Application Instructions for Avery Dennison™ Conform Chrome Films

Technical Bulletin #4.0 (Revision EU4)
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1.0 Consult Product Data Sheet

- Before starting application, consult the appropriate product data sheet for information regarding minimum and maximum application temperatures, recommended substrates, and immediate service conditions before and after application. These factors are critical to a successful application and future decal performance. Once assured that all factors are understood with respect to the product, and all factors comply with the product recommendations, cleaning and surface preparation can begin.
- **Conform Chrome is a chrome accent film designed to add special effects and a sporty touch to graphics. Before using, user shall determine the suitability of the product for its intended use and accepts responsibility to ensure compliance with any and all laws and regulations concerning the use of chrome film on vehicles or in the ultimate graphic application. End user assumes all risk and liability in connection therewith.**
- **Avery Dennison® Conform Chrome is especially designed as an accent film. Cutting for the purpose of preparing sizes or shapes has proven to be feasible. However, signcutting of letters and graphics is not recommended.**
- **Some surface imperfections are not uncommon in the film, these are not considered a defect.**

2.0 Surface Preparation

- All application surfaces must be considered contaminated and must be cleaned according to Technical Bulletin #1.1 “Cleaning and preparation of application substrates“.
- The surface must be completely dry. Check all seams, rivet heads, and corrugations for any remaining moisture or solvent. If moisture or solvent is present, a heat gun may be used to dry the surface completely.

NOTE: Always ensure the painted surface has been properly processed per the paint manufacturer's specifications or recommendations. The drying or curing period of the paint system must be followed. Failure to adhere to the above can result in poor decal performance and difficult removal characteristics.

3.0 Application Tools

- Tool belt – to hold all application tools (Avery Dennison product code CB0650001)
- Microfiber Felt Edge Squeegee, like the following:
    - Squeegee Pro (Avery Dennison product code CA3480002)
    - Squeegee Pro Flexible (Avery Dennison product code CA9080002)
    - Squeegee Pro Rigid (Avery Dennison product code AP8270002)
- FleXtreme micro-squeegee (Avery Dennison product code CB2620001)
- Professional Heat Gun
- Cutter with break off blades (Avery Dennison product code CA8140001)
- Spray Bottle with Soap & Water mixture (1 part baby shampoo/20 parts water)
- Scratch free, seamless application glove (Avery Dennison product code CA3640001)
- Surface Temperature Thermometer/ IR Thermometer – for checking surface and ambient temperature (Avery Dennison product code CA6380001)

4.0 Application Temperature

- Ambient Air Temperature - Air temperature of environment
- Surface Temperature - Substrate temperature of vehicle or surface
- Air, film, and application surface temperature are important and must match the characteristics of the adhesive and film being applied.
- 10°C is the absolute minimum application temperature for film, air, and substrate.
- Material applied at the minimum temperature MUST be allowed to set at application for a minimum of 24 hours, or until graphics have completely set, verified through visual & physical inspection.
- Conform chrome Series films have a broad application temperature range (for more information please refer to the appropriate product data sheet).
    - While the film can be applied at the lower end of the temperature range, more pressure will be needed and it will take longer for a functional bond to be achieved during application.
    - Until a “functional” bond is achieved, it is risky to remove premask or allow a vehicle to be transported.
    - Higher heat and humidity conditions may also make a graphic more difficult to re-position once it has made contact with the applications surface.
    - If the air temperature or the application surface temperature exceeds 38°C, Avery Dennison™ Easy Apply performance may be limited.
- The ability to move trapped air can be adversely affected by the amount of pressure used previously to apply the graphic to the substrate.
- For optimal application performance and ease-of-use characteristics, apply films at a temperature of 21-27°C.
- Allow 24 hours for graphics to fully set prior to placing graphic marked vehicles into service.

NOTE: The markings can be applied if the ambient air and substrate surface temperature are between the minimum and maximum application temperature specified in the appropriate Product Data Sheet. If the substrate surface temperature is below minimum requirements, the substrate must be heated until minimum application temperature has been achieved. During cold temperature months, it is recommended to use a heat source on the surface of the substrate before and after application. This will increase the surface temperature of the substrate and accelerate the ultimate adhesion of the film.

5.0 Key Tips Before Proceeding

- Surfaces must be completely clean and prepared according to Avery Dennison Technical Bulletin #1.1. This is a critical first step toward successful decal application.
- Follow the guidelines toward minimum and maximum application temperatures and required service conditions before and after application.
- MODIFIED Wet Application is recommended for the “Face” chrome side of the material to reduce scratching during application. See guidelines for this type of application below.
- Do NOT over heat the film, as it may discolor or whiten due to excessive heat. Use a heat gun set on low, and gently heat the material to soften the material enough to conform. Practice will aid in selecting the proper heat setting. Discoloration or whitening due to overheating is not covered by any warranty.
- Do NOT over stretch the film, as it may discolor or whiten due to excessive stretching or tension. Before stretching the film, use a heat gun set on low, and gently heat the material and then lightly stretch the film. Practice will aid in selecting the proper heat setting and amount of stretch possible. Discoloration or whitening due to overheating or overstretching is not covered by any warranty.
- To minimize scratching during application, and during the life of the graphic, the film can be protected with the use of a DOL. The DOL laminated to the top of the film prior to application provides greater structure to the product, and improves abrasion resistance. DOL 1400Z series is recommended for optimum conformability, however, greater care should be taken to ensure proper conformability for the end use application.
- Do not use the “wet method” on the adhesive during installation. Water or soap solution not properly removed from underneath the film can remain between the substrate and the decal thereby reducing ultimate adhesion and cause premature failure. .

- If premask is used, the decal must be squeegeed before **and** after premask removal. During premask removal, decals are exposed to potential edge lifting. In order to eliminate this, re-squeegee the decal (paying particular attention to the edges).
- All smooth body seams or edges must be cut flush with the edge, and be free of caulk, and sealant. The decal must be re-squeegeed along the cut edge to prevent potential edge lifting.

6.0 Registration

- Because of the caliper of the film and the RS (repositioning and sliding) features of the product, it is easy to position the graphic into place.
- If the graphic or accent is small, completely remove the liner and position the graphic and tack into place. (see photo 1 and 2)
- If the graphic is larger, or has complex cut pieces with application tape, see the Hinge Method below. Position the graphic into place, and use small pieces of tape to hold it in place.


Photo 1


Photo 2

7.0 Application

Wet "**Face"** Method
Once the graphic is positioned, liner has been removed, and it has been tacked into position follow these steps.

- Wet the soft microfiber edge of your squeegee and the chrome surface with the baby shampoo solution as shown in Photo 3. (The soap solution acts as a lubricant to minimize scratching).


Photo 3

- Using smooth even overlapping squeegee strokes to effectively push the air, bubbles, and any wrinkles out of the film as shown in Photo 4. Note that Due to its unique matte finish, it is recommend to take extra care when applying Conform Chrome Matte Silver, ensuring to keeping the felt side of the squeegee always wet to avoid scratching the surface

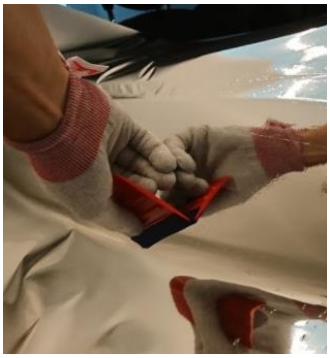

Photo 4

- Work the film gently around edges and curves using a wet edge squeegee, wet application glove, and light heat as shown in Photos 5, 6, 7.
- If heating, heat the material gently, using a hot-air gun, to about 40°-50°C. The use of an IR Thermometer will ensure your hitting this temperature range. It is advised to do small areas at a time. DO NOT OVERHEAT OR OVERSTRETCH FILM.

Photo 5

Photo 6

Photo 7

- Once all edges are conformed, and applied well, use a sharp snap off bladed knife to trim the graphics as shown in Photo 8. Keep a new sharp blade by snapping off a fresh edge after every cut.

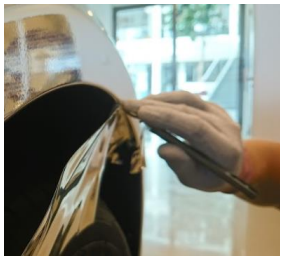

Photo 8

- Keep the squeegee edge wet during the entire application process, paying attention to rewet the squeegee upon final re-squeegeeing of all edges, and the entire graphic to ensure secure adhesion to the substrate. As shown in photo 9.

Photo 9

Final Squeegee Pass. Tips on Good Re-Squeegee Techniques:

NOTE: This is a key final step and will help prevent premature graphic failure due to edge lifting.

- Re-squeegee all graphic edges, overlaps, and seams using firm pressure.
- Use a heat source during this process to ensure edges are sealed properly, attaining temperatures in the range of 80-90°C.
- Use a wet micro fiber edged squeegee to prevent scratching or damage to the decal.
- Re-squeegee is a must on ALL edges of the decal, including any overlap edges.

Alternate Application method for Large Graphics, or Graphics Utilizing Application Tape; Hinge Method

1. Position the graphic into place, ad use small pieces of tape to hold it in place.

2. Once the Graphic has been properly aligned, apply a masking tape hinge along the center edge of the decal. The hinge goes from top to bottom extending a few centimeters past the graphic. This holds the graphic in position, and also provides a hinge.

3. Fold ½ of the graphic back on itself using the masking tape as a hinge. Keep liner/backing paper affixed.

4. The graphic will be essentially folded in ½, application tape to application tape. Secure the piece that has been folded back with masking tape.

5. Remove the liner. Always remove the liner from the marking.

6. Carefully cut the liner near the center hinge using a Snitty Tool. Do not use a knife as this can cut into the substrate. DO NOT TEAR the liner as paper fibers may be left behind.

7. Hold the decal away from the application surface with one hand.

8. Begin to squeegee from the top center downward and outward. Use firm, short, overlapping strokes that run the entire height of the decal. Continue using the squeegee until the first side of the decal is applied. Hold the squeegee at a 60° angle, dragging the squeegee in the in an overlapping up and down motion.

9. Remove the masking tape hinge. Re-squeegee the top edge to which the tape hinge was applied using overlapping, upward strokes.

10. Pull the second half of the decal back on the first side (which has been applied). Remove the liner from the graphic.

11. Squeegee the graphic as before, from the top center downward and outward. Use firm, short, overlapping strokes that run the entire height of the decal. Continue using the squeegee until the second side of the decal is applied.

12. Remove the premask/application tape from the decal by peeling back on corner of the mask and pulling it back at an 180° angle. Continue pulling the application tape against itself until the application is completely removed.

13. Re-squeegee the entire decal using very firm squeegee pressure, including all edges. Pay close attention to the edges, ensuring the graphic is completely adhered to substrate. When doing this step, use the baby shampoo solution to wet the edge of the squeegee as shown above.

8.0 Test Sensors

Test all vehicle components and sensors and confirm that they work correctly before releasing the vehicle to the customer. If necessary, cut and remove any film that covers sensors.

9.0 Protection and Maintenance

Refer to Technical Bulletin 1.6 “Cleaning and maintenance of Avery Dennison decals and Graphics” for general guidelines.

The cleaning solution should have a pH of 3-11. Dilution ratios of the cleaning solutions, as recommended by the manufacturer should be closely followed to reduce/minimize film or ink degradation.

For the cleaning & maintenance of Conform Chrome Matte Silver, test an inconspicuous area of the film prior to using any cleaners, wax, and polish to ensure no color shift or change in finish is caused to the film.

Cleaning products must be grit free to avoid scratching.

Always use a soft chamois, or microfiber cloth to avoid scratches. Do not use brushes.

Water temperatures should not exceed 50°C.

Final clean water rinse is necessary. Dry with a soft non-scratching absorbent cloth to avoid spots.

10.0 Special Comments

Important: Failure to install the film in full compliance with Avery Dennison’s installation instructions may result in personal injury or property damage. Read and follow all instructions when installing the film.

Important: After application it is absolutely necessary to post heat parts exposed to stretch, strain or other deformations to obtain its final shape. Post heating will eliminate the applied tensions in the film. The target post heat temperature (for vinyl and substrate) is 80-90°C.

Do not overheat or overstretch graphics during application. If too much heat or stretch is used the film will whiten and there is not warranty for whitening of film during application.

11.0 Warranties and Limited Remedy

This technical bulletin describes a technique. The information contained herein is believed to be reliable, but Avery Dennison makes no warranties, express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. To the extent allowed by law, Avery Dennison shall not be liable for any loss or damages, whether direct, indirect, special, incidental or consequential, in any way related to the technique of making a graphic regardless of the legal theory asserted.