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**Product Technical Bulletin**

**ORAJET® Series 3951RA Inkjet Media with RapidAir™ Technology  
Release 1, Effective April 2007**

**Description**

**ORAJET® Series 3951RA Professional Wrapping Film with RapidAir™ Technology** is an ideal choice for vehicle wraps and other challenging conformable applications. Series 3951RA features an advanced air release system, a repositionable adhesive and cast construction for highly conformable performance over the most difficult curves, corrugations and rivets. Recommended for use with ORAGUARD® 290 laminating film, 10-year, 2-mil Series 3951RA features an ultra-glossy surface to produce vivid, life-like prints that can be removed with little or no adhesive residue for up to four years.

**Product Data**

**Construction**

*This information is subject to change. Please ensure you are referencing the most recent Product Bulletin.*

- **Face Film** – 2-mil cast PVC film available in white with gloss finish
- **Adhesive** – Grey, solvent-based, repositionable, permanent adhesive that can be removed with little or no adhesive residue for up to four years
- **Liner** – 80# PE-coated silicone paper featuring advanced air-release technology to facilitate quicker, easier application

**Physical Properties**

The information stated below is based on testing results and intended solely as an information source. These values are given without guarantee and no warranty is implied or expressed. ORACAL recommends the purchaser conduct independent tests prior to use in order to determine suitability for the intended application.

<b>Thickness</b> (without protective paper and adhesive)	2 mil
<b>Dimensional Stability</b> (FINAT TM-14)	Adhered to steel, no shrinkage in cross direction; In length, <.009"
<b>Temperature Resistance</b>	Adhered to aluminum, -58°F to +230°F, no variation
<b>Fire Behavior</b> (DIN 75200)	Adhered to steel, self-extinguishing
<b>Adhesive Power</b> (FINAT TM-1, after 24 h, average)	Adhered to stainless steel: 4.1 lb/in <sup>2</sup>

<b>Tensile Strength</b> (DIN EN ISO 527) Along Across	Min. 19 MPa/2755 psi Min. 19 MPa/2755 psi
<b>Elongation at Break</b> (DIN EN ISO 527) Along Across	Min. 120% Min. 120%
<b>Seawaterability</b> (DIN 50 021)	Adhered to aluminum, after 100h/73°F, no variation
<b>Shelf Life</b> (68°F/50% relative humidity)	2 years
<b>Minimum Application Temperature</b>	46°F
<b>Available Lengths</b> <b>Available Widths</b> (inches)	164' (50 meters) 15, 30, 36, 48, 54, 54RW, 60
<b>Minimum Life Expectancy</b> (based on accepted application procedures on vertical surfaces)	10 years
<b>Recommended Laminates</b>	ORAGUARD® Series 290 or Series 290F

### Compatible Substrates

- Acrylic
- Aluminum
- Glass (uncoated)
- Painted metal
- Polycarbonate<sup>2</sup>
- Rigid vinyl
- PETG
- Smooth, non-porous, painted surfaces

<sup>2</sup> Refer to manufacturer's suggestions on the processing and handling of this material. Ensure that the graphics are applied to the proper side of the material.

### Compatible Products

ORAJET® Series 3951RA Inkjet Media is compatible with most of today's popular solvent, eco-solvent and UV curable printers.

### Printing and Fabrication

#### Color Profiles

ORACAL USA has developed a proprietary Advanced Color Management program to provide exceptional technical support for all of our ORAJET® inkjet media, including Series 3951RA. For optimal printing results, it is imperative that your printer is calibrated using RIP software and the appropriate color profile. Color profiles can be downloaded from [www.oracal.com](http://www.oracal.com). For additional color management support, please call ORACAL USA's Technical Support team at 1-800-ORACAL-1 (672-2251).

## Ink Drying

**Allow printed film to dry for at least 24 hours at 70°F (48-72 hours preferred) before applying a laminate or cutting, trimming, mounting or applying the graphic. This will allow the solvent inks to outgas, improving ease of application and removal.**

## Laminating

To provide UV protection and extend the life of the ink up to four years, ORACAL recommends laminating all digital prints. Series 3951RA is compatible with ORAGUARD® Series 290 laminates. ORACAL requires printed film to dry for at least 24 hours at 70°F (48-72 hours preferred) before media is laminated.

## Application Methods

ORAJET® Series 3951RA is suitable for dry application only.

## Preparing the Surface

When using materials that tend to outgas, such as polycarbonate or polystyrene products, we recommend the following steps:

1. Clean the surface, mount a piece of film to it, and store at 140° F for 24 hours.
2. If bubbles form after 24 hours, outgassing is still occurring. Either treat the plastic with a heat source or store it for an extended period at room temperature conditions in order to cure the substrate prior to application of the vinyl.

The high-quality special adhesives used on ORACAL pressure-sensitive films create an excellent bond with most clean, smooth, weather-resistant surfaces that are free of grease, dust or any contaminants. For a long-lasting bond, the target surfaces must be properly prepared. ***Be sure to check the directions provided by the manufacturer of the substrate you are using to determine the recommended cleaning method for that surface.*** Gas bubbles may form between the film and the surface if any solvent residue remains as a result of improper cleaning or if paint on the surface is too fresh. Freshly lacquered or painted surfaces should be allowed to stand for at least three weeks after complete curing before adhering the film. *The compatibility of selected lacquers and paints should be tested by the end-user prior to use.*

## Application Temperatures

ORACAL films should never be applied at temperatures below 46° F. Newly fabricated sign faces should remain in the application environment for at least 24 hours to promote uniform adhesion characteristics and allow any residual moisture to evaporate. A significant drop in temperature should be avoided during the first 24 hours after adhesion.

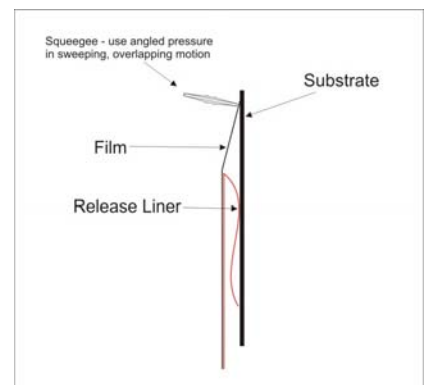
## Removing the Release Liner

Lay the cut film on a flat surface with the film side down. Pull back only as much release liner as required to begin mounting. Always draw the release liner from the film, never the other way around.

## Dry Application

For dry adhesion, use a low-tack application tape.

1. Arrange the film on the surface to which it is to be adhered and pull down approximately six to eight inches of release liner. Be sure to keep the liner intact, but draped behind the graphic to keep adhesive off of the substrate until the instance of application (Diagram 1).



2. Apply the film in firm, overlapping strokes; be sure to establish a smooth baseline across the entire graphic.
3. Continue with overlapping strokes until the entire graphic has been applied.
4. When using ORATAPE masking tape, pull slowly away from the film at a 180° angle. If needed, the top of the masking tape can be lightly sprayed with water to allow for easier release from the graphic.

### **Removal of Air Bubbles**

ORAJET® Series 3951RA features an advanced air-release liner specially designed to facilitate smooth application of the material. In the event that you do need to remove air bubbles from your installed graphic, this can easily be done by applying pressure with your thumb or squeegee to the center of the bubble and rubbing out toward the edge of the material. The air will then disperse along the air egress channels. There is no need to make air release holes unless the bubble is larger than 1" in diameter, in which case you should use an air release tool to remove the air using conventional techniques.

### **Application over Rivets**

Tenting around rivets is best handled in the following way:

1. Using a soft squeegee, apply the graphic over rivets as if it were a flat panel, leaving an air pocket around the rivet head.
2. Using the squeegee or your thumb, press the film towards the rivet head to make the air pocket as small as possible.
3. Using an air release tool, make several small holes around the rivet head to release the air, and then press the film even closer around the rivet.
4. Using a rivet brush and heat gun, first apply heat, and then work the rivet brush in a gentle circular brushing motion around the outer edge of the rivet. Continue brushing as you narrow the circle to the area immediately over the rivet.
5. Finally, heat the rivet again with a heat gun to set the film, and then finish the rivet by applying gentle pressure with the rivet brush once more.

### **Application Tips**

- Seams can be made using the overlap method. It is recommended that overlaps and seams measure no more than 1/8".
- Puncture air bubbles with an air release tool. Do not use a knife or razor.
- If using application tape, always remove it at a 180° angle and immediately re-squeegee the film.
- Apply heat to all seams, then re-squeegee.
- Rivets should be treated as a flat panel during installation. Puncture with an air-release tool, apply heat and finish with a rivet brush.
- Cutbacks should be performed soon after application as adhesion builds with time.

### **ORALIFE Component System Warranty**

The ORALIFE Component System (OCS) warranty from ORACAL USA includes specially matched media and laminates to fit almost any graphic application where a pressure-sensitive adhesive is needed. Combined with your approved wide-format inkjet printer and corresponding OEM ink sets, the OCS warranty can help you achieve an unrivaled level of performance and guaranteed reliability for your outdoor digital prints. For more information, visit [www.oracal.com](http://www.oracal.com) or contact us at 1-800-ORACAL-1 (672-2251).

### General Warranty

ORACAL USA warrants its pressure-sensitive vinyl films to be free of defects in materials and manufacture, and to perform as stated in published product technical information bulletins if properly stored and applied. ORACAL USA will, at its discretion, either replace defective material or refund the purchase price of any ORACAL®, ORAJET®, ORAGUARD®, ORALITE® or ORAMASK® materials that do not meet this warranty within the specified effective performance life. The customer assumes responsibility in determining product suitability for intended use. ORACAL USA 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.

If you are in extreme climate zones (Southwestern United States, desert, tropics, etc.), South America, Latin America or the Caribbean, contact ORACAL USA for specific warranty information for your area.

### Shipping, Storage, Shelf Life

- Film must be stored at 68° F/50% relative humidity.
- For optimal product quality and performance, film must be stored in a dry, clean area, out of direct sunlight.
- Shelf life of ORACAL® Series 3951RA must not exceed two years from the date it is received from ORACAL USA

### Contact Us



#### ORACAL USA

7251 Salisbury Road  
Jacksonville, FL 32256 USA  
Toll Free 800.672.2251  
904.726.9597 • FAX 904.726.9409  
www.oracal.com • ORACAL USA 2006