

SL® Automotive Glass Upgrading

Working conditions

Assembly of the film should be executed in a closed, dust-free and well illuminated work area. There should be as few persons as possible. We recommend you to wear lint-free clothing. Your hands and the needed equipment should be clean and free of oil and fat.

Preparation of installation

Please clean the windows on the outside, we recommend you to clean the complete car. Remove all decals on the inside of the windows. Cover all vehicle parts that can be harmed by window cleaner or cleaning liquid.

Tools

To ensure that your warranty does not become void you have to execute the installation with our installation concentrate. The needed tools for the processing and installation of the films can be bought additionally from us.

Handling of tools

Always wet the film before using any rubber tools on it. Only use the original Olfa-Cutter with AB 10S stainless steel blades (see picture). Always work with a sharp blade and position it as flat as possible. Use lint-free dry paper towels. Wrap the hard card in a paper towel.



Cutting of the film

Trim the film at the outside of the window (the side with the adhesive has to face out). There must be a label with the corresponding General Type Approval on every cut. Attach the pre-cut film to a trimboard or separate glass with the application solution. When working with a dark tint use a neon lamp to illuminate the window from the inside. Never cut on the black ceramic (Dot-matrix) and on the inside of the window. Cut the film around a hole in the glass (e.g. deflector pane). Take into consideration that the film has to be squeezed well on the window before cutting the hole. After cutting of the hole the cut edge has to be squeezed once again, and has to be sealed with clear fingernail polish. In order to coat curved windows use the "dry or wet shrink method" (see corresponding paragraph). If the curvature is too extreme or the window simply too large you need to install the film in two stripes. Overlap these stripes on a heating wire. Make a cut along the heating wire. The side borders of the stripes should form one line, so that an exact fit is ensured when applying the film. For installing the film on closed wind-up windows, please notice that the bottom edge should be completed with the outer rubber lip a little bit above it (also depends on the position of the rubber). If the inner rubber lip is not lower than the outer lip press it down or remove it to assure a clean application. At the sides angle the cutter so that the piece of film becomes slightly larger and the edges are covered by the outer sealing after installation. Lift the bottom part of the film and move down the window about 10cm. Squeeze the top part to the glass and cut it along the edge. Remove the film and trim inaccurate corners and edges on the trimboard.

Cleaning of the glass

Spray the glass with window cleaner. Scrape off the dirt using a single razor scraper (see picture below), important: Do not turn around the blade in order to avoid scratches. Only pull the blade along heating wires and antenna wires. Never push the blade or pull it on the heating wire. Possibly existing glue residues on the glass will become visible when you softly wipe it with spirit. Remove the residues by using spirit or a single edge razor scraper.



General advice

Never touch the dry adhesive. No part of the adhesive should be dry when applying the film. Always apply the film leaving a minimum gap to the edge of glass. At the edges or at problematic areas the instant adhesion can be increased by heating the glass from the outside.



Wet shrinking technique

Preparation of the glass

Clean the exterior of the rear window, assure the removing of any dust or dirt and let it dry completely.

Apply the film from the outside on the window pane

Spray the exterior of the rear window with installation liquid. Position the film with the liner side up onto the glass. Squeeze the film in a horizontal line in the middle and at the sides creating an H-pattern. As a result the film should be sticking flat to the glass on both sides. All the excess material should now be evenly distributed at the top and bottom (have a look at the graph at the end of the chapter). The film has to shrink longitudinally.

Cutting of the film

Trim the film around the edge of the window, so that as much glass as possible can be used for the shrinking of the film. After finishing shrinking the film will be cut to fit.

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Preparation of use of the professional workshop drier

Spray the rear window once again with the installation liquid. Squeeze the film a little bit (picture 5) and leave airlocks at the top and the bottom (picture 4).

Use of the professional workshop drier

Depending on the model, the drier should be adjusted to the highest level. The perfect temperature hitting the film will be defined by the distance between drier and film (some centimetres). Start in one of the parts where the film begins to lift of the glass and where finger tips are visible. Move the drier vertically from the middle to the edge (have a look at the graph at the end of the chapter). The film will fall flat to the curvature of the glass. Squeeze the film only on parts of the film which have already been shrunk, otherwise bents are possible. The closer you come to the edge, the more you have to position the material with your fingers so that a steady heating is guaranteed. Rather leave many little fingers than some big ones. Should the film cover the whole window in the area of the screen printing, we recommend you to put up a cold light lamp inside the car. This facilitates the exact cutting of the film.



Apply the film from the outside onto the window pane

Spray the glass with the cleaning liquid. Use a rubber squeegee and clean the glass in horizontal strokes from one edge to the other starting at the top (picture 1). Clean the squeegee with a paper towel after every stroke. Wipe the edges with a paper towel. Spray the glass with the installation liquid leaving the top edge dry. Before applying the film slightly move down the window. Remove the liner only 2/3 and put the piece to the glass leaving a minimal gap to the top edge. Carefully squeeze the top part of the film (the film should not slip). After 20 minutes respectively after heating the top part of the glass press the edge of the film to the glass using the "little chizler" and move up the window. Remove the rest of the liner, wet the adhesive and squeeze the bottom part of the film. Squeeze the film first with the rubber squeegee, then with the plastic squeegee "blue max" (picture 2). Finally squeeze the edges once again with the "little chizler" (picture 3). After the bottom part of the film has cured the rubber lip can be brought back up. Please note that built out windows should only be installed when the edges are dried well.

Installation SL® film rear window

Spray the window with the OPALFILM® cleaning liquid. Use a blade to clean the window. Move the drier horizontally from edge to edge. Only pull the blade along heating wires, antenna wires etc. Never push the blade or pull it on the wires, otherwise the film could be damaged. After that, clean the window horizontally with a rubber squeegee. Start at the top edge of the window. Clean the squeegee with a paper towel after every stroke. Wipe the edges with a paper towel. Spray the window with the OPAL® installation liquid leaving the top edge dry to prevent the window from getting dirty. Remove the liner except for 10 cm at the bottom and wet the adhesive at the same time.

Put the film on the glass without having the adhesive touch the interior of the rubber lips. Position the film at one of the top edges, then on the other, so that you get the middle of the film. Remove the liner at the bottom and wet the adhesive at the same time. Now carefully place the bottom edge of the film behind the casing. You have the possibility to position and relocate the film. If this is not possible, there isn't enough concentrate in the installation liquid. In that case you can try to relocate it with slight beatings, not with powerful pushes, because of the risk of destroying the film.

Dry shrink method

The dry shrink method and the wet shrink method are techniques that allow shaping film to match even strongly curved spherical windows. This installation guide will explain the basic steps of these two techniques.

Preparation of the glass

Clean the exterior of the rear window removing any dust or dirt and let it dry completely.

Application of the powder

Sprinkle a small amount of powder (talcum or baby powder) slightly onto the glass and distribute it to a thin layer all over the window. Use a terry-cloth or a rag. The powder enables the film to "move" on the glass and avoid that the scratch-resistant coating is stuck to the surface. To keep the film in position during heat forming wet the glass in a horizontal line in the middle and at the sides (as far on the sides as possible) creating an H-pattern. This enables the film to stick on parts of the window on which heat forming is not needed or desired. Use a damp paper towel and make sure no water is running down into the dry powdered areas. The powder should be completely removed.

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Apply the film from the outside onto the window pane

Position the film with the liner side up onto the glass. Using a lot of pressure squeeze down the film over the wetted H-pattern. As a result the film should be sticking flat to the glass on both sides. All the excess material should now be evenly distributed at the top and bottom. The film has to shrink longitudinally.

Cutting of the film

Trim the film around the edge of the window, so that as much glass as possible can be used for the shrinking of the film. After finishing shrinking the film will be cut to fit.

Explanation: At this point please observe how the film is laying on the glass. The excess material showing itself as large fingers in the regular wet shrink method now gently floats consistently into the powdered areas. This widens the area of the film that can be heat shrunk to its maximum. Instead of just shrinking the fingers you can now shrink all of the film evenly and less stressful to the film.

Use of a professional workshop drier

Depending on the model, the drier should be adjusted to the highest level. The perfect temperature hitting the film will be defined by the distance between drier and film (some centimetres). The film starts melting at 250°C. Start in one of the parts where the film begins to lift of the glass and keep the drier in a circular motion. Move the drier horizontally instead of moving from the middle to the side. The film will fall flat to the curvature of the glass. It is not necessary to press down the film. Note that only a small amount of shrinkage is required for the middle and continuously more towards the edge. Too much shrink in the middle will result in the edges lifting of the glass after applying the film. The closer you come to the edge, the more you have to position the material with your fingers so that a steady heating is guaranteed. A continuous circular and swinging motion of the drier is vital to evenly shrink the film without burning it. As there is no water underneath the film, it won't lie perfectly close to the window. After shrinking is completed it is advisable to check if you succeeded in shaping the film to match the curvature of the glass perfectly.

Checking the shape

Lift the film and swill the powder down the window. Then wet the window, replace the film to the glass and flatten it out with your hands. Carefully squeeze down the film using a rubber squeegee. If small finger tips (see picture 4) become visible you can use the conventional method to finish up. Now cut the film to fit and it is ready to be installed.



Special techniques for application

Overlap: At the rear window, apply the stripes starting at the top. Hide the cut underneath the heating wire.

Dot Matrix

In order to achieve a satisfactory result the film has to be pressed to the dot matrix parts 2 weeks after it has been applied. According to the used technique, the film will be squeezed differently. If you have used the wet shrink method you have to take the shortest way to the edge of the window. If you have used the dry shrink method please squeeze the film from the middle to the edges in a circular pattern (picture 6). First squeeze the film with the rubber squeegee, after that use the plastic squeegee "blue max".

Finally squeeze the edges once again with the "little chizler". If you want to improve the visual effect, you have still the possibility to heat the screen printing from the outside. You can now try to press the film with your thumb into the edge of the screen printing.



Legal situation in Germany:

Which kind of coating is allowed? Coating is just possible till the pane retainer. It is not allowed to stick the film in the window encapsulations. Coating is just allowed on the inside of the window. You have to carry along the General Type Approval of the film.

Coating of the rear window > allowed

- A second side mirror must exist.
- The General Type Approval is included with the film and therefore has been handed over to the customer.
- No approval by the Technical Inspection Service is needed

Coating of the windows behind B-pillar > allowed

- The General Type Approval is included with the film and therefore has been handed over to the customer
- No approval by the Technical Inspection Service needed

Coating of the front side windows >

Only allowed with special permission

- Transparency has to be higher than 70% (at the moment only security film in combination with transparent glass allowed)
- Film has to be installed optically perfect
- Approval by the Technical Inspection Service is needed

Coating of the front window >

Not allowed all over the window

- Max. 10 cm on the top part of the window
- Max. 10% of the window surface area