

3M™ Envision™ Print Wrap Film SV480Cv3

3M™ Envision™ Print Wrap Film LX480Cv3

Product Bulletin

Product Description



Important Notice

Envision Print Wrap Film LX480Cv3 with Latex Inkjet Inks is designed for Latex Inkjet Inks. Envision Print Wrap Film SV480Cv3 with Solvent Inkjet Inks is designed for Solvent Inkjet Inks. LX480Cv3 or SV480Cv3 with UV Inkjet or Screen Print Inks are both suitable for UV inkjet or Screen Print Inks.

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 is suitable for application to fleet application with recesses and deep channels.

For water craft/marine applications, please consult your 3M representative.

To protect graphics 3M recommends using the non-PVC and phthalate-free 3M™ Envision™ Gloss Wrap Overlamine 8548G or 3M™ Envision™ Lustre Wrap Overlamine 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, visit 3Mgraphics.com/Sustainability.

3M™ Controltac™ adhesive minimises the initial contact area of the adhesive, allowing the applicator to reposition the film during application. This feature also allows for easier installation of large format graphics in a wide temperature range.

3M™ Comply™ air release channels facilitate fast, easy, bubble-free applications.

Product Line	LX480Cv3 - Latex, UV and screen printing	white, opaque, gloss, permanent adhesive (grey) with Comply v3 adhesive.
	SV480Cv3 - Solvent for UV and screen printing	white, opaque, gloss, 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	gloss
Thickness (film only)	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 deep corrugated surfaces
In-use 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	aluminium, glass, PMMA, PC*, ABS, paint (*Might require drying with heat before use)

	Graphic removal	Removable with heat and/or chemicals from most substrates within the warranty period of 1°C (50°F) minimum (air and substrate). No liability is given for ease or speed of removal of any graphic. Pay attention to adequate air and substrate temperature.
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 +40°C, out of sunlight, in a clean and dry area. Bring the film to room temperature before use.

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 programmes.

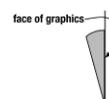
Visit www.3mgraphics.com for getting more details about 3M's comprehensive graphic solutions.

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

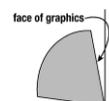
Exposure Types

Vertical:



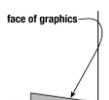
The face of the graphic is ±10° from vertical.

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	12 years	10 years	8 years
	Zone 1	Zone 2	Zone 3
Non-vertical outdoor exposure	6 years	5 years	4 years
	Zone 1	Zone 2	Zone 3
Horizontal outdoor exposure	3 years	2.5 years	2 years
	Zone 1	Zone 2	Zone 3
Interior application	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">- Non 3M films and flexible substrates including 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. (For water craft/marine applications, please consult your 3M representative.)- watercraft graphics that are not edge sealed. (For water craft/marine applications, please consult your 3M representative.)- 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 paint meeting OEM standards.- Vehicles with re-sprayed panels
Graphics subjected to Important Notice	<ul style="list-style-type: none">- Petroleum vapours 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.

Important Notice re Cleaning

Isopropyl Alcohol is **not a recommended** cleaning product for vehicle wrapping: because it evaporates too quickly, IPA (Isopropyl Alcohol) is not an appropriate cleaner. 3M™ Surface preparation system is the only 3M recommended cleaning product.

Tips for successful textured wall applications

Notice

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

- 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 m² of film
Heat and burn-resistant gloves

Application	<p>Perform the test in an inconspicuous place on each type of substrate you plan to use for each of the larger graphics</p> <p>Set the gun to > 500°C</p> <p>Work at a speed that allows the film to be heated enough to make it conformable</p> <p>Overheating damages the film; under-heating does not permit conformability</p> <p>Hold the heat gun about 1 inch above and immediately in front of the roller</p> <p>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</p> <p>Roll all the way to the edge</p> <p>Move the roller down about 5 m and repeat until the film is fully applied</p> <p>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.</p>
Test Time	<p>If possible, leave the film in place for one week, then check for good adhesion and acceptable removal.</p>

Graphics Manufacturing

When to use an overprint clear or overlaminate

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 Product Bulletin [3M UK Commercial Graphics Overlaminates](#) for further information about selection and use of protective overlaminates and printable clears.

Shipping finished graphics

Flat, or rolled film side out on 130mm (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.

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.

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 Instruction Bulletin 4.3 [3M™ Application Tapes Premasking and Prespacing for Films](#) for information about selection and use of suitable application tapes for this product, please.

Important Notice

Isopropyl Alcohol is not a recommended cleaning product for vehicle wrapping: because it evaporates too quickly, IPA (Isopropyl Alcohol) is not an appropriate cleaner. 3M™ Surface preparation system is the only 3M recommended cleaning product.

Refer to Instruction Bulletin 5.1 [Substrate Selection, Preparation and Substrate-specific Application Techniques](#) for general application information.

Post Heating

A minimum temperature of 100°C should be used for the post heating procedure. See Instruction Bulletin 5.4 [Special Applications and Vehicles](#) for information on why and how to post heat.

Refer to Instruction Bulletin 5.46 [Application on Substrates with Recesses and Removal 3M™ Envision™ Print Wrap Film 480Cv3](#), for special application information.

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.

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.3M.co.uk/graphicsolutions

- details about 3M™ MCS™ Warranty and 3M Performance Guarantee
- additional instruction bulletins
- An overview of the 3M Commercial Graphics range of graphic films

Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

Important Notice to Purchaser

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.

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