

PRODUCT BULLETIN

APPLICATION AND REMOVAL

Cast Vinyl Film

CAST KG10000

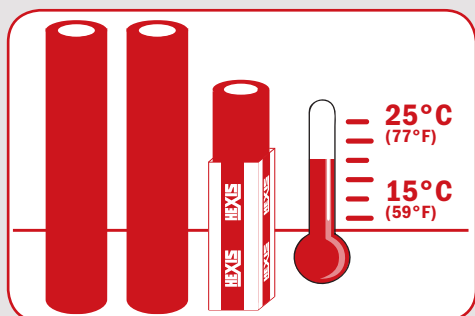
ESSENTIAL ACCESSORIES

- › Tesa® 7476 adhesive tape
- › Masking tape
- › HEXIS'O surface cleaning agent
- › CLEAN HEXIS degreaser
- › ND45 strong cleaner and degreaser
- › Assorted squeegees
- › Electric heat gun
- › EASYPOSE Application fluid
- › MPFSEC Squeegee
- › MALCOV HEXIS toolbox comprising:
 - › Laser thermometer
 - › Magnets
 - › Stanley measuring tape
 - › Craft knife
 - › Scalpel
 - › Ten 30° cutter blades
 - › Cotton gloves
 - › 10 scalpel blades
 - › Plastic squeegee
 - › A5 sheet size felt squeegee
- › DECOLL'VIT adhesive remover

ALWAYS STORE VINYL ROLLS AT THE RECOMMENDED CONDITIONS

Keep the film away from sources of heat (radiators, exposure to direct sunlight...): the ideal storage temperature is between 15 and 25°C (59 and 77°F). Store in an atmosphere with low humidity (30 to 70% relative humidity).

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



CHARACTERISTICS

The KG10000 series, made of a 50µm (2mil) PVC film, is particularly suitable for outdoor signage. Its high technological performances and its flexibility allow it to be used on curved or textured surfaces (welded or riveted) and it is especially recommended for lettering on complex surfaces and vehicles.

PREPARING YOUR APPLICATION SURFACE

You can apply your HEXIS films on a wide variety of substrates, under the condition that these application surfaces are clean, dry, smooth, non-porous and with no traces of oil, grease, wax, silicone or other contaminating agents. To avoid any bad surprises, always assume that these surfaces are contaminated and must be cleaned (cf. chapter 3). Do not forget to carry out a preliminary test on a small surface to check this substrate does not deteriorate.

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1. RECOMMENDATIONS

- Avoid applying the adhesive film on unpainted vehicle side strips or bumpers.
- The best adhesion of the Cast films is achieved after 24 hours of contact.

2. PRELIMINARY SURFACE TESTS

- Any fresh 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, dusty or flaky paint must be sanded down and restored before application and must undergo a tear off test.

2.1 Tear off test

With a TESA 7476 adhesive tape, or an equivalent, apply on an area of 2.5cm x 5cm (1in x 2in) plus some leftover space to allow for fingers to hold it. Fold and quickly pull off perpendicularly to the surface. No trace should remain on the removed adhesive. Repeat this operation in several places.

> On request, HEXIS can provide you with Tesa adhesive tape in 2.5cm x 5cm (1in x 2in).

2.2 Outgassing test

Use a square of around 15cm x 15cm (6in x 6in) of adhesive polyester or of the film to apply. Wait 24 hours or 2 hours at 65°C (149°F). If any bubbles appear, this means the surface has insufficiently outgassed. This operation can be repeated after several days, or carry out the operation below.

2.3 Outgassing procedure with flame treatment (polycarbonate, translucent or diffusing methacrylate, expanded PVC ...) consists of changing the surface tension of a substrate by swiping it with the flame of a gas burner. Have the flame swipe past quickly with a horizontal and vertical sweep along the whole substrate (use the flame's blue tip).

Careful: never leave the flame on a set point for more than one second (risks destroying the substrate). The film must be applied immediately as this light surface treatment disappears after a few minutes.

⚠ HEXIS is not liable for any bubbles caused by outgassing.

3. CLEANING

Depending on the condition of the substrate, three cleaning possibilities are possible:

3.1 Clean surface appearance

Before applying the film on the substrate, we recommend you clean it with the gentle HEXIS'O solution. Dry with a clean and lint free cloth.

3.2 Soiled surface appearance

Clean the substrate with a cloth soaked in the CLEAN HEXIS degreasing agent and dry it with a cloth before evaporation.

If the substrate is stained due to resistant contaminating agents such as diesel oil, tar or rubber, use a cloth soaked in the powerful HEXIS ND 45 cleaning agent. If necessary, use a gentle, non-abrasive grater beforehand.

In all cases, the targeted areas must then be washed with HEXIS'O.

3.3 Special cases

Remember to adapt the preparation methods according to the substrate type and condition.

The painted surfaces must be dry and hard, and the baked paints must be cooled down. Air-dried paints or car paints need to be dried for 7 to 10 days before applying the film. For bare metallic surfaces, clean the substrate with soapy water and then with a cloth soaked in HEXIS'O solution.

The type of film to be applied will define what sort of preparation methods to use (cf. technical data sheets available on www.hexisgroup.com).

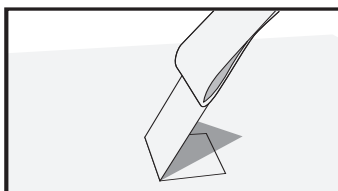
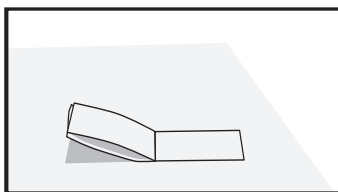
4. CUTTING OF FILMS

The films should preferably be stored in the same environment as the cutting area.

Check the cutting strip on the plotter is perfectly smooth and unscratched. A damaged cutting strip reduces the cutting quality.

4.1 Cutting letters

Be sure to find the correct blade speed and pressure so as to cut the film and adhesive surface. (FIG 01)



HEXIS'O
cleaner and
degreaser



CLEAN HEXIS
cleaner and
medium
degreaser



ND45
cleaner
and strong
degreaser



The blade pressure should be adjusted according to the film. The vinyl colour is given by the pigment load which may cause different degrees of hardness when cutting. Thus a red vinyl following a white vinyl may need more pressure.

If there is too much pressure, the liner (silicone paper) may undergo a scarification into which the adhesive may seep which makes the weeding more difficult, or even delaminate the liner paper weakened in the cutting area.

The minimum height possible for cutting depends on the condition of the blade, the pressure and the speed. Generally the acceptable height is 10mm (0.4in), the descender line is 1.5mm with an average speed and a blade in good condition. Small characters may be obtained by reducing the speed.

A blunt and used blade will affect the cutting quality and will require a stronger pressure. It will also be more difficult to weed.

> HEXIS offers a range of different blades in their catalogue.

4.2 Weeding:

After cutting, proceed with the waste stripping, meaning removing the vinyl scraps. For this, carefully remove the excess vinyl by peeling it from the liner at a 180° angle, leaving the design to be transferred on the liner. Ideally, the waste stripping should be done immediately after the cutting.

Generally, it is easier to waste strip the graphics from right to left. Nevertheless, certain fonts strip easier from left to right.

Pay very special attention to small designs which may easily be torn off when stripping.

4.3 Selecting the transfert film (tape):

The character sizes to transfer and the temperature conditions determine the selection of transfer papers and films. Small characters and low temperature call for a High Tack Tape. The application, with water or dry, and even the adhesive force desired of the Tape, will determine the selection of a specific sort of Tape.

Don't leave the Tape too long in contact with the graphics. It is better to carry out the transfer the day after placing the Tape.

If you want to leave a longer time frame for the Tape/Vinyl contact, the HEX100 or HEX910 "Special Kit" is recommended.

> HEXIS offers a range of transfer films and papers in their catalogue.

4.4 Transfert operation:

> After waste stripping, place the Tape on the graphics and rub down vigorously using a squeegee (pushing hard on the small type).

> The graphics appear after laying the liner (cf. paragraph 5).

For small sizes, carefully peel off the graphics and all the Tape + liner graphics.

If the transfer is difficult, turn over both the Liner and Tape (Tape under, liner under) and just peel off the liner while holding the Tape horizontally.

5. APPLICATION OF THE GRAPHICS OR THE KG10000 VINYL

Before any application of the KG10000 film, make sure all the surfaces are clean (cf. paragraph 3) and pay particular attention to the critical areas such as the corners and edges.

The "dry" procedure allows to apply the KG10000 film on complex surfaces: corrugated iron, riveted ...

The "wet" procedure is reserved exclusively for flat surfaces.

The ideal application temperature is between 15 and 25°C (59 and 77°F) and must be respected equally for both the ambient and the substrate temperatures.

The hygrometry may result in a less effective adhesion of the film on the substrate.

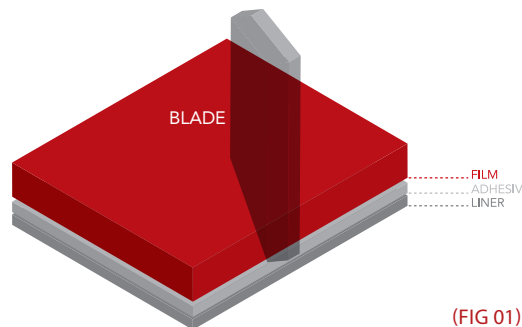
In a cold environment, the transfer tape must be left longer before being removed.

Several days are needed to finish the final adhesion of the vinyl.

5.1 Dry procedure

In all cases, apply first on flat surfaces (cf. paragraph 5.1.1).

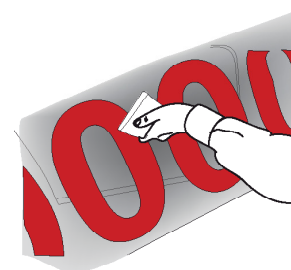
5.1.1 Procedure for application of KG10000 on flat surfaces



(FIG 01)



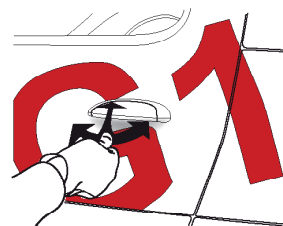
(FIG 02)



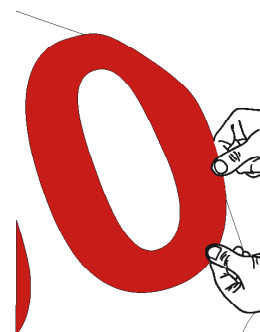
(FIG 03)



(FIG 04)



(FIG 05)



(FIG 06)

- › Place the Tape, Vinyl and Liner in their defined positions, immobilising them with magnets or masking tape. (FIG 02)
- › Remove part of the liner (or all of it, for small graphics (cf. paragraph 4.4).
- › Start applying the vinyl - only on the flat surfaces - using a soft MARBLEU-type squeegee which has been covered in felt beforehand. (FIG 03)

The squeegee forms about a 45° angle with the surface and the application is done working from the middle to the edges of the graphics.

- › Continue removing the liner and applying the graphics only on the flat surfaces.
- › To apply on flat surfaces, press hard over the whole surface, especially the edges. Carefully remove the Tape by forming a 180° angle with the surface. (FIG 04)

› Everything is now in place.

- › If deformations are visible on the part to be covered, the Tape must be removed before, even looking at these deformed part. Press down hard on all the flat surfaces, then carefully remove the Tape forming a 180° angle with the surface. (FIG 04)

Continue application according to the varied surfaces (cf following subparagraphs).

5.1.2 Curved surfaces

Step 5.1.1 is now finished - proceed as follows:

- › Put on cotton gloves (available in MALCOV toolkit).
- › Stretch the vinyl over the car, making sure any possible textured parts are covered.
- › Heat the deformed part between 40 and 50°C.
- › With a finger, apply the vinyl working from the center out. The application is done from the edges of the deformation towards the hollow. (FIG 05)
- › Once the work done, heat (between 80° and 90°C) all the hollow parts which are largely deformed so as to thermoform the end product.

5.1.3 Curved surfaces

Step 5.1.1 is now finished – proceed as follows:

- › Heat the vinyl between 40°C and 50°C, then stretch so as to cover the whole curved surface. (FIG 06)
- › Apply the vinyl over the whole surface using a felt-covered plastic squeegee and run it gently along the curved area to make any bubbles or folds disappear.
- › If necessary, peel off, re-stretch and reapply.
- › Heat the edges between 80-90 °C.

5.1.4 Riveted surfaces

Step 5.1.1 is now finished – proceed as follows:

- › With riveted surfaces, lightly heat the stretched vinyl between 40°C and 50°C.
- › Run the squeegee or your thumb around the rivet (FIG 07) and prick 2 to 3 times with a needle to release any trapped air
- › Heat each rivet again between 80°C – 90°C. (FIG 08)

5.1.5 Additional information

- › For all vehicles, application on the air duct seals of windows and body joints is totally prohibited.
- › Avoid gluing KG10000 film on unpainted parts, such as side strips or bumpers.
- › Overtime, certain horizontal applications such as hoods or roofs may diminish in color or shine compared to the parts exposed vertically. Hexis is in no way liable for long-term product efficiency on areas constantly exposed to sunlight or extreme temperatures.

5.2 Using the heat gun

You just used the heat gun for the dry procedure method for complex surfaces (concave, convex and riveted).

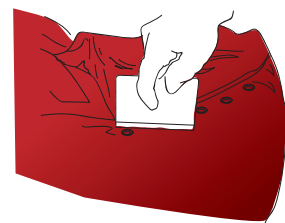
The application finished, reheat using the heat gun all the parts which underwent severe warping. The heating temperature must be between 80° and 90°C (176 and 194°F).

Check with the help of a laser thermometer (included in the MALCOV HEXIS).

This heat allows for acceleration in the gluing process of the adhesive which is sensitive to the pressure. In this way, the vinyl will be definitively thermoformed.

5.3 Wet procedure

This application procedure is strictly for flat surfaces only. Never use this procedure for complex surfaces.



(FIG 07)



(FIG 08)

In all cases of wet application, the work-time will largely depend on the care taken to evacuate all water under the vinyl otherwise a bubble problem will persist. Use a plastic felt-covered squeegee or a MPFSEC squeegee, having already wet beforehand the vinyl surface to avoid having it scratched. Wait for it to dry before removing the Tape transfer.


- › Wet the substrate to be covered.
- › Apply the KG10000 vinyl on the substrate (liner on outer side).
- › Take off the protective liner and wet the adhesive side with the EASY POSE solution.
- › Turn over the vinyl and stretch it.
- › Position the vinyl by sliding it.
- › Wet the graphic side with the EASY POSE solution to decrease the squeegee friction.
- › Using a squeegee, get rid of the film of water by working from the centre out to the vinyl edges and by pushing harder and harder. Repeat this operation until all the water is gone.


Note: the application time is longer than the dry procedure as each visual must be dry before handling the whole design.


Caution: if you are using a application film (Tape), you must wait 1 to 6 hours before removing it without causing any damage to the vinyl or the substrate.

6. CLEANING AND FILM MAINTENANCE

The Cast KG10000 film may be cleaned by any conventional automatic cleaning methods, with cleaning products and detergents used in the framework of professional maintenance for vehicles and promotional equipment. Nevertheless be careful when cleaning. Use an average pressure at a distance of at least 50cm (20in) and a water temperature of 35°C (95°F) maximum.

 *Caution: the film should not be cleaned in the 48 hours following the application at the risk of altering its adhesion which might result in the film lifting off.*

 *Caution: corrosive agents and detergents are prohibited. HEXIS is not liable for any adhesive films cleaned with the unspecified additives from cleaning stations.*


 *Car washes: the added products and the condition of the rotating brushes can harm the appearance of the graphics or films. It is a fact that after 10 car washes, the polyurethane paint becomes streaked, so consequently and in the same way, these mechanical effects can alter the vinyl aspect which frees us from any responsibility.*

HEXIS tip: always be sure to test a small surface before proceeding with the cleaning of your overlapping.


7. REMOVAL PROCEDURE


The KG10000 film is equipped with a permanent adhesive and for this reason its removal needs some attention. Nevertheless, by following the instructions below, the removal will be relatively easy.

- › Using a heat gun, start from one corner and heat the film at a temperature around 60°C (140°F) (use the laser thermometer).
- › Pull up the corner using a cutter – available in the toolbox – without damaging the substrate and slowly lifting the heated parts. Continue pulling the film at a 70° to 80° angle compared to the substrate.

 *If the angle is too wide or acute, there is a risk of the film cracking.*

- › Always work on small heated areas by gently pulling up the film to decrease the risks of leaving adhesive on the substrate or of tearing the vinyl.
- › Continue heating and gently pulling off the film until there is none left. Always be aware of the active heat, the tearing angle and the tearing speed.
- › If some adhesive remains on the substrate, take a cloth soaked in our DECOLL'VIT product and rub the substrate until all traces disappear.

 *Caution: never put the liquids in contact with the window or body sealing gaskets.*

 *Before using any of our liquids, please consult our technical data sheets on our Website at: www.hexisgroup.com*



For further information of a technical nature, refer to to Technical Data Sheets available for download from our website www.hexisgroup.com under professionals/data sheets.

The great diversity of media and the ever growing number of possible applications commit the user to ensure that the product is suitable for each particular usage.

The information given does not constitute a warranty. The seller assumes no liability for claims or damages beyond the replacement value of a product. Specifications are subject to changes without notice. Updates to specifications can be found on our website www.hexisgroup.com.

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