

Application Instructions for Avery Dennison® SPF DIR Series Paint Protection Films

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This Technical Bulletin describes a general technique for the application of Avery Dennison SPF DIR Series, a range of different paint protection films. The following application guidelines should be followed when applying:

- Avery Dennison SPF-X3 DIR (Avery Dennison product code CH6640002)
- Avery Dennison SPF-X2 DIR (Avery Dennison product code CP3470001)

1.0 Consult Product Data Sheet

- Before applying the product, consult the appropriate product data sheet for information regarding appropriate substrates and product performance. Once assured that all factors relating to the product are understood, and all factors comply with the product specifications, you can decide to apply the relevant Paint Protection Film of the Avery Dennison SPF DIR Series.
- For additional information about the application technique, please also see the following how-to videos: [Surface preparation](#), [Wet Application](#) & [Curved surfaces](#).

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 (Avery Dennison product code CA8140001)
- Stainless steel blades (Avery Dennison product code BM3290001)
- Lint-free cleaning cloth
- Spray Bottle (Avery Dennison product code CA8140001)
- Avery Dennison Surface Cleaner (Avery Dennison product code CA3750001)



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- Avery Dennison Application Gel (Avery Dennison product code BP6340001 / BP6330001)
- A professional heat gun or a steamer
- Baby shampoo and water
- Ethanol (>96% purity)
- Mild detergent solution for vehicle washing

3.0 Storage conditions

Avery Dennison SPF-X3 DIR and SPF-X2 DIR Paint Protection Films should be stored at a Temperature of 20 °C (± 2 °C) with 50 %RH (± 5 %), in the original package and in a vertical position. Proper storage is essential to maintain product quality and also enables a hassle-free application. SPF-X3 DIR and SPF-X2 DIR have a protective PET sheet and require additional extra care when stored. After unwinding and using these products, ensure to store by applying high tension and tightly closing the roll with 3 pieces of tape, to avoid formation of tunneling between PET protective sheet and facefilm. User assumes all risk and liability for the loss of performance due to improper storage by the user. Improper storage shall mean that the user did not store the film in accordance with the aforementioned instructions.

4.0 Recommended substrates

SPF-X3 DIR and SPF-X2 DIR Paint Protection Films are designed for vehicle paint protection purposes and recommended for application on:

- OEM painted vehicles
- On top of already applied Avery Dennison Supreme Wrapping™ Film

Note for application of SPF-X3 DIR and SPF-X2 DIR on top of Supreme Wrapping Film:

- SPF DIR paint protection films cannot be used as a lamination film and must be applied manually on top of Avery Dennison Supreme Wrapping Film with a second application step, following the guidelines provided in this Technical Bulletin.
- When applied on top of Supreme Wrapping Film, the film acts as a protecting layer against aging and sun exposure. Over time, this can result in visible color difference between parts that are covered by the film and parts that are unprotected.
- If applied on top of Supreme Wrapping™ Film, the removal of the film may damage the original wrap underneath.

5.0 Preparation and cleaning of the surface

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. The use of a squeegee can help to remove dust or particles from the vehicle surface.



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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.

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. In addition, the following factors should be included in the preparation before application:

- Car wax and polish residues must be completely removed.
- Paint surfaces must be completely dry, hardened and free of scratches. On most baked paints, films can be applied immediately after cooling down. Air dried and car repair paints require at least one week to dry before films should be applied. Solvent residues in painted substrates may adversely affect film adhesion and might cause excessive shrinkage or blistering.
- Painted substrates should be dried according to the paint manufacturer's instructions to avoid solvent retention. 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.
- 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.

For extra information on preparation and cleaning of the application surface, additional instructions are provided in Technical Bulletin 1.1.

6.0 Installation of the film

The Avery Dennison SPF DIR series has been designed to protect the car's body paint and can be applied to car fronts, wheel arches, rocker panels, door edges, pillars etc. Before starting the application, wash your hands, to avoid fingerprints on the adhesive, and ensure that the SPF DIR film is applied in a clean, dust-free and well lit environment.

The film needs to be applied using the wet application method, installing the film either with Avery Dennison Application Gel or with a water and baby shampoo solution.

Avery Dennison Application Gel is a pre-mixed optimized solution, specifically designed to facilitate the application of SPF DIR series. The gel can be sprayed directly from its own spray bottle or used in combination with the Avery Dennison spray bottle 1.2L.

In case of using water and baby soap, the recommended soap solution for application is 1 Liter of water mixed with 2 mL of baby soap. Prepare and mix this solution into the Avery Dennison spray bottle.

As a first step in the application, cut the material from the roll to approximate needed size and make sure to remove the transparent protection sheet applied on the face of the film.



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Spray the Avery Dennison Application Gel or soap solution on the painted surface before applying the film.

Remove the PET liner and spray the exposed adhesive side with the Avery Dennison Application Gel or soap solution. Then position the material on the selected application area. If necessary, slide the film until you have reached the correct positioning. The surface of the film should also be sprayed wet with the Avery Dennison Application Gel or soap solution throughout the application to allow the squeegee to slide across the film.



Once the material has been positioned, gently start to squeegee the film. Use an Avery Dennison Red and Blue Squeegees and gradually increase the pressure in order to remove all the air, water or gel from under the film. Overlap the squeegee strokes by about 50% to avoid remaining air/water or gel entrapments. During this phase, make sure to keep the squeegee and the face of the film wet with the Avery Dennison Application Gel or soap solution to facilitate sliding of the squeegee on the film surface. For applying extra pressure in removing gel or water, it is also possible to use the hard/back part of the squeegee, paying attention not to damage the film. User assumes all risk and liability for any damage to the film that may be caused by the use of the hard/back part of the squeegee.

Please note that re-positioning of the film is only possible during the stage of positioning and with low squeegee pressure. If done at a later stage, small marks or lines might remain visible on the film surfaces.



For curved areas, it is necessary to firmly pull and stretch the film in order to conform the film around the surfaces. Identifying some fixing points, where the adhesive can be activated by applying pressure, will help in the stretching and fitting process. It is recommended to stretch the material without applying any heat, making use of the intrinsic flexibility of the film. It is also possible to gently heat the material to a temperature of 40-50 °C using a heat gun or a steamer. Make sure not to overstretch the material to the point of creating white stretch lines and/or other visible marks onto the face film.

If higher tack/faster adhesion is needed when stretching the film into a compound/curved part, it is possible to spray the substrate with a solution of water and ethanol (1 part ethanol 4 parts water, for example 250 ml ethanol, 1 L water).



Conventional convex and compound shapes on car fronts are mostly suitable to be covered with all of the paint protection films in the Avery Dennison SPF DIR series, but in some deeper corrugated shapes it may be necessary to make an incision in order to avoid any form of air/water entrapment in the deep recesses. This incision does not jeopardize the functionality or durability of the product.

Once the film has been applied and effectively squeegeed on the selected application areas, proceed to the finishing step by trimming the excess film off the edges. On long and straight edges, it is possible to tuck the material over the edges. Before doing that, please ensure you have left sufficient material (approx. half a cm) on the edge and have properly cleaned the edge of the film surface. The use of a heat gun can help to activate the adhesive around the edges. Please, do not overheat the material any higher than 40-50 °C. On sharp corners and non-regular edges, it is necessary to cut the film short, approx. 1-2 mm. To facilitate cutting, make sure to use new and very sharp knives for cutting: dull knives will result in blurred cutting edges. When applying products of the SPF DIR series, it is recommended to use stainless steel blades with your knife. The use of stainless steel blades will delay rusting and deterioration of the blades, due to contact with water.

As final application step, re-squeegee the most critical areas (e.g. deep corrugation and edges) with a wet squeegee to ensure secure adhesion to the substrate. To facilitate and speed-up adhesion on edges, spray the edges using a solution of water and ethanol (1 part ethanol 4 part water, as for example 250 ml ethanol, 1 L water).

In case any residue of Avery Dennison Application Gel remains after application, it can be easily cleaned using some 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 DIR and SPF-X2 DIR are able to heal small and medium scratches if exposed to an external source of heat (>40 °C), such as hot water, heat gun or warm sunlight.

8.0 Cleaning, Maintenance and Removal

Avery Dennison SPF DIR series Paint Protection Films feature a long-term protection of the car body's paint during the lifetime of the product. In order to maintain and clean the film, it is recommended to use Avery Dennison Supreme Wrap Care products. Other commercially available cleaning products may be suitable but need to be tested prior to use on an inconspicuous area of the film.

Avery Dennison SPF-X3 DIR and SPF-X2 DIR have been specially designed to provide high stain resistance enhancing the ease of cleaning and removal of stains.

Within the limit of its expected lifetime and if applied on properly cured car paint, Avery Dennison SPF DIR series Paint Protection Film can be easily removed. Easy removability is not warranted if the film is applied on an existing graphics film, not properly cured car paint or any other type of surface that is not car paint. Avery Dennison SPF DIR 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.

9.0 Disclaimer

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