LX480mC
SV480mC

Quick Links
3M Graphics Warranties
Technical Information Selector
Safety Data Sheets (SDS)
Flammability (ASTM E84 Reports)
Videos

Some of these links lead to web-based resources that are not product-specific.

wensco
800.253.1569 | wensco.com

Product Description

- Use LX480mC with Latex Inkjet inks
- Use SV480mC with Solvent Inkjet Inks
- Use LX480mC or SV480mC with UV Inkjet or Screen Print Inks
- High-performance, 2-mil, white, non-PVC film with a luster finish

Product Features

- Comply™ Adhesive with micro technology offers excellent air flow and leaves a smooth finish
- Optimized initial tack
- Slideability for easy positioning
- Non-visible air release channels for fast and easy, bubble-free installations
- Many finished graphic constructions can be stretched up to 150% (i.e., a 10 inch [25 cm] piece of film can stretch to 15 inches [38cm]) without primer or relief cuts and maintain lift resistance; see "Stretchability" on page 8
- Flexible and highly-conformable for use on compound curves, corrugations, deep channels, and rivets
- High dimensional stability, for installation in hot or cold temperatures
- Removable with heat from most surfaces within the Warranty Period
- Resists tearing in cooler temperatures
- Highly durable, guards against intense UV and even acid dew, when applied with recommended graphic protection.
- A horizontal warranty is offered when paired with the 3M™ Envision™ Wrap Overlaminates
- Expected Performance Life of 11 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)
- Expected Performance Life for Textured Surface Graphics of 2 years (indoor in most applications); and 6-12 months (outdoor when not used in freezing and thawing cycles). See "Factors that Affect Graphic Performance Life" on page 5

Greener Solutions

- Non-PVC, phthalate-free film
- Contains no added chlorine or halogens
- 8548G, 8549L, and 8550M made in part from bio-based materials
- Manufactured using 58% less solvent

Recommended Types of Graphics and End Uses

- Indoor and outdoor graphics and signs, including point-of-purchase and displays
- Fleet, vehicle, watercraft and transit graphics and wraps
  - Commercial vehicles and fleet trucks and trailers; emblems or striping
  - Personal vehicle graphics and wraps
  - Watercraft graphics (above the static water line only)
  - Bus graphics
  - Rail cars and lead cars of trains, light rail and subways
  - Non-vertical and horizontal vehicle wraps, watercraft and transit when protected with overlaminate 8528, 8548G, 8549L, or 8550M
- Small format original equipment manufacturer's (OEM) decorative and identification graphics, cautionary and safety labeling
- Smooth and textured walls graphics
  - Graphics applied to indoor smooth wall surfaces
  - Graphics applied to indoor or outdoor moderately textured surfaces when protected with overlaminate 8548G, 8549L, 8550M

When constructed and used as described in this Bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty or the 3M Performance Guarantee. Please read the entire Bulletin for details.

3M

Recommended Compatible Products

Graphic Protection

The recommended graphic protection options for 3M™ Wrap Films LX480mC and SV480mC are the following Envision™ Wrap Overlaminates, designed for optimal compatibility and conformability:

- 3M™ Envision™ Gloss Wrap Overlaminate 8548G *with horizontal vehicle warranty*
- 3M™ Envision™ Luster Wrap Overlaminate 8549L *with horizontal vehicle warranty*
- 3M™ Envision™ Matte Wrap Overlaminate 8550M *with horizontal vehicle warranty*

Alternative graphic protection options, listed below, are also compatible with LX480mC and SV480mC, however, the finished graphic may have lower conformability:

- 3M™ Scotchcal™ Gloss Overlaminate 8518
- 3M™ Scotchcal™ Luster Overlaminate 8519
- 3M™ Scotchcal™ Matte Overlaminate 8520
- 3M™ Scotchcal™ Gloss Overlaminate 8528 *with horizontal vehicle warranty*
- 3M™ Décor Overlaminate 8600
- 3M™ Scotchcal™ Ultra Matte Overlaminate 8915
- 3M™ Screen Print Matte Clear 1930
- 3M™ Screen Print UV Gloss Clear 9800CL
- 3M™ Screen Print Gloss Clear 1920DR
- 3M™ Screen Print UV Gloss Clear 9740i
- 3M™ Screen Print Matte Clear 9730UV

Application Tapes

See 3M Instruction Bulletin AT-1 to determine what application tape is recommend for the film or finished graphic.

Other Products

- 3M™ Edge Sealer 3950
- 3M™ Edge Sealer Tape 8914
- 3M™ Vehicle Channel Applicator Tool VCAT-2
- 3M™ Roller L (large hard roller)
- 3M™ Roller S (small hard roller)
- 3M™ Textured Surface Application TSA-1
- 3M™ Textured Surface Application TSA-2
- 3M™ Textured Surface Application TSA-3
- 3M™ Textured Surface Application TSA-4

See the 3M Quick Reference Guide for Installation Tools for more information.

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made with all 3M Graphics Products, including 3M Ink purchased through a qualified 3M Distributor or 3M Printing Partner, may register to be recognized with a Certificate of 3M™ MCS™ Warranty. Only graphic manufacturers having a current Certificate of 3M™ MCS™ Warranty are eligible to extend this warranty to their customers.

NOTE: For non-digitally printed Finished Graphics, check your eligibility for the 3M™ MCS™ Warranty by viewing the Warranty Period found within the Product Bulletin or using the warranty selector at www.3mgraphics.com/warranties.

Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	High-performance non-PVC
Film Color	White, opaque
Thickness	**Without adhesive:** 2 mil (0.05 mm) **With adhesive:** 3–4 mil (0.08–0.10 mm)
Adhesive	Pressure-activated (slide, tack, snap-up, reposition) with air release channels
Adhesive Color	Gray
Liner	Polyethylene-coated paper
Adhesion, Typical ***24 hours after application***	**ABS:** 2–4 pounds/inch (0.36–0.72 kg/cm) **Acrylic enamel:** 2–4 pounds/inch (0.36–0.72 kg/cm) **Aluminum, anodized:** 5–7 pounds/inch (0.89–1.26 kg/cm) **Aluminum, etched:** 4–6 pounds/inch (0.72–1.08 kg/cm) **Fruehauf pre-painted panels:** 2–4 pounds/inch (0.36–0.72 kg/cm) **Automotive clear coats:** 3–5 pounds/inch (0.54–0.89 kg/cm)
Tensile Strength	11–13 pounds/inch at 73 °F (1.98–2.34 kg/cm at 23 °C)
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (does not include immersion) Resists occasional fuel spills
Flammability	ASTM E84 report: SV480mC, LX480mC or go to the On-line Product Catalog at 3M.com/graphics **All other test reports:** call 1-800-328-3908

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	Sign and vehicle applications: **Surface type:** flat, with and without rivets, simple curves, compound curves, deep channels and corrugations **Substrate type:** ABS resins, aluminum, chrome, glass, fiberglass reinforced plastics, paint (check adhesion to powder-coated or water-based paints), fiberglass with gel coat **Application method:** Dry **Application temperature (air and substrate):** Flat without rivets: 40–105 °F (4–40 °C) Curves or corrugations with rivets: 50–105 °F (10–40 °C) Compound curves and/or watercraft: 60–95 °F (16–35 °C) Walls: 40–100 °F (4–38 °C)
Applied Shrinkage	Less than 0.015 inches (0.4 mm)
Temperature Range After Application	-65 to +225 °F (-60 to +107 °C) (not for extended periods of time at the extremes)
Graphic Removal	Removable with heat from most substrates within the Warranty Period at 50 °F (10 °C) minimum (air and substrate) 3M makes no claims as to the ease or speed of removal. See 3M Instruction Bulletin 6.5 for removal techniques.

Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at 3MGraphics.com/warranties includes:

- 3M Graphics Warranties Bulletin
  - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- 3M Graphics Warranties Selector
  - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- U.S. Desert Southwest Region Map
  - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

The warranties set forth in this Bulletin are made in lieu of all other express or implied warranties, including any implied warranty of merchantability, fitness for a particular purpose, or arising out of a course of dealing, custom, or usage of trade.

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the 3M Graphics Warranties Bulletin.

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

Warranty Period Matrices - Inkjet

See the 3M Graphics Warranties Matrices at 3MGraphics.com/warranties, for vertical warranty period information specific to your film.

IMPORTANT NOTE

The Adhesion Test Kit must be used to test adhesion characteristics of smooth indoor walls before application in order to be eligible for the 3M™ MCS™ Warranty. See 3M Instruction Bulletin 5.37 for full details.

The 3M Smooth Interior Wall Installation Checklist (located at the end of this Bulletin) must be completed in order for the finished graphic to be eligible for the 3M™ MCS™ Warranty.

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics materials used.
- complete ink drying or curing.
- selection, condition and preparation of the substrate.
- surface texture.
- application methods.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

Factors that Affect Graphic Performance Life for Textured Surface Graphics

- **Installation techniques.** Improper installation techniques result in edge curling, lifting and/or poor adhesion.
- **Adhesion for outdoor graphics.** When testing film adhesion, the film is unlikely to be durable in outdoor applications if it can be easily removed from a textured surface (using a force of <2 pound/lineal inch (0.36 kg/cm)). See Instruction Bulletin 5.37 for the proper Textured Wall adhesion test procedure.
- **Outdoor graphics exposed to water from rain or irrigation systems.** Water can be trapped behind graphics applied outdoors, leading to lifting as well as the creation of mold.
- **Surface temperature.** Textured substrates that reach temperatures in excess of 135°F (57°C) may exhibit lifting, especially in mortar joints.
- **Texture variation.** More than 1/8 inch (3 mm) variation in high and low spots of substrate texture and mortar joints, as well as square cut or undercut mortar joints, may exhibit lifting.
- **Freezing and thawing cycles.** For a textured masonry wall that has both an indoor facing side and an outdoor facing side and no effective moisture barrier, moisture vapor transmission occurs naturally when the indoor surface has a room environment that is warmer and moister than the outdoor surface. When a graphic is applied to the outdoor wall and there are cycles of outdoor freezing and thawing, moisture can be trapped between it and the wall and result in graphic lifting, as well as in spalling both within the wall and on the outdoor facing wall. Such damage can be unsightly and costly to repair.
- **Removal.** Unsound substrates, paint, texture-finished wallboard and textured wallpaper may be damaged upon graphic removal.

Graphics Manufacturing

⚠ CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

Total Ink Coverage

The maximum recommended total ink coverage for this film is:

- **270%** when printed with all approved 3M solvent inkjet inks.
- **280%** when printed with all approved 3M UV inkjet inks.
- **250%** when printed on the Mimaki JV5 Series printer with HS ink series (3M Performance Guarantee).

Do not exceed the recommended total ink coverage for the ink series used on this product. Having too high a total physical ink amount on the product results in media characteristic changes, incomplete drying, overlaminate lifting, and/or poor graphic performance. For additional details about total ink coverage, refer to the 3M Product and Instruction Bulletin for 3M inks or the 3M Performance Guarantee Matrix for OEM inks.

Completely Dry Graphics

IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

Printing on Sheeted Film

3M does not recommend inkjet printing on sheeted film because material handling can contaminate the film's surface and affect print quality.

Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

Cutting

See 3M Instruction Bulletin 4.1 for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin or see the 3M Graphics Market Product Catalog, for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application Tapes

There are two types of application tapes. See 3M Instruction Bulletin AT-1 to determine what application tape is recommended for your film or finished graphic.

Premasking Tape

Increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See 3M Instruction Bulletin 4.3 for complete details.

Prespacing Tape

Holds cut and weeded letters or graphics in place during application and after removing the film liner, while preventing stretching and damage. Use when large amounts of liner are exposed. See 3M Instruction Bulletin 4.3 for complete details.

Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- 3M Instruction Bulletin 2.1 Design of graphics.
- 3M Instruction Bulletin 4.22 Lamination Basics for Inkjet Printed Graphics.
- 3M Instruction Bulletin 5.36. Application Techniques for Automobiles, Vans and Buses. Complete the 3M Pre-Installation Inspection Record found in this Instruction Bulletin prior to manufacturing or applying a graphic to an automobile, van, or bus.
- 3M Instruction Bulletin 5.37 A Guide to Understanding and Applying Graphics to Common Smooth and Textured Wall Surfaces
- 3M Instruction Bulletin 5.4. Application, Fleet Trucks.
- 3M Instruction Bulletin 5.42. Application, Special Considerations for Watercraft. Complete the 3M Pre-Installation Inspection Record found in this Instruction Bulletin prior to manufacturing or applying a graphic to a watercraft.
- 3M Instruction Bulletin 5.5 Application, General Procedures for Interior and Exterior Dry Application
- 3M Product and Instruction Bulletin V-Tools. 3M™ Vehicle Channel Applicator Tools.

IMPORTANT NOTE

UV inkjet inks may crack if too much heat is used during graphic application to complex curves and deep contours as well as around rivets. When using heat during application, make sure the film surface temperature does not exceed 212° F (100° C). For best results, **always do a test application** of a printed graphic to determine how much heat can be used without damaging the image.

IMPORTANT NOTE

3M recommends using additional heat in the post-application process for vehicle graphics. During this process, 3M only recommends using a heat gun to make sure the film surface temperature reaches a minimum of 200° F (93° C) and does not exceed 225° F (107° C).

IMPORTANT NOTE

For textured walls, 3M only recommends using a heat gun with appropriate application tools to apply the film to the textured surfaces.

Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- smooth sliding into position on a substrate;
- fast finger tacking to check position; and
- easy snap-up and repositioning when you need it.

The **snap-up and reposition feature is lost:**

- when firm pressure with a squeegee or other application tool is applied.
- at application temperatures above 100° F (38° C) even if only light finger pressure was used for tacking.
- if any part of the film is removed from the original liner and reapplied to the same or another liner.
- solvent from inkjet ink has not completely dried or cured, which affects both slideability and snap-up.

Working with Non-Visible Air Release Channels

Air release channels are a characteristic of films with Comply™ adhesive that allow trapped air to exit through the edges of the graphic.

- The channels will be damaged and effective air removal affected if the user removes and attempts to change liners or reapply the same liner.
- For the best results, always work from the center out to the edges of the graphic to allow trapped air to exit through the air release channels. If the channels are closed off by firm pressure and air is trapped, use an air release tool to aid in removing air bubbles. See 3M Instruction Bulletin 5.4 for details.

Stretchability

Many finished graphic constructions can be stretched without primer or relief cuts and maintain lift resistance.

- For Automobiles, Vans and Buses, see 3M Instruction Bulletin 5.36 for details and exceptions.
- For Straight trucks, semi-trucks and semi-trailers, see 3M Instruction Bulletin 5.4 for details and exceptions.

Primer

3M recommends the use of the following primers on substrates where the film will be stretched, particularly for the edges of the film. Use primer to maximize a graphic's bond to its substrate.

- 3M™ Tape Primer 94
- 3M™ Adhesion Promoter 111

IMPORTANT NOTE

Air Quality Regulations

Air quality regulations on the state and municipal level may restrict or prohibit the use of certain chemicals that contain Volatile Organic Compounds (VOC's). Check with your local state environmental authorities or air quality district to determine whether use of VOC containing products may be restricted or prohibited.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See 3M Instruction Bulletin 6.5 for details.

Removal

Removal may require heat. 3M makes no claims as to the ease or speed of removal. See 3M Instruction Bulletin 6.5 for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 3 years** from the date of manufacture on the original box.
If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 3 year maximum from the manufacturing date.

Storage Conditions

- 40° to 100 °F (4° to 38 °C)
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to room temperature before use

Shipping Finished Graphics

Flat, or rolled printed side out on 6 inch (15 cm) or larger core. This helps prevent the application tape, if used, from popping off.

Health and Safety

CAUTION

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

LEED v4 Credits

This section describes some of the options for acquiring LEED credits using this product.

NOTE: Each application is different. It is the sole responsibility of the end user to evaluate and determine whether the LEED credits listed below are applicable.

ID+C MR Credit, Interiors Life-Cycle Impact Reduction

- Option 1: Interior Reuse - Product can be used to refinish salvaged, refurbished, or reused nonstructural materials.
- Option 2: Furniture Reuse - Product can be used to refinish salvaged, refurbished, or reused furniture and furnishings.

ID+C, BD+C EQ Credit, Low-Emitting Materials

- Product is GREENGUARD GOLD Certified, meaning it is in compliance with the General Emissions Evaluation requirements

BD+C MR Credit, Building Life-Cycle Impact Reduction

- Option 3: Building and Material Reuse - Product can be used to refinish permanently installed interior elements (e.g. walls, doors).

BD+C MR Credit, Furniture and Medical Furnishings

- Option 3: Multi-attribute assessment of products - Product can be used to refinish permanently installed interior elements (e.g. walls, doors).

O+M MR Credit, Purchasing - Facility Maintenance and Renovation

- Product can be used to refinish permanently installed interior elements (e.g. walls, doors)
- Product is GREENGUARD GOLD Certified, meaning it is in compliance with the General Emissions Evaluation requirements

Building Product Disclosure and Optimization Information

Environmental Product Declaration (EPD) or

Life Cycle Analysis (LCA)LCA information available under Confidential Disclosure Agreement

Raw Material Source and Extraction Reporting

Raw Material source and extraction information for this product is considered to be 3M confidential and is therefore not available

Extended Producer Responsibility

Take-back or recycling program for this product is not available

Bio-based Materials

Product does not meet criteria for bio-based materials

Wood Products

Product does not meet criteria for wood-based product

Materials Reuse

Product can be used to refinish salvaged, refurbished, or reused materials and furniture

Recycled Content

Product does not contain pre- or post-consumer recycled content

Material Ingredient Reporting

Product ingredient information for this product is considered to be 3M confidential and is therefore not available

GreenScreen Benchmark or Cradle to Cradle Certification

Assessment or Certification not available on this product

REACH Optimization

REACH Substance of Very High Concern certifications are on www.3M.com/SDS (US) or 3M.com/SVHC (Europe)

Location Valuation Factor

Based on supply chain, this product would not meet location valuation factor requirements of being extracted, manufactured, and purchased within 100 miles.

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