

PRODUCT BULLETIN

APPLICATION AND REMOVAL METHOD

PVC-free film featuring HEX'PRESS technology:

HXLT200

REQUIRED EQUIPMENT

- › Tesa® 50110 adhesive tape
- › Masking tape or magnets
- › Microfibre cloths
- › ProTech® SHAMPCARV2 car body shampoo
- › Liquids for the cleaning of application surfaces:
 - › SHAGREMOV
 - › SHAGCLEAN
- › Liquid for an easier application MAGICSPRAY
- › Gloves for full wraps SHAGGLOVE
- › SHAGCUT liner cutting tool
- › Squeegees of your choice from the catalogue
- › PC500 or LTL750 laminate
- › SHAGGUN heat gun
- › RSSEAL edge sealing tape
- › VR7077 sealing varnish
- › Different HEXIS application tools
- › SHAGRELOAD cleaning agents
- › Ceramic coating kit NANOSERUM by HEXIS

STORE YOUR FILMS UNDER APPROPRIATE CONDITIONS

Keep the films away from all major sources of heat (radiators and heaters, direct exposure to sunlight, etc.): the ideal temperature ranges from 15 °C to 25 °C (from 59 °F to 77 °F).

Store them in an atmosphere with low humidity (with relative humidity between 30 % and 70 %).

Keep your films in their original packaging. Each opened roll must be stored vertically or suspended in order to avoid pressure marks on the contact surface.

FEATURES

The HXLT200 film is a 50-µm, PVC-free film, which is perfectly suitable for slightly complex “2D+” surfaces and adheres particularly well to glass, steel, aluminium, PVC and melamine. Its technical performance and flexibility allow you to apply it to slightly curved surfaces requiring a certain conformability.

The combination of HXLT200 film and advanced HEX'PRESS technology allows you to obtain high quality results while reducing the time required for application. This technology allows easy repositioning of the film on the substrate during application, while not excluding the squeegeeing step for optimal adhesion of the film to the substrate.

PREPARING YOUR APPLICATION SURFACE

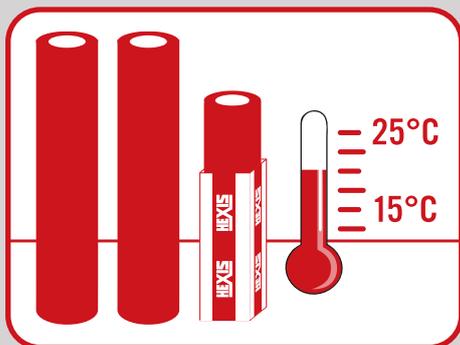
HEXIS films can be applied to a wide variety of substrates as long as the target surface is clean, dry, smooth, non-porous and free from any traces of oil, grease, wax, silicone or other contaminants. To avoid unexpected outcomes, always assume that every substrate is dirty and needs to be cleaned (cf. chapter 3).

Perform a preliminary trial on a small surface area to check the compatibility of the products with the substrate and that the substrate remains undamaged.

For further information on the films used, please refer to the technical data sheets available on our website at www.hexis-graphics.com.

CONTENT

1. RECOMMENDATIONS:.....	2
2. PRELIMINARY TEST OF THE APPLICATION SURFACES:.....	2
2.1. Preliminary inspection of the substrate:.....	2
2.2. Tear-off test:.....	2
2.3. Degassing test:.....	2
2.4. Degassing procedure with flame treatment:.....	2
3. CLEANING:.....	3
3.1. Clean or soiled surface appearance:.....	3
3.2. Heavily soiled surface appearance:.....	3
3.3. Special case:.....	3
4. LAMINATING THE FILM:.....	3
5. APPLYING HXLT200 FILM OR APPLYING THE HXLT200 FILM:.....	4
5.1. First steps and application of the film to flat surfaces:.....	4
5.2. Extended application method on slightly undulated surfaces:.....	5
5.3. Extended application method on sheet metal vehicle doors:.....	5
5.4. Application by superposing widths:.....	9
6. EDGE SEALING TAPE OR VARNISH:.....	9
6.1. Edge sealing tape:.....	9
6.2. Edge sealing varnish:.....	10
7. FILM TREATMENT:.....	10
8. CLEANING AND MAINTENANCE OF HXLT200 FILM:.....	11
9. REMOVAL PROCEDURE:.....	11



Application methods are based upon HEXIS' experience and are non-restrictive. Comply with instructions to ease application of HEXIS films. HEXIS also offer training sessions for beginners and professionals to achieve optimum results.

1. RECOMMENDATIONS:

- › The HXLT200 film adheres particularly well to glass, steel, aluminium, PVC and melamine.
- › The HXLT200 film has a weaker adherence to the following substrates: low-energy (polyethylene, polypropylene, etc.), granular or textured substrates or those coated with acrylic paint.
- › For vehicles, application on the window and body panel seals, on any unpainted ABS plastics (trim strips, bumpers, rear-view mirror casings, etc.) must be avoided by all means.
- › For any other substrate, preliminary tests must be carried out.
- › The best adhesion of the HXLT200 film is achieved after 24 hours of contact.
- › After use, store the HXLT200 film rolls in their original packaging to preserve all their qualities.

 *Prolonged contact between HXLT200 film rolls may cause irreparable damage to the product, therefore HEXIS accept no liability whatsoever.*

2. PRELIMINARY TEST OF THE APPLICATION SURFACES:

Before proceeding with any application, the installer must first inspect the substrate and the paint to which the film will be applied.

The installer and the customer are responsible for the suitability evaluation of the target surface to be covered.

2.1. Preliminary inspection of the substrate:

- › Any fresh new paint must be dried for at least 7 days at 25 °C (77 °F) in order to degas completely. A degassing test must be carried out before applying the film.
- › Any old, powdery or flaky paint must be sanded and renewed before application and must undergo a tear-off test.

2.2. Tear-off test:

Using a Tesa® 50110 adhesive tape, or similar, apply it to a surface of 2.5 cm x 5 cm (1 in. x 2 in.) plus some overhang material for easier removal. Fold and promptly tear it off perpendicularly to the substrate surface. The film must generate a certain resistance during its removal. Repeat this process in several places.

> On request, HEXIS can provide you with a Tesa® adhesive tape in 2.5 cm x 5 cm (1 in. x 2 in.) size. HEXIS cannot be held liable for any damage to the substrate following the execution of this test.

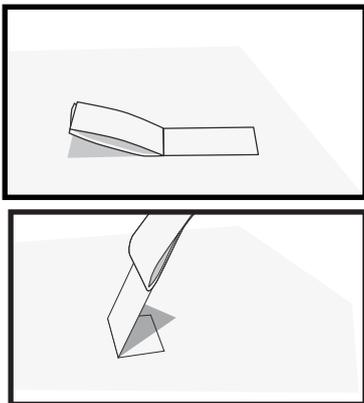
2.3. Degassing test:

Use a square piece of around 15 cm x 15 cm (6 in. x 6 in.) of self-adhesive polyester or of the film to be applied. Wait for 24 hours or 2 hours at 65 °C (149 °F). The appearance of bubbles indicates that the substrate has insufficiently degassed. Therefore, this process should be repeated after a couple of days; or the procedure described below should be carried out.

2.4. Degassing procedure with flame treatment:

(Polycarbonate, translucent or diffusing methacrylate, expanded PVC, etc.)

This method consists of changing the surface tension of a substrate by swiping it with the flame of a gas burner. Using the flame's blue tip, proceed evenly with fast sweeps horizontally and vertically along the whole substrate surface.



! MOVE THE FLAME IN SWIPING MOTIONS ON THE SUBSTRATE (RISK OF DESTROYING THE SUBSTRATE IF A FIXED POINT IS HEATED MORE THAN A SECOND).

The film must be applied immediately after as this light surface treatment disappears after a few minutes.

> HEXIS are not liable for any bubbles caused by degassing.

3. CLEANING:

Cleaning of the substrate is required before performing the application. It should always be assumed that the substrate is contaminated with dirt. Some residues or soiling may not be visible; however, they may impact the adhesion of the film.

! Before using any cleaning liquids or chemicals, please refer to the Technical Data Sheets and Safety Data Sheets available for download on our website www.hexis-graphics.com.

3.1. Clean or soiled surface appearance:

For vehicle wraps, it is advised to wash the vehicle with the SHAMPCARV2 vehicle body shampoo, then carry out a final cleaning using the SHAGCLEAN product.

SHAMPCARV2
Concentrated vehicle
shampoo



3.2. Heavily soiled surface appearance:

For vehicle wraps, it is advised to wash the vehicle with the SHAMPCARV2 vehicle body shampoo, then use the SHAGREMOV product.

! Work in a ventilated area. Wear protective gloves and goggles.

Prior to treatment, perform a compatibility test on a small, inconspicuous area of the substrate to be treated. Certain plastic materials may be damaged by the SHAGREMOV product.

SHAGREMOV
Powerful cleaning
agent



- › Spray the SHAGREMOV product on the dirty surface and spread it evenly using a dry cloth.
- › Wait for a few minutes. Then spray the SHAGREMOV product again and wipe the surface dry with a clean cloth or squeegee.
- › When the substrate is clean and dry, carry out a final cleaning with the SHAGCLEAN product.

SHAGCLEAN
Cleaning and
degreasing finishing
agent



3.3. Special case:

It is advised to adapt the preparation methods to the substrate type and its condition. Thus, painted surfaces must be dry and hard, baked paints must be cooled down. Air-dried paints or car paints need to be dried for a minimum of one month before applying the film.

- › For bare metallic surfaces in the case of a partial wrap:
- › Clean the substrate with soapy water and then with a cloth soaked with the SHAGCLEAN product.

! Refer to the Product Safety Data Sheet prior to use.

- › Thoroughly wipe down the surface after the cleaning process.

4. LAMINATING THE FILM:

We recommend you laminate the HXLT200 film with one of the following laminating films: LTL750 for application to flat surfaces only or PC500 for application to flat or slightly curved surfaces.

Ensure that the HXLT200 film is fully dry before lamination.

The printed HXLT200 film is touch-dry after 10 minutes maximum following application, but it is recommended to leave a drying time of at least 24 hours before applying, laminating and cutting it.

- › To ensure that the solvents evaporate completely, leave the printed films stacked in sheet racks in a ventilated room to dry.

5. APPLYING HXLT200 FILM OR APPLYING THE HXLT200 FILM:

Due to its HEX'PRESS liner, it is mandatory to apply the HXLT200 film, laminated or not, using the nominal "dry" application method.

The HEX'PRESS technology allows for easy repositioning of the film on the substrate during application.

However, HXLT200 film must be firmly squeegeed to achieve optimum adhesion on the substrate.

HEXIS tip: To enhance the surface sliding of the squeegee on the film while also limiting the risk of micro-folds during this phase, the MAGICSPRAY product can be sprayed on the squeegee surface as soon as necessary, until the film application is completed.

Before any application of either the HXLT200 + laminate compound or the film alone, make sure that all surfaces are clean.

Application temperature:

The recommended minimum application temperature is +10 °C (+50 °F).

Both the ambient and the substrate temperature must comply with the application temperature. Hygrometry may also influence the adhesion of the film to its substrate.

5.1. First steps and application of the film to flat surfaces:

- › Wear gloves (SHAGGLOVE).



Figure 01

- › Position the printed film on the target surface and tape it into place without stretching it. (FIG. 01)

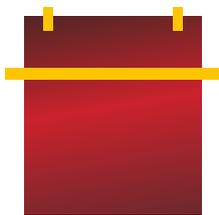


Figure 02

- › Apply a strip of masking tape or magnets across the upper section of the graphic in order to create a horizontal hinge, preferably on a flat part of the surface. (FIG. 02)

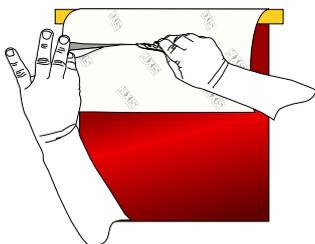


Figure 03

- › Make a slit with the SHAGCUT in the liner, at a distance of about 30 cm from the edge, then remove the upper part. (FIG. 03)

- › Start applying the film with a squeegee (previously covered with felt), by forming a 30° angle with the substrate and working from the centre towards the edges. (FIG. 04)

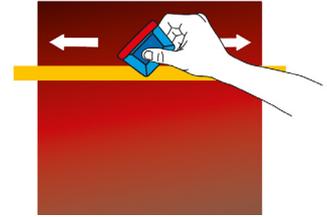


Figure 04

HEXIS tip: To enhance the surface sliding of the squeegee on the film, the MAGICSPRAY product can be sprayed on the film's surface as soon as necessary, until the film application is completed.

- › Remove the top hinge and continue removing the liner, depending on the surface pattern (cf. paragraphs below). (FIG. 05)

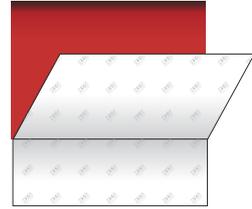


Figure 05

- › During application to flat surfaces, squeegee the entire surface while removing the liner steadily, firmly pressing on the edges and corners.

5.2. Extended application method on slightly undulated surfaces:

After having completed step 5.1., proceed as follows while using the extended application method:

- › Gradually remove the liner while pulling it downward without stretching the film.
- › Apply the film horizontally with your thumb or a squeegee by progressing slowly into the hollow of the undulation.
- › Start by applying the film to the slight hollow ①, then to the peak ② and finally to the hollow part ③. (FIG. 06)
- › Continue onto the next undulation, ④ then continue in the same way.

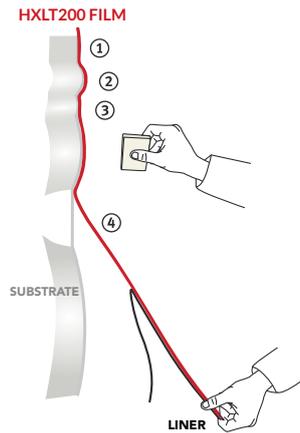


Figure 06

HEXIS tip: For a 3D surface, use one of the cast films of the HX100 or THE190EVO range.

! In the hollow parts, the HXLT200 film requires sufficient pressure in order to completely expel any air that could remain in the micro-channels. This is because the air that has not been evacuated and that is not visible to the eye may later result in the film peeling off from its substrate or in the appearance of bubbles.

HEXIS tip: To enhance the surface sliding of the squeegee on the film, it is highly recommended to spray the application liquid MAGICSPRAY on the film's surface as soon as necessary, until the film application is completed.

5.3. Extended application method on sheet metal vehicle doors:

5.3.1. Positioning of the film

- › Position and fix the film or compound on the bodywork, using magnets or masking tape to apply it to the underside of the horizontal hinge that will be created subsequently. (FIG. 07)



Figure 07



Figure 08

- › Carry out the cutting of the liner with the SHAGCUT liner cutting tool approximately in the middle of the false window.

- › Remove the upper section of the liner. (FIG. 08)

5.3.2. Application to the inner flat part of the false window



Figure 09

- › Start applying the liner-free part of the film to the centre surface of the false window (flat surface). (FIG. 09)

- › Remove the magnets.
- › Remove $\frac{3}{4}$ of the liner to prevent the film sticking to the substrate.
- › Apply the film with the squeegee, without applying any tension, to the flat part of the false window up to the inner edge.

5.3.3. Applying the film to the inner edge



Figure 10

- › Apply the film using the squeegee in a rounded movement up to the edge of the deformation without forcing or stretching the film. To do this, lift the free part of the film to prevent tension being generated. (FIG. 10)

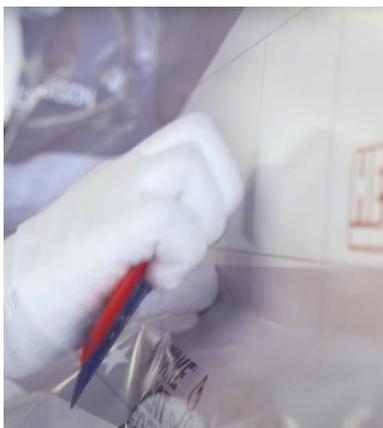


Figure 11

- › Trace the inside of the deformation with your gloved thumb, without using force. (FIG. 11)

⚠ To avoid tension and distortion of the film, make sure that it does not touch the outer edge of the false window.

Advantage: This operation allows the film to be applied to the recess without distorting or stretching it.

5.3.4. Applying the film to the concave recess

- › Run a hand under the film to lift it from the edge until the beginning of the folds.

⚠ *No tension should be exerted to the film during the following operations.*

- › Heat the film to between 30 °C and 40 °C (86 °F and 104 °F) to work the residual memory effect and reduce creases or wrinkles. (FIG. 12)
- › Apply the film to the bodywork without pulling on it.



Figure 12

- › Apply the film to the concave deformation using your gloved hand. (FIG. 13)



Figure 13

5.3.5. Applying the film to the outer edge

- › Spread out the creases or wrinkles on the flat part of the bodywork by working on the residual memory. Heat the film to a temperature ranging from 30 °C to 40 °C (from 86 °F to 104 °F). (FIG. 14)

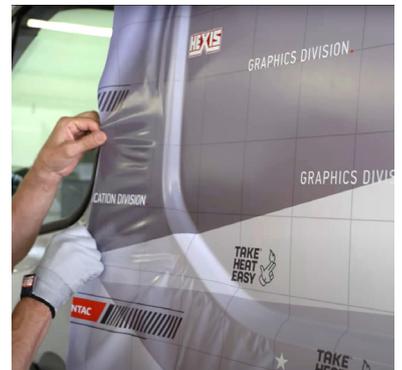


Figure 14

- › Trace the outer edge with your thumb without forcing, then spread out the creases or wrinkles in the material without exerting any tension. (FIG. 15)



Figure 15



Figure 16

- › Remove all the liner, then reposition the film over the remaining bodywork to be covered.

- › Trace the outer edge with your thumb without forcing.
- › Apply the film with the squeegee close to the deformation. (FIG. 16)

5.3.6. Applying the film to the flat surfaces outside of the false window



Figure 17

- › Slightly peel off the remaining film from the bodywork.
- › Heat all of the remaining film to a temperature ranging from 30 °C to 40 °C (86 °F to 104 °F). (FIG. 17)
- › Spread out any folds while positioning the film.



Figure 18

- › Apply the film with the squeegee. (FIG. 18)

5.3.7. Flattening the adhesive structure



Figure 19

- › Finish applying the film to the deformation.
- › While heating, slide the ROLLCOV along the deformation of the false window in order to flatten the adhesive structure. (FIG. 19)

- › Once the film has been applied, you can start cutting.

HEXIS tip: For highly convex surfaces, use one of the cast films of the HX100 or THE190EVO range.

The HEX'PRESS technology allows for very easy repositioning of the film during its application to the substrate as well as easy air evacuation. However, particularly in concave areas, the HEX'PRESS adhesive technology requires sufficient pressure in order to completely expel any air that could remain in the micro-channels. The air that has not been evacuated and that is not visible to the human eye may later result in the film peeling off from its substrate. HEXIS recommend you pay particular attention to the application of HXLT200 film to concave areas.

5.4. Application by superposing widths:

- ▶ If a seam is necessary between two widths, HEXIS recommend you overlap the film by 1 cm (0.4 in.), as follows:
 - Horizontal overlapping: application is always carried out from the bottom up; the upper film will overlap the lower film (tiling principle).
 - Vertical overlapping on a mobile surface: application is always carried out from back to front of the vehicle; the second film will overlap the first one, etc. (FIG. 20)

If any areas turn out to be too convex, we recommend you to use a cast film of the HX100 or THE190EVO range.

⚠ In the case of HXLT200 film application to vehicles, the application of HXLT200 film on the window and body panel seals, on any unpainted ABS plastics (trim strips, bumpers, rear-view mirror casings, etc.) must be avoided by all means.

⚠ Whenever application to a horizontal surface is necessary, such as on engine hoods or roofs, a slight fading of colour and gloss may develop over time compared to vertically oriented areas. As these areas suffer maximum exposure to sunlight and climatic influences, they are not covered by the HEXIS warranty regarding durability.

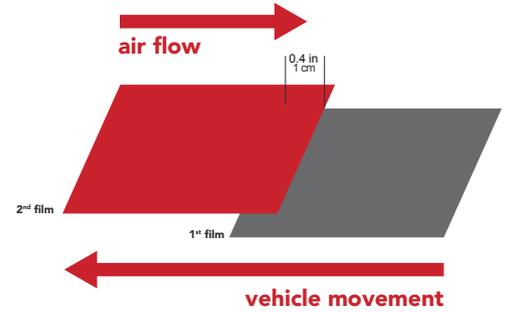


Figure 20

6. EDGE SEALING TAPE OR VARNISH:

HEXIS recommend using RSSEAL sealing strips rather than sealing varnish when applying HXLT200 film + laminate to a vehicle (to avoid any risk of damaging the vehicle paint during removal).

However, in certain cases, such as the application of HXLT200 film to trains (except express trains), heavy machinery, etc. the VR7077 sealing varnish will be required to reinforce the film edges.

6.1. Edge sealing tape:

To enhance the adhesion of HXLT200 film to areas exposed to heavy wear such as door sills, wheel cages, etc., you can use RSSEAL strips for slightly curved surfaces.

- ▶ Apply the strip by overlapping it by approximately 7 mm (¼ in.) over the body work and 7 mm (¼ in.) over HXLT200 film. (FIG. 21)

HEXIS tip: it is preferable to use sealing strips rather than the VR7077 sealing varnish for most applications.

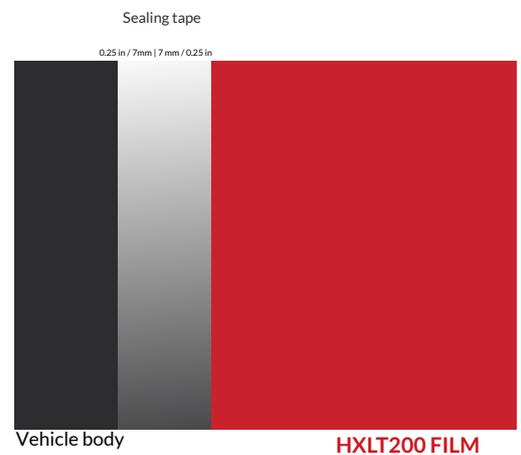


Figure 21

6.2. Edge sealing varnish:

The VR7077 sealing varnish must be applied only to reinforce the seal and adhesion of the edges of the HXLT200 films undergoing heavy external stress without modifying the adhesion properties of the films.

HEXIS tip: It is preferable to use sealing strips rather than the VR7077 sealing varnish for most applications.

Using VR7077 varnish is at the installer's own discretion.

- › Ensure that all surfaces are completely dry.
- › Apply 2 strips of masking tape.
 - 1 to the substrate at 5 mm (0.2 in.) from the HXLT200 film.
 - 1 to the HXLT200 film at 5 mm (0.2 in.) from its edge. (FIG. 22)
- › Apply the varnish with a brush in one single layer; wear gloves and protective goggles.
- › Remove the masking tape 15 minutes after application.
- › Drying time is variable depending on the thickness of the varnish coat and surrounding temperature: For a film with an average coat, optimal drying time is 24 hours. Any physical aggression (cleaning, abrasion, etc.) must be avoided by all means during that period of time.

! *In all cases, avoid any contact between varnish and window seals.*

7. FILM TREATMENT:

In order to keep your full wrap films clean for longer and make them easier to clean, HEXIS recommend treating them with the NANO SERUM by HEXIS as soon as you have finished the film application and then periodically. This surface treatment provides hydrophobic protection to the film, it gives a non-stick effect against aqueous compounds and external contaminants, and durably maintains the aesthetic appearance of the full wrap films.

The NANO SERUM by HEXIS must be applied by a qualified professional in a clean, dust-free, well-ventilated place away from sunlight (the NANO SERUM liquid is UV-sensitive).

HEXIS tip: Please refer to the technical data sheet of the NANO SERUM by HEXIS for the details of the liquid's application method.

Note: A slight change in the appearance of the film may be observed after treatment with the NANO SERUM by HEXIS, but this will not impair in any way the quality of the film. HEXIS consider this change in appearance to be normal, taking into account the addition of a NANO SERUM by HEXIS layer to the surface of the film, and will not accept any claim on this ground.

The protection of the NANO SERUM by HEXIS is effective up to 36 months, depending on the vehicle's exposure and maintenance conditions.

The protective effect of the NANO SERUM by HEXIS may be impaired and reduced if the vehicle is frequently cleaned with automatic rollers in car wash stations. The ceramic treatment loses its effectiveness when the water-repellent effect becomes irregular on the surface of the film.

! *The NANO SERUM by HEXIS is a technical product that requires a meticulous application by a qualified professional. HEXIS cannot be held responsible for any traces of application, demarcations, rings, etc. visible on the film resulting from incorrect application of the product.*

HEXIS decline all responsibility in the case of inappropriate use or failure to comply with the safety instructions for all their products.



Figure 22

8. CLEANING AND MAINTENANCE OF HXLT200 FILM:

For a complementary cleaning of the compound HXLT200 + laminate, use the SHAGRELOAD product with a clean microfibre cloth.

- › Spray directly onto the surface to be cleaned (± 40 cm x 40 cm/15 in. x 15 in.).
- › Wipe with a microfibre cloth before the product dries.

HXLT200 film can also be cleaned in any conventional automatic car wash, using cleaning products and detergents used for professional maintenance of vehicles and advertising equipment.

Nevertheless, exercise care when cleaning with high-pressure cleaners: apply medium water pressure at a minimum distance of 50 cm (20 in.) and a maximum water temperature of 35 °C (95 °F).

 *Caution: Do not wash the film within the first 48 hours following its application as this can affect the adhesion, which may result in the film peeling off.*

 *Caution: Solvents and corrosive detergents are forbidden.*

 *HEXIS are not liable for any adhesive films cleaned with unspecified additives from cleaning stations.*

 *Car washes: The additive products and the condition of the rotating brushes may impair the adhesion of the graphics or films. It is commonly admitted that after 10 car washes, the polyurethane paint becomes streaked; therefore, we are not accountable for these mechanical effects that may affect the film appearance.*

HEXIS tip: Always carry out a test on a small area before cleaning the entire covered surface.

9. REMOVAL PROCEDURE:

HXLT200 film features a permanent adhesive and therefore its removal could be difficult. Nevertheless, by following the instructions below, the removal will be relatively easy.

- › Using a heat gun, start from a corner and heat the film to a temperature of around 60 °C (122 °F) (use the laser thermometer).
- › Gently lift the corner with the cutter without damaging the substrate, and gradually remove the film, which has been heated; the film should form a 70- to 80-degree angle with the substrate.

 *A more or less wide angle will cause the film to break more easily.*

- › Always proceed gradually by heating small areas while carefully removing the film so as to limit the risk of leaving any adhesive on the substrate or tearing the film.
- › Continue to carefully heat and gently peel off the film until it is completely removed while keeping a watchful eye on the heat applied, on the pulling angle of the film, and the pulling speed.
- › If any adhesive remains on the substrate, take a cloth soaked with our SHAGREMOV product and rub the surface until all traces disappear.
- › Acetone may be used to ease the removal of the VR7077 sealing varnish.

 *Liquids may damage seals; therefore, take the necessary precautions before performing the clean-up.*

 *Before using any of our liquids, please refer to the technical data sheets available on our website at www.hexis-graphics.com.*

For further technical information, please refer to the Technical Data Sheets available for free download from our website www.hexis-graphics.com, on the "Professionals" pages.

Due to the great variety of substrates and the growing number of new applications, the installer must check the suitability of the medium for each application. None of the information constitutes however a binding guarantee. The seller cannot be held liable for indirectly related damages and assumes no liability for claims that are higher than the replacement value of the purchased product. All specifications are subject to potential changes without prior notice. Our specifications are automatically updated on our website www.hexis-graphics.com.



www.hexis-graphics.com