

3M™ Controltac™ Print Film

# 40C-114R

## A clear advantage.

Get the versatility and value of 3M™ Controltac™ Print Film 40C with this dry-apply clear film. With every use you'll see the same thing: quality.

- ▶ Blend printed images with clear areas
- ▶ Clear film, coupled with clear adhesive, allows you to view your graphic from either side of a window or glass
- ▶ Benefit from slideability and air-release channels for fast, easy, bubble-free installations
- ▶ Create eye-catching applications for walls, windows, floors, signs, partial vehicle graphics and more
- ▶ Value priced and removable for easy updates

Make the clear choice, visit

**3M.com/40C**

or call 1-800-328-3908.



Clear film allows customers to see through unprinted areas.

Used with 3M™ Scotchcal™ Gloss Overlaminate 8508

75-5100-2632-3

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## 40C-10R 40C-20R 40C-114R

### Product Description

- For solvent, eco-solvent, UV, and latex inkjet and screen printing
- 3-mil vinyl films

### Product Features

- Available in gloss (10R), matte (20R), and transparent luster (114R) finishes
- Comply™ adhesive for fast, easy, bubble-free installations
- Pressure-activated adhesive for easy sliding, tacking, snap up, and repositioning
- Removable with heat from most surfaces within the expected performance life
- Expected performance life varies depending on end usage:
  - **Most General Signage:** Seven years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)
  - **Indoor Floor Graphics:** One year (unwarranted period for unprinted film protected by [3M™ Scotchcal™ Luster Overlamine 3645](#) applied to a flat, non-vertical surface)
  - **Indoor Carpeted Floor Graphics:** Three months (unwarranted period for unprinted film protected by [3M™ Scotchcal™ Luster Overlamine 8509](#) or [3M™ Envision™ Matte Overlamine 8050M](#), applied to a flat, non-vertical surface)

### Recommended Types of Graphics and End Uses

- General intermediate signage for outdoor and indoor applications
- Interior and exterior building windows and dividers
- Indoor floor and carpet graphics
- Truck graphics on flat areas or simple curved areas
- Partial vehicle wraps on flat areas or simple curved areas

#### IMPORTANT NOTE

3M floor and carpet graphics, except for 3662, are for indoor usage only. They require the use of 3M™ Scotchcal™ Overlaminates 3645, 3647, 8509, 8510M, or 8520, or 3M™ Envision™ Matte Overlaminates 8050M or 8550M, each of which provides a slip-resistant surface.

When applying graphics to carpet, it is solely the user's responsibility to comply with the Americans with Disabilities Act Standards for Accessible Design, which includes, but is not limited to:

**302.2 Carpet.** Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge.

#### 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.

## CAUTION

Loose or damaged floor or carpet graphics may cause a person to slip, trip, or fall. To reduce the risk of slipping, tripping, or falling on floor graphics:

- Use only 3M Overlaminate 3645, 3647, 8509, 8510M, 8520, 8050M, or 8550M, each of which has a slip-resistant surface.
- Properly apply graphics only on hard indoor floors, or carpets with a pile as described in the ADA Standards for Accessible Design, Section 302.2.
- Immediately remove or replace loose or damaged graphics. Do not attempt to repair or readhere them.

Failure to heed this caution may result in personal injury.

## Graphic Protection

Graphic protection can improve the appearance, performance, and durability of a graphic. Use only the graphic protection options recommended for film 40C by this bulletin.

- [3M™ Scotchcal™ Luster Overlamine 3645](#)
- [3M™ Scotchcal™ Matte Overlamine 3647](#)
- [3M™ Envision™ Gloss Overlamine 8048G](#)
- [3M™ Envision™ Matte Overlamine 8050M](#)
- [3M™ Scotchcal™ Gloss Overlamine 8508](#)
- [3M™ Scotchcal™ Luster Overlamine 8509](#)
- [3M™ Scotchcal™ Matte Overlamine 8510](#)
- [3M™ Scotchcal™ Matte Overlamine 8520](#)
- [3M™ Envision™ Matte Overlamine 8550M](#)

## IMPORTANT NOTE

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

## Characteristics

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

### Physical Characteristics

Characteristic	40C-10R	40C-20R	40C-114R
Material	Vinyl		
Film Color	White, opaque		Transparent
Finish	Gloss	Matte	Luster
Thickness	<b>Without adhesive:</b> 3 mil (0.081 mm) <b>With adhesive:</b> 4 mil (0.102 mm)		
Adhesive	Pressure-activated (slide, tack, snap up, reposition) with air release channels		
Adhesive Color	Gray		Clear
Liner	Polyethylene-coated paper		
Flammability	Refer to ASTM E84 reports <a href="#">40C-10R</a> and <a href="#">40C-20R</a> or the online product catalog at <a href="#">3Mgraphics.com</a> . For all other test reports, call: 1-800-328-3908		

## Application Characteristics

Characteristic	Value
<b>Finished Graphic Application Recommendation</b>	<p><b>Surface type:</b></p> <ul style="list-style-type: none"> <li>- <b>Most Graphics:</b> Smooth and flat with or without rivets (expect tenting), simple curves</li> <li>- <b>Indoor Floor Graphics Only:</b> Smooth and flat (no surface texture)</li> </ul> <p><b>Substrate type:</b></p> <ul style="list-style-type: none"> <li>- <b>Most Graphics:</b> Painted metal, other painted substrates, rigid plastic, glass</li> <li>- <b>Indoor Floor Graphics Only:</b> Most indoor floors including tile, sealed concrete, terrazzo, ceramic, and finished wood. Low pile, secured floor carpets.</li> </ul> <p><b>Application temperature:</b> 40°F to 100°F (4.4°C to 38°C) for both air and substrate</p> <p><b>Application method:</b> Dry</p>
<b>Temperature Range After Application</b>	-30°F to +200°F (-34°C to +93°C) (Though not for extended periods of time at the extremes.)
<b>Graphic Removal</b>	Removable with heat from most surfaces within the expected performance life.

## Factors Affecting Graphic Performance Life

The actual performance life of a graphic is affected by:

- The combination of graphic materials used
- Complete ink drying or curing
- Selection, condition, and preparation of the substrate
- Surface texture
- Application methods
- The angle and direction of sun exposure
- Environmental conditions
- Cleaning and maintenance methods

## 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.

- **Sheeted film:** When used on a flat-bed inkjet printer, sheeted film may produce printing defects.
- **Ink limiting:** The recommended total ink limit is 250%.
- **Storing sheeted and stacked graphics:** If you plan to store sheeted and stacked finished graphics for an extended period of time, leave an unprinted margin (about 1/4 in.) on all sides to allow for possible shrinkage before trimming the graphic.

Do not exceed the recommended total ink coverage for the ink series used on this film. Having too much ink on the film results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance.

## 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 Graphics warranty.

See the ink's 3M product and instruction bulletins for more details.

## Cutting

See [3M Instruction Bulletin 4.1](#) for sheeting, scoring, and film cutting details.

## Screen Printing

Formulations and processing conditions can affect ink durability. Refer to your ink's product and instruction bulletins for limitations and proper usage.

## Application and Installation

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

- [3M Instruction Bulletin 5.1](#) Select and Prepare Substrates for Graphic Application
- [3M Instruction Bulletin 5.19](#) Application and Maintenance of Floor Graphics
- [3M Instruction Bulletin 5.36](#) Application Techniques for Automobiles, Vans and Buses
  - Complete the 3M Pre-Installation Inspection Record found in 5.36 prior to manufacturing or applying a graphic to an automobile, van, or bus.
- [3M Instruction Bulletin 5.4](#) Application: Fleet Trucks.
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance and Removal of Films and Sheetings
- [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 when applying graphics to complex curves and deep contours as well as around rivets. During application, ensure 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.

3M recommends using a heat gun in the post-application process for vehicle graphics. Heat the film's surface to a minimum of 200°F (93°C) but no more than 225°F (107°C), or no more than the lowest specified maximum temperature for any other component, whichever is lower.

## Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- smooth sliding into position on a substrate;
- fast finger tacking to check positioning; 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; or
- if solvent from inkjet ink has not completely dried or cured, affecting 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 if you remove and attempt to change liners or reapply the same liner.

For the best results, always work from the center of a graphic out to the edges to allow trapped air to escape. If air is trapped, use an air release tool to help remove air bubbles. See [3M Instruction Bulletin 5.4](#) for details.

## Working with Rivets

- This film will tent when applied over rivets.
- If the rivets are closely spaced, the film will bridge between rivets.
- Tented or bridged film may fail prematurely.
- For the best appearance and durability, 3M recommends cutting around the rivet, removing the circle of film, and then re-squeegeeing around the rivet.

## Film Lifting and Tenting

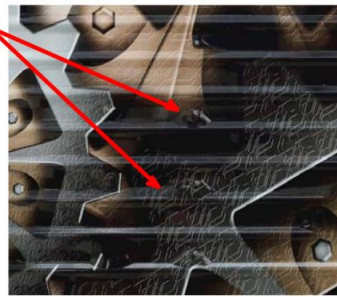
Film 40C is an excellent choice for graphics applied to flat and simple curved surfaces, and even for riveted surfaces if tenting is not a concern. Users should understand the challenges of using this film on complex surfaces to ensure satisfaction with the results.

### **i** IMPORTANT NOTE

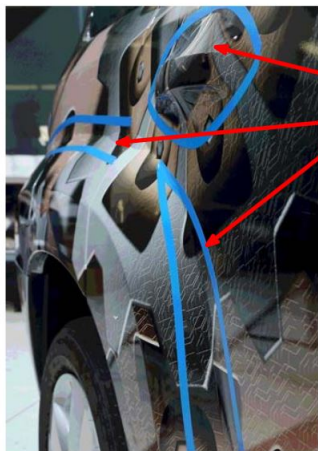
Film 40C is not highly conformable, meaning it remembers its original shape. It is not a good choice for surfaces with complex curves, deep channels, severe contours, or corrugations. Even with the use of primer, heat, tools, and advanced installation skills, the film is likely to lift or tent, either during the application or within hours or days of the application.

The following photos show the risks of applying film 40C to complex surfaces.

Film 40C is not recommended for corrugations. Lifting from corrugations and tenting over rivets.



Tenting over rivets even on relatively flat surfaces.



Tenting over door handle

Lifting in deep contours

For good results on flat or simple curved vehicle surfaces with doors, cut film out around door handle.



## 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 the use of 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 two years** from the date of manufacture on the original box.

If you process the film, its shelf life is changed to **one year** from the processing date, but no later than two years from the manufacturing date.

### Storage Conditions

- 90°F (32°C) maximum
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

### Shipping Finished Graphics

Flat, or rolled printed side out on a 6 in. (15 cm) or larger core. This helps prevent the liner, 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 for 3M products go to [3M.com/SDS](https://www.3m.com/SDS). To request SDS by mail, or in case of an urgent situation, call 1-800-364-3577 or 1-651-737-6501.

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

## 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 the film was purchased. Information found at [3M.com/graphicswarranties](https://www.3m.com/graphicswarranties) includes:

- [3M Graphics Warranties Bulletin](#)
  - This bulletin contains information on limitations, 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.

## Technical Information

The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

## Product Selection and Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment, reviewing all applicable regulations and standards, and reviewing the product label and use instructions. Failure to properly evaluate, select, and use a 3M product in accordance with instructions or to meet all applicable safety regulations may result in injury, sickness, death, and/or harm to property.

## Warranty, Limited Remedy, and Disclaimer

Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

## Limitation of Liability

Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

### Commercial Solutions

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1-800-328-3908  
3M.com/Graphics

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## Typical properties

Details	
Adhesive Controltac/Comply	Controltac™, Comply™
Adhesive Features	Slideability, Air Release
Application	Displays, Walls, Labeling
Application Surface	Simple Curve, Flat
Color Palette	White
Converting Process	Inkjet Printing
Core Size (Imperial)	3 in, 6 in
Factory ISO Certification	No ISO Certification information available
Film Type	Calendered
Imaging Method	Digital Print, Latex Inkjet, Eco-solvent Inkjet, Solvent Screenprint, UV Screenprint
Interior/Exterior	Interior, Exterior
Maximum Service Temperature (Celsius)	90 °C
Maximum Service Temperature (Fahrenheit)	194 °F
Minimum Application Temperature (Celsius)	10 °C
Minimum Application Temperature (Fahrenheit)	50 °F
Minimum Service Temperature (Celsius)	-50 °C
Minimum Service Temperature (Fahrenheit)	-58 °F
Opacity	Transparent, Opaque
Product Code	40C-114R,40C-20R,40C-10R
Product Color	Transparent, White, Matte White
Product Usage	Interior, Vans, Windows, Opaque Signs, Buses, Buildings, Displays, Trucks, Vehicles, Walls, Cars, Metros, Trams, Transportation, Trailers, Floors
Removability	Removable with Heat
Service Life	7 Year
Substrate	Glass, Aluminum, PMMA
Surface Finish	Glossy, Matte