

Avery Dennison Instructional Bulletin 1.10

Instructions for Bus Wrapping

Overview

As with any application there are specific considerations necessary for bus wraps. Products or application materials not specifically addressed in this bulletin are NOT recommended or warranted by Avery Dennison for bus wrap applications. As a condition for warranty, a signed pre-application examination is required.

Recommended Films

Avery MPI 2112 is recommended for use for temporary bus wrap graphics.

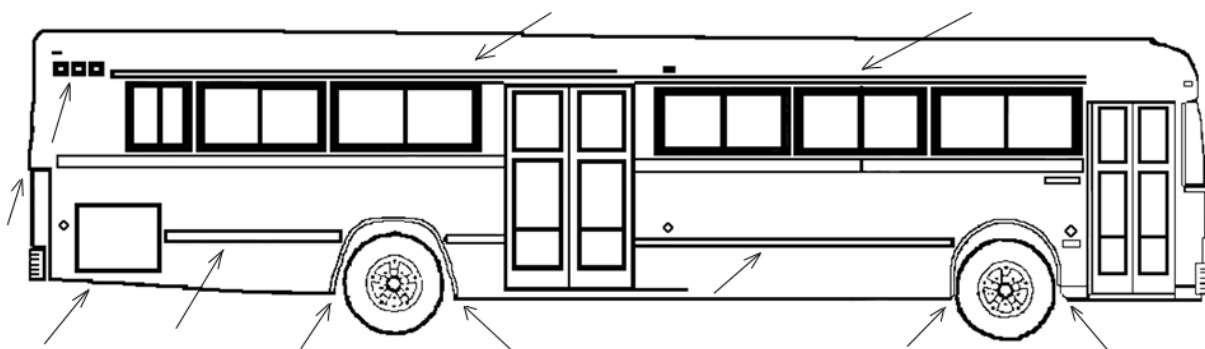
Pre-Application Examination

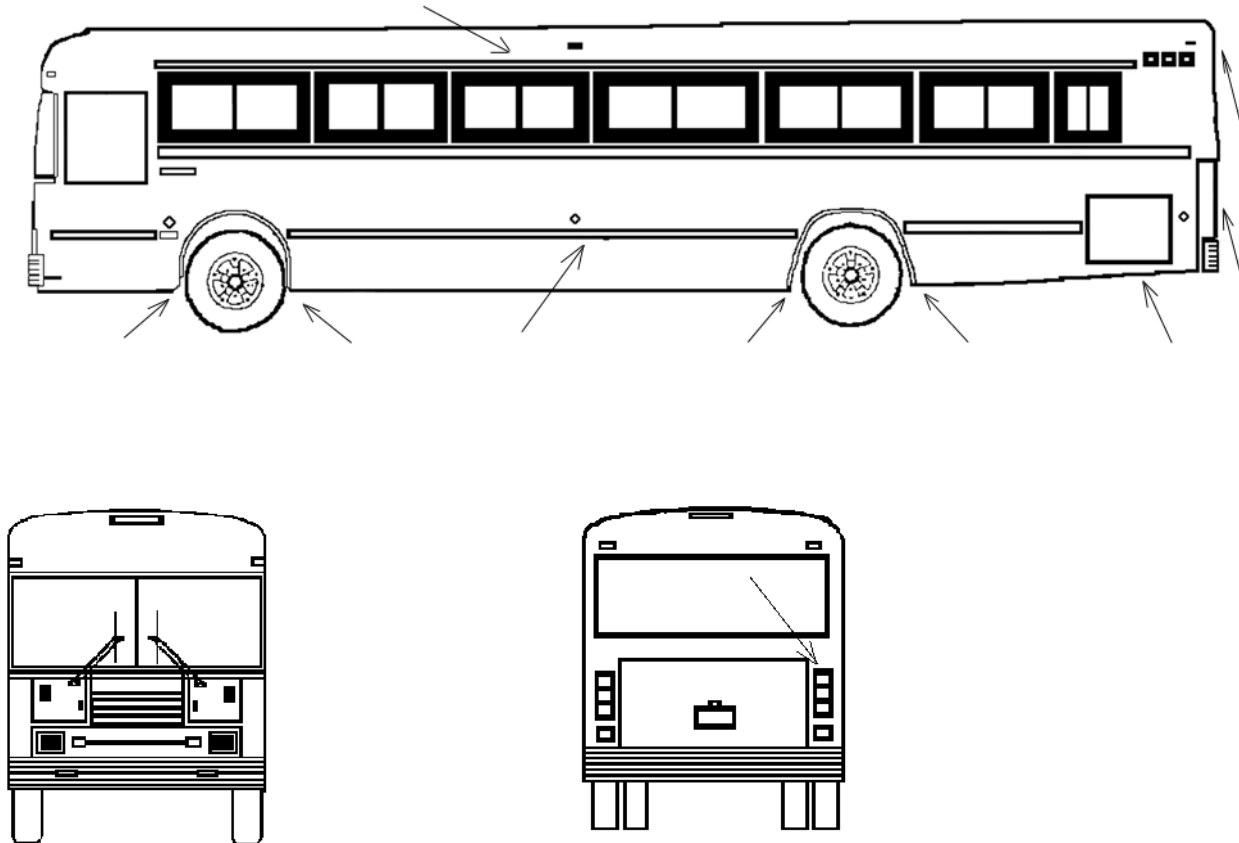
Transit vehicle graphics are normally designed to adhere to the painted bus sides and bus windows for up to one year. The graphics will remove cleanly after the service life from undamaged original equipment manufacturers (OEM) prepared surfaces. Vinyl decals are not designed to adhere to rubber or plastic substrates such as, but not limited to window moldings, plastic vents etc.

All transit vehicles must be inspected before the application of graphics to evaluate paint integrity, and locate any potential troublesome areas on the vehicle. Areas with chipped paint, rust spots, dents etc. have a high probability of paint damage upon removal of the graphics. Additionally, areas of the transit vehicle that have been repainted with a non OEM system (including proper primer, dry times and temperatures) risk paint removal upon graphic removal.

All vehicles should be inspected prior to application to identify any possible compromised areas. Any areas that may have been damaged by graphics removal should be noted on the following schematics, and the examination report signed by both the applicator and bus owner. Paint damage to areas noted as suspect will not be covered by any Avery warranty or guarantee, express or implied.

NOTE: It is the graphic printers responsibility to ensure that the listed signatures are obtained. Misrepresentation of the worthiness of the bus' paint surface on the Pre-Application Examination form voids the limited warranty.





Consult Product Data Sheet

Before starting application, consult the appropriate product data bulletin 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.

NOTE: Documentation of application date, material lot number, and application conditions (temperature, etc.) is required to support warranty claims in the event of decal failure.

Surface Preparation

NOTE: Complete the Pre-Application form at the end of this document. A completed, dated, and signed Pre-Application Examination is necessary for any warranty claims.

All application surfaces must be considered contaminated and must be cleaned according to Instructional Bulletin 1.01. The surface must be completely dry. Check all seams, rivet heads, and corrugations for any remaining moisture or solvent. If moisture or solvent are present, a heat gun may be used to dry the surface completely. Do not use a torch or open flame.

NOTE: Always ensure the painted surface has been properly processed as 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.

Application Tools

- Squeegee
- Heat Gun
- Razor Knife
- Rivet Brush
- Masking Tape
- Marking Pencil
- Air Release Tool (Straight Pin)

Temperature

Ambient Air Temperature - Air temperature of environment

Surface Temperature - Substrate temperature of vehicle or surface

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 Bulletin. If the substrate 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 gun 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.

Registration

Use a pencil, pen, or masking tape to mark the decal location on the application surface. If a chalk line has been used, replace all chalk marks with pencil or pen lines. Remove the chalk dust before applying decal. When overlapping multi-part decals, apply individual sections beginning with the rear of the vehicle and working towards the front and/or beginning with the bottom of the vehicle and working toward the top. The actual overlap should be at least 6mm width and less than 13mm.

Key Application Tips Before Proceeding

CAUTION: Application of film to areas of the vehicle that will impair driver's vision or violate any federal, state, or local ordinances is not recommended.

- Surfaces must be completely clean and prepared according to Instructional Bulletin 1.01. 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.
- Do not use application fluid or the 'wet method' during installation. Water or application fluid not properly squeezed from underneath the film can remain between the substrate and the decal thereby reducing ultimate adhesion.
- 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 (especially the edges). Wrap a squeegee sleeve or soft clean rag around the squeegee to prevent potential damage to the decal.
- All smooth body seams or edges must be cut flush with the edge, and be free of chalk, and sealant. The decal must be re-squeegeed along the cut edge to prevent potential edge lifting.
- Films should be cut and tucked into complex curves and corrugations.

Application Procedures

Application of bus wrap vinyl films

For application procedures of bus wrap vinyl films follow procedures listed below.

The following instructions show a step-by-step procedure for installing large premasked markings onto a bus. The method used is the 'top hinge method'. Other methods can be used (such as centre or vertical hinge method or no hinge method) at the discretion and expertise level of the applicator. For questions on proper application techniques contact Avery Dennison's Technical Support.

Application procedure large marking top hinge method – Avery Dennison Films

1. Using previously marked registration marks, position the marking on the application surface using small pieces of tape to hold it in place.
2. Once the decal has been properly registered, apply a masking tape hinge along the top edge of the decal.
3. Cut through the masking tape along the sides of the decal, being careful not to score the application surface.
4. Flip the marking up over the hinge and remove the liner.
5. Hold the decal away from the application surface with one hand and squeegee from the top centre downward and outward. Use firm, short, overlapping strokes. Remove the masking tape hinge (if one was used). Re-squeegee the top edge to which the tape hinge was applied using overlapping, upward strokes.
6. When a corrugation or complex curve is encountered the film should be cut and tucked into the curve or corrugation. This will help prevent tenting of the film.
7. Re-squeegee the entire decal using very firm squeegee pressure, including all edges. Puncture any air bubbles with a straight pin and re-squeegee from the edge of the bubble towards the puncture.

Professional Application Services

The above information provides basic information on how to apply pressure-sensitive graphics. The instructions are designed to help ensure success across a broad range of applications. Depending on the size and complexity of applications, a certain amount of expertise is needed.

Professional applicators can be hired to ensure proper application of finished graphics. When mounting graphics in remote geographic areas, professional applicators can offer the added benefit of local service. Consider hiring a professional whenever the application requires:

- Multiple panels to be registered
- Complex surfaces, such as rivet and corrugated trucks
- Harsh environmental conditions (i.e. outdoor applications in high heat climates)
- Remote geographic locations

For further information, contact your local Avery Graphics representative.

Pre-Application Examination Form

Job Description:	_____
Customer Name:	_____
Customer Address:	_____
Customer Contact:	_____
Phone Number:	_____
Printer Name:	_____
Printer Address:	_____
Printer Contact:	_____
Phone Number:	_____
Graphics Installer Name:	_____
Graphics Installer Address:	_____
Installer Contact:	_____
Phone Number:	_____

Bus Number: _____	Bus Make: _____
Bus Serial Number: _____	Bus Manufacture Date: _____

Pre-Inspection Done:	Yes: _____	No: _____			
Pictures Taken:	Yes: _____	No: _____			
Passed	Yes: _____	No: _____	Waived: _____	Yes: _____	No: _____
Date of Installation:	_____	Film Materials Used:	_____		
Coverage:	Full: _____	Sides Only: _____	Rear Only: _____		

Signatures:

Installer:	_____
Agency Representative:	_____
Bus Owner / Operator:	_____
Date:	_____