

Avery Dennison Instructional Bulletin 2.06

Converting and Applying Blockout and Diffuser Films

Avery Diffuser Films are premium quality cast vinyl films designed for use as a light diffuser. Avery Diffuser Films applied onto flexible or rigid substrates balance the light distribution of a backlit sign and eliminate hot spots.

Avery Blockout Films are premium quality cast films, which are especially designed for internally illuminated light box applications. Avery Blockout Films are designed to provide complete light blocking characteristics. Avery White Blockout film exhibits a uniformly lustre white finish and is uniformly black on the adhesive side. Avery Black Blockout film has a black lustre finish and is uniformly white on the adhesive side.

Substrate Preparation

All surfaces must be prepared and cleaned prior to the application of the film. Refer to Instructional Bulletin 1.01 Cleaning and Preparation of Application Substrates for recommended procedures.

Product Preparation

Avery Diffuser Films and Blockout Films should be prepared and converted according to Avery Instructional Bulletin 2.01 Sign Cutting of Avery Films.

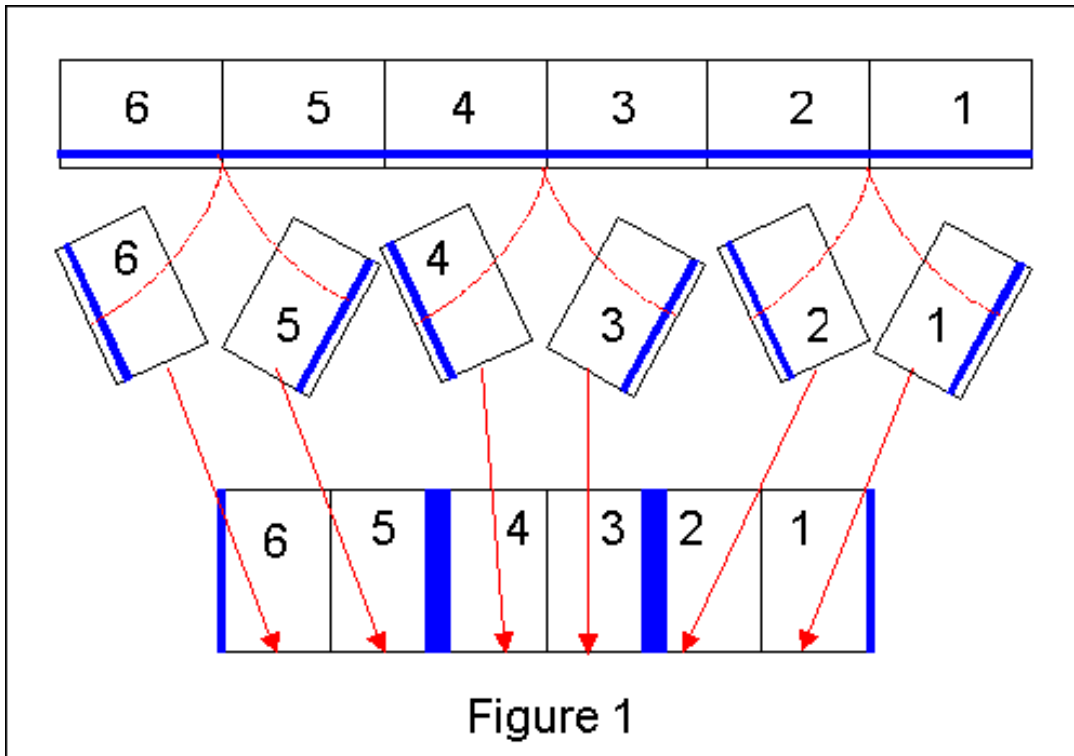
Converting Instructions

It is recommended that cutting and weeding of graphics be done prior to application to the substrate. If cutting is done after application, exercise caution to prevent cutting the substrate's surface. If weeding is done after application and cutting on the substrate, be aware that removal of the film might leave some adhesive residue on the surface.

Generally, films applied using detergent and water (wet method) do not need to be premasked. If premasking is desired or the application is to be made without detergent and water, be sure to use an appropriate application tape.

When more than two pieces of Avery Translucent Films or Avery Diffuser films are joined together to form a continuous surface a certain sequence of handling should be followed. This is a common practice in the sign industry and illustrated below.

NOTE: In general, translucent film from a roll can be matched as shown in Figure 1. The dark line represents one edge of the film.



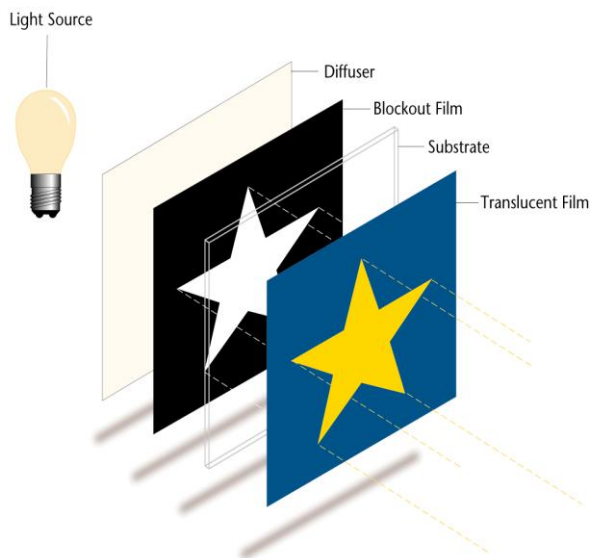
The dark line represents one edge of the film.

Application Instructions

- Make sure the surface and surroundings are properly cleaned as per Instructional Bulletin 1.01.
- Air and surface temperatures must be in the specified range (see data sheet of Avery Diffuser Films and Blockout Films).
- Films are usually applied with detergent and water (wet method).
- Firm pressure on the plastic squeegee is necessary.
- Always use a squeegee of good quality; the edge must be smooth and not nicked.
- Use overlapping strokes when applying markings.
- If application tape is used, always remove tape at an 180° angle.
- Re-squeegee graphics after the removal of application tape. Pay particular attention to the edges.
- Puncture air bubbles with a pin or air release tool (do NOT use a knife or razor blade).
- Repeat the above described procedure if more than one layer of film, graphic or marking is applied. The individual time intervals should be respected after the application of each layer.
- Exposure of newly fabricated signs to direct sunlight is not recommended for at least 24 hours.

Since many different models of sign faces exist and further develop at a constant rate, one basic design concept will be used in the following example.

Backlit Sign example



Step 1 (second surface application)

- Position the cleaned substrate on a sturdy support or work table.
- Prepare for the wet application method.
- Apply the converted Avery Blockout Film onto the substrate in the following order.
- Position the blockout film.
- Use light, overlapping squeegee strokes to smooth out the wrinkles.
- Squeegee from the centre to the nearest edges.
- Remove the excess water.
- Now use firm and overlapping applicator strokes to adhere the film to the substrate.
- Dry with a clean cloth or soft paper towel, then re-squeegee the entire graphic and wait an additional 30 minutes.

Step 2 (second surface application)

- Apply the prepared Avery Diffuser Film onto the blockout film according to the same procedure and sequence as described above.
- Carefully remove all the fluid from under the surface.
- Dry the surface thoroughly.
- Eventually, work on entrapped water or air with an air release tool until fully removed.

Step 3 (first surface application)

- Apply and position the converted Translucent Film to the substrate.
- Use light, overlapping applicator strokes to smooth out the wrinkles.
- Squeegee from the centre to the edges.
- Remove the excess water with a clean cloth or soft paper towel.
- Re-squeegee the film and all edges.

General Information

Avery Blockout Film

- The choice of using black or white side of the blockout film as second surface application depends entirely on the colour of the final image.
- Black will make the colour deeper, while white will enhance the colour. Therefore the side chosen depends on the design of backlit sign image and should be determined by the design engineer.

Note: The functionality of the blockout film, being to control the total light blockout or 0% light transmission, is not influenced by the choice of the side.

Avery Diffuser Film

- The choice of Diffuser Film is a design issue only.
- Shadow effects may be created by small differences in dimension during the cutting process and the precise positioning of the graphic.

In general these films are used as secondary surface application films. If during the design of the sign one of the films is to be used as first surface film, one should note that the guaranteed life time of the films is slightly reduced compared to the guaranteed life time of the Translucent Film.

The combination of the application of the films (blockout, diffuser or translucent) is entirely up to the designer of the sign. The films are technically compatible, thus one can design with the white side of the blockout film to the face of the sign, or the inverse as well as any of the Translucent Film products.

Furthermore, all films can be projected behind a transparent substrate guaranteeing optimal weathering resistance. However one should bare in mind that in the case of the Translucent Films the specified side for surface finish is the topside of the product, not adhesive side.

Any questions related to technical issues during the design stage of the sign can be directed to the Technical Marketing Department. Please call the Avery Graphics technical marketing manager or contact your local Avery Dennison sales representative for further assistance.

Substrate Influence

Some of the rigid substrates used in the signage industry include Glass, PMMA (polymethylacrylate), PC (polycarbonate) and several products of this kind with special topcoatings for UV or scratch resistance. Many of these products are sold under specific and/or patented trade names.

The supplier of the substrate should provide the appropriate cleaning or pre-treatment instructions and further technical data related to the product.

In case of using a substrate known or suspected of outgassing, then the product should be thoroughly tested and evaluated prior to any production. Avery Dennison recommends that the converter test the substrate with the applied self-adhesive film or multiple layers of films, if applicable, at elevated temperatures and increased humidity levels.

Careful observation and analysis of the film(s) after the test cycle has been completed is an absolute necessity.

For further information, contact your local Avery Graphics representative.