



# Application Instructions for Custom Design Vehicle Markings from 3M™ Scotchlite™ Reflective Film

Information Folder 4.7

March 2001

Replaces IF 4.7 dated June 1997

## Health and Safety Information

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet, and/or product label of chemicals prior to handling or use. Electronically, visit us at [www.3M.com/us](http://www.3M.com/us) and select MSDS search.

## Description

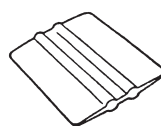
3M™ Scotchlite™ Removable Graphic Film with Comply™ Performance Reflective Film and Scotchlite™ Plus Reflective Film provide good durability and will withstand severe weather and use conditions. They are designed for easy hand application to clean vehicles. When viewed by reflected light, they have the same appearance in daytime and night.

Markings may consist of numbers, legends, emblems, shields and striping. The film will have either pressure sensitive changeable, positionable, or Comply™ adhesive. A white premask tape, to aid application, may be on the surface of the marking. It should be removed **after** the marking is applied to the vehicle.

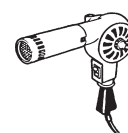
All instructions must be read and understood before starting application to ensure optimum product performance.

## Tools

1. Plastic Applicator, PA-1 (Blue or Gold)
2. Razor blade or scissors
3. Pin, or sharp, round pointed tool
4. Industrial heat gun
5. Masking tape, 1"
6. Clean cloth and recommended cleaning solvent
7. Low friction sleeve



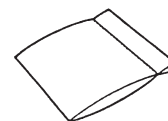
Tool #1



Tool #4



Tool #3



Tool #7

## Temperature

The markings can be applied when air and application surface temperatures are above the minimums specified in the following table. Surfaces may be heated with a heat gun to raise their temperature. If applied at temperatures above 110°F, care must be taken to avoid pre-adhesion.

| Scotchlite Film Series | Minimum Application Temperatures |
|------------------------|----------------------------------|
| 480*                   | 32°F (0°C)                       |
| 550                    | 55°F (13°C)                      |
| 580                    | 55°F (13°C)                      |
| 690 Plus*              | 50°F (10°C)                      |
| 680 Plus               | 50°F (10°C)                      |
| 681*                   | 50°F (10°C)                      |
| 680CR                  | 40°F (4°C)                       |

If outside temperatures are below minimums listed above, park the vehicle inside a heated building overnight to allow the vehicle surface to warm. If the weather is hot and sunny, the application must be done out of direct sunlight. Adherence to these instructions regarding application temperature will allow the adhesive to bond properly.

\* To be replaced by Series 680CR.

## Surface Preparation

All surfaces, including the door wrap areas, must be considered contaminated. Clean and dry all application surfaces with the following recommended procedures in this order.

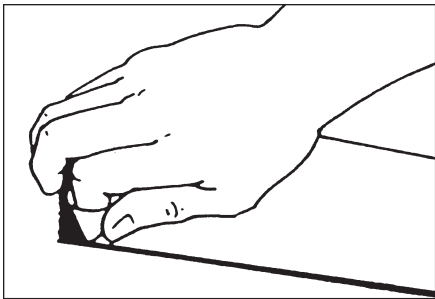
1. Wash surfaces with detergent and water.
2. Saturate a clean paper towel with recommended solvent and wipe the surface. 3M Brand General Purpose Adhesive Cleaner and Wax Remover Part No. 8984, Sherwin Williams R7-K156 Sure Will Klean, Dupont's Prep-Sol Brand Solvent Cleaner 3919S, denatured alcohol or isopropyl alcohol are the recommended solvents.
3. Dry the surface with lint-free paper towels before the solvent evaporates. If using isopropyl alcohol or denatured alcohol, use extra care in this step. Alcohol may evaporate before it can be wiped away.

## General Application

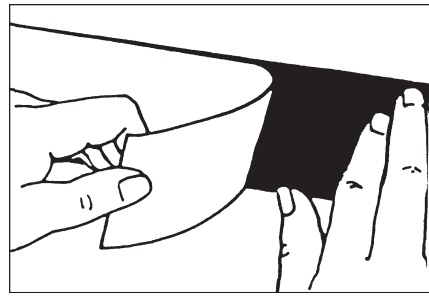
### Controltac™ Adhesive and Comply™ Performance

3M™ Controltac™ Adhesive has been designed to facilitate the positioning of the sheeting by allowing it to be moved freely on the application surface. The adhesive allows for application without detergent and water. Comply™ performance adds a unique characteristic to the film adhesive that enables faster installation with very few air bubbles.

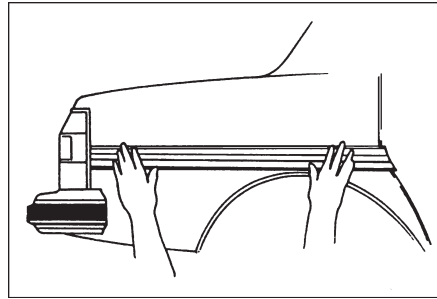
1. Wipe the face of the film and the plastic applicator (squeegee) with a soft cloth to remove any surface dust.



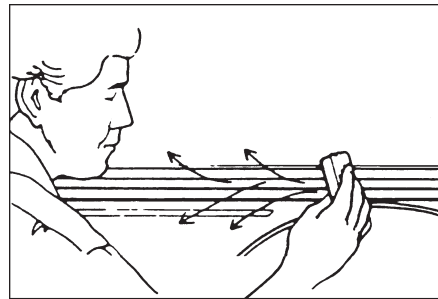
2. Bend the film corner toward the front face with the ball of the thumb or fingernail.



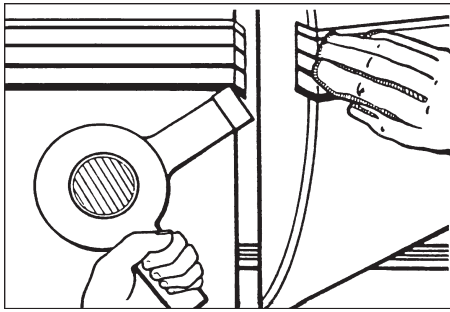
3. Place the film face down on a clean, dust-free surface and remove the liner from adhesive by pulling it back upon itself, starting with the lifted corner.



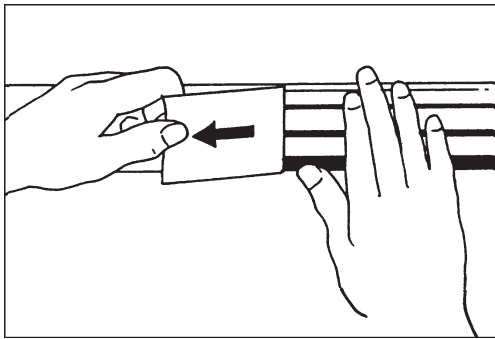
4. Gently position the film on the application surface. The film can be moved about on the surface until pressure is applied. Prevent any preadhesion by avoiding any pressure on the film. When properly aligned, tack the marking in place by finger pressure at two points on the upper edge. If realignment is required, lift the marking from the surface and reposition.



5. When the film is in proper position, press it to the surface with the squeegee using firm, overlapping strokes. Start at the center and push the air out to the closest edge. Do not use hands and fingers in place of the squeegee.
6. When nearing the points on the upper edge that are lightly tacked down, lift them up from the surface and squeegee them down as the application proceeds to the edges. This will prevent wrinkles at the tack points.



7. If the marking has been positioned properly, there will be sufficient material for wrapping the hem flange areas. The hem wrap is best accomplished by heating the excess film with a heat gun and applying it.



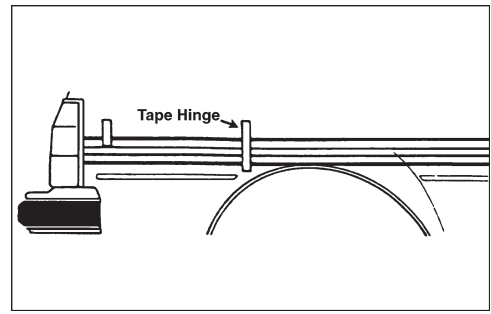
8. If the marking is premasked, remove the pre-mask after applying the marking by pulling the tape back at a 180° angle.

9. Inspect application for bubbles and/or areas not completely applied. Squeegee the trapped air into a smaller, tighter bubble. Pierce the bubble near one edge with a pin. Squeegee the air out towards the pinhole.

10. Resqueegee the edges with very firm pressure. **This is very important!** Any area of the edge that is not firmly resqueegeed may allow water seepage, and will result in edge lifting.

### Pressure Sensitive and Changeable Adhesive

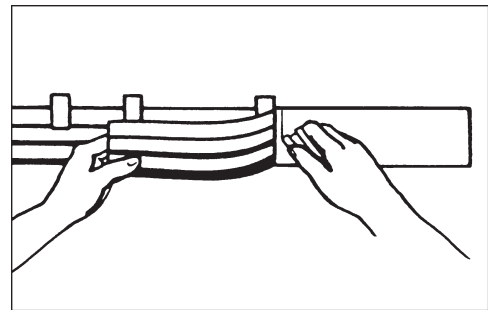
Film with pressure sensitive adhesive requires different application techniques than film with Controltac adhesive. Unapplied film with pressure sensitive adhesive must be held away from the surface to prevent bubble formation. To ensure that the adhesive does not bond to the surface prematurely follow the instructions.



### 1. Large Panels of Film

#### a. The hinge method

Tape the section of the marking to the vehicle with a vertical piece of masking tape in the center. This is the hinge. With the tape hinge in place, adjustments can be made. When the marking is in position, make sure it is securely held by the hinge.



Fold one half of the sheet over onto the other, so that the part to be applied is flat against the vehicle. Peel off the liner to the hinge while holding this part flat. Cut this piece of the liner off near the hinge. Do not tear it off. Unfold the remaining premask and film, remove the liner, and squeegee it down from the hinge out. Remove the hinge. It is not needed anymore since half of the section is securely in place. Squeegee it to the surface from the applied section out.

Remove the premask by peeling it off at a 180° angle. The film will lift off if it is not folded back on itself at this angle. It is very important that the edges are thoroughly resqueegeed.

## Letters and Numbers

Letters and numbers must be applied by the recommended methods for a good appearance. All letters and numbers must be premasked and pre-spaced with SCPM-3. They are much easier to apply than individual letters. If they are not already premasked, follow Information Folder 4.4, "Prespacing and Premasking Instructions for 3M™ Scotchlite™ Reflective Film."

All application surfaces must be clean. This includes the reflective sheeting the lettering will be applied on top of. Do not wash newly applied film with an automatic washer or soap and water. Gently wipe the surface with a solvent. Before starting, check the solvent's effects on the sheeting in an inconspicuous area. The solvent must not affect the smooth, top surface of the sheeting to be an acceptable cleaning agent. Isopropyl alcohol should be an acceptable solvent.

To apply the premasked letters, use the hinge method as outlined above. Be careful to resqueegee all edges.

## Notes on the Use of the Plastic Applicator

1. Hand or finger pressure must never be substituted for plastic squeegees.
2. The squeegee used must be firm and free of nicks. The corners should not be rounded or worn down.
3. Always firmly squeegee the air out to the closest edge. This will minimize air bubbles and stretching of the sheeting.
4. The squeegee should tilt at an angle in the direction of application for more effective air removal.

## Note on Washing

After the film is applied, the vehicle should not be washed for 48 hours to allow the adhesive to bond permanently. High pressure washers can force applied sheeting off a surface if they are not set correctly. Nozzles must be at least twelve inches away from the surface. They should be pointed at no more than a 45° angle from perpendicular. The pressure must be less than 1000 psi.

## Literature Reference

IF 4.4      Prespacing and Premasking  
Instructions for 3M™ Scotchlite™  
Reflective Film

## FOR INFORMATION OR ASSISTANCE

**CALL:**

**1-800-553-1380**

**Fax-on-Demand in the U.S. and Canada:**

**1-800-887-3238**

**Internet:**

**[www.3M.com/tcm](http://www.3M.com/tcm)**

3M assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where reference is made in literature to a commercially available product, made by another manufacturer, it shall be the user's responsibility to ascertain the precautionary measures for its use outlined by the manufacturer.

### Important Notice

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith.

Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

# 3M

**Traffic Control Materials Division**  
3M Center, Building 225-5S-08  
P.O. Box 33225  
St. Paul, MN 55133-3225  
[www.3M.com/tcm](http://www.3M.com/tcm)

**3M Canada**  
P.O. Box 5757  
London, Ontario N6A 4T1

**3M México, S.A. de C.V.**  
Av. Santa Fe No. 55  
Col. Santa Fe, Del. Alvaro Obregón  
México, D.F. 01210



40% Pre-consumer waste paper  
10% Post-consumer waste paper

© 2001, 3M IPC. All rights reserved.  
75-0300-9036-1