Practical Information
ORALITE® 6900 Brilliant Grade &
ORALITE® 6901 Brilliant Fleet Marking Grade
for Vehicle Livery

General Information
ORALITE® 6900 Brilliant grade and ORALITE® 6901 Brilliant fleet marking grade for Vehicle Livery (for the rest of this document referred to just as ORALITE® 6900) are tough, weather and solvent resistant sheeting suitable for graphics applications on vehicles when converted using the appropriate conversion techniques. It is easy to apply to smooth painted or unpainted surfaces. For more information, please reference the Technical Product Bulletin, which is available from local ORAFOL sales offices. Read carefully through the full application instructions before commencing the application process.

BEFORE APPLICATION

STEP 1: TEMPLATING
ORALITE® 6900 is a highly reflective film with a pressure sensitive adhesive and easily removable translucent polypropylene liner. Application as a single piece to very complex curves is not recommended. Its use should be limited to minor curves only. Complex curves can be avoided by templating smaller pieces that will be butt jointed giving the appearance of one single piece.

STEP 2: CUTTING

Manual cutting
The material for the purpose of conversion to graphics is not recommended to be cut by hand. Cutting on the vehicle is not recommended.

Plotter cutting/Edge Sealing
To achieve accuracy and product fit for graphic type applications ORALITE® 6900 must be edge sealed with accuracy using the appropriate equipment and test procedures. Please refer to the document titled “Ultrasonic Sealing Recommendations” or contact ORAFOL.

Corner Tips
It is recommended that where possible square edges and Chevron tips be rounded in design to give improved cosmetics and to minimise risk of corners being lifted by mechanical and power washers.

STEP 3: SUBSTRATE PREPARATION

The user is responsible for determining whether the ORALITE® 6900 product is fit for a particular purpose and suitable for the user’s application. **Users are urged to carefully evaluate substrates for material adhesion and compatibility.** Listed below are guidelines for selected substrates. Material failures caused by the substrate or improper surface preparations are not the responsibility of ORAFOL (Please contact ORAFOL for any further information required).

Two-part Polyurethane Paints
Two-part polyurethane paints must be cured before applying ORALITE® 6900. If the paint is not properly cured, the adhesive will not adhere adequately. ORAFOL recommends testing for outgassing prior to applying the sheeting. For drying times, paint manufacturers’ guidelines are to be followed in all instances. While most paints are usually touch-dry within a few hours, dependent upon the primer, paint mixture and thickness, proper curing may take significantly longer.

GRP (Glass Reinforced Plastics) and/or gelcoated surfaces
Similar guidelines to the above will apply for composite materials such as GRP substrates and/or gelcoated surfaces, in that the substrate must be properly and fully cured before applying, otherwise outgassing may result.

Outgassing Plastics
Polycarbonates, polypropylene copolymers and other plastics can interact with the environment absorbing or outgassing moisture, or outgassing processing aids and solvent carriers for additives, which might cause the formation of bubbles on the film. Preliminary tests are essential to ensure that no adverse effects arise from this interaction.

STEP 4: SURFACE CLEANING

Successful adhesive bonding always starts with surface preparation. To achieve a strong and permanent bond, it is important to remove all contaminants so as to provide a smooth, clean and dry surface before applying the adhesive. The surface must be **thoroughly** cleaned of all grease, road film and any other materials that will affect the adhesive bond. Use a clean cloth with isopropyl alcohol to wipe the surface in one direction only to avoid spreading contamination. Best results are achieved by removing old paint chips, burrs etc.

STEP 5: APPLICATION TEMPERATURE

The recommended application temperature range to achieve the best results is between 15° C to 38° C. Ensure both substrate and film are at the optimum temperatures. In cold climates surfaces should be warmed up in order to achieve optimum substrate temperatures. Applying the material in hot environments can cause the film to stretch more easily.

APPLICATION

STEP 6: METHOD

ORAFOL recommends a dry method to apply ORALITE® 6900 Brilliant Grade.
For more information on the dry method, please refer to Annex 1.

NOTE! It is important not to touch the adhesive side of the material during application.

DO's & DON'T's

Concave surfaces
ORALITE® 6900 is designed primarily for application to flat vertical substrates. It can be applied on some curves but not complex curves (surfaces bending in two directions). However, its use should be limited to minor curves only.

Butt Joints
When more than one piece of reflective material is required to form a continuous marking on a substrate, pieces should be butt jointed and not overlapped onto one another. A gap of up to 1.5 mm between pieces is acceptable.

Application to corners / edges
The material should not be applied around corners or edges (e.g. door edge, wheel arch etc). Instead it should be templated and designed to be in a position such that a material edge is 6 mm (1/4") back from a substrate edge.

Application of reflective sheeting over reflective sheeting
ORAFOL does not recommend applying any reflective sheeting over the sheeting to create a chevron effect or lettering. This practice violates the warranty.

Application of reflective sheeting over vinyl
ORAFOL does not recommend applying ORALITE® 6900 over vinyl sheeting. This practice violates the warranty.

Heat application
Do not use any source of heat to make ORALITE® 6900 conform to curves. Heat should only be used when applying Chevron markings (see Annex 3 for details) or to reaffirm good material edge contact.

Chevron
Please refer to Annex 3 for recommendations on Chevron application.

Storage of Material
Rolls should be stored tightly wound in the box supplied when not in use, sitting on waxed paper at each end of the roll. This prevents dirt / particles sticking to the tape edges and protects the roll. Material should be stored in a cool, dry area, preferably at room temperature (18-28° C).
Kit material should not be stored face to face. It is recommended to store cut kit material with siliconised slip-sheets in between for protection and to avoid material face to face contact, either folded inwardly or outwardly particularly when stacked and stored.

AFTER APPLICATION

Bonding Time
It is recommended that the vehicle is kept at temperatures between 15° C to 38° C for 24 hours to allow the optimum adhesion to build up between the substrate and material before putting the vehicle into service.

Painting after application
ORAFOL does not recommend painting on or close to the reflective sheeting, after ORALITE® 6900 has been applied to the vehicle. This practice violates the warranty.

Cosmetics
The manufacturing process means that a thin "weld line" appears across the width of the material/tape approximately every 225 mm (9"). This is not a manufacturing flaw and the material cannot be supplied without these lines. For the same reason, an exceptionally thin line may occasionally be seen running the length of the tape/material. This is virtually invisible to the naked eye, when viewed from one meter (3 ft) away.

REMOVAL

When removing ORALITE® 6900 for repair damage or de-commissioning of vehicles, it is recommended that the tips in Annex 3 are followed.

CARE INSTRUCTIONS

ORALITE® 6900 can be washed manually by brush, cloth or sponge using water, soap or detergent followed by a clean water rinse. If an automatic truck / car wash or standard high-pressure hand spray is used, please follow these recommendations:

- Maximum pressure – 1200 PSI / 80 bar
- Maximum water / wash solution 60° C
- 40˚ Nozzle cone opening size should be used
- Cleaning wand or jets to be at no greater angle than 45 degrees from perpendicular to the marking surface
- Hold the cleaning jet a minimum of 60 cm away from the material

When using cleaners/degreasers, make sure the product is suitable for vehicles and follow the manufacturer's recommendations for dilution. Thoroughly rinse after soaking vehicle. Prolonged exposure to cleaners/degreasers can in some circumstances affect the material negatively. Prolonged exposure in combination with sunlight can reinforce cleaners/degreasers negative effect.

Do not use solvents to clean the film, as they can adversely affect the product. If soap or detergent does not sufficiently clean the film, **gently** rub the film with a cloth soaked in isopropyl alcohol to remove the stains.

Important: The suitability of the intended care process must be determined by the end user.

IMPORTANT NOTICE

All ORALITE® products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning ORALITE® products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of ORALITE® products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. All specifications are subject to change without prior notice.

ANNEX 1 – Dry method

After properly preparing and cleaning the substrate, the following items will be necessary to apply the dry method:

- Squeegee with a soft side or a cloth/squeegee sleeve to avoid scratching the film
- Masking tape
- Pair of scissors

Step 1. Position the piece to be applied on the vehicle, with liner still on it, and keep it in place with masking tape securely holding the piece at the top end. Place masking tape so that half the masking tape is on the piece and half will be in contact with the surface. It will serve as a hinge during the application. Ensure that the piece is in the exact desired position.

Step 2. Remove the liner and squeegee piece into place.

NOTE! It is important to avoid touching the adhesive side of the material, particularly the edges, during application.

NOTE! If repositioning the piece is necessary, it should be done **carefully**. Slowly pull back the film at 90° angle. The film can stretch if pulled too hard or too fast causing damage to the reflectivity as well as registration failures.

Step 3. Remove masking tape and then re-squeegee all edges.

NOTE! Application of Chevron markings requires specific techniques. See Annex 2 for details.

ANNEX 2 – Chevron Application

After properly preparing and cleaning the substrate, the following recommendations should be followed when applying Chevron markings:

Templating

Sharp tips are more likely to lift during power washing and should therefore be avoided. **Tips should be rounded by design in advance** for improved cosmetics and adhesive performance.

Application

When removing the liner and squeegeeing the film, it is essential not to touch the adhesive side, **specially the edges**, as it can weaken the adhesive where touched and consequently cause a weak bond to the surface.

After application, with a hot air gun **gently heat the Chevron tips** (approx 35° C) for a few seconds and re-squeegee all edges to guarantee a strong bond.

ANNEX 3 – Removal

When the need arises to remove ORALITE® 6900, the following tips can help facilitate the task.

- Keep the angle of removal perpendicular (90°) to the surface and pull at a moderate speed. If the angle is more or less, there is greater chance of adhesive transferring from the sheeting to the working surface.

- At temperatures below approx. 18° C there is greater chance of adhesive transferring from the sheeting to the working surface, e.g. painted metal. In such cases a heat gun may be used to gently warm the adhesive. Heating the film will soften both reflective film and adhesive facilitating clean removal. Optimum material temperature will be approximately 75° C. Warm the area in a circular pattern and be careful not to leave the heat source in one spot for too long. It could melt the adhesive causing it to release from the sheeting, or worse, damage the painted finish below. Before heating, always make sure that elevated temperature will not cause any damage to layer below. *Note: Removal at temperatures above 75°C increases the potential for adhesive transfer to the working surface.* Using an IR thermometer to read and monitor temperature is recommended.

- With the surface warm, use a wooden applicator or similar (one that will not scratch the working surface) to gently lift the edge of the material. Continue to peel the sheeting at moderate speed. Reduce speed and reapply heat if sheeting starts feeling stiff again and residues of adhesive or sheeting are left behind, respectively.
  Caution: Wear appropriate personal protection equipment when using heat guns. Panels & vehicle body can get hot during this process.

- Once the graphic is removed, there may be adhesive residue left behind on the working surface. The residue can often be removed using packing tape or duct-tape. With a repeating motion, dab the adhesive residue with the adhesive side of the packing or duct-tape to pull off the residue.

- Leftover adhesive residue may also be removed with clean-up solvents and adhesive removers. Before use, always review the manufacturer's MSDS and test the surface in an inconspicuous area for compatibility.

Due to the enormous variety of paint systems and substrates, ORAFOL cannot guarantee that ORALITE® 6900 will be cleanly removed from the working surface.