



Controltac™

Changeable Graphic Film with Comply™ Adhesive

3552C

For Screen Printing Only

Description

Film 3552C is a flexible, removable 2-mil film, designed for screen printing. It is ideal for short-term graphics for fleet or commercial vehicles and indoor or outdoor graphic applications. These films combine the features found in Controltac and Comply adhesive technologies, including pressure activation, slideability and repositionability, and air release channels for the fastest and easiest bubble-free graphic installations.

Recommended Types of Graphics and End Uses

These end uses are recommended for this film and may be covered by the 3M™ MCS™ Warranty. Certain restrictions may apply; please read the entire bulletin for details.

- Graphics, emblems and striping for automobiles, vans, buses and commercial fleet
- Indoor and outdoor emblems or striping
- Vending or dispensing machines and cooler graphics

Limitations of End Uses

We do not normally warrant other applications, but please contact us to discuss your needs or let us suggest other 3M products.

Important Information about Vehicle Paints

The changeable adhesive used on this film may not perform as well on the new low surface energy paints some manufacturers are introducing on vehicles such as the 2007 Ford vans and Dodge Sprinter vans. Application to such paints in high humidity conditions can be difficult. To avoid premature graphic failure, contact 3M Technical Service at 1-800-328-3908 for recommendations prior to specifying and fabricating this film.

Wall Graphics

This film can be used for wall graphics; however, the user must determine the product's suitability and whether it has the necessary adhesion for their application. The user is solely responsible for the graphic adhesion to the substrate. See Instruction Bulletin 5.37, *Guide to Understanding Walls and Applying Graphics to Walls*.

Unsuitable End Uses for This Film

- Pre-spaced letters or characters
- Graphics applied to:
 - Stainless steel
 - Non 3M-films
 - Flexible rubber and plastic
 - Graphics printed with 3M™ Four Color Screen Printing UV Ink Series 9800 or 9700UV or other colors printed half-tone (graphics already existing on a vehicle)
- Graphic removal from:
 - Applications with poor paint-to-substrate adhesion
 - Aged paint and metals; user must check and approve; surface oxidation or chalking may result in adhesive residue upon removal
 - Improperly cured paint
 - Existing graphics that must remain in tact, except graphics made from selected 3M films
 - Graphics made with 3M™ Scotchlite™ Reflective Graphic Film or 3M™ Screen Print Clear 8925 ES
- Graphics subjected to excessive gasoline spills at gas pumps
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

Important Information about Bus Applications

Film used on buses must not be applied so as to restrict the safe use of emergency window exits. See the most current Instruction Bulletin 5.4 for details.

Compatible Products for 3M™ MCS™ Warranted Graphics

Refer to the durability tables for 3M™ MCS™ Warranty and the 3M Performance Guarantee (page 3) for the proper combination of printers, inks, films and graphic protection.

Screen Printing Ink

- 3M™ Screen Printing UV Ink Series 9800
line color and four color

Graphic Protection Options

- 3M™ Screen Printing Gloss Clear 9720UV
- 3M™ Screen Print Gloss Clear 9800CL

Other Products

- 3M™ Premasking Tape SCPM-3
- 3M™ Premasking Tape SCPM-44X

Characteristics

All values given are typical for unprocessed film unless noted otherwise and are not for use in specifications. Processing film may change certain values. If you have questions about your construction, contact the Technical Service help line at 1-800-328-3908.

Physical Characteristics

Characteristic	Description
Material	Vinyl
Color	White, opaque
Gloss	Luster
Thickness	Without adhesive: 2 mils (0.05 mm) With adhesive: 3-4 mils (0.08-0.10 mm)
Adhesive type	Changeable, pressure-activated with air release channels
Adhesive color	Gray
Liner	Polyethylene-coated paper
Tensile strength	5 pounds/inch at 73°F (9 kg/cm at 23°C) (minimum)
Characteristic	Description
Adhesion <i>24 hours after application</i>	ABS: 3.8 pounds/inch (0.50 kg/cm) Fruehauf pre-painted panels: 1.7 pounds/inch (0.30 kg/cm) Glass: 0.6 pounds/inch (0.11 kg/cm)

Chemical resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water <i>(this does not include immersion)</i>
Flammability	Call 1-800-328-3908 for information

Application Characteristics

Characteristic	Description
Finished graphic application recommendation	Surface type: Flat, with and without rivets, simple curves, moderate compound curves Substrate type: Smooth, rigid vehicle materials such as glass, aluminum, paint, ABS molding Application temperature: <i>(air and substrate)</i> <i>Flat surfaces with or without rivets:</i> 28° to 100°F (-2° to 38°C) <i>Curved surfaces:</i> 60° to 100°F (15° to 38°C)
Applied film shrinkage	0.032 inch (0.80 mm)
Finished graphic exposure temperature	-40° to +150°F (-40° to +66°C)
Graphic removal	Removes easily without heat and chemicals when ambient and substrate temperatures are greater than 28°F (-2°C)

Warranty Information

See the 3M Graphics Center Warranty Brochure for the complete warranty and remedy details. The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

3M™ MCS™ Warranty for Finished Graphics

3M MCS Warranty Finished Graphic Constructions and Durability				
Film 3552C plus...		U.S. Vertical and Non-Vertical Exposure (in years)		
Ink Series	Graphic Protection	Vehicle	Outdoor	Indoor
9800	9720UV 9800CL	Applied to flat and simple curved surfaces		
		2	2	2
		Applied to compound curved surfaces using heat and stretching		
		1	1	1

How to Determine Other 3M MCS Warranty Durabilities

Use the warranted durability for your construction if exposed in a U.S. vertical orientation and use the following formulas to determine other durabilities.

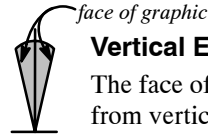
	Exposure		
	U.S. Non-Vertical	U.S. Vertical Desert Southwest	U.S. N.-Vertical Desert Southwest
Percentage of U.S. Vertical Exposure	50% (0.5)	70% (0.7)	35% (0.35)
Example	0.5 x 2 years = 1 years	0.7 x 2 years = 1.4 years	0.35 x 2 years = 0.7 years

Removal Warranty

The removal warranty for this film for standard fleet graphics and signs is the same as the warranted durability for the constructions listed in the warranty that applies to your graphics. Refer to page 1, *Limitations of End Uses, Graphic removal from*, for restrictions.

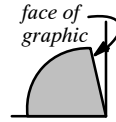
Warranty Notes

Definitions



Vertical Exposure

The face of the graphic is $\pm 10^\circ$ from vertical.



Non-Vertical Exposure

The face of the graphic is greater than 10° from vertical.

Desert Southwest: Graphics exposed to solar energy more than half of the time in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas. A detailed map is available upon request.

Vehicles. Refers to commercial fleet, buses, vans and automobiles unless otherwise noted.

Outdoor and Indoor. Indicates warranties for signs.

Graphic Performance Life

The actual performance depends on the:

- Correct combination of 3M–recommended graphics products
- Ink formulation
- Proper drying or UV curing
- Selection and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning or maintenance methods

Application Outside the U.S.

Contact the 3M organization for that country.

Special Warranty Stipulations for Vehicle Graphics

When applied to a vehicle, a Pre-installation and Inspection Record (see Instruction Bulletin 5.36) must be completed for each vehicle and readily available if a warranty claim is made.

Application to Compound Curved Surfaces

Heat is required during the application. Some shrinkage and film lifting may occur if graphics are stretched during application.

Clears

Apply clears by screen printing and, as needed, UV curing. For details, refer to the ink’s Product and Instruction Bulletins for the clear you are using

Application to Glass

3M accepts no liability for glass breakage when using this film on window graphics. See Instruction Bulletin 5.1 for details.

Graphics Made with Components Not Sold or Recommended by 3M

The 3M MCS warranty does not cover finished graphics made with other manufacturers' inks, film, graphic protection and/or application tapes. The user is solely responsible for the graphic appearance, performance and durability of graphic constructions that include non-3M graphic products.

Warranty and Limited Liability

The following is made in lieu of all other express or implied warranties, including any implied warranty of **merchantability** or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade: all 3M products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

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.

This Product Bulletin does not contain detailed printing, processing, or application procedures. Refer to the 3M Related Literature section to identify the Bulletins you need to process your graphics.

Cutting

The following are common cutting methods for this film. See Instruction Bulletin 4.1 for details.

- Hand cut
- Guillotine
- Cold and hot steel-rule die cutting
- Computer-aided cutting (not for prespaced characters)

Application Tapes

The type of premasking tape to use depends on the ink or clear coat that was applied last. See Instruction Bulletin 4.3 for details.

Do not use this film for cut characters; such use is not warranted.

Graphic Protection	Premasking Tape
Unprinted 1920DR 1930	SCPM-3
9720UV 9730UV 9800UV (no clear coat)	SCPM-44X

Application and Installation

Refer to the **3M Related Literature** section for a list of the Instruction Bulletins that may be needed to apply or install this film.

Apply this film using the dry application method.

Adhesive

This film combines the features found in Controltac and Comply adhesive technologies for the fastest and easiest graphic application. The pressure-activated adhesive allows you to slide, position and reposition the film on the application substrate when tacked with light hand pressure. Applying firm pressure bonds the adhesive to the substrate, and by design, destroys the positionability feature. A network of microstructured air channels in the adhesive allows air to escape laterally beneath the film. An air bubble trapped under the film can be rubbed out easily and usually does not require making an air release hole.

The adhesive characteristics may be reduced under these conditions:

- The film has been removed, even partially, from the original liner and reapplied to the same liner or another liner.
- When applied at higher than 100°F (38°C), the film loses its positionability feature even if only light hand pressure is applied.

About Changeable Films

Changeable films have lower adhesion, usually in the range of 2 to 5 pounds per inch peel-back adhesion, which allows graphics to be removed easily without the aid of heat or chemicals.

Film Has a Memory

Film, including film with changeable adhesive as used in vehicle graphics, has a memory for its original shape. Consequently, stretching the film does result in some shrinkage as it attempts to return to its original dimensions. As it shrinks, you can expect minor tenting and lifting. Applying heat during stretching and again after application helps void the film's memory, which reduces tenting and lifting. This is discussed in the most current version of Instruction Bulletin 5.36.

Special Installation Techniques

Read and follow *Application: Special Considerations for Complex Contour Surfaces* in Instruction Bulletin 5.36.

Maintenance and Cleaning

Use a cleaning system designed for high-quality painted surfaces. They 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 for general maintenance and cleaning information.

Removal

When properly removed, 3M-recommended films for temporary vehicle graphics will leave little or no adhesive residue. These films will not damage a soundly painted surface or a previously applied 3M vinyl graphic unless the surface was corroded, rusted, blistered, scratched or previously damaged, or if it was damaged since the graphic application.

Shelf Life, Storage and Shipping

Activity	Recommendation
Shelf life	Total shelf life: 2 years Up to 2 years unprocessed, OR process within 1 year and apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none">• 100°F (38°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 5 inch (13 cm) or larger core; processed film may block if wound too tightly

Attention: Authorized Graphics Manufacturers

Visit our password-protected website for exclusive product information. Certain restrictions apply.

1. Go to www.3mgraphics.com.
 2. Select a country.
 3. Click *Login* on upper left side of screen.
 4. Click Register.
 5. Enter authorization code: **CGD_SGN**.
 6. Complete the information and submit. An e-mail will be sent when your authorization is completed.
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Health and Safety



When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at www.3M.com/MSDS.
- 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.

3M Related Literature

Before starting any job, be sure you have the most current Product and Instruction Bulletins.

The information in 3M Product and Instruction Bulletins is subject to change. Current Bulletins, as well as a list of all Bulletins updated within the last three months, are available at www.3mgraphics.com or through our Fax-on-Demand system. Any warranty, if offered, is based on information in the appropriate Bulletin(s) that was current at the time you purchased the 3M products. The following Product and/or Instruction Bulletins provide the information and processes you need to properly make the graphics described in this Bulletin.

Fax-on-Demand phone numbers:
 United States or Canada: 1-800-364-0768
 International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
Product Bulletins		
3M™ Screen Printing Ink Series 9700UV	9700	2507
3M™ Screen Printing UV Ink Series 9800	9800	2513
Instruction Bulletins		
Design of graphics	2.1	5501
Screen printing with ink series 9700UV	3.4	6004
Screen printing with UV ink series 9800 - line color	3.20	6020
- 4-color	3.21	6021
Scoring and cutting	4.1	6501
Using 3M application tapes; premasking and prespacing for films	4.3	6503
Applying 3M graphic films with Comply™ Adhesive	5.31	7031
Application, substrate selection, preparation and substrate-specific application techniques	5.1	7001
Application: Special considerations for complex contours of automobiles, vans and buses and inspection forms	5.36	7036
Application, special applications and vehicles	5.4	7004
Application, general procedures for interior and exterior dry applications	5.5	7005
A guide to understanding and applying graphics to common interior wall surfaces	5.37	7037
Storage, handling, maintenance, removal	6.5	8505

Subject	Bulletin No.	FOD No.
Warranties		
3M Graphics Market Center Warranty Brochure		9503

3M, Comply, Controltac, and MCS are trademarks of 3M Company.

Bulletin Change Summary

FUNCTIONAL CHANGES: Important information about low surface energy paints has been added to page 1. Note that prespacing cut graphics is not recommend or warranted for this product.

Warranty information has been reorganized for more clarity.

3M has dropped the Plus after the brand name Controltac.



Commercial Graphics Division

3M Center, Building 220-12E-04
 PO Box 33220
 St. Paul, MN 55144-3220 USA
 General Info. 1-800-374-6772
 Technical Info. 1-800-328-3908
 Fax 1-651-736-4233

3M Canada

P.O. Box 5757
 London, Ontario
 Canada N6A 4T1
 1-800-265-1840
 Fax 519-452-6245

3M México, S.A. de C.V

Av. Santa Fe No. 55
 Col. Santa Fe, Del. Alvaro Obregón
 México, D.F. 01210
 52-55-52-70-04-00
 Fax 52-55-52-70-22-77

3M Puerto Rico, Inc.

Puerto Rico Industrial Park
 P.O. Box 100
 Carolina, PR 00986-0100
 787-620-3000
 Fax 787-750-3035

Fax-on-Demand document number: 1016 Fax-on-Demand ordering: 1-800-364-0768 US/Canada; 1-651-732-6506 International
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