

Application Instructions for Avery Dennison® Paint Protection Films in Marine Application with Avery Dennison Edge Sealer

Technical Bulletin #6.3

Dated: 02/04/2025

Note that Paint Protection Film is intended exclusively for application above the water line.

1.0 Consult Product Data Sheet

- Before applying the product, please read the product data sheet of Paint Protection Film carefully for information regarding appropriate substrates and product performance. Once assured that all factors are understood with respect to the product, all factors comply with the product specifications and you made the assessment that the Avery Dennison Paint Protection Film is suitable for the intended application, you can decide to apply the Avery Dennison Paint Protection Film. Also, prior to applying the product, please consult the Material Safety Data Sheet (MSDS) of Avery Dennison Edge Sealer
- This technical bulletin is focused on the use of Paint Protection Film for Marine application in combination with Avery Dennison Edge Sealer. If you are not familiar with Paint Protection Film, please refer first to Technical Bulletin TB 6.0, giving general application instructions for Paint Protection Film.

2.0 Application Tools

- Tool belt – to hold all application tools (Avery Dennison product code CB0650001)
- Avery Dennison squeegee for wet application, shown in table below:

Item code	Description	Size	Colours	Hardness
CM7800001	PPF Squeegee Pro Flex Small	65mm	Red	Flexible
CM7810001	PPF Squeegee Pro Flex Large	100mm	Red	Flexible
CM7820001	PPF Squeegee Pro Rigid Small	65mm	Blue	Rigid
CM7830001	PPF Squeegee Pro Rigid Large	100mm	Blue	Rigid

- Cutter with break off blades (Avery Dennison product code CA8140001)
- Stainless steel blades (Avery Dennison product code BM3290001)
- Lint-free cleaning cloth
- Professional heat-gun or steamer
- Spray Bottle (Avery Dennison product code CA8140001)
- Avery Dennison Surface Cleaner (Avery Dennison product code CA3750001)
- Avery Dennison Application Glove (Avery Dennison product code BN6260001)

Page 1 of 7

- Avery Dennison Edge Sealer (Avery Dennison product code BP2530001)
- A thin brush
- Protective Gloves and goggles (for Avery Dennison Edge Sealer application only)
- Avery Dennison Surface Cleaner (Avery Dennison product code CA3750001)
- Avery Dennison Application Gel (Avery Dennison product code BP6340001 / BP6330001)
- Baby shampoo and water
- Ethanol (>96% purity)

3.0 Preparation and cleaning of the application surface

Before applying Paint Protection Film, it is mandatory to remove the boat or marine vessels from the water and secure it in a stable position in a well-lit, ventilated and dust-free/clean environment.

Prepare the application surface by removing all unnecessary hardware, rigging and any pre-existing graphics. Make sure to apply on a smooth application surface, carrying out spot repair or gel-coat re-application, if needed.

Paint surfaces must be completely dry, hardened and free of scratches. Painted substrates should be dried according to the paint manufacturer's instructions to avoid solvent retention. Solvent residues in painted substrates may adversely affect film adhesion and might cause excessive shrinkage or blistering. Paint system components which are not compatible or do not adhere properly to each other may cause paint to be lifted when films have to be removed after use.

To prepare the application surface, wash it with a mild detergent solution, after which the surface should be rinsed and dried with a lint free cloth.

After the surface has completely dried, the surface should be further cleaned and degreased using Avery Dennison Surface Cleaner and a lint free cloth. Depending upon the level of contamination, this process may need to be repeated to ensure that the surface is fully prepared for application.

Special attention should be given to critical areas, such as edges, corners, welding seams, rivets and the like. These should be thoroughly cleaned and dried before application.

It is recommended to clean the application surface with Avery Dennison Surface Cleaner. Many other commercially available cleaning/degreasing products may be suitable for cleaning and degreasing but need to be tested prior to use.

4.0 Installation of the film

Note that Paint Protection Film is intended exclusively for application above the water line.

For a successful application, follow the below instructions:

- Always ensure your squeegee is in good condition for application and has a smooth edge. This ensures a smooth graphic finish after application is completed, and that 100% of the adhesive has contact with the vessel substrate.
- Locate where to position graphics and mark the spot on the substrate using small pieces of tape.

- Apply the product starting from the bow to the stern. When applying, It is very important that the unwind direction of the roll is consistently oriented into one direction during application and application orientation is kept the same between different pieces. Please refer to TB 6.0 for more details.

Preparation:

- Ensure that the application surface is clean and dry before application of any graphic film.
- Be sure the air, film, and substrate are within the temperature range recommended for the film. Having a dust-free environment is important to ensure that no dust is trapped between the film and the surface of the boat.
- Wash your hands to avoid fingerprints on the adhesive especially when handling the film. Wear AD application gloves during application.
- Ensure squeegee is in good condition for application and has a smooth edge. This ensures a smooth graphic finish after application is completed, and that 100% of the adhesive has contact with the vessel substrate.
- For more details, please consult TB 6.0.

Application Method and Solution Preparation:

- Apply the film using the wet application method.
- Use either Avery Dennison Application Gel or a water and baby shampoo solution.
- For Avery Dennison Application Gel, spray directly from its bottle or use with the Avery Dennison 1.2L spray bottle.
- For the water and baby shampoo solution, mix 1 liter of water with 2 mL of baby shampoo in the Avery Dennison spray bottle.

Film Preparation and Initial Application:

- Cut the film from the roll to the approximate needed size.
- Remove the transparent protection sheet from the film's face.
- Spray the painted surface with the Avery Dennison Application Gel or soap solution.
- Remove the PET liner and spray the exposed adhesive side with the application solution.
- Position the film on the selected application area.
- Slide the film to achieve the correct positioning, if necessary.
- Keep the film's surface wet with the application solution throughout the application.

Squeegeeing:

- Gently begin squeegeeing the film using Avery Dennison Red and Blue Squeegees.
- Gradually increase pressure to remove air, water, or gel from under the film.
- Overlap squeegee strokes by approximately 50% to prevent entrapments.
- Keep the squeegee and film surface wet with the application solution.
- For extra pressure, use the hard/back part of the squeegee, being careful not to damage the film.

- Note: Repositioning is only possible during the initial positioning stage with low squeegee pressure.

Curved Area Application:

- For curved areas, firmly pull and stretch the film.
- Identify fixing points to activate the adhesive with pressure.
- Stretch the film using its intrinsic flexibility, preferably without heat.
- Optionally, gently heat the film to 40-50°C using a heat gun or steamer, avoiding over-stretching (max 25%).
- If higher tack is needed, spray the substrate with a water and ethanol solution (1 part ethanol to 4 parts water).
- For deep corrugated shapes, make incisions to prevent air/water entrapment.

Finishing:

- Trim excess film off the edges.
- For long, straight edges, tuck the film over the edges, leaving approximately 0.5 cm of material and cleaning the edge. Apply heat if needed, do not exceed 40-50 °C.
- For sharp corners and non-regular edges, cut the film short, approximately 1-2 mm.
- Use new, sharp knives, preferably stainless steel blades.

Final Steps:

- Re-squeegee critical areas (deep corrugations, edges) with a wet squeegee for secure adhesion.
- To improve edge adhesion, use AD Application Gel or spray the edges with a water and ethanol solution (1 part ethanol to 4 parts water).
- Ensure that adequately high pressure is applied to edges to hold the film in place for a few seconds, giving time for the adhesion to build-up, before release to avoid edge lifting.

5.2 Sealing graphics edges

For any marine application of Paint Protection Film, it is mandatory to apply Avery Dennison Edge Sealer on any edges. The application of Avery Dennison Edge Sealer is required to prevent the film from being released by exposure to water. Any and all warranties, if granted, shall be void if Paint Protection Film has been applied in marine environments without seal edges or without adhering to the following application instructions:

- Before applying Avery Dennison Edge Sealer, re-squeegee the edges of the graphics and verify that the application area for the sealer is clean, dry and free of contaminants. It is important to wait 24 hours to ensure complete drying of the installed paint protection film before the application of Edge Sealer.
- When applying Avery Dennison Edge Sealer, please wear the required protective equipment (gloves and goggles), as indicated in the MSDS. Make sure not to leave the can open and exposed to air, to avoid any contamination and loss of performance. To

facilitate the application process, you can transfer the needed quantity of edge sealer from the original can to a separate container.

- Apply Avery Dennison Edge Sealer on an inconspicuous part of the substrate, to verify it does affect the application surface.
- Using a thin clean brush, apply Avery Dennison Edge sealer by pulling the brush along the edge with a firm and continuous movement. Product can be applied directly from the can, without using any thinner or dilution agent. As a result, the graphics edges need to be completely sealed with no gaps and the edge sealer needs to cover both the film and the substrate.
- Ensure that the sealer dries for 24 hours before putting the vessel into service.

6.0 Confirm Adequate Adhesion and Inspect

Ambient temperature is a key environmental factor affecting adhesion of pressure sensitive adhesive films. The warmer the ambient temperature is, the less time it will take the film to achieve adequate adhesion. Material applied in temperatures below the recommended low application temperature may take significantly longer, even days, to achieve adequate adhesion.

Before delivering, inspect the installation completely verifying all material edges have full adhesion to the substrate, all compound curves have been properly set with heat, and the material has been applied and finished properly. Whenever possible, move the wrapped object outdoors for natural light or use a well lit interior area to ensure a high quality application has been achieved. It is recommended to wait a minimum of 24 hours before putting the boat or marine vessel back in the water.

7.0 Self-Healing Property

Self-healing refers to the film's capability of repairing its surface from slight abrasion and small to medium scratches, resulting from daily usage of the film.

Large and deep scratches or damages cannot be recovered.

The surface of Avery Dennison SPF-X3 and SPF-Gloss Black is able to heal small and medium scratches if exposed to an external source of heat (50-60degC), such as hot water, heat gun or warm sunlight.

8.0 Cleaning Maintenance and Removal

Avery Dennison SPF-X3 has been specially designed to provide high stain resistance enhancing the ease of cleaning and removal of stains. In addition to the following instructions, please refer to TB 6.2 Maintenance Instructions for Avery Dennison™ SPF Series for general guidelines.

- It is recommended to clean the boat once a month, with the following cleaning techniques to reduce/minimize film degradation over time.
- Long-term deposits of salt and sand that have not been cleaned according to the guidance can impact the quality of the film.
- High pressure water can be used to wet the surface of the film. When using a high pressure cleaning equipment, the following conditions must be respected:
 - Maximum pressure : 80 bars (1200 psi)

- Maximum water temperature : 50 °C
- Minimum nozzle distance : 75 cm (between graphics and dispenser nozzle)
- Angle of nozzle: 90 degree against substrate. Avoid aiming the water jet to the edges of the film

- The surface of the film can be cleaned with water and neutral pH soap, using a soft nylon or soft polystyrene bristle brush. The film should be cleaned from the top to the bottom.
- Final clean water rinse is necessary to ensure that all the soap solution is washed off from the surface of the film.
- Cleaning products must be grit free to avoid scratching and it is recommended to always use a soft chamois or microfiber cloth when drying off liquids to avoid spots.
- The Avery Dennison Edge Sealer has to be refreshed and re-applied once every two years on the edges.
- Avery Dennison Supreme Wrap care products are compatible with our Paint Protection Films, Other commercially available cleaning products may be suitable but need to be tested prior to use on an inconspicuous area of the film.
- Within the limit of its expected lifetime and if applied on paint that has been completely cured following manufacturer's instructions, Avery Dennison SPF series Paint Protection Film can be easily removed. Good removability is not warranted if the film is applied on an existing graphics film, not properly cured paint or gel-coat. Avery Dennison SPF Series Paint Protection Films need to be removed by applying heat (approx. 40-50 °C), using a steamer or a professional heat-gun, and ensuring to keep a low removal angle between the surface and the film (< 30 degrees). In case some adhesive residue is present after removal, use Avery Dennison Adhesive Remover. The general instructions for removal of self-adhesive films are described in Technical Bulletin 1.2.)
- For removing any excess of Avery Dennison Edge Sealer, use isopropyl alcohol (IPA) or Avery Dennison Adhesive Remover. Also in this case, test the removal liquid of choice on an inconspicuous area of the surface.

As a general recommendation, handle the wrapped vessel with care, always ensuring to protect the wrap during docking, loading/unloading & transportation of the boat.

8.0 Durability of Paint Protection Film in Marine Application

The use of Paint Protection Film in marine application reduces the durability of the product by approximately 30%, compared to automotive applications. As a result, the durability statements for Paint Protection Film in Marine are the following

	Zone 1		Zone 2		Zone 3	
	Vertical	Non Vertical / Horizontal	Vertical	Non Vertical / Horizontal	Vertical	Non Vertical / Horizontal
SPF-X3 and SPF Gloss Black	7	5	5.5	2.5	4	2

9.0 Disclaimer

This Technical Bulletin describes a technique. The information contained herein is believed to be reliable, but Avery Dennison makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. To the extent permitted by law, Avery Dennison shall not be liable for any direct, indirect, special, incidental, consequential, or otherwise related loss or damage arising out of or in connection with the technique of making a graphic element, regardless of the nature of the legal argument.