

# PRODUCT BULLETIN

## APPLICATION AND REMOVAL METHOD

# HEX'PRESS Polyurethane Film: HX500WG2

### REQUIRED EQUIPMENT

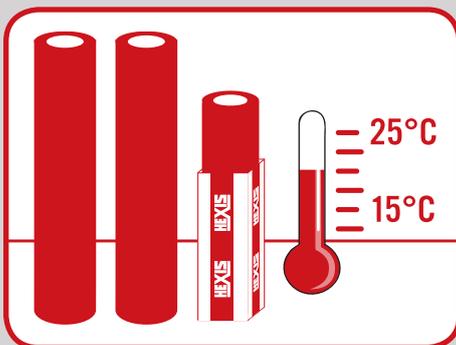
- › Adhesive tape Tesa® 7476
- › Masking tape
- › « System 1, 2, 3 » cleaning liquids:
  - › 1-Remover
  - › 2-Pre Cleaner
  - › 3-Final Cleaner
- › ProTech® SHAMPCAR vehicle shampoo
- › Liquid for an easier application: MAGICSPRAY
- › Squeegees upon your choice from the catalogue
- › PC500G2 laminate
- › ROLLRIV application wheel for applications over rivets
- › RIVETBRUSH application accessory for riveted surfaces
- › VR7077 sealing varnish
- › PISTHERMIQ heat gun
- › MALCOV HEXIS tool case
- › ProTech® cleaning agents

### STORE YOUR FILMS UNDER APPROPRIATE CONDITIONS

Keep off the films from any major source of heat (radiators and heaters, direct exposure to sunlight, etc.): the best 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 50-µm, PVC free HX500WG2 film is perfectly suitable for complex surfaces and adheres particularly well to glass, steel, aluminium, PVC and melamine.

Its high technical performance and its conformability allow to use it for full wraps and on curved and riveted surfaces or the like.

The combination of the conformable film and the advanced HEX'PRESS adhesive technology ensure you to obtain superior quality results while reducing the time required for application. This technology allows an easy repositioning of the vinyl on the substrate during application; however, the film must be firmly squeegeed to achieve optimum adhesion to the substrate.

The HX500WG2 film features an adhesive, which provides enhanced ease of application and optimum installation comfort at low temperature conditions (10 °C to 15 °C (50 °F to 59 °F)).

### 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 of any traces of oil, grease, wax, silicone or other polluting agents. To avoid unexpected results, always consider that every substrate is polluted and needs to be cleaned prior to any application. (cf. chapter 3)

Remember to carry out a preliminary test on a small surface area to check if the substrate is compatible and remains undamaged.

For further technical information, please refer to the data sheets available on the "Professionals" pages on our website at [www.hexis-graphics.com](http://www.hexis-graphics.com).

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## 1. RECOMMENDATIONS:

- › The HX500WG2 film adheres particularly well to glass, steel, aluminium, PVC and melamine.
- › The HX500WG2 film has less adhesion on these substrates: low energy surfaces (polyethylene, polypropylene, etc.), grained or textures surfaces, acrylic paints.
- › In the case of vehicle wrap, avoid applying self-adhesive films on unpainted components such as trim or unpainted bumpers.
- › For any other substrate preliminary tests must be carried out.
- › The HX500WG2 film achieves optimum adhesion after 24 hours of application.
- › After use, the HX500WG2 film coils must be stored in their original packaging in order to preserve all their technical features.

 *HEXIS are not liable for any irreversible deterioration of HX500WG2 film coils that came into prolonged contact with each other.*

## 2. PRELIMINARY TEST OF THE APPLICATION SURFACES:

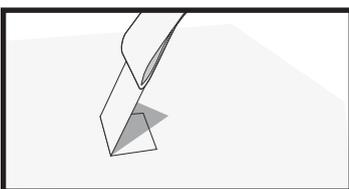
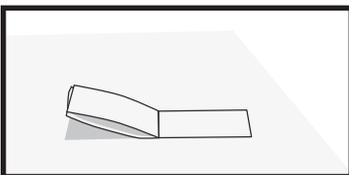
Before any application, the installer must primarily inspect the substrate and the paint to which the film will be applied.

The installer and the client 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) to outgas completely. An outgassing 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® 7476 adhesive tape, or the like, apply on a surface of 2.5 cm x 5 cm (1 in x 2 in) plus some extra length for hand grabbing. Fold and promptly tear off perpendicularly to the substrate surface. No traces should be visible on the ripped off adhesive tape. 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.*

### 2.3. Outgassing test:

(For checking) Use a square 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 outgassed. Therefore, this process should be repeated after a couple of days; or else the procedure described below should be carried out.

### 2.4. Outgassing 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 right after that treatment as this light surface treatment disappears after few minutes.

> *HEXIS are not liable for any bubbles caused by outgassing.*

### 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 contaminations 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 at [www.hexis-graphics.com](http://www.hexis-graphics.com).*

#### 3.1. Clean or soiled surface appearance:

For vehicle wraps, it is advised to wash the vehicle with the SHAMPCAR vehicle body shampoo, then use the PRE CLEANER (product n° 2).

- › Spray it onto the surface.
- › Let it operate for a few minutes, then wipe it dry with a clean cloth.
- › Carry out a final cleaning using the FINAL CLEANER (product n° 3).

#### 3.2. Heavily soiled surface appearance:

For vehicle wraps, it is advised to wash the vehicle with the SHAMPCAR vehicle body shampoo, then use the ADHESIVE REMOVER (product n° 1).

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

Prior to treatment, run a compatibility test on a small, non-conspicuous area of the substrate to be treated. Indeed, certain plastic materials might be damaged by the ADHESIVE REMOVER (product n° 1).

- › Spray it onto the dirty surface and spread out using a dry cloth.
- › Then wait for a few minutes. Spray again the ADHESIVE REMOVER (product n° 1), then wipe it dry with a clean cloth or squeegee.
- › When the substrate is clean and dry, clean again with the PRE CLEANER (product n° 2), then finish with the FINAL CLEANER (product n° 3) (as explained above).

#### 3.3. Special case:

Remember to adapt the preparation methods according to the substrate type and 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, clean the substrate with soapy water and then with a cloth soaked in PRE CLEANER (product n° 2), then FINAL CLEANER (product n° 3) in the case of a full wrap.

Refer to the product safety data sheet.

⚠ *Thoroughly wipe the surface after the cleaning process.*

Shampcar  
Concentrated vehicle  
shampoo



Pre Cleaner  
Powerful universal  
cleaning agent



Adhesive Remover  
Powerful cleaning  
agent



Final Cleaner  
Cleaning and  
degreasing finishing  
agent



#### 4. LAMINATION OF THE FILM:

We recommend you to laminate the HX500WG2 film with the PC500G2 laminate.

Ensure that the HX500WG2 film be dry before application.

The printed HX500WG2 film is touch-dry at the latest 10 minutes following application, but it is recommended to leave a drying time of 48 hours before applying, laminating or cutting the film.

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

#### 5. APPLICATION OF THE HX500WG2 FILM:

Due to its HEX'Press liner, the HX500WG2 film must solely be applied according to the so-called "dry" application method.

*This HEX'PRESS technology allows easy repositioning of the vinyl on the substrate during application.*

However, the HX500WG2 film must be firmly squeegeed to achieve optimum adhesion on the substrate.

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

Before any application of the HX500WG2 + PC500G2 compound or of the film alone, make sure that all surfaces are clean.

Application temperature:

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

The application temperature must be respected for both the ambient temperature and the temperature of the substrate. Hygrometry may also impact the adhesion of the film on the substrate.

##### 5.1. First steps and application of the HX500WG2 film on flat surfaces:

› Wear cotton gloves (available in the tool case).

› Position the printed film on the target surface so as to hold it in place without stretching it. (FIG. 01)

› Using masking tape strips or magnets, make a horizontal hinge preferably on a flat area. (FIG. 02)

› Peel off 10 cm (4 in.) of the liner. (FIG. 03)



Figure 01

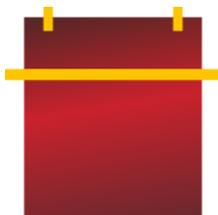


Figure 02

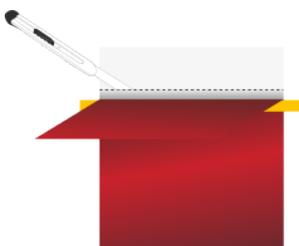


Figure 03

- › Start applying the film with a squeegee (previously covered with felt), by forming a 45° angle with the substrate, and by working from the centre towards the edges. (FIG. 04)

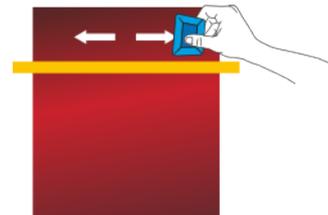


Figure 04

**HEXIS advice:** To facilitate the surface sliding of the squeegee on the film, the MAGICSPRAY can be sprayed on the surface of the latter as soon as necessary, until completion of the film application.

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



Figure 05

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

**5.2. Undulated surfaces:**

Having completed step 5.1, you may come across slight or pronounced undulations for which the application process will be different.

**5.2.1. Slight undulations: « stretched application »**

- › Remove all the liner.
- › Apply the stretched vinyl over the substrate so as to have it stick only to the peaks of the undulation. (FIG. 06) ① and ②
- › Apply the surface contours with a finger or a squeegee.
- › Then heat the stretched areas to a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F) with the heat gun.
- › While continuing to heat the film, press it with your thumb into the hollow of the undulation from both sides so as to properly stick the adhesive.
- › Without heating and using the squeegee, apply the area between the 2 undulations from the centre to the edges.
- › Now cut the contours if your undulated substrate has several parts.

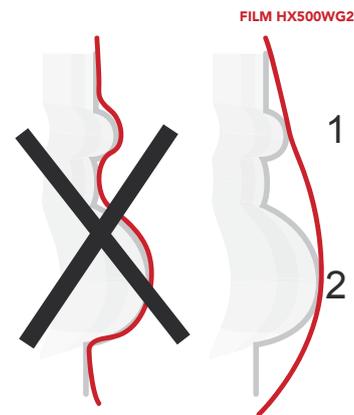


Figure 06

**5.2.2. Pronounced undulations: « extended application »**

- › Remove the liner gradually by tensioning it towards the lower end. (FIG. 07)
- › Apply the film with the thumb or a squeegee horizontally by progressing slowly into the hollow of the undulation.
- › Apply the hollow ①, then the peak ② and afterwards the hollow ③.
- › Go up onto the next undulation ④, then keep going ⑤ until completion of the application.
- › The application is finished.

⚠ In the hollow parts, the HEX'PRESS adhesive technology requires sufficient pressure in order to completely expel any air that may 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.

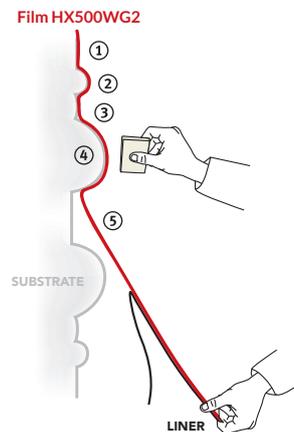


Figure 07

### 5.3. Concave surfaces:

After work step 5.1 proceed as follows:

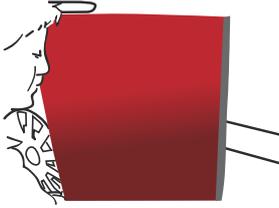


Figure 08

- › Remove all the liner. (FIG. 08)



Figure 09

- › Stretch the vinyl over the substrate so that the film touches the peaks only.

- › Apply the film with a finger or a plastic squeegee previously covered with felt. (FIG. 09)



Figure 10

- › If necessary, lift again and stretch again the film; then apply it.

- › Heat to a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F) and press the film with your thumb into the hollow area so as to properly apply the adhesive. (FIG. 10)

**⚠ Caution:** HEXIS recommend you to pay particular attention to the application of HEX'PRESS films on concave areas. The HEX'PRESS adhesive technology requires sufficient pressure at the film surface in order to completely expel any air that may remain in the micro-channels. Indeed, the air which has not been evacuated from the micro-channels and which is not visible to the eye may later result in the film peeling off from its substrate.

**HEXIS advice:** In order to reduce the risk of micro-folds generated during the air evacuation phase, it can be necessary to increase the surface sliding of the squeegee on the film. For this purpose, MAGICSPRAY can be sprayed on the squeegee surface as soon as necessary, until completion of the film application.

### 5.4. Convex surfaces:

Having completed step 5.1, proceed as follows:

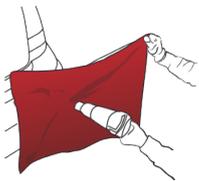


Figure 11



Figure 12

- › Remove the liner.

- › Heat the vinyl to a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F) (FIG. 11), then stretch the film so as to completely wrap the convex surface. (FIG. 12)

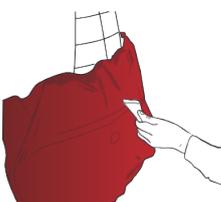


Figure 13

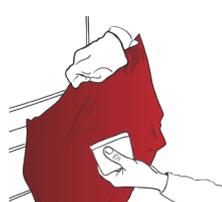


Figure 14

- › Apply the film over the entire surface with the help of a plastic squeegee covered with a felt sheet, and carefully wipe over the convex area (FIG. 13) to eliminate any tensions.

- › If necessary, lift the film, stretch it again and completely wrap the convex surface, then apply it. (FIG. 14)

- › Following this, heat to a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F) (FIG. 15) and squeegee the surface.
- › Leave it to cool down.
- › The application is completed. (FIG. 16)

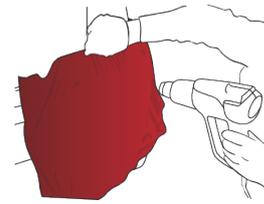


Figure 15



Figure 16

**5.5. Riveted surfaces:**

Having completed step 5.1, proceed as follows:

- › When you come across a rivet, the film is stretched. Gently heat at a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F). Then dab the rivets with the RIVETBRUSH to apply the film on them.

Then slide the ROLLRIV over the film to make it adhere to the entire rivet surface. Press it all around the rivet using a squeegee or your thumb (FIG. 17).

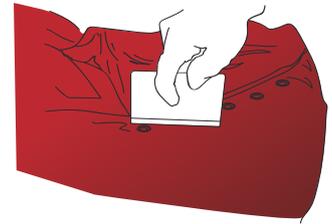


Figure 17

- › To finish, use the RIVETBRUSH and firmly apply it on the rivets (still by dabbing).

**5.6. Additional information for a vehicle full wrap:**

- › On vehicles, the film application on window and body panel seals must by all means be avoided.
- › Whenever a horizontal application becomes necessary as on engine hoods or roofs, this may lead over time to a slight attenuation of colour and gloss compared to vertically exposed areas.

- › If an overlap of widths becomes necessary, HEXIS recommend 1 cm (0.4 in.), carried out in the following way:

- Horizontal overlap: always apply from the vehicle bottom towards the top so that the upper part of the film overlaps the lower part (tiling).
- Vertical overlap on moving surfaces: always apply from the rear towards the front of the vehicle, the second width will overlap the first one, etc. (FIG. 18)

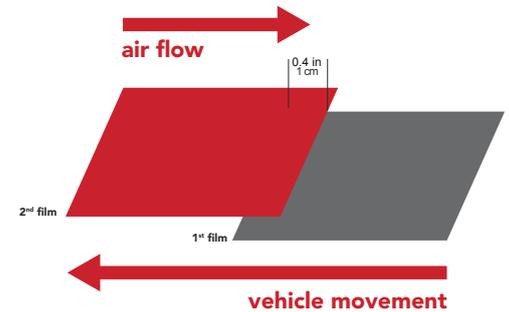


Figure 18

- › Avoid applying the HX500WG2 film on unpainted components such as trims or unpainted bumpers.
- › The first step is the most important and here is some essential advice:
  - › Make a hinge as indicated above (chapter 5.1. First step and application of the HX500WG2 film on flat surfaces: page 4) just above the door handles.
  - › Cut and remove the liner from the upper part.
  - › Tension the film and apply it using a squeegee.
  - › Once the upper part is applied, remove the remaining liner from the lower part.

- › Tension the film over the door handles and, using a squeegee, apply the film all around the door handles. (FIG. 19)



Figure 19

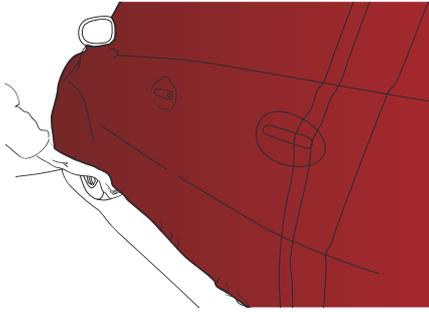


Figure 20

› Once the door handles are done, tension the film down up to the bottom of the vehicle body. (FIG. 20)

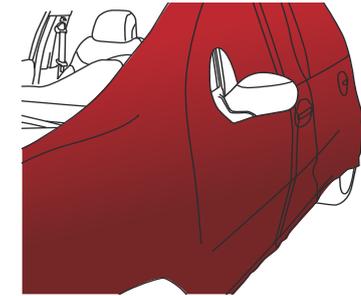


Figure 21

› If necessary, lift and stretch the film again, then heat it to a temperature ranging from 40 °C to 50 °C (from 104 °F to 122 °F) so as to remove any folds.

› The film is now stretched over the entire surface area to be wrapped. Now you can apply the film (FIG. 21) according to the type of surface.

## 6. EDGE SEALING TAPE OR EDGE SEALING VARNISH:

HEXIS recommend the use of sealing strips with the PC500G laminate rather than the use of sealing varnish in combination with the HX500WG2 film applied to vehicles (to avoid any risk of damage to the vehicle paint during removal).

However, in certain cases such as HX500WG2 film applied to trains (excluding high-speed trains) or heavy machinery, the VR7077 sealing varnish will be required to reinforce the edges of the film.

### 6.1. Edge sealing tape:

To enhance the adhesion of the HX500WG2 film on areas exposed to heavy wear such as door sills, wheel cages, etc. you can use PC500G2 laminate film strips for slightly curved surfaces.

› Cut the laminate into a strip of 14 mm (½ in.) wide.

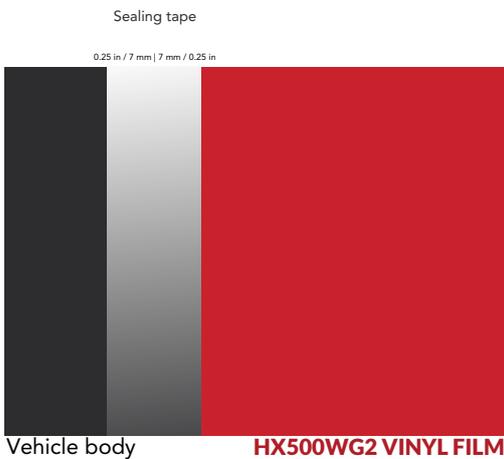


Figure 22

› Apply the strip with an overlap of approximately 7 mm (¼ in.) over the body work and 7 mm (¼ in.) over the HX500WG2 film. (FIG. 22)

HEXIS advice: Preferably use sealing strips rather than the VR7077 sealing varnish for most applications.

## 6.2. Sealing varnish:

The VR7077 sealing varnish must only be applied to reinforce the sealing and the adhesion of the HX500WG2 film undergoing heavy stress without modifying the adhesion properties of the films.

**HEXIS advice:** Preferably use sealing strips rather than the VR7077 sealing varnish for most applications.

The use of the VR7077 varnish is at the installer's own discretion.

- › Ensure that the surfaces be completely dry.
- › Apply 2 strips of masking tape:
  - 1 on the substrate at 5 mm (0.2 in.) from the edge of the HX500WG2 film.
  - 1 on the HX500WG2 film at 5 mm (0.2 in.) from its edge. (FIG. 23)
- › Apply the varnish with a brush in one single layer; wear gloves and protective goggles.



Figure 23

- › Remove the masking tape 15 minutes after application.
- › The drying time is variable depending on the thickness of the varnish coat and the ambient temperature: for a film with an average coat, the optimum drying time is 24 hours. Any physical aggression (cleaning, abrasion, etc.) must be avoided by all means during this time.

**⚠** *By all means avoid contact between the varnish and the window seals.*

## 7. CLEANING AND MAINTENANCE OF THE HX500WG2 FILM:

For optimum maintenance of your HX500WG2 film, HEXIS suggest to use their range of ProTech® cleaning agents specially designed for the total wrap.

The HX500WG2 film can be cleaned in any conventional automatic car wash, using cleaning products and detergents used for professional maintenance of vehicles and advertising equipment. Nevertheless, clean carefully: apply medium water pressure at a minimum distance of 50 cm (20 in) and a maximum water temperature of 35 °C (95 °F).

Nevertheless, for the use of high-pressure cleaners, respect the following procedure: apply medium water pressure at a minimum distance of 50 cm (20 in.) and a maximum water temperature of 35 °C (95 °F).

**⚠** *Caution: However, do not clean the film within the 48 hours following its application as this can affect the adhesion that may result in the film peeling off.*

**⚠** *Caution: Solvents and corrosive detergents must not be used.*

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

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

**HEXIS advice:** Always test cleaning on a small area before cleaning the entire surface to be covered.

## 8. REMOVAL PROCEDURE:

The HX500WG2 film features a permanent adhesive and therefore its removal needs some attention. Nevertheless, if you follow 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 (140 °F) (use the laser thermometer).
- ▶ Lift the corner gently with the cutter - available in the tool case -, without damaging the substrate, and gradually remove the film; the film should form an angle of 70° to 80° relative to the substrate.

 *An angle more or less wide or acute 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 off the film.
- ▶ Continue to carefully heat and peel off the film gently until it is completely removed while keeping a watchful eye on the heat brought, on the pulling angle of the film, and the pulling speed.
- ▶ If any adhesive remains on the substrate, take a cloth soaked with our ADHESIVE REMOVER (product n°1) and rub the surface until all traces disappear.

 *Prior to treatment, run a compatibility test on a small, non-conspicuous area of the substrate to be treated. Indeed, certain plastic materials might be damaged by the ADHESIVE REMOVER (product n° 1).*

- ▶ Acetone may be used to ease the removal of the VR7077 sealing varnish.

 *Always check the compatibility and non-aggression of the liquids with the substrate by carrying out a test on a small, non-conspicuous area of the substrate. HEXIS are not liable for damages and degradations caused to the substrate by using incompatible products.*

 *Before handling any of our liquid products, refer to the technical data sheets on our website at [www.hexis-graphics.com](http://www.hexis-graphics.com).*

For further technical information, please refer to Technical Data Sheets available on the "Professionals" pages on our website at [www.hexis-graphics.com](http://www.hexis-graphics.com).

Because of the great variety of substrates and the growing number of new applications, the installer must check the suitability of the media for each application. The information provided does not constitute a binding warranty. The seller is not held accountable for not directly related damages beyond the replacement value of the purchased product. All specifications are subject to potential changes without prior notice. Updates of our specifications are automatically available on our website at [www.hexis-graphics.com](http://www.hexis-graphics.com).



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