



# Cutting and Application of 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 190 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 8619 ES

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## Description

This bulletin gives specific instructions for the application of 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 190 and 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 8619 ES to 3M approved substrates\*. Graphics can be applied horizontally, on a large table, on the floor, or vertically with a back support. If applied on the vehicle, support from the back side of the PVC coated curtain material is necessary.

**\*Note:** The chosen curtain material must be submitted to 3M Technical Services for adhesion testing. Please allow a minimum of three weeks for the completion of these tests

## Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

## Surface Preparation

All surfaces must be considered contaminated and must be cleaned prior to the application of marking film.

The recommended procedure is as follows:

1. Wash the surface with detergent and water and dry before solvent wiping.
2. Saturate clean, lint free paper towel with isopropyl alcohol, wipe the substrate surface, and, with a fresh paper towel, dry the surface before the solvent evaporates. See the health and safety section of this bulletin.

**Caution:** An application surface that has been prepared as described above can still provide poor adhesion in the area of seams due to liquid retention caused by capillary action. This problem can be overcome by allowing a cleaned curtain to sit overnight prior to application of markings, or by the use of a heat gun to dry out retained liquid.

## General Requirements

**Important:** The following information should be carefully reviewed before proceeding with individual instructions.

## Temperature

The graphic can be applied when air and application surface temperatures are between 10°C (50°F) and 38°C (100°F).

## Tools

Plastic Applicator, PA-1 (Gold)\*  
Rivet Brush, RBA-1\*  
Low Friction Sleeve, SA-1\*  
Pin or 391X air release tool\*  
Industrial heat gun  
Spray Bottle  
Tape Measure  
Marking Pen  
Scissors

*\*Available from 3M Commercial Graphics Division*

## Recommendations for Cutting Film

**Flat Bed Cutting** - Cutting should be done with a 40° double edge blade. The minimum cutting height is 10cm (4") upper case Helvetica Medium.

**Drum Cutting** - A 45° single edge blade is recommended. The minimum cutting tolerances are the same as above.

**Kiss Cutting** - Cold Die Kiss Cutting using Steel Rule Dies may be used.

Heated magnesium die cutting is **NOT** recommended.

## Storage

Unapplied markings may be stored for a period of up to 12 months. The markings must be stored flat or wrapped film side out on a core with at least a 12cm (5") diameter. The markings must be stored in a clean area, free from excessive moisture and direct sunlight, with a maximum ambient temperature of 38°C (100°F) or less.

## Registry Marks

As an aid for aligning and registering markings on surfaces prior to application, registry marks may be made on top or side edge with a lead pencil, marking pen or small pieces of masking tape. **Note:** Do not use a chalk line, china marker or grease pencil.

## Markings Applied to Older Curtains

3M™ Controltac™ Plus Curtain-Sided Vehicle Film 190 and 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 8619 ES markings are intended to be applied to new PVC curtains which have been approved by 3M. Markings may be applied to curtains up to three months old, providing they are in good condition and have been regularly cleaned. However, this may affect the 3M warranty; please contact your local 3M Technical Service Representative for further information.

## Positioning of Graphics

**Note:** Controltac Plus curtain-sided vehicle film 190 and Controltac Plus curtain-sided vehicle film 8619 ES markings are not warranted where the film is applied below the buckles or underneath the rubber pelmet at the top of the trailer. In both cases, the graphic can be damaged by the constant abrasion.

## Application Procedure

Before starting the application, several key points should be stressed:

1. The surface must be properly cleaned as previously outlined.
2. Air and surface temperatures are between the minimum and maximum specified.
3. A rigid surface on the backside of the curtain is in place.
4. Use firm pressure with a gold plastic applicator during application.
5. Graphics using film 190 must be covered with 3M application tapes (SCPM19 or SCPS-100). Graphics using film 8619 will normally be covered with a transparent application tape
6. Both Controltac Plus curtain-sided vehicle film 190 and Controltac Plus curtain-sided vehicle film 8619 ES are positionable and a dry application must be used. A wet application **CANNOT** be used.
7. If graphics are overlapped, a maximum of 10cm overlap is recommended.
8. Resqueegee all edges before and after removal of the premask. Use a Low Friction Sleeve (SA-1) to prevent scratching of unpremasked markings.

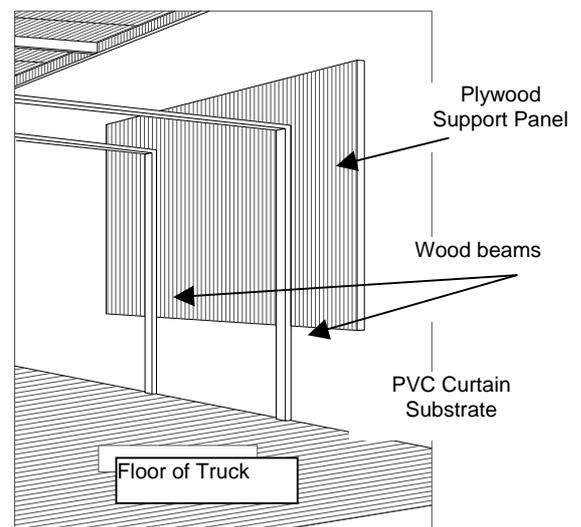
9. After application remove premask at a 180° angle. **Note:** 8619 graphics use a transparent application tape that **MUST** be removed after application.
10. Puncture air bubbles with a pin or round pointed tool (not a razor blade) after application, then resqueegee area.
11. Resqueegee all edges, overlaps and areas covering seams and reinforced parts of the curtain, using heat. If the film has to be applied over structured seams, the following procedure is recommended:  
To conform the film to the structured substrate surface, first use heat gun and rivet brush on the film with application tape still applied. After removal of the tape, use rivet brush (moderate pressure) and the 391X air release tool.
12. The curtain must not be opened or rolled up for at least **16 hours** after graphic application.

## Cleaning

1. Do not clean the Controltac Plus curtain-sided vehicle film 190/Controltac Plus curtain-sided vehicle film 8619 ES markings for at least 48 hours after application.
2. Both 190 and 8619 markings can be cleaned at a normal truck wash, however, avoid cleaning the markings with high pressure steam cleaners. Cleaning solutions should be in the range of pH4 to 10 (neither strongly acidic or alkaline). **DO NOT USE** organic solvents.
3. With high pressure cleaning procedures, the maximum pressure must not be higher than 1200psi (80 bar), the water temperature maximum 70°C (160°F) and the distance between the vehicle's PVC curtain material and nozzle at least 30cm (12") with a 90° angle perpendicular to the curtain surface.

## Back Support for Application on Vehicle

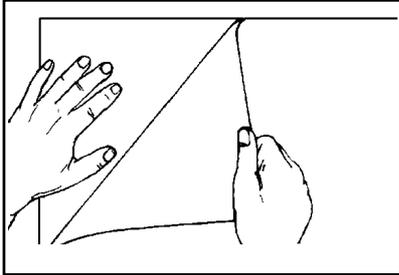
Mount plywood panel on inside of vehicle to provide back support for application to PVC curtain material.



## Application Sequence

### Position Marking

Register position of marking on the vehicle surface following the recommendations under “General Requirements”.



### Remove Liner

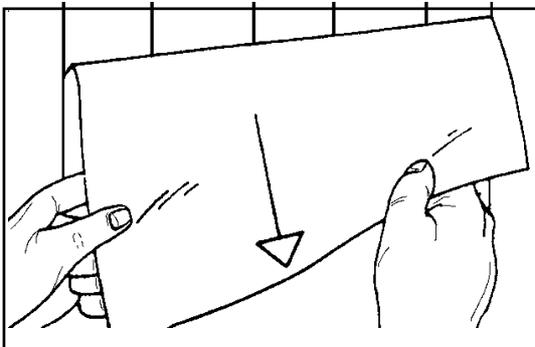
Before application, lay marking against vehicle side or on a clean flat surface. Start removal of the liner by sharply flicking the marking edge toward the face of the marking with the ball of the thumb or a fingernail.

A small bend at the corner of an edge will cause the liner to separate from the marking. Pull the liner away in a continuous motion at a 180° angle. If liner is scored, bend at seam and remove.

**Note:** Always remove the liner from the marking rather than the marking from the liner. A “raspy” sound is typical when removing the liner from this type of film. The adhesive will not feel tacky. It is formulated to adhere specifically to PVC curtain material.

### Apply Marking

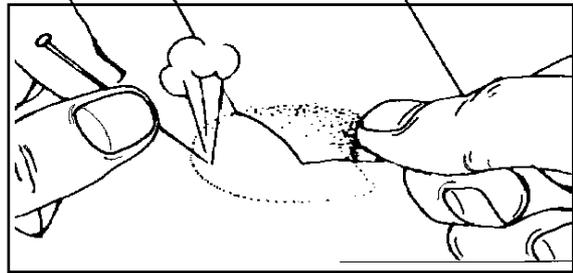
The application procedures used will vary with the size and shape of the marking. Therefore, follow the appropriate procedures outlined for the size of graphic in the section labelled “Application Procedure Method”.



### Remove Application Tape

Remove premasking or prespacing tape from the face of the film by pulling tape back upon itself at a 180° angle as illustrated.

**Important:** Resqueegee all edges, overlaps and areas covering seams and reinforced parts of the curtain, using heat. If the film has to be applied over structured seams, the following procedure is recommended.

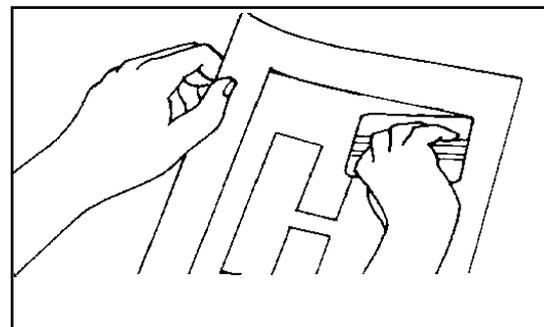


### Remove Entrapped Air

Inspect the marking in the flat areas for bubbles. To eliminate the bubbles, puncture the marking at one end of the bubble with a pin and press out entrapped air with the thumb or squeegee moving toward the puncture. Lift the film gently with the pinpoint to slightly enlarge the hole for easy air release, then resqueegee.

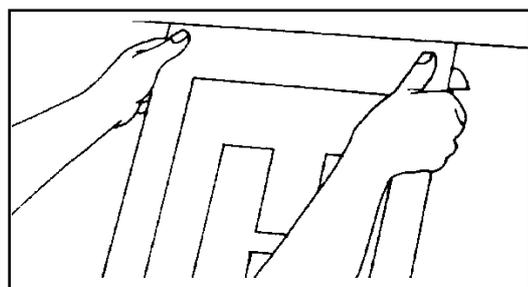
### Direct Method

1. Remove entire liner from adhesive side of marking.
2. Align marking and press one edge to surface with finger. The PVC coated canvas should be without wrinkles for the application.

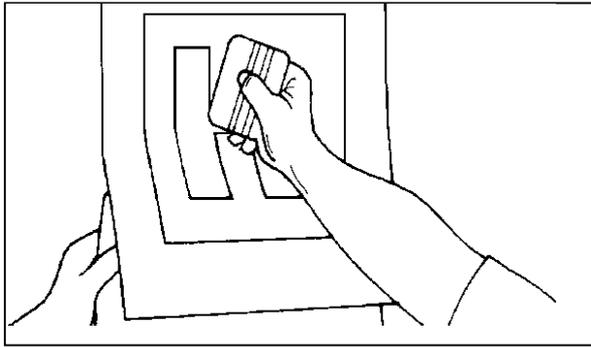


3. With plastic applicator, apply remaining marking using firm overlapping strokes.

### Indirect Method



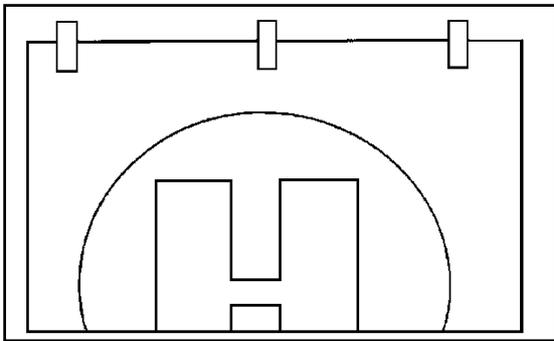
1. Expose 2.5-5cm (1-2”) of adhesive and register edge of marking along registry line and press adhesive to surface with finger pressure.



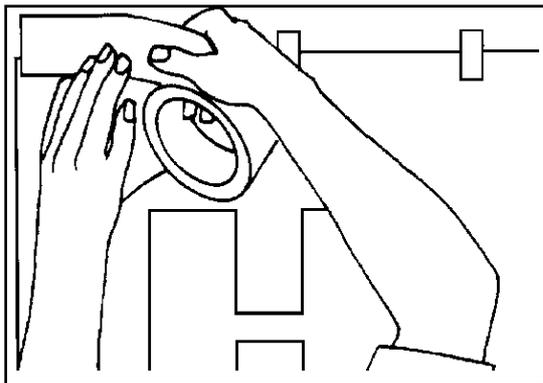
2. Squeegee marking into place with firm overlapping strokes across width of marking, while removing remainder of liner a few centimetres at a time to prevent pre-adhesion.

### Markings Larger than 0.4 Square Metre (4 Square Feet)

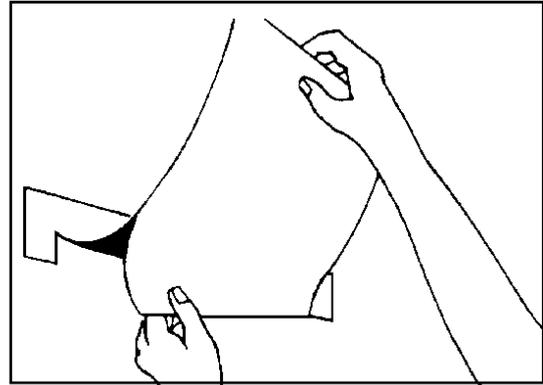
#### Top Hinge Method



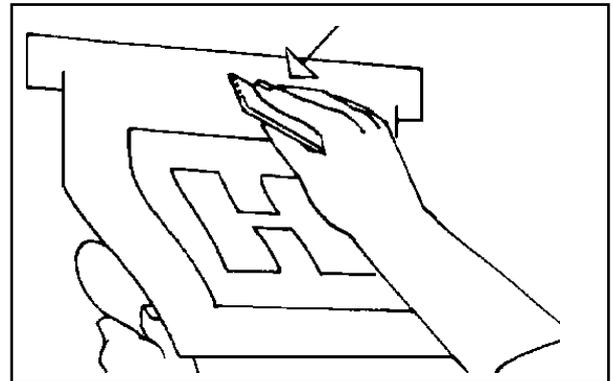
1. Tape marking into position with small pieces of masking tape.



2. Apply 5 - 7.7cm (2-3") masking tape over top edge to serve as a hinge.

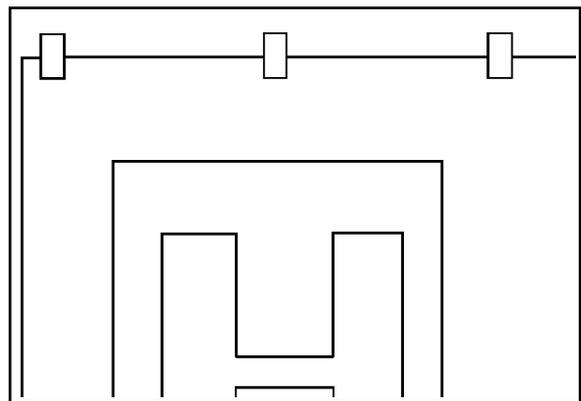


3. Raise marking up over top hinge and peel the liner back a few centimetres at a time while squeegeeing marking to surface with firm overlapping strokes, beginning at top centre and working down and outward towards each edge.

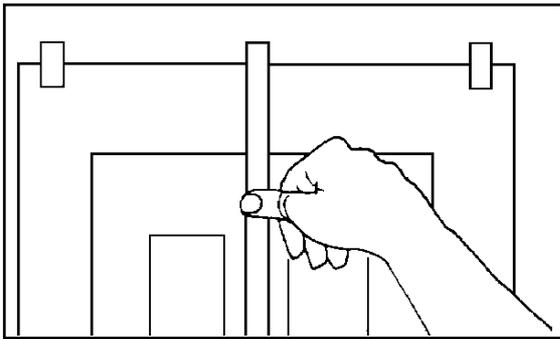


4. Hold marking away from surface with one hand and allow adhesive to touch only as pressure is applied.

#### Centre Hinge Method

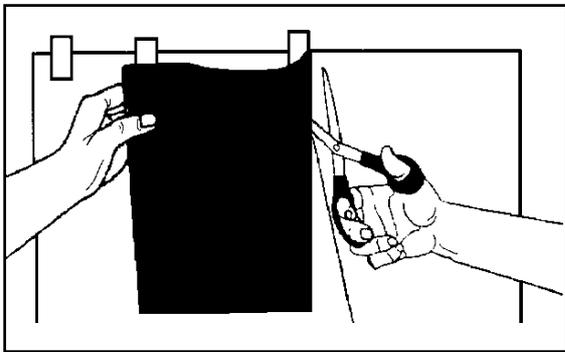


1. Tape Marking into position with small pieces of masking tape.

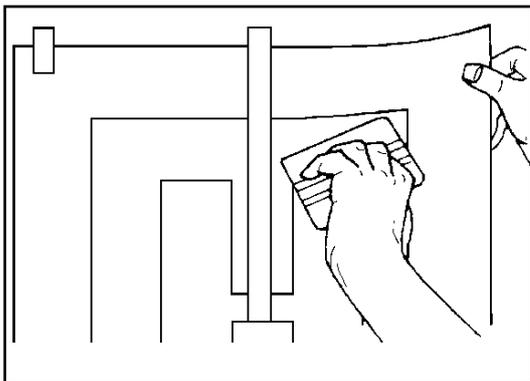


2. Apply 2.5-5cm (1-2") masking tape hinge through centre of marking either vertically or horizontally.

**Note:** It is recommended that the masking tape be placed perpendicular to the long dimension of the marking.

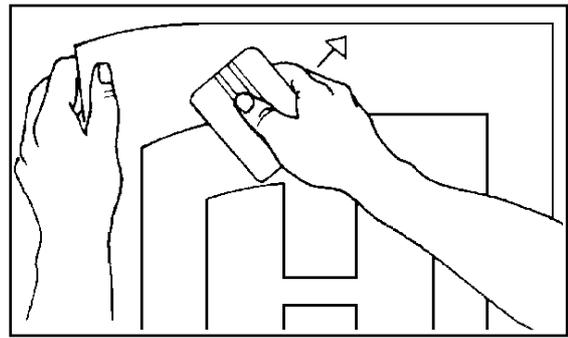


3. Fold half of marking back over hinge, peel liner off marking to tape hinge, cut liner along hinge and discard.



4. Squeegee marking down, beginning at tape hinge.

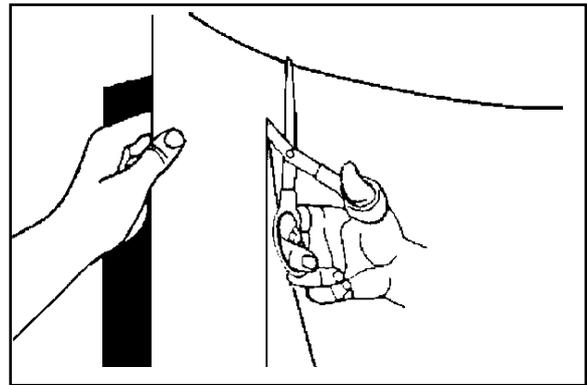
5. Remove masking tape hinge.



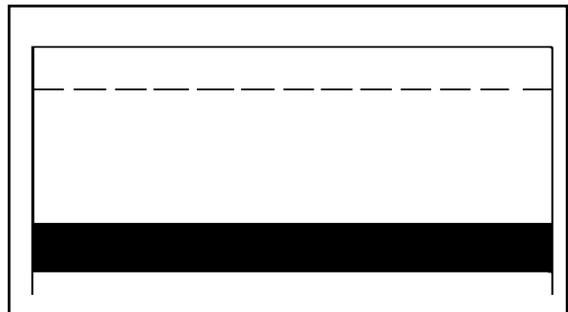
6. Fold over the other half of marking. Remove liner and apply as above.

### Split Liner Method

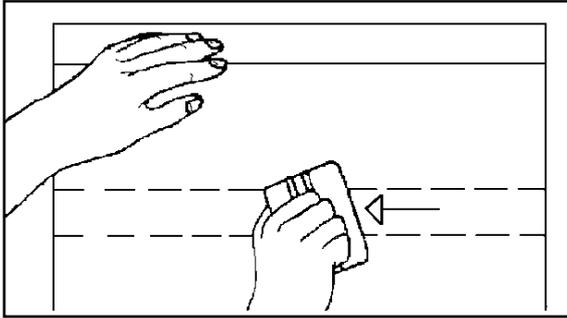
This method can be used to advantage when masking tape is not available or for application to horizontal surfaces.



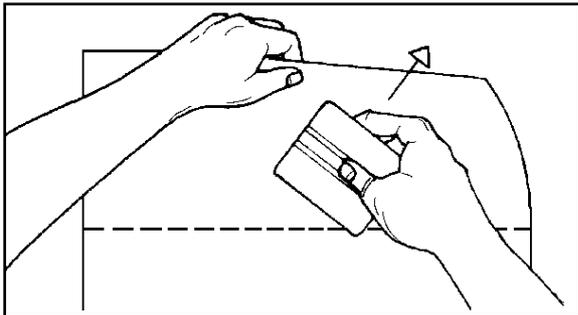
1. Place marking face down on a flat surface. Peel back and cut off liner approximately 1/3 of the width of the marking from one edge.



2. Replace liner paper back onto the adhesive, exposing about 2.5-5cm (1-2") of adhesive in the centre of the marking.



3. Apply marking along line of exposed adhesive. This will now act as a hinge.

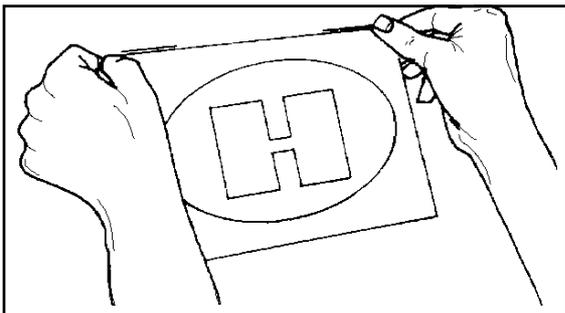


4. Remove the liner and apply marking using the same technique as the centre hinge method.

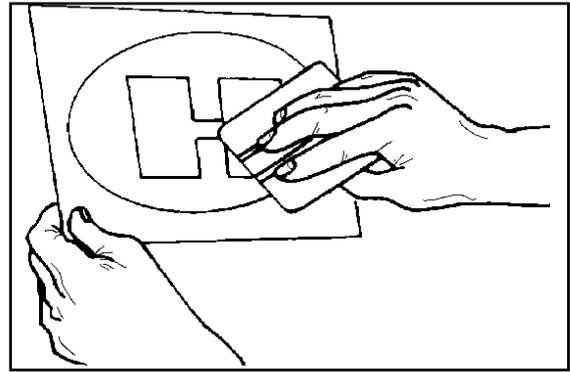
#### Scored Liner Method

If the marking has a scored liner, any of the application methods previously mentioned may be used.

#### Small Prespaced Markings



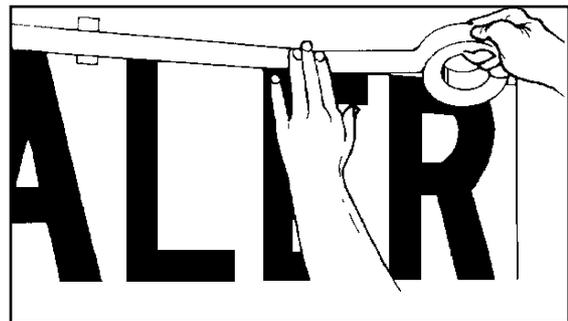
1. Remove liner, then position legend on application surface placing top corners of prespacing tape on registry marks.



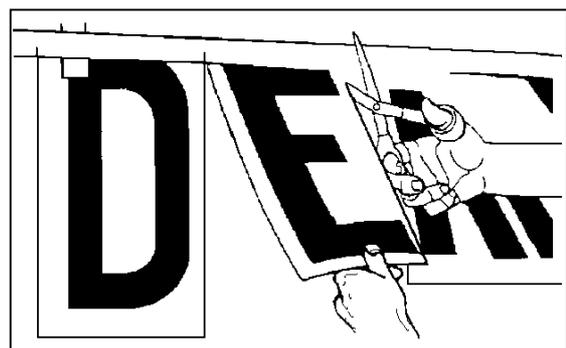
2. Using firm initial squeegee pressure, begin at top centre of marking and work downward and out toward edges.

#### Large Prespaced Markings

**Caution:** When applying prespaced letters and numbers, the entire prespacing tape must be squeegeed onto surface to avoid wrinkles and misalignment of the marking.

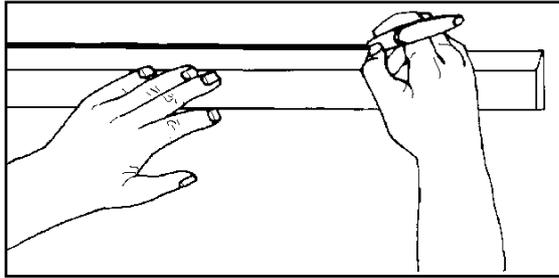


1. Align legend on application surface and tape into position using top horizontal hinge method.

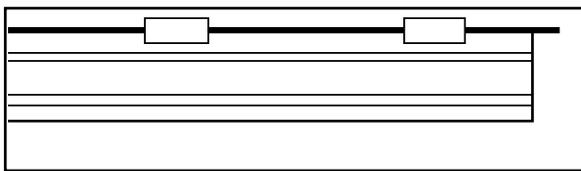


2. Cut between each letter or number so that each is independently hinged from top.
3. Remove liner, then squeegee letter or number into place using firm pressure.
4. Follow above procedure for each remaining letter.

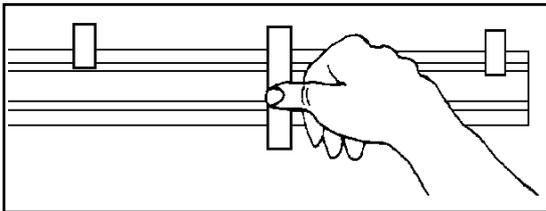
### Striping: Up to 30cm (12") Wide



1. Mark position of stripe on application surfaces.
2. Cut stripe to proper length.

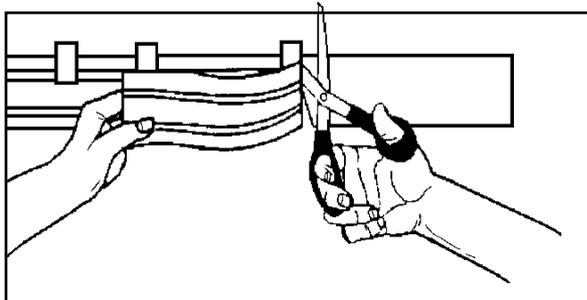


3. Tape stripe into position with small strips of masking tape.

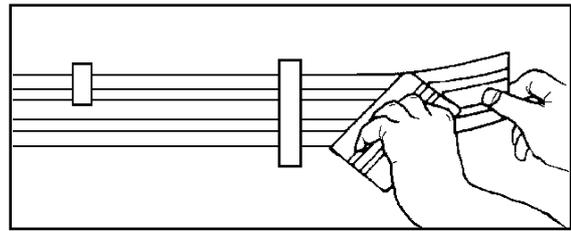


4. Apply a 2.5-5cm (1-2") tape hinge through centre of stripe, either vertically or horizontally.

**Note:** It is recommended that the masking tape be placed perpendicular to the long dimension of the stripe.



5. Fold half of stripe back over hinge, peel liner off stripe to tape hinge, cut liner along hinge and discard.



6. Fold back and squeegee stripe to surface beginning at centre of tape hinge and working outward and away from the hinge using firm overlapping strokes. Hold stripe away from surface with one hand and allow adhesive to touch only as pressure is applied.
7. Remove tape hinge.
8. Fold over the other half of stripe, remove liner and apply as above.

### Storage of Decorated Curtains

If the curtain must be transported after application of marking, the curtain must be rolled up with the 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 190 or 3M™ Controltac™ Plus Curtain-Sided Vehicle Film 8619 ES on the outside. The PVC curtain material should **not** be folded.

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## Related 3M Literature

Listed below is related 3M technical literature which may be of interest:

|                                      |                  |
|--------------------------------------|------------------|
| Product Bulletin                     | 190              |
| Design of Markings                   | 2.1              |
| Preparation for 4-Colour Printing-   | 1.1              |
| Screen Printing 1900 Series Inks     | 1900, 3.11, 3.12 |
| Scoring and Cutting-                 | 5.12             |
| Premasking and Prespacing-           | 4.3              |
| Surface Preparation and Application- | 5.12             |

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