

3M



Installation

Training Manual

Equipment

Slip Solution:

Concentrate instructions: 10ml of Baby Shampoo / Baby Bath to 5 Litres/ 1Gallon Water.

This solution slows the adhesion process of the film sufficiently to allow easy positioning onto the area to be protected and also allows handling of the adhesive side of the material with less risk of contamination from fingerprints, static build up etc.

The other uses of this solution include cleaning of the panels prior to installation to assist removal of insects, mild dirt etc. in addition to aiding squeegee to glide on the surface of the film during installation.

This should be dispensed using a suitable mist spray applicator bottle.

Flush Solution:

Concentrate instructions: Water / Isopropynol Alcohol

This solution is used to disperse slip solution when fast adhesion is required, for example when folding edges, tucking into apertures, prior to applying tension etc. A 25% Alcohol / 75% water mix may be used, where allowed, for this purpose.

Plain water is more commonly used for this process.

This should be dispensed using a suitable mist spray applicator bottle.

Rubber Squeegees:

These may be obtained through your local 3M distributor ((3M Id. 50871 (GC-8010-3747-1)) at minimal cost and so far have been proven as the best style of applicator available. These may be used for approx. 5-10 installations or until edges begin to deteriorate.

Olfa Lock Knife Blades:

Occasionally it may be necessary to trim excess film after installation, we recommend the use of these snap off style blades, wrapped in a suitable protective tape, as they allow for greater feeling and maneuverability in confined spaces over use of conventional knives.

Note: Caution should be taken when trimming to avoid damaging vehicle paintwork!

Absorbent Towels:

Used during and after installation to assist in excess solution removal.

Fine Needle Syringes:

Used for the removal of fluid bubbles, which may have become trapped.

Note: Caution should be taken when using to avoid damaging vehicle paintwork!

Other Self explanatory equipment:

Selection of Screwdrivers / Socket Set / Pliers / 'Lint Free' Polishing Cloth / Mild Wax Polish / Tar & Glue Remover / Insect Remover / Panel Wipe or Panel Prep

Preparation

Clothing:

Installers should avoid wearing clothing with loose fibres such as wool etc. as these could contaminate the adhesive side of the film and become entrapped during installation. Any outer clothing such as jackets with zips, metal buttons etc, along with jewellery such as bracelets watches, rings etc. should also be removed to avoid the possibility of damage to the vehicle during the installation process

Installation Area:

A suitable location should be provided for the installation of VentureShield; this should be an enclosed area which is clean and relatively dust free. Adequate lighting should be available and you should avoid areas around doorways or areas of high traffic from other vehicles or personnel.

Vehicle Preparation:

The vehicle should where necessary be washed thoroughly using **3M Car Wash Soap (39000)** before installation commences, paying particular attention to apertures, body lines, grilles and any other area where dust and grit may collect.

Once satisfied with the general cleanliness of the vehicle it is time to prepare the surfaces of the vehicle where application of VentureShield is to take place.

Firstly remove all contaminants from the painted surface, such as insect debris, road tar, tree sap etc. Specialist cleaning solutions may need to be used for this purpose however care should be taken to ensure appropriate cleaners are used.

Next using either the flush solution or a suitable panel prep solution remove all wax polish from the main areas to be protected. (**3M Glass Cleaner 50586** works very well for this purpose)

The third and most important areas to be cleaned are those where the film is likely to be tucked or folded and the removal of any silicone waxes and dirt should be thoroughly ensured from these areas. Pay particular attention to the area around the hood where the film is normally tucked under, and or apertures in bumpers where the film is to be folded out of sight. If in doubt of the areas where folding / tucking is to take place clean all possible areas as this process cannot be done once installation is underway.

Once satisfied that the vehicle is prepared suitably, spray a fine mist coating of the Flush Solution over the main surfaces of application and re clean to ensure wax / dirt etc. is thoroughly removed.

Film Preparation:

Separate the pre cut pieces into groups (i.e. Bumper & Lower Skirt / Hood and Fender Ends / Lights etc.)

Select the area which you are to start with and separate the pieces further into left and right sections. (It is normally recommended that installation commences with the upper areas and then work downward on the vehicle (i.e. Bonnet – Headlights – Bumper – Lower Skirt etc).

Basic Installation Techniques

Initial Film Removal:

When removing the film from the liner, roll back a suitable edge and spray liberally with the slip solution, at the same time spray your fingers so that there is no chance of touching the adhesive whilst dry. This will allow you to handle the adhesive side of the film without the possibility of leaving fingerprints in the adhesive surface, also there is a considerable amount of static build up when removing the film and the spraying of the solution greatly reduces the possibility of adhesive contamination from dust and grit particles.

With large sections of film it is useful to remove these panels from the liner paper by laying them film side down onto the hood of the vehicle after first spraying a fine mist coat of solution over the panel to avoid scratching of the hood. Then simply repeat the process as described above leaving the film lying on the hood whilst peeling back the liner.

Panel Preparation:

Spray a light mist coat of slip solution onto the area of the vehicle to which the film is to be applied, this will assist in the application of the piece and allow the film to slide into position without sticking.

Initial Film Application:

Lay film onto panel, roughly into position, utilizing the slip solution which you have sprayed both onto the panel and also the film, gently slide the piece into the starting position, this varies dependant on the size and shape of the piece.

Squeegee Techniques:

The first basic recommendation when using a squeegee is to ensure you hold it correctly; position four fingers on one side with your thumb on the opposing side, and hold at approximately 45-60 degrees to the panel so that only one edge comes into contact with the film.

When using the squeegee ensure that the surface of the film is suitably lubricated by spraying a mist coat of slip solution over the top surface. Re-wet the surface, as it becomes dry, to avoid leaving rubber squeegee marks / scratches. (Avoid using excess solution as this creates surface bubbles which may hide underlying solution bubbles)

Using short sharp repeated strokes, applying moderate pressure, push or pull excess solution from under film towards the nearest available edge, utilizing the available light above to check constantly for remaining fluid bubbles whilst progressing. When dealing with uneven surfaces and particularly around edges apply suitable pressure, even bending the squeegee to ensure suitable contact with film surface.

To remove bubbles which may become trapped, use short sharp strokes to break the adhesion around the trapped section, try to work towards the closest edge of the material, however sometimes you may find that bubbles will work out a route which may be longer but where adhesion is less advanced allowing bubble to travel easily. (*Note: It is much easier to remove fluid bubbles during early stages of adhesion, later attempts at trapped fluid may result in marking the film surface or even prove impossible, at this stage you may need to remove bubble using syringe!)

Tensioning Film:

When dealing with certain complex curves it will be necessary to apply tension to the film to reduce gathering of excess material. When the need arises to apply tension you should ensure that the material is suitably fixed to the point prior to where tension is to be applied to avoid disturbing previously positioned sections.

When applying tension it is sometimes useful to start a rocking motion from side to side at the same time, this will help eliminate pockets of air and ease installation, distributing the film evenly over the panel.

Slip solution is used when tensioning the film to reduce adhesion sufficiently to allow pulling into position, however using the flush solution towards the end of the tensioning will ensure the material does not shrink back after fixing. Always try to work film in sections several inches at a time, paying attention to body lines / apertures etc. to ensure accuracy of installation. Whenever possible release the tension once no longer necessary, especially toward edges.

Tucking / Folding:

Once main section of film is fitted you can then proceed with the final stages of installation.

These may include the tucking and folding of excess material into apertures, around the edges of the hood and fender ends etc.

Providing that suitable tension has been applied as described earlier, the folding / tucking of the material should be relatively easy, however additional techniques may need to be applied.

It is often easier to liberally spray the flush solution along edges and areas for folding to remove traces of any remaining slip solution first, as this will speed up adhesion. Use your thumb / fingers during this process, rather than the squeegee, as the heat generated from your body will assist in a faster adhesive curing time.

The use of absorbent paper towels when tucking / folding is also useful to soak up excess fluid and in extreme cases the use of a hot air gun or similar can assist in evaporating excess solution and produce a faster curing time, however caution should be exercised to avoid damage to vehicle paintwork and film surface by overheating.

(Note: Ensure that all excess solution has been removed from main section of panel before tucking / folding as once this process is complete bubbles will become trapped as edges will have been sealed!)

Excess Film Removal:

Following completion of installation it may occasionally be required to remove excess film. This should be done using a sharp blade as previously recommended.

The film only requires the top surface to be scored, this will allow easy separation and avoid causing damage to the underlying paintwork. Wherever possible it is recommended that the film to be trimmed is lifted away from the panel and trimmed before re adhering.

(Caution should be taken whenever trimming the film in place, always ensure that a fresh blade is used and only apply the minimum amount of pressure to avoid paintwork damage!)

Final Inspection / Cleaning:

Once installation is complete, spray a light mist coat of slip solution over the surface area and wipe clean using an absorbent paper towel, not only will this clean the surface of the film but also allow you to recheck for fluid bubbles or areas which may have lifted using the light above to ensure there is no remaining or problem areas of lifting etc.

Once completely satisfied with the installation it is recommended to apply a light wax polish, (**3M Performance Finish**, has been identified as one of the best products), over the surface of the film, always ensuring that you avoid polishing towards any edges of the film so as not create a build up of residue. Always polish from the film surface away to the remaining panel.

Please note during winter months where the temperature is expected to fall near to or below freezing point it is recommended to keep the vehicle within the warm workshop conditions to ensure evaporation of any remaining water residue from under the film takes place. Failure to do this could result in water freezing under and the film and so cause loss of adhesion and lifting issues.

Customer Handover:

As part of the warranty terms and conditions it is recommend that the customer apply suitable wax polish, such as **3M Performance Finish**, periodically to maintain the high gloss finish of the product. Attempts should be made to ensure that this process is repeated every 6-8 weeks.

The removal of bird lime / insect debris etc should be carried out at the earliest available moment to avoid staining to the film, remember VentureShield is applied to stop this contamination from damaging paintwork, however poor aftercare may result in the film itself becoming contaminated, if contamination becomes to bad, then replacement of the product at the customers cost may be the only resolution!

Advanced Installation Techniques

Hood Package

Fender Ends

1. When installing a hood and fender package we recommend that in most cases the fender ends be fitted first as these parts are usually pre cut to fit accurately around headlamps, side lights etc and therefore once installed may act as a guide to ensure the fitment of the hood is symmetrical.
2. Dependant on the vehicle and design of the fender end, the starting point for application will vary, however it is usual that you will work fixing the film at the lower points and working towards the hood aperture as there is normally excess material to fold into this aperture.

Hood

Note: With the exception of some Ferrari, Porsche, Lamborghini and Mercedes Benz models (with raised emblems) most Invisible Patterns templates have a pre cut area around the hood emblem, should the need arise to remove any emblems or grilles refer to Vehicle Manufacturer instructions.

1. Position the hood piece centrally onto the panel using emblems, grilles, body lines to check that equal distances and alignment both horizontal and vertically is achieved prior to squeegeeing.
2. Fix the centre of the panel into place and then begin working the fluid out towards the edges, always checking accuracy of fitment whilst proceeding.
3. Tension should be applied wherever necessary and ensure that when edges are reached they align with the fender end back edge prior to fixing.
4. Where excess material is to be folded around hood edges it is necessary that you remove a triangle of film from any 90 degree corners to avoid excess material gathering underneath. Do this by lifting the material away from the panel and trimming diagonally across the corner before refixing.
5. Before folding excess material ensure that you have sprayed liberally with the flush solution to remove any underlying soap. In most cases it is recommended to leave the tucking of the hood until later to allow the film adhesion to return and save spending excessive amounts of time with these areas. Once the film has begun to dry out you will find it a lot easier to tuck and adhere.
6. If there are large quantities of excess material when folding is complete you can remove this back to a suitable fixing point by trimming with a fresh blade.

Door Mirrors

Due to the bulbous shapes of most mirrors we recommend that the inner edges be fitted first this allows tension to be applied towards the outer edge to ensure that film does not lift at any edges and cause

later problems. Care should be taken not to overstretch these small areas as this may result in marks being left in the adhesive and surface of the film.

Bumper Package

One Piece Bumpers:

1. Installation of one piece bumpers will normally commence from the centre of the panel working out towards the edges of the vehicle. This only differs when pre cut areas are apparent and may require aligning on one side first.
2. Position the bumper centrally as per the hood, using mouldings, inserts etc. as guides for accuracy. Ensure adequate quantities of slip solution are used to allow the part to be slid into position.
3. Once happy with centralization fix down the centre area first, it may be required that flush solution be introduced to ensure suitable adhesion.
4. Working from side to side, begin applying necessary tension and work out the material towards the edges, constantly switch from left to right to ensure even distribution of the film over the panel surface.
5. Additional tension may need to be applied when attempting to go around the corners of the bumper and here it is particularly useful to apply the 'rocking technique' described earlier to reduce gathering of film. Remember that once around the corner and the film has been suitably fixed that you release the tension and continue to the edge of the panel to ensure that the film does not shrink back.

Care should be taken around washer jet inserts or anywhere that the film is in thin strips as these pieces can become easily distorted if excess tension is applied. Never simply grab the end of the film, once the centre is fixed, and attempt to pull the panel all the way into position as this will distort the film, it is always better to fix several inches at a time only applying tension at the required intervals, this will ensure accuracy of fitment.

Two Piece Bumpers:

1. With bumpers that are supplied in two pieces or more it is usual that you work from the outside edge towards the centre as it is normally a thinner section in the centre and tension can be applied more easily here. As with the one piece bumpers, occasionally it may be necessary to align pre cut areas first such as spotlamp apertures, bumper inserts etc, but this should be fairly apparent once main panel is laid onto vehicle for the first time.
2. Once you have established starting point proceed with installation again working outwards and checking accuracy with body mouldings etc.
3. Where sections meet either in the centre or at the edges, ensure that both pieces join evenly and centrally, taking care not to disturb parts already fitted when squeegeeing.

Lower Skirts / Bumper Inserts:

It is normal procedure to fit these additional pieces after the main sections of bumper are installed. Cautions should be taken where edges meet existing pre installed areas to avoid damage when squeegeeing.

Lamp Package

When installing lamps it is important to ensure that approx 5-10mm gap be left around edge of lamp to allow for heat dissipation. This is particularly important on Xenon / Hi Intensity / Gas discharge lamps etc.

For symmetrical lamps you would normally start from the centre and work out evenly towards the edges.

With larger more complex lamps it may be necessary to start in the bottom corner and work upwards and outwards around the side of the vehicle, applying suitable tension to deal with gathering etc.

Due to the bulbous nature of certain spot lamps, it is sometimes impossible to fit film to these parts and they may not be included in the kits for this reason.

Options Package

Parts included in the option package are normally installed last after all other parts have been applied.

Pay particular attention to items like the top of rear bumpers and ensure that they are centralized prior to fixing.

Inner wheel arches will require suitable tension to allow wrapping inside wheel apertures.