

TECHNICAL BULLETIN 6.90

Avery Dennison® Reflective Films: Application & Care Guide

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Introduction

Avery Dennison® High Visibility Reflective Films are engineered to improve the day and nighttime visibility of trucks and trailers, as well as emergency and commercial fleet.

Safety and Handling

The use of any chemicals for cleaning should be done with caution. Refer to the manufacturer's Material Safety Data Sheet and follow all instructions and guidelines.

Tools

It is recommended to use only Avery Dennison approved tools during Reflective material application, including: Squeegee, roller, utility knife, rivet punch, soap and water, Isopropyl Alcohol (IPA), wire brush, clean towels.

Storage

Avery Dennison Reflective Films can be stored for one year from date of purchase at a temperature between 18-24°C and a relative humidity between 45-55%. The Reflective Vinyl must be applied within this one year time frame. Rolls should be stored in their original packaging or suspended from a rod or pole through the core of the material. Sheeted material should not be stored with the faces of two sheets touching without slip sheeting in between.

Converting

Digital Printing

Avery Dennison has tested multiple print platforms to determine suitability of the white color of V-4000, V-4000E and V-8000 for digital printing, including our own Trafficjet Print System, along with other Mild/Eco Solvent, Latex, and UV digital printers.

For the appropriate Trafficjet print profiles, please contact [**Reflective.Tech@averydennison.com**](mailto:Reflective.Tech@averydennison.com).

For some printers of Mimaki, Epson, Roland and HP, ICC profiles are available. Please visit the Avery Dennison Graphics ICC Profile page <https://averydennison-eu.color-base.com>.

The digitally printed films are recommended to be protected using an overlamine (see [Technical Bulletin 5.3](#)).

Screen Printing

Avery Dennison Reflective Films can be Screen printed with conventional and UV curing inks. Consult your printing ink supplier about suitable printing inks. All printing inks should be tested for suitability prior to use.

Plotter Cutting

Avery Dennison Reflective Films are cuttable on Drum/Vinyl and flatbed plotters with up to 600 g cutting force when using a high angle 60 degree blade. The ability to print and cut using registration marks will be dependent on the ability of the optical sensor on your plotter. The prismatic tiling on the sheeting can make it difficult for the optical sensor to correctly pick up the registration marks. Due to the nature of retroreflective material, graphics comprised of multiple pieces of film may show the perception of a color shift depending on the viewing angle and light source. This is not considered a defect in the material. To minimize this effect, cut large letters from a continuous piece of material or use material from adjacent portions of the roll. Also, a small overlap (<.25") or no overlap of the reflective film is recommended to maintain a consistent viewing angle.

Application Temperature

Avery Dennison Reflective Prismatic Vinyl should be applied between 15°C and 38°C to ensure adhesion. Both the air and vehicle surface temperature should be within this range during application. Watch out for condensation build up when bringing cold surfaces into a warm environment. It is recommended that the applied film remains within this temperature range for at least 2 hours after application.

Surface Preparation

Note: All surfaces are considered contaminated and must be cleaned and then dried prior to application. Avery Dennison Reflective Films should be applied soon after cleaning in order to prevent dust accumulation on the application surface. Newly painted surfaces should be dried and cured according the manufacturer's instructions prior to Reflective Film application.

1. Use a wire brush and/or paint scraper to remove any peeling paint, rust, burrs, debris, etc.
2. Wash surface with soap and water to remove dirt and grease. Rinse thoroughly with water.
3. Re-wash surface with isopropyl alcohol (IPA). Saturate a clean towel in solvent and wipe the entire application area. Immediately dry with a clean towel before the solvent dries. Repeat this process until no dirt transfers to the towel. Change towels frequently to prevent cross contamination.
4. Make sure the entire application area is dry prior to application. Watch out for areas around rivets, seams and hinges as these areas often trap water or moisture.

Application Procedure

Note: If applying in a continuous piece, Avery Dennison recommends leaving at least 1" sticking to an angled/curved surface to ensure there is enough surface area to allow the sheeting to hold its shape. Please follow Avery Dennison Graphics Solution TB 3.10 "Signcutting of Avery Dennison® films" for application instructions.

Cleaning

Note: Regular cleaning is recommended In order to remove dirt and ensure maximum performance for vehicle identification.

Proper Instructions for Hand Washing Reflective Vinyl

- The cleaning solution should be a mix of clean water and a mild detergent wash that has a ph range of 3-11.
- Always test the cleaning solution on a small section of the graphic before using.
- Always read & follow the warning labels and safety precautions provided by the cleaner manufacturer before using.
- Mix your mild detergent and clean water to a soapy blend in a cleaning bucket. Make sure your cleaning bucket is clean and free of small debris that could get onto your cleaning rag and scratch your graphic.
- Rinse graphic first with clean water from a garden hose sprayer to remove any loose dirt or debris from graphic face.
- Begin washing the graphic from the top down to allow dirt and debris to run downward.
- Once the graphic has been washed, rinse graphic with clean water using a garden hose with spray nozzle attachment.

- Graphic can then be let to air dry or can be dried off by hand with the use of a microfiber cloth.
- Once dry, the use of a silicone or Teflon based polish designed specifically for vinyl graphics may be used for added protection. (Be sure to read & follow product manufactures directions and suggestions for frequency of use).

Using a Pressure Washer to Clean Reflective Vinyl

- The use of a pressure washer to clean vinyl graphics should only be used when all other cleaning methods have been used or tested and did not properly work. Keep in mind that pressure washing could have negative effects on the vinyl graphic including (edge lifting, face degrading over time). Here are some tips to use for this cleaning method:
- Use a pressure washer that is no greater than 1200 psi with a water temperature no greater than 50°C.
- Spray nozzle opening should have a 40° angle.

Tooling Lines in V-8000 Reflective Prismatic Film

Tooling lines are visible in all Reflective Prismatic films. These lines are an artifact of the tooling used to create the prisms that make the film retroreflective. V-8000 has lines that repeat every 5.75" across web and every 28.5" down web.

