panoRama Self-Adhesive Window Films
Application and Removal Instructions

Information is based on our knowledge and experience. Not all aspects which should be considered for application will be explained. Specialized and occupational knowledge and competence of a professional sign maker are presupposed. Due to the diversity of influencing factors during application and use, we strongly recommend situational tests of our products by customers who wish to use the material for special applications. No legal binding warranty of certain qualities can be derived from our information.

Self-adhesive panoRama window film is easy to apply and to remove because the holes allow any trapped air to easily escape (air egress) and the film conforms well to curved glass surfaces. Installation is simple if you use the recommended tools and follow a few basic guidelines. Please consider the recommendations of this instruction guide carefully.

*INSTALLATION/REMOVAL RECOMMENDATIONS ARE VALID FOR ALL PERFORATION PATTERNS, <u>EXCEPT PANORAMA GREEN</u>. PLEASE REFERENCE SEPARATE PANORAMA GREEN HANDLING RECOMMENDATIONS FOR FURTHER ADVICE.

BASIC ADVICE

INK DRYING/OUTGASSING
Our self-adhesive panoRama window films can be printed with solvent, eco-solvent, UV curable or latex inks (please refer to the individual panoRama technical datasheet for specific data). It is essential that the inks are completely dry before the panoRama Cast or panoRama Protect laminate is applied. We recommend a drying time of 24 to 48 hours depending on the specific ink used. Prints should lay flat or very loosely rolled in an upright position during that time for proper and thorough degassing to occur.

LAMINATING
Laminates from Continental Grafix USA, Inc. (panoRama Protect and panoRama Cast), especially manufactured for one-way-vision films, are designed to be laminated without any heat (pressure-sensitive). The quality of the laminator will have an impact on the result. The tension on the perforated film and on the lamination must always be regular and identical. Through experience, we find that many problems with lamination (tunneling, etc.) are due to poor calibration of the laminator. We recommend a light pressure and a slow lamination mode. After lamination, we recommend waiting 24 hours before applying onto the window.

PACKAGING AND TRANSPORTATION
To avoid tunneling after printing/laminating and related problems during application we recommend the following:
- Always wind roll with printed side facing out.
- Do not wind the roll too tightly. Always try to wind it with as much diameter as possible (at least 10" diameter).
- Avoid prolonged exposure to cold temperatures prior to installation. DO NOT store panoRama perforated window films in a cold vehicle overnight or for long periods of time in freezing temperatures prior to installation. Material may become brittle and more difficult to apply. Keep material warm (above +50°F/+10°C) until material will be applied.

SURFACE PREPARATION
Cleaning
Windows must be properly cleaned using soap and water only. Do not use solvent based cleaners under any circumstances. The window must be completely free of grease and dust. After cleaning, dry the window completely with brown industrial paper or other a lint-free cloth, paying special attention to the corners and edges.

Temperature
The application temperature must be at least 50ºF (+10°C) and no greater than 86ºF (+30°C). **NOTE**: **panoRama Innova Ice** application temperature can be as low as +5°F (-15°C) and as great as +122°F (+50°C). These values relate to the outside temperature *as well as* to temperature on the surface itself on which the window film will be mounted. For optimum tack to the subsurface, we recommend that the window film be stored at the same application temperature for a few hours prior to the application process, with the exception of panoRama Innova Ice.
*For Vehicles: If air temperatures are below freezing, we recommend waiting up to 24 hours after installation before exposing the product to the cold. This is to allow the adhesion to fully tack onto the surface. If the adhesion is uncommonly weak (e.g., when the vehicle or parts of it have been pre-treated with substances using nano-sealing, nano-coating, or nano technology) cleaning with Acetone may help. Take care that neither window rubber nor painted surfaces or plastic parts come into contact with acetone as it may damage these parts. Continental Grafix USA, Inc. assumes no responsibility for damages caused by using Acetone.

APPLICATION

panoRama products should only be applied in dry conditions, using a dry application method. Due to the natural expansion and contraction of glass, it is very important to leave a gap of at least 3-5 mm (1/8" - 1/4") between the edge of the window and the graphic. Do not apply the film to the window seal or frame. Application to the window seal or frame may cause panoRama products to detach from the window.

EDGE PROTECTION AND SEALING
To prevent edge curling or lifting, we strongly recommend using one of the following methods.
- ✓ Apply optically clear edge seal tape, strips of optically clear laminate, or liquid edge seal along all edges.
- ✓ For experienced installers, it is possible to apply a laminate film after the window film is installed. Trim the graphic 1/2" back from the window frame. Over-size the laminate, so that it goes beyond the edge of the graphic by at least 1/4" on all edges.

APPLICATION
1. Lift the upper edge of the liner and fold back approximate 8-16 cm (3"-5"), depending on the size of the graphics. UV liner: It is important to remove the perforated and non-perforated print liner together.
2. Carefully position the graphic so that it is properly aligned on all sides, then press corners in place using light pressure.
3. Using your hand or a soft plastic squeegee, lightly press the film in place.
4. Working from the top of the graphic to the bottom, continue by peeling away more of the liner and applying light pressure to the graphic. Continue in this manner until the liner is completely removed and the window graphic is in place.
5. Squeegee the film from the center and work outward in all directions.

6. Using a utility knife, carefully trim away any unneeded portion of the graphic.
7. Be sure to squeegee the edges firmly and to seal the edges as recommended above.
8. If you are installing more than one panel, we recommend butt seaming the panels. Overlap seams are less attractive and more likely to fail. All seams should be sealed with a strip of laminate, edge seal tape, or liquid edge sealer.
9. Under certain conditions (weather, application temperature and/or lack of time between printing/laminating and application), you may see the appearance of bubbles after application. The most likely cause is the escape of solvents. Most such appearances will disappear in most cases during a few days and can be considered as normal. DO NOT, under any circumstances, attempt to lance these bubbles with a knife or a needle!

OUR PANORAMA PRODUCTS MAY BE APPLIED TO LIGHTLY CURVED SURFACES SUCH AS SOME REAR WINDOWS OF VEHICLES BUT IS NOT CONSIDERED A CONFORMABLE PRODUCT. END RESULTS WILL BE BASED ON THE EXPERIENCE AND DEXTERITY OF THE INSTALLER.

When applied on a vehicle, the vehicle should be left at least 12 hours at room temperature after the application, for the film to adhere correctly to the vehicle. This recommendation is especially important during the winter season when temperatures are close to or below freezing. The lower the temperature is outside, the more important it is to respect this step.

CLEANING GRAPHICS AFTER INSTALLATION

After installation gently clean windows, using mild detergents and a soft brush or rag. We recommend avoiding the use of high-pressure sprayers or mechanical brush systems of some automated car washes, as these can cause edge lifting and graphic failure.

REMOVAL

Glass is one of the easiest substrates to work with. Removing the panoRama product should not be a difficult task, however a long exposure may increase its tack and potential of adhesive residue. If working with older films please attempt to remove it at once in one piece.

1. Please note that a *minimum* temperature of 10°C (50°F) is highly recommended for removing panoRama perforated window film. This temperature is the minimum for the film and for the window for an easy removal.
2. Lift a corner of the graphic and slowly pull at an angle of approximately 45° to 75°. Over 90° the adhesive is more likely to leave residue behind on the glass.
3. In the rare case of adhesive residue, use a cloth soaked in mild detergent or adhesive residue remover and a plastic squeegee to scrap off the adhesive residue. Always use caution to avoid scratching the glass.
4. In case of cold weather, consider using a hair dryer or heat gun to soften the adhesive (with care!). This will also help to avoid cracking the film (be careful not to crack the cold glass with hot air).

Thank you for choosing to use our panoRama family of products! Please refer to our website at www.cgxusa.com for additional information regarding warranty and technical support.