

# Vehicle Wrap

## Top 10 Tips for a Perfect Wrap



Courtesy of bluemedi@

Advances in vinyl substrates and printing technologies are revving up the vehicle wrap business for shops of all sizes. Whether you're applying graphics to cars, vans or other complex surfaces, the following tips and techniques can help you achieve great-looking applications.

### FILM SELECTION

# 1

Choose your graphic materials wisely

To wrap complex surfaces, select materials suitable for special application techniques, including heating, stretching and conforming.

- Use 2-mil, cast vinyl films for vehicle wrap applications. (Unlike calendared films, cast films are manufactured with very little inherent stress in the materials.) While calendared films can be used on flat areas of vehicles for shorter term graphics, only cast films are suitable for application to the compound curved surfaces found on most vehicles.

*Pro's Tip:* Always refer to the manufacturer's Product Bulletins to verify a film's suitability for contours and compound curved surfaces.



# 3

Protect your wraps by using graphic protection

Your overlaminate choice has a significant impact on conformability, ease of application and aesthetics. Pairing a high-performance film with a too-stiff overlaminate, for

# 2

Protect your bottom line by selecting products that are easy to use

- To help reduce installation problems, failures and time, opt for products with adhesives that are easy to slide and reposition. For fast, easy applications, 3M™ Controltac™ Graphic Films\* with Comply™ Adhesive offer effortless slideability and repositionability.
- Films with air release channels virtually eliminate bubbles and help reduce installation costs. For easy, bubble-free application, 3M recommends 2-mil cast vinyl films with the 3M™ Comply™ Adhesive\*.

*\*The best of both worlds: The award-winning 3M™ Controltac™ Graphic Film with Comply™ v2 Adhesive IJ180Cv2-10 enables fast, easy, bubble-free installation even under challenging conditions (see page 3).*

example, can cause installation problems or graphic failure. And glossy overlamination is often desirable to achieve a wet-paint look to the graphics.

- Look for overlaminates that provide high conformability and flexibility as well as UV, weathering and abrasion protection for the underlying graphic. Highly versatile overlaminates include 3M™ Scotchcal™ Gloss Overlaminate 8518 and 3M™ Scotchcal™ Luster Overlaminate 8519: both provide optimum performance in conformability, durability and aesthetics.



### SURFACE PREPARATION

# 4

Clean the vehicle with recommended cleaners; make sure it's dry

- Wash the vehicle with non-lotion detergent and water. Rinse thoroughly and dry. Clean all hidden areas where the graphic may be tucked or wrapped.
- Dry the vehicle indoors, overnight.
- Immediately before graphic application, wipe the vehicle with a recommended solvent cleaner and clean, dry lint-free toweling. This step is required even for freshly painted vehicles.

# 3M



# 5

## Monitor vehicle and ambient air temperatures

Most film manufacturers have vehicle surface temperature recommendations. When applying 3M films to complex contours, verify that:

- vehicle surface temperature is at least 60°F.
- Ambient air temperature is between 60°F and 100°F.

*Pro's Tip: Even after application, keep the vehicle's temperature above 60°F for a minimum of 12 hours before exposing it to cold or moisture. This strengthens the graphic's bond to the contoured areas*

## HANDLING FILM ON COMPLEX SURFACES

Before applying the graphics, identify all areas on the vehicle where graphics may tend to lift—such as concave and convex areas.

The next steps help you reduce problems with lifting.

# 6

## Use a recommended primer such as 3M™ Tape Primer 94, to promote better adhesion where the film will be stretched

- In concave channels, apply a thin layer of primer over most of the area. On convex surfaces, apply a thin layer of primer at the outer edges of the curve.
- Allow the primer to dry for five minutes.

# 7

## Use enough heat to soften the film when stretching it around and into complex curves

- Use as much heat as possible to soften the film—typically, 180°F for convex and concave areas – but be careful not to scorch or blister the film.

- Film cools quickly, so gently stretch the film right away. The film should be too hot to handle with unprotected hands—wear cotton gloves.

- For concave channels, wear cotton gloves and use your fingers or use a squeegee with a low-friction sleeve to conform the heated material into the middle of the channel first.

*Pro's Tip: If force is needed to stretch the film, the vinyl has likely cooled to below 150°F Reheat the film.*

## Vehicle Wrap Product Index

3M offers a choice of graphics materials and a choice of warranties that give you everything you want, including peace of mind.

Product	Benefits
3M™ Controltac™ Graphic Film with Comply™ Adhesive IJ180C	Industry standard for vehicle wraps providing slideability, repositionability and air release.
3M™ Controltac™ Graphic Film with Comply™ v2 Adhesive IJ180Cv2	Same great benefits as IJ180C along with a smoother and glossier appearance.
3M™ Controltac™ Graphic Film IJ180C	Excellent for watercraft applications providing easy installation and reliable adhesion.
3M™ Controltac™ Changeable Graphic Film with Comply™ Adhesive IJ3552	The ultimate in removability. Use this for short-term vehicle wraps when you still need slideability, repositionability and air release.
3M™ Scotchcal™ Perforated Window Graphic Film IJ8171	Great conformability and durability on vehicle wrap windows. The only cast window film on the market.
3M™ Scotchcal™ Gloss Overlaminates 8518	Offers high gloss in a highly conformable overlaminates.
3M™ Scotchcal™ Luster Overlaminates 8519	Industry standard for flexible, conformable cast overlaminates.
3M™ Scotchcal™ Optically Clear Overlaminates 8914	Use on window graphics where optical clarity is required.

# 8

After the film has been applied, heat the stretched portions of the graphic again to reduce the film construction's internal stress

- Adjust the heat source so the film reaches a temperature of about 200°F. Move the heat source slowly across the stretched film surface.

*Pro's Tip:* With a 200°F setting, move the heat source about one inch every 2 to 3 seconds. This technique relaxes the stress caused by stretching the vinyl film.



# 9

Long-term use films may be cut in deep channels to relieve stress

- In general, cutting is not necessary if the previous application techniques have been followed, unless the film is expected to lift in high stress areas or a non-recommended film was used.

*Pro's Tip:* Experience is everything when it comes to wrapping. Contact your 3M distributor about installation seminars for 3M graphics products. You can also view the 3M video, Application Instructions for Complex Contours for Vehicles, at [3Mgraphics.com](http://3Mgraphics.com) (enter Graphic Solution and look under Resources).

## REMOVAL TECHNIQUES

# 10

Manufacturer's recommendation for removal

If you don't know which film has been applied, try to remove a small piece.

- Films with low-tack (changeable) adhesive can generally be removed without heat at 70°F. For films that require heat for removal, heat the surface adequately and remove the film at a low angle to prevent adhesive splitting. Reheat the surface as needed.

- Any residual adhesive and primer can be cleaned off with 3M™ Citrus Base Cleaner.



## Award-Winning Wrap Innovations For Easier, Faster, High-Gloss Results



Voting on products that did the most for their bottom lines, readers of *Wide-Format Imaging Magazine* named two 3M graphics products among the Reader's Choice Top Products of 2007.

**3M™ Controllac™ Graphic Film with Comply™ v2 Adhesive IJ180Cv2-10** delivers the benefits of easy installation and non-visible air release channels for a smoother appearance and higher gloss. Its patented technologies provide effortless slideability, allowing the graphic

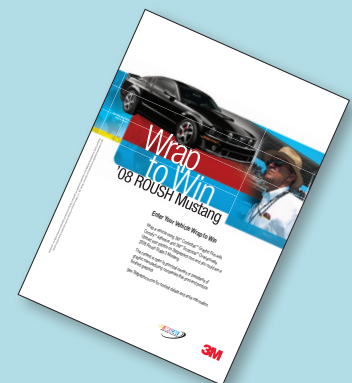
to be repositioned as needed for fast, easy, bubble-free installation even under challenging conditions.

Designed for vehicle wraps and other applications requiring high gloss and superior conformability, **3M™ Scotchcal™ Gloss Overlaminate 8518** helps give vinyl graphics a glossy wet-paint look. Use this overlaminate with 3M's approved portfolio of graphic films with Comply adhesive for fast, easy installation and excellent conformability to complex curves and deep channels.

## Wrap to Win a Roush® Mustang

Show off your company's vehicle wrapping talents using 3M graphics products for a chance to drive away in a Roush Stage 3 Mustang!

For contest rules and details on how to enter the "Wrap for a Roush Contest," visit [www.3Mgraphics.com](http://www.3Mgraphics.com). The contest ends October 1, 2007.



# Wrap Anything the Heart Desires...

3M Graphics Market Center helps customers worldwide build brands by providing total large-format graphics solutions. 3M manufactures or certifies graphic film and graphic protection, flexible substrates, inks and toners, as well as software and hardware used to create large-format finished graphics that are consistent, reliable and durable. For more information call 1-800-328-3908, or go to [www.3Mgraphics.com](http://www.3Mgraphics.com)



Farley's & Sathers Candy Company. 3M™ Scotchlite™ Removable Reflective Graphic Film with Comply™ Adhesive Series 680CR.



University of Minnesota History Wall. 3M™ Scotchcal™ Graphic Film for Textured Surfaces IJ8624 and 3M™ Scotchcal™ Luster Overlaminate 8524.



Gas Tanker. 3M™ Controltac™ Conformable Graphic Film 8620 ES and 3M™ Scotchcal™ Luster Overlaminate 8519.



USPS Mailbox. 3M™ Controltac™ Changeable Graphic Film with Comply™ Adhesive IJ3552C. Ink: 3M™ UV Screen Printing Ink & Clear Coat.



Public Library and Parking Garage. 3M™ Scotchcal™ Translucent Graphic Film IJ3630-20 and 3M™ Scotchcal™ Matte Overlaminate 8520.



## Graphics Market Center

3M Center, Bldg 220-12E-04  
 St. Paul, MN 55144 USA  
 General Information:  
 1-800-374-6772  
 Technical Information:  
 1-800-328-3908  
[www.3Mgraphics.com](http://www.3Mgraphics.com)

Please recycle. Printed in USA.  
 © 3M 2007. All rights reserved.

Fax-on-Demand US/Canada 1-800-364-0768 or International 651-732-6506