

Application instructions

ORALITE® VC 104+ Flex Grade Segmented can be applied onto trucks and trailers with new and old PVC curtains.
Important: **The ORAFOL warranty is applicable to new curtains only.**

Curtains

The performance of the adhesive will depend greatly on the curtain surface. Every curtain type should be assessed individually for suitability. Graphics printed by digital/screen/stencil technique and using clear coats or varnishes for additional durability need to be assessed for ORALITE® VC 104+ Flex Grade Segmented adhesion. ORAFOL accepts no responsibility for poor adhesion to clear coat or pre-treated curtains. It is the applicator's responsibility to ensure that the curtain is suitable for application.

Tools required

- Pen and/or masking tape
- Clean cloths
- Craft knife or scissors
- Squeegee with sleeve to avoid scratching the material
- Cleaner: Isopropyl alcohol (IPA) and/or soapy water
- Used curtains only: Abrasive pad

Application temperature

To ensure proper adhesion between the tape and the cleaned curtain bonding materials must be applied when both curtain and tape temperature is between 15° C and 38° C. The temperature needs to be consistent for at least one hour after application. NB! It is recommended that ORALITE® VC 104+ Flex Grade Segmented is stored at temperatures between 18° C and 28° C.

Where to apply

It is recommended to position the tape minimum 5 cm above the buckles. Use the guidelines provided in Regulation ECE 104 to ensure that the tape is in general positioned correctly on the vehicle. Check www.ece104.com for more information.

Initial preparation

The tape can be applied either on a flat surface, or while tensioned on the trailer. If on a flat surface, lightly tension the curtain ensuring that the curtain surface is flat. An example of how to do this is to place a weight at both ends of the length of the curtain. When applied on a trailer, position a board behind the curtain to ensure enough pressure can be applied to the tape when using the squeegee. This is done most easily by having at least two people to do the application. It is recommended that the curtain is not over-tensioned during application.

Used Curtains:

Survey used curtain for suitability of application, avoiding application over tears, holes or repairs. NB! It is the applicator's responsibility to ensure that the curtain is suitable for application.

Surface cleaning

The purpose of cleaning the curtain is to remove any dirt or contamination. It is very important that the surface is free of dust and grease, and ideally the surface should be smooth. Use a clean cloth with isopropyl alcohol to wipe the surface in one direction only to avoid spreading contamination. With a dry clean cloth wipe away the cleaner before evaporation. Repeat this process until the surface is clean, i.e. when there is no visual dirt or contamination transfer onto the cloth.

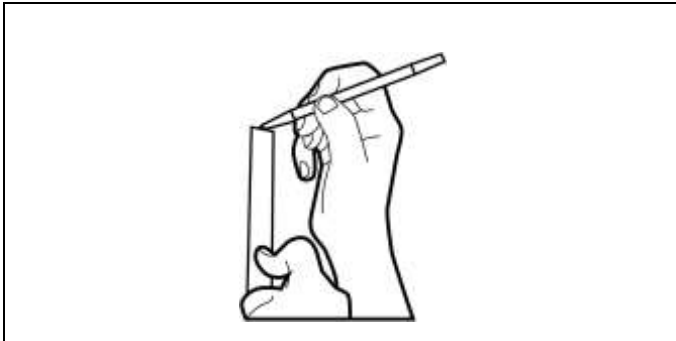
ORAFOL only recommends the cleaner isopropyl alcohol with a concentration of isopropyl alcohol (2-Propanol) greater than 98%*. Please check the Safety Data Sheet from the cleaner manufacturer to verify this.

For curtains with coatings which adversely react with isopropyl alcohol, soapy water is recommended (98% water, 2% soap). Ensure the surface is dry and that either the isopropyl alcohol or soapy water has completely evaporated before commencing application. *Other Surface Preparation Cleaners may contain slow evaporating solvents, scented additives etc. that may affect final adhesion properties. ORAFOL cannot accept warranty claims when such cleaners are used. Please contact ORAFOL Customer Service if in any doubt.

Used Curtains:

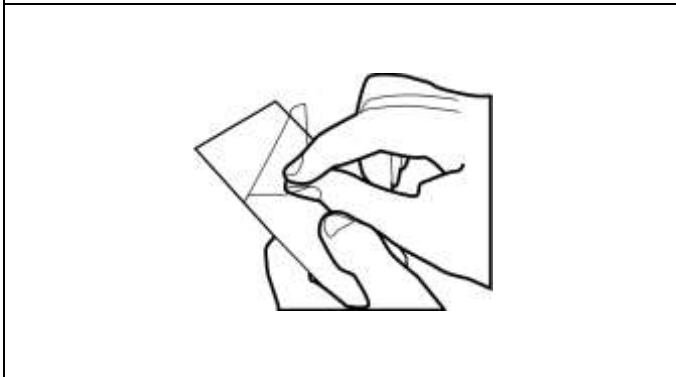
An additional step is required for used curtains: After completing the above cleaning process, abrade the area with an abrasive pad, and clean again using a clean cloth with isopropyl alcohol.





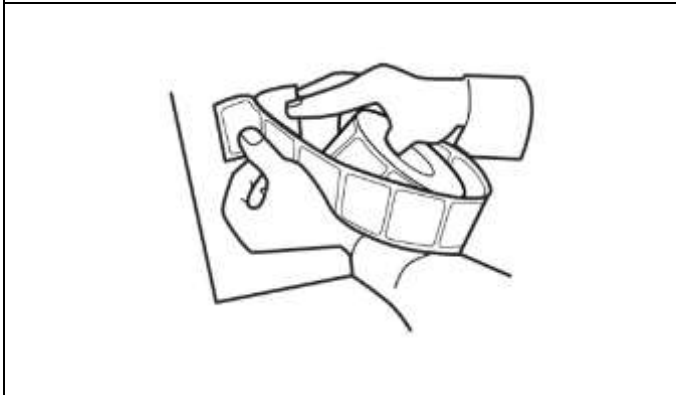
STEP 1:

Mark out a pencil line guide, or alternatively apply a strip of masking tape. Do not use chalk line or other means that may leave residue on the surface.



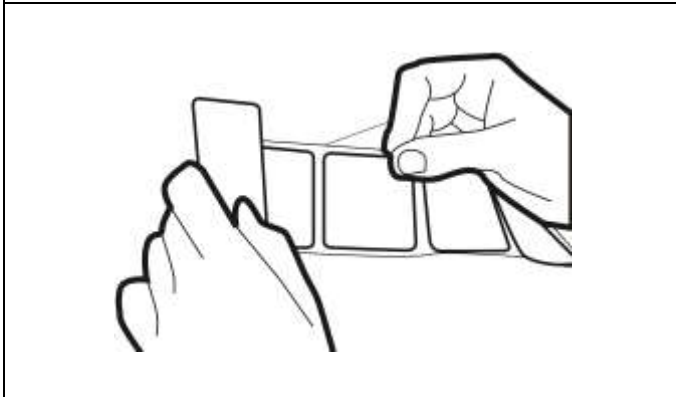
STEP 2:

Peel back the adhesive liner on the first segment. Avoid touching the exposed adhesive once the liner has been removed.



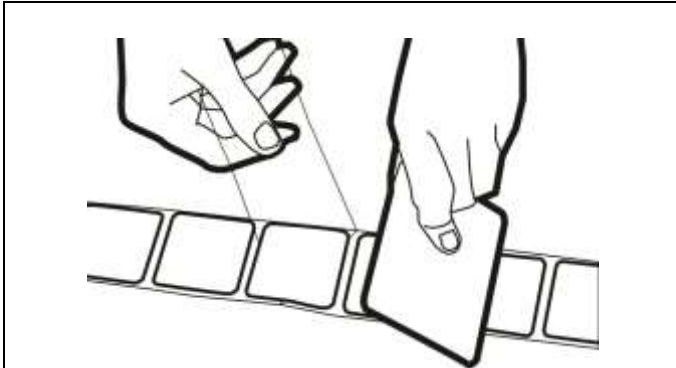
STEP 3:

Tack it onto the application surface with a squeegee.



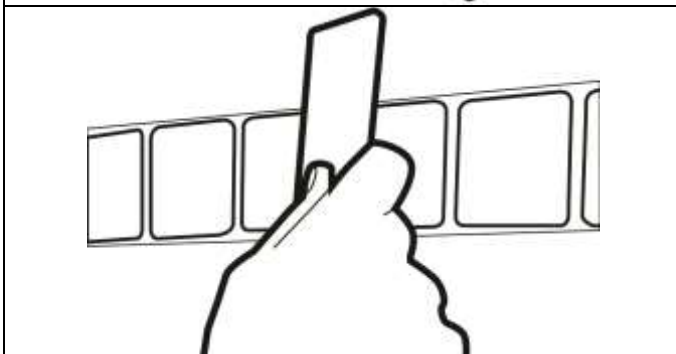
STEP 4:

Squeegee.



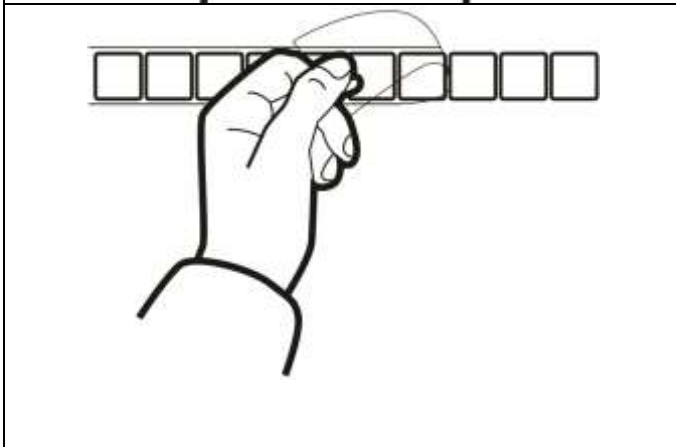
STEP 5:

Squeegee the tape down as the adhesive liner is removed. Ensure that the exposed adhesive only comes in contact with the curtain through the pressure of the squeegee. If the exposed adhesive touches the surface without uniform squeegee pressure, air can be trapped under the film and bubbles may occur. The application liner facing the reflective side should be left on to keep the pieces in place. Repeat the process for the length of the vehicle.



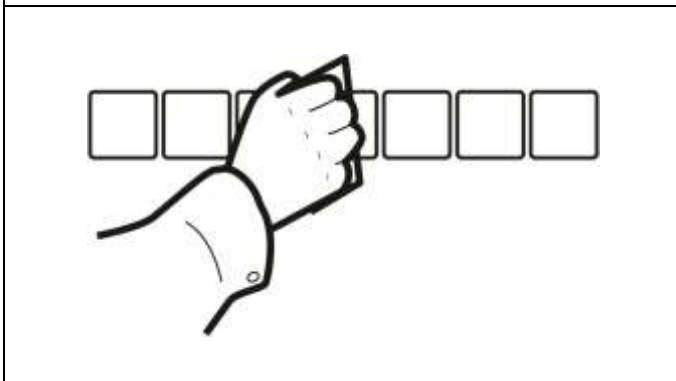
STEP 6:

Afterwards, re-squeegee the whole length of the vehicle.



STEP 7:

After completing this process, remove the application liner by peeling it back from the reflective side and re-apply pressure using a squeegee along the length of the tape, to ensure that the edges of the tape have been properly adhered to the curtain. Use of a weighted roller (>4kg) to apply pressure is also allowed.



STEP 8:

Re-squeegee. Upon inspection of the application there should be no visual air bubbles. If air bubbles occur, use a pin to puncture the bubble and a squeegee to push the air towards the pin hole.

Bonding time

The applied material should remain at temperatures between 15° C and 38° C for at least one hour after application (one hour applies for application temperatures of 27° C and higher, longer periods for lower temperatures). If applied directly on the truck, it is recommended that the vehicle is not moved and/or the curtain not folded or opened during this period.

After application

When the application process is finished, care should be taken when rolling the curtain to ensure that no sharp folds or bends are present.

Stockage

All rolls including partially used rolls should be stored in original packaging, lying flat, tightly wound around a 3" diameter core and taped. Store in a clean and dry area, away from direct sunlight. Store at room temperature 23° C and 50% r.h.

Care Instructions

Manual Washing:

ORALITE® VC 104+ Flex Grade Segmented can be washed manually by brush, cloth or sponge using water, soap or detergent followed by a clean water rinse.

Power Washing:

Automatic truck / car wash or standard high-pressure hand spray:

- Maximum pressure – 1200 PSI / 80 bar
- Maximum water / wash solution 60° C
- 40° Nozzle cone opening size should be used
- Cleaning wand or jets to be at no greater angle than 45 degrees from perpendicular to the marking surface
- Hold the cleaning jet a minimum of 60cm away from the material

When using cleaners, follow the manufacturer's recommendations for dilution. Thoroughly rinse after soaking vehicle.

Important: Do not use solvents to clean the tape, as they can adversely affect the product. If soap or detergent does not sufficiently clean the film, gently rub a cloth soaked in isopropyl alcohol to remove the stains.

Trouble Shooting/Application Tips

There are many factors that influence the adhesion of the contour marking. These include the following general areas:




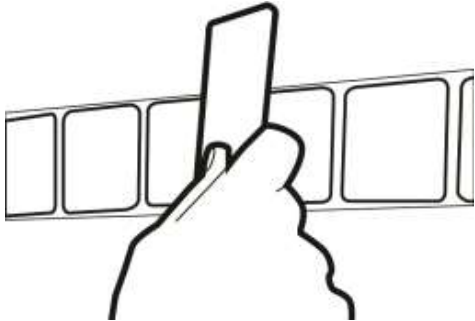
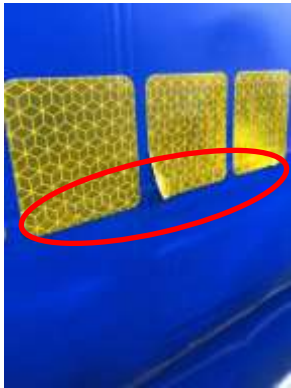
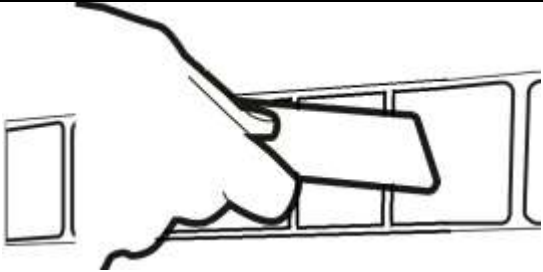
Substrate




- **Substrate (PVC) Composition**
There are many PVC Producers with different production/finishing processes and different protective coatings which can affect adhesion. Changes in PVC component composition may be needed in order to maintain compliance to REACH or to adjust plasticizer composition amongst other reasons and should be notified to ORAFOL in order to evaluate if the change has influenced the adhesion properties.
- **Substrate (PVC) Colour**
Darker coloured PVC curtains may contain more plasticizer content which may migrate to the surface of the curtain quicker in warmer temperatures (e.g. Summer Time). If this plasticizer is not thoroughly cleaned from the surface, it may affect adhesion of the contour marking. It is important that all curtains are cleaned per the recommendations listed earlier prior to application of the contour marking but darker coloured curtains require cleaning with great care and completeness and may need additional attention during this period. .
- **Surface Texture**
The ultimate bond strength of the adhesive is not instant and builds over time. Rough/uneven surfaces may require more time/pressure for the adhesive to flow into the uneven surface texture and create a good bond to the substrate. Where this is not possible, please contact ORAFOL for further assistance.
- **Surface Contour**
Excessive curved surfaces may cause internal stresses/edge lift on the contour marking. This may occur during the transport and storage of the curtain when wound up and should be avoided where possible. Additional time/pressure applied to the contour marking before winding up the curtain may reduce this effect.
- **Surface Contamination**
Substrates need to be cleaned before application. Grease, moisture, oil, release chemicals, surface plasticizers create a barrier between the adhesive and substrate. Dust, Fiber, Particle Contamination affects tackiness of adhesive and reduces the contact surface area. Protective powder coatings applied to screen printed lettering must be fully removed and the curtain cleaned before application of the contour marking.





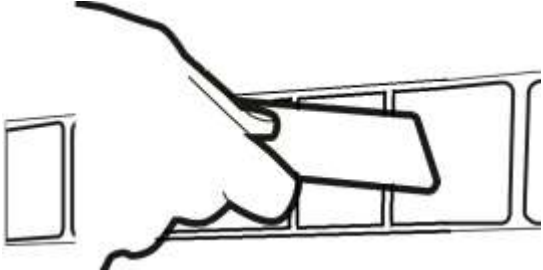
Application

- **Time**
The adhesive needs time to flow in order to effectively cover the substrate structure. For some substrate types (see above), longer dwell time of the tape on the curtain without applying stress to the curtain/tape may be necessary.
- **Temperature**
Applying at room temperature (21° C) is always best, slightly higher temperatures can improve adhesive flow, speeding up the bonding process
- **Pressure**
Applying adequate pressure will accelerate the adhesive flow and eliminate trapped air. This will ensure higher adhesive coverage of the substrate. Factors such as re-squeegeing after removal of the application liner are important to ensure pressure is applied at all stages of the application. Additional weighted pressure other than use of the squeegee will also assist the process.


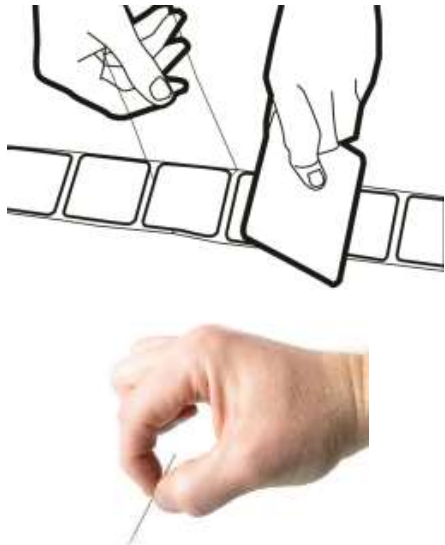
The following pages detail some common problem areas and best practices to avoid application related problems.


Reference #	Description of Issue	Recommendation
1.0	 <p>At the rear of the curtain sided trailer, the information label relating to the curtain is placed above the buckle reinforcement.</p>	 <p>Place this information label(s) below the buckle reinforcement.</p>
2.0	 <p>On some special curtains, there are vertical reinforcement strips</p>	 <p>Take additional care when applying pressure with squeegee and re-squeegee in this area.</p>
3.0	 <p>On some special curtains (e.g. Anti-Theft), there are [horizontal] reinforcement strips or steel wires.</p>	 <p>Please consider repositioning of the tape to avoid direct placement on the steel wires, [Application beneath the buckle in this instance is acceptable]. If this is not possible, take additional care when applying pressure with squeegee and re-squeegee in this area directly above and below the steel wires.</p>

Reference #	Description of Issue	Recommendation
<p>4.0</p>	 <p>Excessive curved surfaces may cause internal stresses/edge lift on the contour marking if the curtain is wound in the immediate time after application of the tape. The curtains should not be stacked on each other to create an excessive weight on top of each other.</p>	<p>The curtain should remain undisturbed for a minimum of 1 hour after application. Minimise amount of curvature on the curtain when winding after application by winding the completed curtain with a longer fold/wider radius. Place internal spacers between the curtains when transported to reduce the cumulative weight placed on the curtain.</p>
<p>5.0</p>	 <p>Protective powder coatings applied to screen printed lettering before application of the contour marking.</p>	 <p>Substrate must be thoroughly cleaned with Isopropyl alcohol prior to application of contour marking to remove any surface contamination.</p>

Reference #	Description of Issue	Recommendation
6.0	 <p>Reinforced corner areas of the curtain.</p>	<p>Apply the contour marking outside of the reinforced area or where this is not possible, apply VC104+ Seg 50mm Corner Stickers to these areas</p>
7.0	 <p>The tape is positioned less than the recommended 5 cm above the buckles.</p>	 <p>Apply the tape at the recommended distance of 5cm minimum above the buckles. An exception is permitted for Anti-Theft curtains.</p>
8.0		

	<p>The tape is positioned just beneath a join in the curtain of two PVC layers creating a step in the curtain. The squeegee does not provide uniform pressure when applied in this area. The tape is also positioned less than the recommended 5 cm above the buckles but due to the curtain design</p>	<p>Take additional care when applying pressure with squeegee and re-squeegee directly beneath the step in the curtain so that pressure is applied to the tape in this area.</p>
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Reference #	Description of Issue	Recommendation
<p>9.0</p>	 <p>Visible raised area of the tape that when pricked with a pin bursts or reduces in size</p>	 <p>Ensure that the exposed adhesive only comes in contact with the curtain through the pressure of the squeegee. If the exposed adhesive touches the surface without uniform squeegee pressure, air can be trapped under the film and bubbles may occur.</p> <p>Although some of these bubbles are obvious initially, others that seem small will increase in warmer temperatures due to the expansion of air when heated. These bubbles can be pricked with a pin to allow the trapped air to escape.</p>

Reference #	Description of Issue	Recommendation
10.0	 <p>The tape must be applied to a digital printed curtain.</p>	<p>ORAFOL accepts no responsibility for poor adhesion to full colour, clear coat or pre-treated curtains. Contact ORAFOL Customer Service for further information.</p>

IMPORTANT NOTICE

All ORALITE® products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning ORALITE® products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of ORALITE® products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. All specifications are subject to change without prior notice.

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