

ORAFOL Americas General Warranty

ORAFOL Americas warrants its pressure-sensitive adhesive films to be free of defects in materials and manufacture, and to perform as stated in published product technical information bulletins if properly stored, processed and applied. ORAFOL Americas will, at its discretion for all ORAFOL product lines that do not meet specified effective performance life, issue credit for the purchase price of the material through the authorized distributor from where the material was purchased.

The customer assumes responsibility in determining product suitability for intended use on any surface to which ORAFOL materials will be applied. ORAFOL Americas shall not be liable for any direct, indirect, or consequential damages, arising from the use or inability to use the product. This warranty is declared in lieu of any other claim, whether expressed or implied, and is not subject to interpretation.

In no event will ORAFOL Americas be responsible for labor, consequential or incidental damages of any kind. Samples must be submitted to an ORAFOL Americas-approved laboratory to verify any claims against the stated material warranty. Surfaces to which Oracal materials are applied are not covered under this warranty. Direct replacement material will be authorized on a case-by-case basis only, and an individual failure shall not be construed as an indication of failure for the entire vinyl graphic package.

Outdoor Durability Warranty Specifications

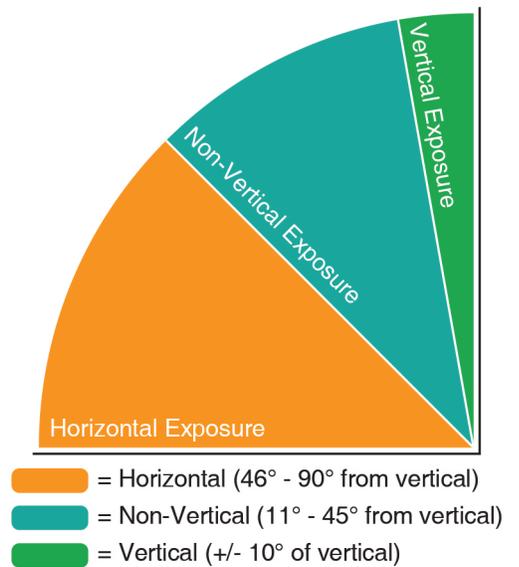
Published outdoor durability specifications for ORAFOL films represent the expected performance of our films in vertical exposure applications (+/- 10° from vertical orientation) located in standard U.S. & Canadian climate conditions located in Climate Zone 1. **Prorated warranty information for other application angles and climate zones is shown below:**

Application Type	Prorated Warranty Coverage	EXAMPLE			
		Expected Outdoor Durability		Expected Prorated Durability	
Vertical Applications (+/- 10° of vertical)					
Climate Zone 1	100%	1	x	8 years	= 8 years
Climate Zone 2	75%	0.75	x	8 years	= 6 years
Non-Vertical (11° - 45° from vertical)					
Climate Zone 1	50%	0.5	x	8 years	= 4 years
Climate Zone 2	35%	0.35	x	8 years	= 2.8 years
Horizontal (46° - 90° from vertical)					
All Climate Zones	0%	0	x	8 years	= 0 years

- CLIMATE ZONE 1**
Canada, United States (also see Outdoor Durability Map for US Zone 2)
- CLIMATE ZONE 2**
Central & Southern Florida, Central & Southern Texas, New Mexico, Arizona, Southern Utah, Central & Southern Nevada, Central & Southern desert areas of California, Mexico, Caribbean, Central and South America

Note: No warranty applies to graphics installed on horizontal surfaces (>45° from vertical) such as vehicle hoods, trunks & roof-tops, unless stated otherwise in the individual product technical data sheet.

Exposing vehicle graphics to certain environmental and mechanical damage (i.e. automatic car washes, industrial truck washes, or abrasive cleaning chemicals) can degrade the face film over time, causing the graphic to lose its luster, fade, crack and even chip away from the substrate and will not be covered under the General Warranty. For more information and helpful advice, please see the "Care and Maintenance of Vehicle Graphics" technical bulletin located in the Support section of our website.



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Industrial Pollutants

Applications in some urban, valley or industrialized areas may experience reduced durability and/or cosmetic damage caused by atmospheric conditions such as acid rain, smog or other harsh pollutants. Damage from these pollutants is not covered by our product warranty. For more information and helpful advice, please see the "Dealing with Fallout" technical bulletin located in the Support section of our website.

Application Warranty Guidelines

The following guidelines are intended to provide basic knowledge about common application methods and general information for use of ORAFOL products.

Application Temperatures

ORAFOL films should never be applied at temperatures below 46°F unless otherwise stated in the individual product technical data sheet. However, for best application results, surface and ambient temperatures should be between 65°-75°F. Colder temperatures will result in the material feeling more rigid and the adhesive less tacky. Warmer temperatures will result in the material feeling more aggressive and pliable. Newly applied graphics should remain in the application environment for at least 24 hours to promote uniform adhesion characteristics. A significant change in temperature should be avoided during the first 24 hours after the application is initially complete, as this may result in the material lifting or popping up in complex curved areas. For application temperatures below 46° F please contact ORAFOL Americas for low temperature product choices.

Wet Application

Wet applications are typically recommended for large surface applications. For best results, ambient temperature should be at least 60°F. For wet applications, ORAFOL Americas recommends using a medium-tack application tape. After the application fluid has ample time to dry remove the application tape carefully at a 180° angle. Newly applied graphics should remain in the application environment for at least 24 hours to promote uniform adhesion characteristics and allow any residual moisture to evaporate. (Recommended ingredients for wet application fluid: one tsp. of traditional Joy® or Dawn® dish detergent to one quart of water. Detergent should not contain moisturizers, lotions, or bleaching agents.) Wet applications are not recommended or warranted for the following: polyacrylate dispersion or water-based adhesive, ORACAL® Polyester or Metallic, ORALITE®, REFLEXITE®, CommandForm® or RapidAir® films. Windex® or other glass and surface cleaners should never be used to clean a substrate or as an application fluid for vinyl installation. Wet applications should only be used on clean, smooth, and non-porous surfaces.

Glass Application

Glass and other surface cleaners may leave a residue that could cause poor adhesion between the graphic and the surface. Only clean glass with a mild detergent and water solution prior to vinyl application. If additional cleaning is needed, use only Isopropyl Alcohol. Since glass is transparent, it is sometimes difficult to tell which side is contaminated when you are ready to clean. So it's important to clean both sides of the glass to ensure you are removing any possible contaminants or debris that could potentially cause poor adhesion of newly applied vinyl graphics. **ORAFOL Americas assumes no liability for breakage associated with application of its films on glass surfaces.** For other tips to reduce the risk of poor adhesion properties and to reduce the risk of glass breakage, please contact ORAFOL Americas Product Support for suggested application guidelines.

Stainless Steel Application

Due to the wide variety of stainless steel types, gauges, and applications, ORAFOL Americas does not recommend or warranty its products when applied to stainless steel surfaces.

Watercraft and Boat Applications

ORACAL® and ORAJET® products utilizing RapidAir® technology are not recommended or warranted for boat and other watercraft applications. Instead, ORAFOL Americas recommends ORAJET® Series 3951 Professional Wrapping Film with CommandForm® Technology laminated with ORAGUARD® Series 290 PVC Premium Cast for boat and other watercraft wrap applications. ORACAL® 951 Premium Cast Film, 951M Premium Cast Metallic Film, and 751 High Performance Cast Film graphic marking films are also ideal for striping and lettering applications.

Adhesive Promoters

ORAFOL Americas does not promote or recommend using any type of adhesive promoter or tape primer with its products. Use of adhesive promoters will void any applicable warranty coverage.

Unwarranted Metal Surfaces

ORACAL®, ORAJET®, ORAGUARD®, ORALITE®, or REFLEXITE® brand films applied to copper, tin, nickel, brass, lead, alloys, or magnesium will not be warranted. If a substrate is in question, please contact Oracal Product Support before application.

Contact ORAFOL Americas Product Support with questions regarding unfamiliar product to substrate combinations.

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Graphics Applied to Latex Painted Surfaces.

Vinyl graphics must be applied to a clean, smooth, dry, and non-porous surface. Allow freshly applied latex paint to cure for three full weeks prior to graphic application. Prior to application, test substrates by cleaning the surface with a dry lint free rag and apply a small test strip for 24 hours. If bubbles or edge peeling appear, out-gassing is still occurring. At this time it is best to let the paint continue to outgas and repeat the test in a few days. Due to the wide variety of paint systems, substrate types, and finishes, substrate and paint damage due to graphic removal is not warranted. For more information and helpful advice, please see the PSA Vinyl Interior Removable Wall Graphics User Guide, or FAQ's located in the Support section of our website.

Flexible Substrate Applications

For the general warranty to apply with selected ORACAL® plotter films, the following procedures must be followed:

- Prior to application, the selected flexible substrate should be thoroughly cleaned with a clean saturated rag containing a mild detergent and water solution and then dried.
- The surface should be wiped down with Isopropyl Alcohol using a clean rag to remove any surface contamination such as dust, grease, or other debris.

Application of a graphic marking film on a flexible substrate should be laid out on a rigid table top. After the initial application, graphics should then be burnished using a rivet brush. Multiple cycles of applying heat and pressure will help ensure a solid bond between the adhesive and the subtle texture of the substrate. (Always apply vinyl graphics to the smoother side of flexible substrates.) Graphics applied to previously used flexible substrates will not be warranted. ORAFOL Americas does not recommend applying printed and laminated graphics to flexible substrates.

Acrylic and Polycarbonate Applications

When using substrates that tend to outgas, such as polycarbonate or acrylic products, it is recommended to remove the protective liner on these substrates to allow proper outgas time prior to installation. Be sure to properly test these substrates by cleaning the surface and applying a small test strip for 24 hours. If bubbles or edge peeling appear, outgassing is still occurring. Either treat the substrate with a heat source or store it for 24-36 hours at room temperature conditions in order to cure the substrate prior to application of the vinyl graphic.

Product Compatibility and Performance

Please contact ORAFOL Americas Product Support to ensure proper product combinations, and substrate compatibility for your specific job. No warranty will apply when combining ORACAL®, ORAJET®, ORAGUARD®, ORALITE®, or REFLEXITE® brand films with films produced by any other manufacturer.

Substrate Damage

ORAFOL is not responsible for the integrity of the substrate to which the vinyl graphic is being applied, and will not be liable for any direct or indirect damage caused during graphic installation, expected service life, or graphic removal. It is up to the graphic installer and their customer to determine the suitability and integrity of the substrate to which the vinyl graphic is being applied.

Laminating Printed Graphics

Lamination of inkjet prints is recommended to ensure longer lifespan at optimum quality (gloss, color, physical damage). ORAGUARD® laminate films enhance the desired appearance of the graphic (gloss, semi-gloss, matte). They also provide excellent protection against ink fading from exposure to UV rays.

Solvent and Eco-Solvent Ink Outgas Procedures

ORAFOL Americas recommends allowing printed films at least 24 hours at 70°F to dry (outgas) before applying a laminate to avoid delaminating or adhesive failure (48-72 hours preferred). Note the following considerations:

- 24 hours of dry (outgas) time should be considered the minimum before applying lamination. (Prints with very little ink coverage would fall into this category.)
- If the print is heavy in ink saturation, (darker, rather than lighter) a longer outgas time of 48-72 hours is preferred for the print to dry before lamination.

DO NOT leave the graphic rolled up tightly around the core after printing. This will cause the solvent gasses in the inks to be trapped and potentially migrate to the adhesive layer of the material, resulting in poor adhesion properties once applied to the intended substrate.

OEM Inks

ORAFOL Americas only warrants the compatibility of OEM solvent, eco-solvent, latex, and UV curable ink-sets with its approved inkjet printable materials. Each series of ORAJET® digital media requires different print and RIP software parameters because of the individual qualities of each material. Check the Support section of www.oracal.com for a wide selection of FREE color profiles.

If you have any questions regarding the above guidelines please contact ORAFOL Americas Technical Support.

Outdoor Durability Warranty by Climate Zone

