn-resistant gloves
Application	Perform the test in an inconspicuous place on each type of substrate you plan to use for each of the larger graphics Set the gun to > 500°C Work at a speed that allows the film to be heated enough to make it conformable Overheating damages the film; under-heating does not permit conformability Hold the heat gun about 1 inch above and immediately in front of the roller Start at an outside top corner and work straight across to the other side using this technique: Heat the film in front of the roller for about 1 second and then begin following closely with the roller, pushing firmly. Move at a slow, steady pace Roll all the way to the edge Move the roller down about 5 cm and repeat until the film is fully applied If the film lifts immediately, the application technique may not have been satisfactory, or the texture is too severe for the film. Do not attempt to go over the sample again; try another one.
Test Time	If possible, leave the film in place for one week, then check for good adhesion and acceptable removal.

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

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%.

Adequately Dry Graphics 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

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.

Screen Printing

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.

Abrasion and Loss of Gloss

Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

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' <](#)

Refer to Instruction Bulletin 5.46 'Application of 480Cv3 on substrates with recesses', for special application information.

[> Instruction Bulletin 5.46 'application of substrates with recesses and removal' <](#)

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 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. (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

Important notice

This bulletin provides technical information only.

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



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