Graphic Innovations

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# Vehicle Wrapping



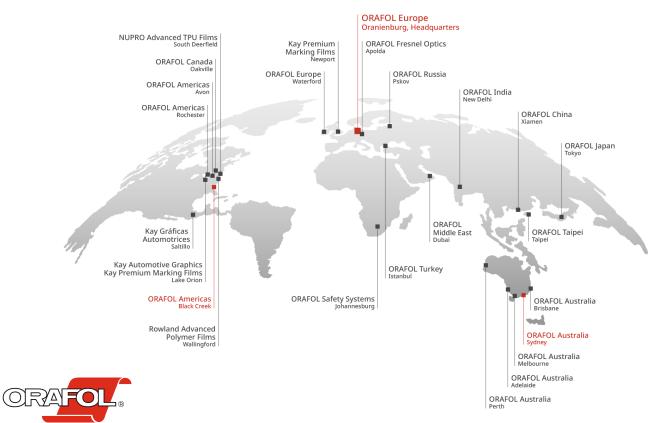
**Engineered to Achieve Perfection**<sup>™</sup>

# ORAFOL Europe GmbH

Headquarters and production facility

ORAFOL is one of the world's leading manufacturers of innovative self-adhesive graphic films, reflective materials and adhesive tape systems. The international ORAFOL Group is headquartered just outside the city gates of Berlin, in Oranienburg.

#### **ORAFOL's Worldwide Locations**



# Vehicle Wrapping

ORAFOL offers the market's largest range of high quality vehicle wrap films. Explore the range and unleash your creativity.

#### Made in Germany.

| 4     | <b>Solid Colours - ORACAL® 970/970RA</b>   |
|-------|--|
| 4     | Premium Wrapping Cast / <i>Rapid</i> Air®  |
| 4     | Premium Shift Effect Cast / <i>Rapid</i> Air®  |
| 4     | Premium Special Effect Cast / <i>Rapid</i> Air®  |
| 5     | <b>Glitter Metallic Films</b>  |
| 5     | ORACAL <sup>®</sup> 851 - Sparkling Glitter Metallic Cast                                |
| 6     | <b>Tuning Films</b>  |
| 6     | ORACAL <sup>®</sup> 975/975RA - Premium Structure Cast / <i>Rapid</i> Air <sup>®</sup>   |
| 7     | <b>Digital Printing Films</b>  |
| 7     | ORAJET® 3951RA+ Pro <i>Slide</i> - Premium Digital Printing Cast PVC - <i>Rapid</i> Air® |
| 7     | ORAJET® 3981RA+ Pro <i>Slide</i> - Premium Digital Printing PU - <i>Rapid</i> Air®       |
| 7     | ORAJET® 3951 - Premium Wrapping Cast   |
| 8     | Laminating Films   |
| 8     | ORAGUARD <sup>®</sup> 289F - Premium Laminating Film                                     |
| 8     | ORAGUARD <sup>®</sup> 293/293F - Premium Laminating Film                                 |
| 8     | ORAGUARD <sup>®</sup> 290/290F - Premium Laminating Film                                 |
| 9     | Stone Guard Films  |
| 9     | ORAGUARD <sup>®</sup> 270/285F/2815GF  |
| 10    | ORAFOL <sup>®</sup> Car Wrapping Seminars  |
| 11    | ORAFOL <sup>®</sup> Cleaning, Care and Application Products                              |
| 12-15 | Product Overview   |

For full product details, Technical Data Sheets, Application Guidelines, Maintenance and Usage Terms as well as for up-to-date information, please refer to our website where they can be downloaded: www.orafol.com

### Solid Colours

# ORACAL® 970/970RA

# Premium Wrapping Cast

ORACAL<sup>®</sup> 970 Premium Wrapping Cast series is your ideal wrapping film for solid coloured fleet and motor sport vehicle wraps. Exceptional dimensional stability and conformability over curved surfaces, rivets and corrugations. The material does not require an overlaminate.

#### Product benefits include:

- · Multi-layered, high-performance cast PVC film (110 micron)
- · 96 vivid standard colours
- · Glossy and matt colours available
- · Super matt available in black
- · Large range of metallic colours
- · Excellent dimensional stability and gloss retention
- · Solvent based polyacrylate adhesive
- · Repositionable with permanent final adhesion.

#### RA product benefits also include:

• The *Rapid*Air<sup>®</sup> technology allows a rapid and bubble-free application and thus requires less application time and cost

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COLOURS

**Note:** The product should be worked in, cut and applied with an overlap at the edge, for more curved surfaces, or for corrugations and rivets.

### Premium Shift Effect Cast

The exciting variation of the classic ORACAL<sup>®</sup> 970 series - with a colour shifting effect depending on which angle you view the material from.

#### **Product benefits include:**

- Unique shade shifting effect where the colour changes depending on viewing angle
- · Multi-layered cast PVC film (110 micron)
- · Glossy and matt colours available
- All the same product benefits as the classic ORACAL<sup>®</sup> 970 series above.



Aubergine Pearl bronze Symphony

## Premium Special Effect Cast

Glamorous version of the classic ORACAL<sup>®</sup> 970 series - with a unique shimmer effect.

#### Product benefits also include:

- · Unique glitter effect
- · Multi-layered cast PVC film (110 micron)
- · Glossy and matt colours available
- All the same product benefits as the classic ORACAL<sup>®</sup> 970 series above.

#### RA product benefits also include:

• The *Rapid*Air<sup>®</sup> technology allows a rapid and bubble-free application and thus requires less application time and cost

**Note:** The product should be worked in, cut and applied with an overlap at the edge, for more curved surfaces, or for corrugations and rivets.



### Glitter Metallic Films

# ORACAL<sup>®</sup> 851 Sparkling **Glitter Metallic** Cast

Sparkling Glitter Metallic Cast PVC film for plotter applications with optimal cutting and application characteristics. Specially developed for lettering, marking and decoration. Surface has a high glossy finish. Available in 18 mesmerizing, high gloss - glitter metallic colours, including Crystal Clear Sparkle (986) transparent that can be laminated to the surface of any standard ORACAL 631, 641, 651, 751, or 951 plotter film colour to create a vibrant custom Sparkling Glitter Metallic colour.



### Tuning Films

# ORACAL<sup>®</sup> 975/975RA Series Premium **Stucture** Cast

ORACAL<sup>®</sup> 975 Premium Structure Cast is your ideal film for surface refinement in car design, especially for highlighting vehicle parts. It is the perfect tuning film.

#### Product benefits include:

- · Multi-layered Cast PVC (150 micron)
- · Five structured optics
- $\cdot$  Several colours in each structure
- High dimensional stability and maintenance of surface finish
- · For uneven and arched surfaces
- · Solvent based polyacrylate adhesive
- · Repositionable with permanent final adhesion.



| Product                   | Structure | Colours   |
|---------------------------|-----------|---|
| ORACAL <sup>®</sup> 975CA | Carbon    | Transparent, White, Black*, Brown, Silver grey, Gold, Anthracite, Geranium red, Middle blue |
| ORACAL <sup>®</sup> 975BR | Brushed   | Silver grey, Gold, Deep blue metallic, Graphite metallic, Tin metallic                      |
| ORACAL <sup>®</sup> 975HC | Honeycomb | Black, Silver grey, Gold, Deep blue metallic, Tin metallic                                  |
| ORACAL <sup>®</sup> 975CR | Crocodile | Black   |
| ORACAL <sup>®</sup> 975CO | Cocoon    | Black   |
|                           |           |   |

\*) Also available with RapidAir®



### Digital Printing Films

### Premium Digital Printing Cast PVC - with ProSlide and RapidAir® technologies ORAJET® 3951RA+ ProSlide

ORAJET<sup>®</sup> 3951RA+ Pro*Slide* Premium Digital Printing Cast PVC is the new and upgraded car wrapping option for printed full wraps. The *Rapid*Air<sup>®</sup> technology makes application even easier! **The new ProSlide** technology enables an easy and quick application due to its improved repositionability.

#### Product benefits include:

- · Premium Cast PVC film (55 micron)
- · Available in white with a glossy surface
- · Inkjet printing with solvent based inks, UV- or latex inks
- · Extreme durability and brilliancy

- · Solvent based grey-coloured polyacrylate adhesive
- $\cdot\,$  Repositionable with permanent final adhesion
- · Laminating film:
- We recommend ORAGUARD® 293/293F/290/290F

# Premium Digital Printing PU - with ProSlide and RapidAir<sup>®</sup> technologies $ORAJET^{\mathbb{R}}$ 3981RA+ ProSlide

ORAJET<sup>®</sup> 3981RA+ Pro*Slide* Premium Digital Printing PU is the environmentally friendly alternative when it comes to car wrapping. **The new Pro***Slide* **technology enables an easy and quick application due to its improved repositionability.** 

#### Product benefits include:

- · Premium high-performance PU film (50 micron)
- $\cdot$  Available in white with a glossy surface
- · Inkjet printing with solvent based inks, UV- or latex inks
- · Extreme durability and brilliancy
- $\cdot\,$  Solvent based grey-coloured polyacrylate adhesive
- · Repositionable with permanent final adhesion.
- · Lamination film:

We recommend the PVC-free and plasticiser-free ORAGUARD<sup>®</sup> 289F.

**Note:** The product should be worked in, cut and applied with an overlap at the edge, for more curved surfaces, or for corrugations and rivets.

## ORAJET<sup>®</sup> 3951

The ORAJET<sup>®</sup> 3951 series is your ideal wrapping film for printed, full coverage fleet and motor sport vehicle wraps.

#### Product benefits include:

- · Premium cast PVC film (55 micron)
- $\cdot$  Available in white and transparent with a glossy surface
- · Inkjet printing with solvent based inks, UV- or latex inks
- Extreme durability and dimensional stability in corrugations and on rivets
- · Solvent based polyacrylate adhesive
- · Repositionable with permanent final adhesion.

 Lamination film: We recommend ORAGUARD<sup>®</sup> 293/293F/290/290F/ 290DU/289F



### Laminating Films

To ensure the long-term durability of your printed ORAJET<sup>®</sup> car wrapping films, we recommend lamination with the ORAGUARD<sup>®</sup> Series.

## ORAGUARD® 289F 🇳

Premium PVC- and plasticizer-free high performance film available with glossy surface, and with the highest level of UV-protection.

#### Product benefits include:

- Premium PVC- and plasticiser-free high-performance film (50 micron)
- · Transparent with a glossy surface
- For the protection of large-format indoor and outdoor graphic applications
- $\cdot\,$  Solvent based polyacrylate adhesive
- Highly recommended for use in combination with the PVCand plasticiser-free ORAJET® 3981RA+ Pro*Slide*.

# ORAGUARD® 293/293F

Ultra flexible transparent Premium Cast PVC film with glossy surface and highest level of UV protection

#### Product benefits include:

- · Premium Cast PVC film (30 micron)
- Transparent with a glossy or matt finish (293F glossy
- finish only)
- · Ultra-flexible

- · Excellent conformability to rivets and corrugations
- · For long-term outdoor applications
- · Solvent based polyacrylate adhesive
- · Release liner 293: Silicone paper
- · Release liner 293F: Polyester film

### ORAGUARD® 290/290F

Premium Cast PVC film available with both glossy and matt surfaces, and with the highest level of UV protection.

#### Product benefits include:

- · Cast PVC film (50 micron)
- · Transparent with a glossy or matt surface
- Protection of digitally printed large format graphics in indoor and outdoor applications
- · Solvent based polyacrylate adhesive
- · Release liner 290: Silicone paper
- · Release liner 290F: Polyester film

"The German quality does not fail to shine through in the ORAFOL<sup>®</sup> range of car wrapping materials. With more than 20 years of industry experience, I can honestly say that if you are looking for the best wrapping materials, you have come to the right place in ORAFOL."

Manfred Hunold - Car Wrapping Expert



### Stone Guard Films

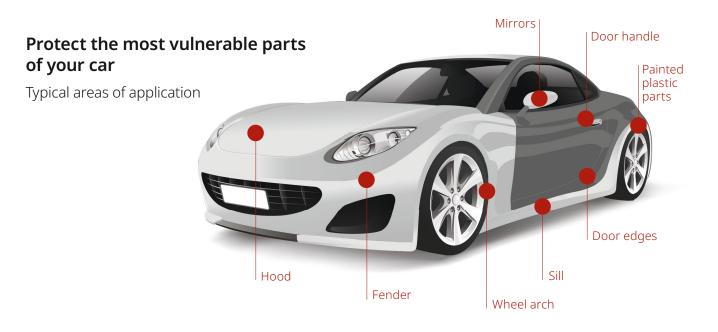
The ORAGUARD<sup>®</sup> Stone Guard Series is the ideal choice for the paint protection of flat or moderately curved surfaces, where more rugged protection is required. This series is the ideal protection of vehicle body parts against stone chipping and other mechanical forces.

With the ORAGUARD<sup>®</sup> films, you get a long-term paint protection of your car, that will enable your car to go through daily use for years and keep on looking great!

- · Preserves the value of your car
- · Protects your car varnish against stone-chip or gravel damage, scratches and general debris
- (e.g. bird droppings, bug splatters)
- $\cdot$  Protects your car against outdoor pollution
- $\cdot$  Anti-corrosion
- · Invisible protection

| Criteria                | NEW!<br>ORAGUARD®<br>2815GF+                   | NEW!<br>ORAGUARD®<br>2815MF+                   | ORAGUARD®<br>2815GF | ORAGUARD <sup>®</sup><br>270 | ORAGUARD <sup>®</sup><br>285F |
|-------------------------|--|--|---------------------|------------------------------|-------------------------------|
| Base Material           | Polyurethan                                    | Polyurethan                                    | Polyurethan         | PVC                          | Polyurethan                   |
| Thickness               | 160µm  | 160µm  | 160µm               | 150µm                        | 50µm                          |
| Stone-chip Protection   | Best   | Best   | Best                | Better                       | Good                          |
| Chemical Resistance     | Highest  | Highest  | Highest             | High                         | High                          |
| Stretchablility         | Best   | Best   | Best                | Good                         | Best                          |
| Stain Retention         | Excellent with<br>super-hydrophobic<br>surface | Excellent with<br>super-hydrophobic<br>surface | Excellent           | Good                         | Good                          |
| Gloss Level             | Highest  | Matte  | Highest             | High                         | High                          |
| Self-healing Properties | Best   | Best   | Best                | Good                         | Better                        |
| Surface finish          | Gloss  | Matte  | Gloss               | Gloss                        | Gloss                         |
| Service Life*           | 10 years                                       | 10 years                                       | 10 years            | 5 years                      | 5 years                       |

\* Service life by specialist application under vertical outdoor exposure (standard central European climate)





### ORAFOL<sup>®</sup> Car Wrapping Seminars – Level 2

### Several times a year, ORAFOL hosts advanced two-day workshop seminars for professionals employed in the car wrapping industry.

During these workshops participants gain all the expertise for the application of ORAFOL<sup>®</sup> car wrapping materials. This is a truly unique opportunity to learn best practices and all the **DO's and DON'Ts** from the best. The seminars are conducted in both German and English. As the number of participants for each workshop is limited, it is a good idea to contact us quickly if you want to reserve a seat at the next event.

Contact ORAFOL for information about the next upcoming seminar: seminars@orafol.de

### Cleaning, Care and Application

# ORAFOL® Cleaning and Care Products

#### The best choice for wrapped vehicles

ORAFOL<sup>®</sup> Cleaning and Care agents have been specifically developed for the surface treatment of cars wrapped with ORAFOL<sup>®</sup> car wrapping films. All the products in the range have been engineered to enable consistent, excellent results.

With ORAFOL<sup>®</sup> cleaning and care agents, you can be sure that you are always working with professional cleaning and care treatment for your vehicle.

### ORAFOL® Pre-Wrap Surface Cleaner

#### For the professional car wrapper



Special cleaner for professional car wrapping. The product effectively degreases and removes cleaning agent residues prior to the application of wrapping films.

The product is supplied in 1 liter bottles or in a 5 liter canister. We recommend the 5 liter version, as this is a more environmentally friendly solution due to less packaging used. After use, the plastic canister may be disposed of according to local recycling systems.

### ORAFOL® Application Gel



#### With the NEW ORAFOL® Application Gel,

installation of car wrapping films is easier than ever before. The gel will provide an initial bond to the surface while simultaneously maintaining good slip/ floating properties and repositionability of the film. Adhesion will build up smoothly, reducing the risk of lift-lines and air entrapments.

- For graphic films that require wet application
- Can be diluted as desired
- Prolonged slip-behaviour
- No dripping during vertical or over-head jobs
- No premature drying
- Dries off invisible and residue free
- Can be applied with a spray bottle
  - The gel comes in 1000 ml bottles

### Product Overview – Vehicle Wrapping Materials

|          | Product                             | Short name                                   | Front material   | Colours / surfaces<br>Gloss (G), Matt (M)   | Adhesive   | Covering<br>material  | Area of use   |
|----------|-------------------------------------|--|--|---|--|---|---|
| <u> </u> | ORACAL®<br>970                      | Premium<br><b>Wrapping</b> Cast              | Multilayer<br>Cast PVC film<br>110 micron                            | 76 colours (G)<br>incl. 25 colours (metallic)<br>20 colours (M)<br>incl. 15 colours (metallic)<br>1 colour (SM) | Solvent polyacrylate,<br>repositionable,<br>permanent                                | PE-coated<br>silicone paper<br>143 g/m <sup>2</sup>           | Developed for complete car wrapping.  |
|          | ORACAL®<br>970<br><i>Rapid</i> Air® | Premium<br>Wrapping Cast                     | Multilayer<br>Cast PVC film<br>110 micron                            | 76 colours (G)<br>incl. 25 colours (metallic)<br>20 colours (M)<br>incl. 15 colours (metallic)<br>1 colour (SM) | Solvent polyacrylate,<br><i>Rapid</i> Air® adhesive,<br>repositionable,<br>permanent | PE-coated<br><i>Rapid</i> Air®<br>silicone paper<br>145 g/m²  | Developed for complete car wrapping.<br>The <i>Rapid</i> Air® technology enables<br>easy and quick application, without air<br>inclusion.                             |
|          | ORACAL®<br>970                      | Premium<br>Shift Effect Cast                 | Multilayer<br>Cast PVC film<br>110 micron                            | 9 colours (G), (M)  | Solvent polyacrylate,<br>repositionable,<br>permanent                                | PE-coated<br>silicone paper<br>143 g/m²                       | Developed for complete car wrapping.  |
| _        | ORACAL®<br>970<br><i>Rapid</i> Air® | Premium<br>Shift Effect Cast                 | Multilayer<br>Cast PVC film<br>110 micron                            | 9 colours (G), (M)  | Solvent polyacrylate,<br><i>Rapid</i> Air® adhesive,<br>repositionable,<br>permanent | PE-coated<br><i>Rapid</i> Air®<br>silicone paper<br>145 g/m²  | Developed for complete car wrapping.<br>The <i>Rapid</i> Air® technology enables<br>easy and quick application, without air<br>inclusion.                             |
|          | ORACAL®<br>970                      | Premium<br>Special Effect<br>Cast            | Multilayer<br>Cast PVC film<br>110 micron                            | 4 colours (G)<br>2 colours (M)  | Solvent polyacrylate,<br>repositionable,<br>permanent                                | PE-coated<br>silicone paper<br>143 g/m²                       | Developed for complete car wrapping.  |
|          | ORACAL®<br>970<br><i>Rapid</i> Air® | Premium<br><b>Special Effect</b><br>Cast     | Multilayer<br>Cast PVC film<br>110 micron                            | 8 colours (G)<br>2 colours (M)  | Solvent polyacrylate,<br><i>Rapid</i> Air® adhesive,<br>repositionable,<br>permanent | PE-coated<br><i>Rapid</i> Air®<br>silicone paper<br>145 g/m²  | Developed for complete car wrapping.<br>The <i>Rapid</i> Air® technology enables<br>easy and quick application, without air<br>inclusion.                             |
|          | ORACAL®<br>851                      | Sparkling<br><b>Glitter Metallic</b><br>Cast | Cast PVC film<br>transparent:<br>75 micron<br>colours:<br>100 micron | 17 colours (G)<br>and 1 transparent   | Solvent polyacrylate,<br>permanent   | Silicone coated<br>paper on one<br>side, 137 g                | Developed for car wrapping and deco-<br>rative lettering  |
|          | ORACAL®<br>975                      | Premium<br><b>Structure</b> Cast             | Multilayer<br>Cast PVC film<br>150 micron                            | 5 structures in<br>various colours  | Solvent polyacrylate,<br>repositionable,<br>permanent                                | PE-coated<br>silicone paper<br>143 g/m²                       | Developed for decorative surface<br>refinement on cars. Especially created<br>for highlighting vehicle parts - the ideal<br>tuning film.                              |
|          | ORACAL®<br>975<br><i>Rapid</i> Air® | Premium<br>Structure Cast                    | Multilayer Cast<br>PVC film<br>150 micron                            | Carbon black  | Solvent polyacrylate,<br>repositionable,<br>permanent                                | PE-coated<br><i>Rapid</i> Air®<br>silicone paper,<br>145 g/m² | Developed for decorative surface<br>refinement on cars. The <i>Rapid</i> Air <sup>®</sup><br>technology enables easy and quick<br>application, without air inclusion. |

|  | Product   | Front material   | Colours / surfaces<br>Gloss (G), Matt (M) | Adhesive  | Covering<br>material  | Area of use  |
|--|---|--|---|---|---|--|
| printing,                                    | Premium Digital<br>Printing Cast<br>PVC<br>ORAJET®<br>3951RA+ ProSlide<br>RapidAir® | Premium Cast<br>PVC film<br>55 micron                    | White (G)                                 | Solvent polyacrylate,<br>repositionable with<br>permanent final<br>adhesion,<br>grey                | PE coated<br><i>Rapid</i> Air® Pro <i>Slide</i><br>silicone paper<br>158 g/m²             | Developed for complete car wrapping. The <i>Rapid</i> Air® technology enables easy and quick application, without air inclusion. The new Pro <i>Slide</i> technology enables an easy and quick application due to its improved repositionability.  |
| solvent based inkjet pr<br>UV- or latex inks | ORAJET®<br>3951   | Premium Cast<br>PVC film<br>55 micron                    | White (G)<br>Transparent (G)              | Solvent polyacrylate,<br>repositionable,<br>permanent,<br>White film: grey<br>Transp. film: transp. | PE-coated<br>silicone paper<br>143 g/m²   | Developed for complete car wrapping with printed designs.  |
| For solve                                    | Premium Digital<br>Printing PU<br>ORAJET®<br>3981RA+ ProSlide<br>RapidAir®          | Premium high<br>performance<br>polyurethane<br>50 micron | White (G)                                 | Solvent polyacrylate,<br>repositionable with<br>permanent final<br>adhesion, grey                   | PE coated<br><i>Rapid</i> Air® Pro <i>Slide</i><br>silicone paper<br>158 g/m <sup>2</sup> | Developed for complete car wrapping. Environmentally<br>friendly option. The <i>Rapid</i> Air® technology enables easy<br>and quick application, without air inclusion. The new<br>Pro <i>Slide</i> technology enables an easy and quick<br>application due to its improved repositionability. |

Measurement after 24 h
Adhered to aluminium
Special sizes available upon request

The durability indicates maximum service life when applied by a specialist, and with proper care and usage. Durability under vertical outdoor exposure (normal climate of Central Europe). In case of printing materials, the stated durability is for unprinted material. For additional specifications, download Processing Guide-lines and Maintenance and Usage Terms on www.orafol.com

| Adhesive power<br>(FINAT-TM 1) N/25 mm | Minimum application temperature | Temperature resistance<br>no variation | Service life in years for application onto vehicles   | Standard sizes of rolls on 3" cores |                |  |
|--|---------------------------------|--|---|-------------------------------------|----------------|--|
| (average)                              | temperature                     | 2                                      | 4   | Widths (mm)                         | Lengths (m)    |  |
| 18                                     | +15° C                          | -50° C to +120° C                      | Black, white 12 years<br>Coloured: 10 years<br>Metallic: 5 years<br>selected colours: 3 years | 1520                                | 25<br>50       |  |
| 16                                     | +15° C                          | -50° C to +120° C                      | Black, white 12 years<br>Coloured: 10 years<br>Metallic: 5 years<br>selected colours: 3 years | 1520                                | 25<br>50       |  |
| 18                                     | +15° C                          | -50° C to +120° C                      | 4 years   | 1520                                | 25<br>50       |  |
| 16                                     | +15° C                          | -50° C to +120° C                      | 4 years   | 1520                                | 25<br>50       |  |
| 18                                     | +15° C                          | -50° C to +120° C                      | 3 years   | 1520                                | 25<br>50       |  |
| 16                                     | +15° C                          | -50° C to +120° C                      | 3 years   | 1520                                | 25<br>50       |  |
| 18                                     | +8° C                           | -50° C to +110° C                      | 5 years   | 1220                                | 50             |  |
| 22                                     | +15° C                          | -50° C to +120° C                      | Black, white, coloured: 5 years<br>Metallic: 3 years  | 1520                                | 10<br>25<br>50 |  |
| 18                                     | +15° C                          | -50° C to +120° C                      | 5 years   | 1520                                | 10<br>25<br>50 |  |

| Adhesive power<br>(FINAT-TM 1) N/25 mm | Minimum application temperature | resistance        | Service life in years<br>for application onto |                             |                | ORAGUARD <sup>®</sup> Laminating films |      |                |       |
|--|---------------------------------|-------------------|---|-----------------------------|----------------|--|------|----------------|-------|
| (average)<br>①                         |                                 | no variation<br>2 | vehicles<br>4                                 | Widths<br>(mm)              | Lengths<br>(m) | 293 / 293F*                            | 289F | 290 /<br>290F* | 290DU |
| 14                                     | +8° C                           | -50° C to +100° C | 10 years                                      | 760<br>1050<br>1370<br>1520 | 50             | *                                      | *    | *              |       |
| 18                                     | +8° C                           | -50° C to +100° C | White: 10 years<br>Transp.: 8 years           | 760<br>1050<br>1370<br>1520 | 50             | *                                      | *    | *              | *     |
| 14                                     | +8° C                           | -50° C to +100° C | 10 years                                      | 1370<br>1520                | 25, 50         |  | *    |                |       |

\*) ORAGUARD® 290F and 293F are covered with a release material consisting of a 36 micron polyester film.

All products above come with a 2 year shelf life in original packaging at 20° C and 50% relative humidity. STANDARD SPLICE-FREE.

The statements in this information sheet are based upon our knowledge and practical experience. The data is intended only as a source of information and is given without any guarantee and does not constitute a warranty. Due to the wide variety of possible uses and applications, customers should independently determine the suitability of this material for their specific purpose, prior to use.

For information about ICC profiles please see www.orafol.com

### Product Overview – Paint Protection Materials

|                  | Product               | Front material   | Colours / surfaces<br>Gloss (G), Matt (M) | Adhesive                           | Covering<br>material                            | Area of use  |
|------------------|-----------------------|--|---|------------------------------------|---|--|
| Laminating Films | ORAGUARD®<br>293      | Ultra-flexible<br>transparent<br>Premium Cast<br>PVC<br>30 micron                            | Transparent (G), (M)                      | Solvent polyacrylate,<br>permanent | Silicone paper,<br>white<br>90 g/m²             | For the protection of digitally printed car wrapping films   |
|                  | ORAGUARD®<br>293F     | Ultra-flexible<br>transparent<br>Premium Cast<br>PVC<br>30 micron                            | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Polyester film,<br>36 micron                    | For the protection of digitally printed car wrapping films   |
|                  | ORAGUARD <sup>®</sup> | Premium PVC-<br>and plasticiser-<br>free high<br>performance<br>laminating film<br>50 micron | Transparent (G)                           | Solvent polyacrylate, permanent    | Silicone-coated<br>polyester film,<br>36 micron | For the protection of large-format indoor and<br>outdoor graphic applications. Recommended in<br>combination with the PVC- and plasticiser free<br>ORAJET® 3981RA. |
|                  | ORAGUARD®<br>290      | Premium Cast<br>PVC film<br>50 micron  | Transparent (G), (M)                      | Solvent polyacrylate,<br>permanent | Silicone paper,<br>white<br>90 g/m <sup>2</sup> | For the protection of digitally printed car wrapping films   |
|                  | ORAGUARD®<br>290F     | Premium Cast<br>PVC film<br>50 micron  | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Polyester film,<br>36 micron                    | For the protection of digitally printed car wrapping films   |
|                  | ORAGUARD®<br>290DU    | Premium Cast<br>PVC film<br>50 micron  | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Silicone paper,<br>white<br>90 g/m²             | For the protection of digitally printed car wrapping films. Highest level of UV protection.  |

|                | Product             | Front material                                   | Colours / surfaces<br>Gloss (G), Matt (M) | Adhesive                           | Covering<br>material                    | Area of use   |
|----------------|---------------------|--|---|------------------------------------|---|---|
| S              | ORAGUARD®<br>270    | Polymeric film<br>150 micron                     | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Siliconised Kraft<br>paper,<br>137 g/m² | For application as a stone chipping protection<br>film on vehicle body parts such as bumper, hood, rear<br>bumper deck or side skirt etc. |
| ne Guard Films | ORAGUARD®<br>285F   | Polyurethane<br>film<br>50 micron                | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Polyester film,<br>36 micron            |   |
| Stone          | ORAGUARD®<br>2815GF | Top-coated<br>polyurethane<br>film<br>160 micron | Transparent (G)                           | Solvent polyacrylate,<br>permanent | Matt PET,<br>75 micron                  |   |

Measurement after 24 h
Adhered to aluminium
Special sizes available upon request

The durability indicates maximum service life when applied by a specialist, and with proper care and usage. Durability under vertical outdoor exposure (normal climate of Central Europe). In case of printing materials, the stated durability is for unprinted material. For additional specifications, download Processing Guide-lines and Maintenance and Usage Terms on www.orafol.com

| Adhesive power<br>(FINAT-TM 1) N/25 mm<br>(average) | Minimum application temperature | Temperature resistance<br>no variation | Service life in years for application onto vehicles | Standard sizes 3 of rolls on 3" cores |             |  |
|---|---------------------------------|--|---|---------------------------------------|-------------|--|
| (average)   |                                 | 2                                      | 4   | Widths (mm)                           | Lengths (m) |  |
| 12  | +8° C                           | -50° C to +110° C                      | 8 years   | 760, 950, 1370,<br>1400, 1550         | 50          |  |
| 12  | +8° C                           | -50° C to +110° C                      | 8 years   | 760, 1050, 1370,<br>1400, 1550        | 50          |  |
| 12  | +8° C                           | -50° C to +100° C                      | 10 years  | 1370, 1550                            | 25<br>50    |  |
| 12  | +8° C                           | -50° C to +110° C                      | 8 years   | 760, 1050, 1300,<br>1370, 1400, 1550  | 50          |  |
| 12  | +8° C                           | -50° C to +110° C                      | 8 years   | 760, 1050, 1300, 1370,<br>1400, 1550  |             |  |
| 14  | +8° C                           | -59° C to +110°                        | 8 years   | 1050, 1300, 1370,<br>1550             | 50          |  |

| Adhesive power<br>(FINAT-TM 1) N/25 mm | Minimum application temperature | Temperature resistance<br>no variation | Service life in years for application onto vehicles | Standard sizes 3 of rolls on 3" cores |               |  |
|--|---------------------------------|--|---|---------------------------------------|---------------|--|
| (average)<br>①                         |                                 | 2                                      | 4   | Widths (mm)                           | Lengths (m)   |  |
| 20                                     | +10° C                          | -40° C to +110° C                      | 5 years   | 1260, 1400, 1520                      | 50            |  |
| 18                                     | +10° C                          | -40° C to +100° C                      | 5 years   | 1370, 1520                            | 25<br>50      |  |
| 17                                     | +10° C                          | -40° C to +100° C                      | 10 years  | 760, 1520                             | 5<br>15<br>50 |  |

All products above come with a 2 year shelf life in original packaging at 20° C and 50% relative humidity. STANDARD SPLICE-FREE.

The statements in this information sheet are based upon our knowledge and practical experience. The data is intended only as a source of information and is given without any guarantee and does not constitute a warranty. Due to the wide variety of possible uses and applications, customers should independently determine the suitability of this material for their specific purpose, prior to use.

For information about ICC profiles please see www.orafol.com



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