



Product Description

- For Solvent, UV, and Latex Inkjet printing

Product Features

- Pressure-activated adhesive for easy sliding, tacking, snap-up and repositioning
- Excellent hiding power; flexible; conforms to compound curves, corrugations and rivets
- Many finished graphic constructions can be stretched up to 130% (i.e., a 10 inch [25 cm] piece of film can stretch to 13 inches [33 cm]) without primer or relief cuts and maintain lift resistance; see "Stretchability" on page 6
- Removable with heat
- **IJ180mC-10UR:** Expected Performance Life of 8 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)
- **All others:** Expected Performance Life of 10 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

Quick Links

- [3M Graphics Warranties](#)
- [Technical Information Selector](#)
- [Safety Data Sheets \(SDS\)](#)
- [Flammability Videos](#)

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

Product Name	Description	Features
3M™ Controltac™ Graphic Film IJ180-10	<ul style="list-style-type: none"> • 2-mil, white, vinyl film with a luster finish 	<ul style="list-style-type: none"> • The original film is optimal for trailer & box truck graphics
3M™ Controltac™ Graphic Film w/Comply™ Adhesive IJ180C-10	<ul style="list-style-type: none"> • 2-mil, white, vinyl film with a luster finish 	<ul style="list-style-type: none"> • The original film is optimal for trailer & box truck graphics using Comply™ Adhesive air release channels for fast, easy, bubble-free installations
3M™ Controltac™ Graphic Film w/Comply™ Adhesive v3 IJ180Cv3-10	<ul style="list-style-type: none"> • 2-mil, white, vinyl film with a luster finish 	<ul style="list-style-type: none"> • The industry go-to film is optimal for trailer & box truck graphics using Comply™ v3 Adhesive non-visible air release channels for fast, easy, bubble-free installations
3M™ Print Wrap Film IJ180mC-10	<ul style="list-style-type: none"> • 2-mil, white, vinyl film with a luster finish 	<ul style="list-style-type: none"> • The industry's go-to film is fine tuned for wraps using Comply™ Adhesive with micro technology non-visible air release channels for fast, easy, bubble-free installations
3M™ Print Wrap Film IJ180mC-114 "Transparent"	<ul style="list-style-type: none"> • 2-mil, clear, vinyl film with a luster finish 	<ul style="list-style-type: none"> • Printable clear wrap film with micro technology non-visible air release channels for fast, easy, bubble-free installations
3M™ Print Wrap Film IJ180mC-120 "Metallic"	<ul style="list-style-type: none"> • 2-mil, metallic silver, vinyl film with a luster finish 	<ul style="list-style-type: none"> • Printable metallic wrap film with micro technology non-visible air release channels for fast, easy, bubble-free installations
3M™ Print Wrap Film IJ180mC-10UR	<ul style="list-style-type: none"> • 2-mil, white, vinyl film with a luster finish with Ultra-Removable adhesive. 	<ul style="list-style-type: none"> • Ultra-Removable adhesive. Shorter term option. Fast, clean removal without heat or chemicals.

Recommended Types of Graphics and End Uses

- Wraps for vehicles, straight trucks, semi-trucks and semi-trailers; emblems or striping
 - Horizontal vehicle wraps when protected with 3M overlaminates 8528, 8548G, 8549L, or 8900
- Walls, indoor and outdoor graphics and signs, including point-of-purchase and displays
- Watercraft graphics (above the static water line only)
- Bus graphics
- Small format original equipment manufacturer's (OEM) decorative and identification graphics, cautionary and safety labeling
- IJ180mC-114 can be used for 2 way emblems on windows (excluding buses or other vehicles).

IMPORTANT NOTE

For all stainless steel applications, see [IJ180mC-10SL product bulletin](#).

For all low-surface energy applications, see [IJ180mC-10LSE product bulletin](#).

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™ Controltac™ Graphic Film

3M™ Print Wrap Film

Recommended Compatible Products

See 3Mgraphics.com/warranties for a complete list of compatible products that are approved by 3M for use with the base film covered in this Bulletin and used for the creation of a graphic that may be eligible for the 3M™ MCS™ Warranty or 3M Performance Guarantee.

OEM Inkjet Inks and Printers for the 3M Performance Guarantee

See the [3M Performance Guarantee Matrix](#) for a complete list of compatible OEM Inkjet Inks and Printers that are approved by 3M for use with the base film covered in the Bulletin and used for the creation of a graphic that may be eligible for the 3M Performance Guarantee.

Graphic Protection

- [3M™ Scotchcal™ Gloss Overlamine 8518](#)
- [3M™ Scotchcal™ Luster Overlamine 8519](#)
- [3M™ Scotchcal™ Matte Overlamine 8520](#)
- [3M™ Scotchcal™ Gloss Overlamine 8528](#) *with horizontal vehicle warranty*
- [3M™ Envision™ Gloss Wrap Overlamine 8548G](#) *with horizontal vehicle warranty*
- [3M™ Envision™ Luster Wrap Overlamine 8549L](#) *with horizontal vehicle warranty*
- [3M™ Scotchcal™ Ultra Matte Overlamine 8915](#)
- [3M™ Screen Print Gloss Clear 1920DR](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Piezo Inkjet Protective Clear 8530](#)
- [3M™ Wrap Overlamine Series 8900](#)
- [3M™ Décor Overlamine 8600](#)

Application Tapes

See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommend for your film or finished graphic.

Other Products

- [3M™ Edge Sealer 3950](#)
- [3M™ Edge Sealer Tape 8914](#)
- [3M™ Vehicle Channel Applicator Tool VCAT-2](#)
- [3M™ Roller S \(small hard roller\)](#)
- [3M™ Roller L \(large hard roller\)](#)
- [3M™ Scotchgard™ Paint Protection Film SGH6](#)

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	Cast vinyl
Film Color	Film IJ180, IJ180C, IJ180Cv3, IJ180mC-10, IJ180mC-10UR: White, opaque IJ180mC-120: Silver IJ180mC-114: Clear
Thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 3–4 mil (0.08–0.10 mm)
Adhesive	Film IJ180: Pressure-activated (slide, tack, snap-up, reposition) Films IJ180C, IJ180Cv3; IJ180mC (all versions): Pressure-activated (slide, tack, snap-up, reposition) with air release channels
Adhesive Color	Film IJ180, IJ180C, IJ180Cv3, IJ180mC-10, IJ180mC-10UR: Gray IJ180mC-120: Silver IJ180mC-114: Clear
Liner	Polyethylene-coated paper
Adhesion, Typical 24 hours after application	ABS: 4–5 pounds/inch (0.72–0.89 kg/cm) Acrylic enamel: 3–4 pounds/inch (0.54–0.72 kg/cm) Aluminum, anodized: 7–8 pounds/inch (1.26–1.43 kg/cm) Aluminum, etched: 5–6 pounds/inch (0.89–1.08 kg/cm) Chrome: 4–5 pounds/inch (0.72–0.89 kg/cm) Fruehauf pre-painted panels: 3–5 pounds/inch (0.54–0.89 kg/cm)
Tensile Strength	5 pounds/inch at 73 °F (0.9kg/cm at 23 °C)
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (<i>does not include immersion</i>) Resists occasional fuel spills
Flammability	ASTM E84 reports: IJ180 , IJ180C , and IJ180Cv3 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	Surface type: flat, with and without rivets, simple curves, compound curves, 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 <ul style="list-style-type: none"> • Flat without rivets: 40–100 °F (4–38 °C) • Curves or corrugations with rivets: 50–100 °F (10–38 °C) • Compound curves and/or watercraft: 60–90 °F (16–32 °C)
Applied Shrinkage	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. IJ180mC-10UR is ultra-removable, and does not need heat to remove. 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](https://www.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](https://www.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

See the 3M Graphics Warranties Matrices at [3MGraphics.com/warranties](https://www.3mgraphics.com/warranties), for vertical warranty period information specific to your film.

Warranty Period Matrices - Smooth, Interior Walls

Table A. Warranty Period (in years) for Finished Graphics Applied to Smooth, Indoor Walls Not Exposed to the Elements or in Direct Sunlight. See the 3M™ MCS™ Graphics Warranties Matrices at 3MGraphics.com/warranties for full list of compatible inks.

Film	Overlaminates	Inks		
		UV Inkjet Inks	Solvent Inkjet Inks	Latex Inkjet Inks
IJ180mC-10	8520; 8550M; 8600; 8915;	8	8	8

(i) IMPORTANT NOTE

This warranty period does not include removability.

(i) IMPORTANT NOTE

Warranty Period table above applies to the listed overlaminates used in conjunction with the films listed in the table and applicable Inkjet inks on smooth, indoor wall applications not exposed to the elements and not located in direct sunlight.

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.

Graphics Manufacturing

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.

3M™ Controltac™ Graphic Film

3M™ Print Wrap Film

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.
- **280%** when printed with all approved 3M latex 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, overlamine 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.

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 5.4](#) 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

IJ180mC-120 may exhibit a directional characteristic in its appearance. For the best overall appearance, do not alternate between lengthwise and widthwise graphic panels.

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 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 you remove and attempt 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.
- The mC channels have slightly different characteristics than the other Comply™ channels like Cv3 and C. Working with mC channels may need a more consistent, firm pressure with overlapping strokes compared with other patterns.

Video

Click [here](#) to see how 3M's Comply™ adhesive technology works.

Click [here](#) to see a demonstration of film application and bubble removal.

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.

3M™ Tape Primer 94

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

Maintenance and Cleaning

Use a cleaner designed for general housekeeping such as the Scotch-Brite™ Easy Eraser or Simple Green® and then rinse with clear water. 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. The ease and rate of removal depends on a number of factors. 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 manufacturer's 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](https://www.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 manufacturer's instructions for safe operation.



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