

Avery Dennison® Instructional Bulletin 1.15

Application Instructions for Avery Dennison SPF-XI Supreme Protection Film

General Information

Avery Dennison™ SPX-XI Supreme Protection Film is a new generation top coated Polyurethane (PU) film, designed to provide excellent protection for automotive, transport, marine and OEM applications. The film can resist light scratches to the specially designed topcoat, these scratches will disappear at normal room temperature, the application of heat can aid in scratch removal. Scratches that penetrate deeper than the topcoat cannot be removed, this is a normal characteristic of a PPF film and not deemed a failure of the material.

This instructional bulletin provides information on the key factors for the successful installation of the product.

Important Note: As with all graphics films, it is important to avoid using any hard solvents (i.e. IPA (Isopropyl Alcohol) or Avery Dennison Surface Cleaner) directly on the surface of Avery Dennison SPF-XI Supreme Protection Film during the application process or afterwards when cleaning. Use of these products directly on the surface may cause matting, loss of gloss and prematurely degrade the film.

1.0 Consult Product Data Sheet

Before applying the product, consult the appropriate product data sheet for information regarding suitable substrates and product performance. Once assured that all factors are understood with respect to the product, and the end use complies with the product specifications, you can decide to apply the Avery Dennison SPF-XI Supreme Protection Film.

2.0 Application Tools

- Tool belt – to hold all application tools
- Microfiber Felt Edge Squeegee, like the following:
 - Squeegee Pro Flexible
- Wet edge squeegee or;
- Avery Dennison Squeegee Pro Flexible with wet edge buffer applied
- Flexible polyurethane squeegee blade, in 130mm width, with handle
- Cutter/knife with break off blades
- Stainless steel replacement blades
- Avery Dennison Magnets
- Heat Gun or Steam Cleaner with on demand steam
- Edge Wash Solution: 1L Pump Spray Bottle with trigger containing 100% water
- Soap Solution: 5L Pump Spray Bottle with trigger containing water and baby shampoo mixture (2ml of baby shampoo per 1 litre of water)
- Avery Dennison Surface Cleaner
- Lint-free microfiber cleaning cloth
- Clay bar and lubricant

Important Note: To avoid damaging the film, always ensure the application tools are in good condition and test the suitability prior to commencing the application.



3.0 Storage conditions

Avery Dennison SPF-XI Supreme Protection Film should be stored at a Temperature of 20°C (\pm 2°C) with 50 %RH (\pm 5%), vertically in original packaging, ensuring the material is tightly wound around the core and fastened with tape. Proper storage allows the film to keep its maximum performance and also enables a hassle-free application. User assumes all risk and liability for the loss of performance, when the film is stored improperly. Improper shall mean that the user did not store the Avery Dennison SPF-XI Supreme Protection Film in accordance with the aforementioned instructions.

4.0 Preparation and cleaning of the surface

Note: some new vehicles may have co-polymer paint protection coatings. These coatings make it difficult for pressure-sensitive adhesive products to adhere sufficiently. Autoglym Multiwash is a recommended cleaner to pre-clean surfaces, however we recommend you check with the manufacturer first to determine suitability. Ensure you follow the instructions as directed by the manufacturer: For removal of Copolymer paint protection coatings, a solution of 1 part Autoglym Multiwash, to 4 parts clean water solution is to be made up for hand low pressure spray application. Spray apply evenly to all areas of vehicle (especially deep recess and 3D sections) rub with a sponge, allow 5 min reaction time, do not allow to dry. If it dries, re-apply; re-work with sponge, then rinse systematically with high-pressure water, preferably hot, removing all of the solution.

- To prepare the application surface, wash it with a mild detergent solution, after which the surface should be rinsed with water and dried with a lint free microfiber cloth.
- For optimum results it is recommended to clay bar automotive paint prior to installation. The use of a clay bar will remove any embedded foreign particles and contaminants in the paint, providing a smooth and contaminant free surface. Use a good quality clay bar, recommended lubricant and follow the manufacturers instructions closely, to avoid damaging or marring the paint.
- After clay barring the surface, repeat the wash with a mild detergent solution, rinse and dry with a lint free microfiber cloth.
- After the surface has completely dried, the surface should be further cleaned and degreased using the method described in section 4.1. Avery Dennison Surface Cleaner is recommended, although many other commercially available cleaning/degreasing products may be suitable for cleaning and degreasing, they need to be tested prior to use.

4.1 Final Surface Cleaning and Preparation

- After following the cleaning instructions above, the substrate should be thoroughly cleaned with Avery Dennison Surface Cleaner.
- Spray the Surface Cleaner onto the surface that is to be prepared and allow to dwell, remove using a clean, soft, lint-free microfiber cloth, remembering to rotate the cloth for each new area you clean.

or alternatively

- IPA (isopropyl alcohol) can be used, by wiping the surface with a cloth soaked in IPA.
- After thoroughly wiping with IPA, dry wipe the surface completely using a clean, soft, lint-free microfiber cloth before the IPA evaporates.

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. Air-dried, oven cured and car repair paints require at least four weeks to dry before films can be applied. Solvent residue in painted substrates may adversely affect film adhesion and might cause excessive shrinkage or bubbling.

- Painted substrates should be dried according to the paint manufacturer's instruction 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 further information on preparation and cleaning of application surfaces, please refer to Avery Dennison Instructional Bulletin 1.01.

5.0 Installation of the film

- Avery Dennison SPF-XI Supreme Protection Film has been designed to protect the surface of the car's body and can be applied to bonnets, bumpers, guards, rocker panels, door edges, pillars and most OEM painted substrates.
- Avery Dennison SPF-XI can be hand cut on the substrate after installation or plotter cut using specialised software and templates prior to installation.
- Before starting the application, wash your hands, to avoid fingerprints on the adhesive and ensure the Avery Dennison SPF-XI Supreme Protection Film is applied in a clean, dust-free and well lit environment.
- SPF-XI film needs to be applied using the wet application method, being a water and soap solution.
- For optimal application performance, the recommended soap solution is a mixture of 1 Liter of water per 2ml of baby shampoo. Eg. For 5L of water add 10ml of baby shampoo.
- Prepare and mix the soap solution in the 5L large pump bottle with trigger spray.

Important Note: Do not add any alcohol (e.g. Isopropyl Alcohol) to the application soap solution.

- To start, measure and cut the material from the roll ensuring it is 50-100mm larger than the panel it is being applied to, make sure to remove the transparent protective sheet applied from the face of the film.
- If plotter cutting the film, ensure the transparent protective sheet is removed prior to cutting.
- Spray the soap solution on the substrate before applying the film, ensuring the surface has an even and generous covering of soap solution.
- Spray fingers with the soap solution to avoid any fingerprints in the adhesive.
- Remove the PET liner and spray the exposed adhesive side with a generous covering of the soap solution.
- Position the material on the substrate, if necessary, slide the film until you have reached the correct positioning.
- The surface of the film should also be sprayed with the soap solution throughout application to allow the squeegee to slide easily across the film and helping to avoid damaging the surface.





- Once the material has been positioned, gently start to squeegee the film.
- Using the 130mm urethane squeegee with handle or the Avery Dennison Squeegee Pro Flexible with wet edge buffer for the large areas, gradually increase the pressure in order to remove all the air and water from under the film. Overlap the squeegee strokes by about 50% to avoid remaining air/water entrapment.

Important Note: Re-positioning of the film is only possible during the initial positioning and after low squeegee pressure has been applied to the film. If done at a later stage small marks or lines might remain visible in the film surfaces.



- For curved areas, it is necessary to firmly pull and apply firm tension to the film in order to conform the film around the surfaces.
- Whilst the film is under firm tension, squeegee the area, gradually increasing the pressure.
- The use of a small amount of heat from a heat gun or steamer (30-50°C) can aid in conformability.



Note: Although Avery Dennison's SPF-XI Supreme Protection Film topcoat is highly resistant to cracking, care should be taken to avoid overstretching or applying too much tension, fine cracks in the top coat can result from incorrect stretching or over tensioning the film. It is recommended to experiment with the film prior to installation to find the limit of the film compared to your installation technique.



Note: Conventional convex, concave and compound curves are mostly suitable to be covered with Avery Dennison SPF-XI Supreme Protection Films, but in some deeper corrugated shapes and recesses it may be necessary to make an incision or relief cut in order to avoid overstretching the film. Ensure any incisions or relief cuts are made with a rounded and not straight cut or finish, this will avoid any unintentional tearing of the film. Incisions or relief cuts do not jeopardize the functionality or durability of the product.

- Where the film meets an edge of a panel such as a bonnet or edge of a door, a 100% water edge wash solution should be sprayed underneath the edges of the film to remove any residual soap solution, in order to achieve suitable adhesion.
- Once the edges have been washed with 100% water, use firm squeegee pressure to ensure the edges adhere. It may be necessary to repeat the edge wash a second time due to residual soap solution re-entering the edges.
- Once the film has been applied and effectively squeegeed onto the application areas, and all edges are firmly adhered, proceed to the finishing step by trimming the excess film off the edges.
- In cooler climates some additional drying time may be required before commencing trimming of the film.
- For optimal cutting of the film, make sure to use a new and very sharp blade: dull blades will result in rough cuts or insufficient cutting depth.
- Use light blade pressure and only score the top half of the film, an audible squeak can be heard when the correct trimming pressure is used.
- Once scored, the excess material will easily come away from the applied material.

Important Note: As final application step, re-squeegee the most critical areas (e.g. deep corrugations and edges) with a wet edge squeegee to ensure optimal adhesion to the substrate.

6.0 Cleaning, Maintenance and Removal

Avery Dennison SPF-XI Supreme Protection Films features a long-term protection of the car body during the lifetime of the product. Avery Dennison only recommends hand washing of the film. Additionally for periodic maintenance and cleaning of 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. For further information on cleaning and maintenance of the film, please refer to Avery Dennison Instructional Bulletin 1.8.

Important Note: Allow 24-48 hours after application before washing the film.

Important Note: Avery Dennison does not recommend the use of high-pressure washers near the edges of the film.

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Within the limit of its expected lifetime and if applied on properly cured car paint, Avery Dennison SPF-XI Supreme Protection Film can be removed cleanly. Clean removability is not warranted if SPF-XI film is applied to existing graphics, improperly cured car paint or surface types other than OEM automotive paint. For further information on removal of self-adhesive films, please refer to Avery Dennison Instructional Bulletin 1.07.

Warranty and Limited Remedy

This instructional bulletin describes a technique. The information contained herein is believed to be reliable, but Avery Dennison makes no warranties, express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. To the extent allowed by law, Avery Dennison shall not be liable for any loss or damages, whether direct, indirect, special, incidental or consequential, in any way related to the technique of making a graphic regardless of the legal theory asserted.

The above information provides basic information on how to apply pressure-sensitive films. 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 installing films in remote geographic areas, professional applicators can offer the added benefit of local service.

Avery Dennison has a vast network of Specialist Installers who have been specially trained and certified in accordance with our recommended techniques.

You can review the Specialist Installer list here: <http://carwrapsanz.com/specialist-installers/>

Consider hiring a professional whenever the application requires:

- 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 Dennison representative.