



Car Wrapping Materials

Lead chromate free REACH & RoHS - compliant



Engineered to Perform Better™



Located just outside of Berlin in the heart of Europe, the ORAFOL Europe GmbH headquarters is the hub of the organisation's culture of leadership and excellence.



ORAFOL is a world leading expert and trusted full range supplier of car wrapping materials.



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Premium Wrapping Cast



Premium Wrapping Cast - with RapidAir® Technology

ORACAL® 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 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
- · The adhesive is a solvent polyacrylate adhesive. It is repositionable, permanent and transparent.

RA product benefits also include:

· The RapidAir® 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.

Premium Shift Effect Cast

RACAI® 970/97

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

Product benefits include:

- \cdot 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® 970 series above.
- · 970RA: RapidAir® technology allows a rapid and bubble-free application and thus requires less application time and cost.

Premium Special Effect Cast



RACAL® 970 / 970

New and glamorous version of the classic ORACAL 970 series - with a unique shimmer effect

Product benefits include:

- · Unique glitter effect
- · Multi-layered cast PVC film
- · Glossy and matt colours available
- · All the same product benefits as the classic ORACAL® 970 series above.
- \cdot 970RA: RapidAir® technology allows a rapid and bubble-free application and thus requires less application time and cost

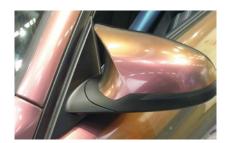
Note: The products should be worked in, cut and applied with an overlap at the edge, for more curved surfaces, or for corrugations and rivets.

Sample colours: Shift Effect Cast









Examples of vehicles applied with the ORACAL® 970 Series



Premium Eco Digital Print - with RapidAir® Technology

ORAJET® 3981RA



ORAJET® 3981RA material is your ideal eco-friendly PVC- and plasticiser-free wrapping film for brilliant and durable large-format printed designs on trucks, busses, trams, trains and other large, flat or slightly curved surfaces. The *Rapid*Air® technology enables easy and quick bubble-free application, especially of large-sized graphics or decals. Entrapped air can be easily removed by simply smoothing it out under the film.

Product benefits include:

- Premium PVC- and plasticiser-free high-performance film (50 micron)
- · Available in white with a glossy surface
- · Inkjet printing with solvent based inks, UV- or latex inks
- · Extreme durability and brilliancy

- · The adhesive is a grey-coloured solvent polyacrylate adhesive. It is repositionable with permanent adhesion.
- Lamination film: We recommend the PVC-free and plasticiser-free ORAGUARD® 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.

- with RapidAir® Technology

ORAJET® 3951RA

The ORAJET® 3951 series is your ideal wrapping film for printed, full coverage fleet and motor sport vehicle wraps. For brilliant and durable large-format printed designs on trucks, busses, trams, trains and other large, flat or slightly curved surfaces the *RapidAir®* version is recommended (ORAJET® 3951RA). With these materials, the only limitation is your own creativity!

Product benefits include:

- · Premium cast PVC film (55 micron)
- · 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
- The adhesive is a solvent polyacrylate adhesive.
 The white film
 has a grey coloured adhesive. It is repositionable, with permanent adhesion.
- Lamination film:
 We recommend ORAGUARD® 293 / ORAGUARD® 293F / ORAGUARD® 290 / ORAGUARD® 290F

RA product benefits also include:

· The *Rapid*Air® 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.







Examples of vehicles applied with the printed ORAJET® wrapping series



Premium Structure Cast

ORACAL® 975

ORACAL® 975 Premium Structure Cast is a 3-D, structured surface film for automotive trim and interior/exterior accent restyling. This tuning film features exceptional dimensional stability and conformability over uneven, arched, curved and flat surfaces. With the wide range of surface textures available, almost unlimited creativity is possible in your designs.

Which type is your favourite?

975 Premium Structure Cast



From left to right:

ORACAL® 975CA - Black

ORACAL® 975HC - Deep blue metallic

ORACAL® 975EM - Silver grey

ORACAL® 975BR - Gold

ORACAL® 975CR - Fir tree green

ORACAL® 975DN - Brown ORACAL® 975CA - Middle blue





Premium Structure Cast

ORACAL® 975

ORACAL® 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)
- · Seven structured optics
- · Several colours in each structure
- \cdot High dimensional stability and maintenance of surface finish
- · For uneven and arched surfaces
- · Solvent polyacrylate, repositionable, permanent

Product	Structure	Colours
ORACAL® 975CA	Carbon	Transparent, White, Black, Brown, Silver grey, Gold, Anthracite, Geranium red, Middle blue
ORACAL® 975BR	Brushed	Silver grey, Gold, Deep blue metallic, Graphite metallic, Tin metallic
ORACAL® 975HC	Honeycomb	Black, Silver grey, Gold, Deep blue metallic, Tin metallic
ORACAL® 975CR	Crocodile	Black, Brown, Fir tree green
ORACAL® 975CO	Cocoon	Black, Silver grey
ORACAL® 975DN	Dune	Black, Brown
ORACAL® 975EM	Emulsion	Black, Silver grey

Premium Structure Cast - with RapidAir® Technology



ORACAL® 975 Premium Structure Cast is your ideal film for surface refinement in car design, particularly for large, flat or slightly curved surfaces. The *Rapid*Air® technology allows for a rapid, bubble-free application with less application time and cost.

Product benefits include:

- \cdot Multi-layered Cast PVC (150 micron)
- · Carbon black
- · Surface refinement in car design, particularly for large, flat surfaces
- \cdot High dimensional stability and maintenance of surface finish
- \cdot Solvent polyacrylate, repositionable, permanent

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.







Examples of applications of ORACAL® 975 Premium Structure Cast



To ensure the long-term durability of your printed ORAJET® car wrapping films, we recommend lamination with the ORAGUARD® 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 long-term outdoor applications

- · Adhesive is transparent, solvent polyacrylate, permanent
- Highly recommended for use in combination with the PVC- and plasticiser-free ORAJET® 3981RA.

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
- · Adhesive is transparent, solvent polyacrylate, permanent
- · 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
- \cdot For long-term outdoor applications

- · Adhesive is transparent, solvent polyacrylate, permanent
- · Release liner 290: Silicone paper
- · Release liner 290F: Polyester film



The German quality does not fail to shine through in the ORAFOL® 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



The ORAGUARD® 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.

ORAGUARD® 280/280F/283/270/285F

Product benefits include:

- · Highly transparent films
- · High UV-resistance

· Glossy surface

- · Excellent tear strength
- · Adhesive is solvent polyacrylate, permanent

Product	Туре	Thickness	Service Life*
ORAGUARD® 280	Polyurethane film	200 micron	Maximum 7 years
ORAGUARD® 280F	Polyurethane film	200 micron	Maximum 7 years
ORAGUARD® 283	Polyurethane film	130 micron	Maximum 7 years
ORAGUARD® 270**	Polymeric PVC film	150 micron	Maximum 5 years
ORAGUARD® 285F	Polyurethane film	50 micron	Maximum 5 years

^{*)} Service life when applied by a specialist, and usage under vertical outdoor exposure (normal climate of Central Europe).







^{**)} The release material of this product is a 100 μm polyester film.

ORAFOL® Car Wrapping Seminars







Several times a year, ORAFOL hosts a one-day workshop seminar for professionals employed in the car wrapping industry. At these workshops participants gain all the expertise on the application of ORAFOL® car wrapping materials. This is a truly unique opportunity if you are a newcomer to the car wrapping industry, and want to learn best practices and all the **DO's and DON'Ts** from the best. The seminars are given in both German and English. As the number of participants for each seminar is limited, it is a good idea to contact us quickly if you want to reserve a space at the next event.

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



ORACAL® Cleaning and Care Products

The best choice for wrapped vehicles

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

With ORACAL® cleaning and care agents, you can be sure that you are always working with professional cleaning and care treatment for your vehicle.

The products are supplied in complete care kits, with versions for glossy or matt surfaces. Each kit contains:

- · 500 ml Shampoo
- · 500 ml Intensive Cleaner
- · 500 ml Fast Care Agent
- $\cdot\,500$ ml Long-Lasting Seal
- · 2 x special Wrapping Film Cleaning Sponges

Each item in the kit is also available for purchase separately (in batches of 4).



For the professional car wrapper:

ORACAL® Pre-wrap surface cleaner

This special pre-wrap surface cleaner degreases and removes cleaning agent residues prior to the application of ORAFOL® self-adhesive films.

Contact ORAFOL for details.

Item code: 359500030

Product	Туре	Item code
ORACAL® Cleaning and Care Kit	For glossy car wrapping films	359500010
ORACAL® Cleaning and Care Kit	For matt car wrapping films	359500020



Product Overview - Car Wrapping Materials

Car wrapping films - For solid colour applications

Product	Short name	Front material	Colours / surfaces Gloss (G) Matt (M)	Adhesive	Covering material	Area of use
oracal® 970	Premium Wrapping Cast	Multilayer Cast PVC film 110 micron	76 colours (G) incl. 25 colours (metallic) 20 colours (M) incl. 15 colours (metallic) 1 colour (SM)	Solvent polyacrylate, repositionable, permanent, transparent	PE-coated silicone paper 145 g/m ²	Developed for complete car wrapping.
ORACAL® 970RA RapidAir®	Premium Wrapping Cast	Multilayer Cast PVC film 110 micron	76 colours (G) incl. 25 colours (metallic) 20 colours (M) incl. 15 colours (metallic) 1 colour (SM)	Solvent polyacrylate, RapidAir® adhesive, repositionable, permanent, transparent	PE-coated RapidAir® silicone paper 145 g/m²	Developed for complete car wrapping. The RapidAir® technology enables easy and quick application, without air inclusion.
ORACAL® 970 Shade shifter	Premium Shift Effect Cast	Multilayer Cast PVC film 110 micron	9 colours (G), (M)	Solvent polyacrylate, repositionable, permanent, transparent	PE-coated silicone paper 145 g/m²	Developed for complete car wrapping.
ORACAL® 970RA RapidAir® Shade shifter	Premium Shift Effect Cast	Multilayer Cast PVC film 110 micron	9 colours (G), (M)	Solvent polyacrylate, RapidAir® adhesive, repositionable, permanent, transparent	PE-coated RapidAir® silicone paper 145 g/m²	Developed for complete car wrapping. The RapidAir® technology enables easy and quick application, without air inclusion.
ORACAL® 1870	Premium Special Effect Cast	Multilayer Cast PVC film 110 micron	4 colours (G), (M)	Solvent polyacrylate, repositionable, permanent, transparent	PE-coated silicone paper 145 g/m²	Developed for complete car wrapping.
ORACAL® 970RA RapidAir®	Premium Special Effect Cast	Multilayer Cast PVC film 110 micron	4 colours (G), (M)	Solvent polyacrylate, RapidAir® adhesive, repositionable, permanent, transparent	PE-coated RapidAir® silicone paper 145 g/m²	Developed for complete car wrapping. The RapidAir® technology enables easy and quick application, without air inclusion.
ORACAL® 975	Premium Structure Cast	Multilayer Cast PVC film 150 micron	7 structures in various colours	Solvent polyacrylate, repositionable, permanent, transparent	PE-coated silicone paper 145 g/m ²	Developed for decorative surface refinement on cars. Especially created for highlighting vehicle parts - the ideal tuning film.
ORACAL® 975RA RapidAir®	Premium Structure Cast	Multilayer Cast PVC film 150 micron	Carbon black	Solvent polyacrylate, repositionable, permanent, transparent	PE-coated RapidAir® silicone paper, 145 g/m²	Developed for decorative surface refinement on cars. The RapidAir® technology enables easy and quick application, without air inclusion.

Car wrapping films - For solvent based inkjet printing, UV- or latex inks

	Product	Front material	Colours / surfaces Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Covering material	Area of use
i	Premium Eco Digital Print DRAJET® 3981RA RapidAir®	Premium PVC- and plasticiser-free film, 50 micron	White (G)	Solvent polyacrylate, repositionable, permanent, grey	PE-coated silicone paper, 145 g/m²	Developed for complete car wrapping of large vehicles with flat surfaces. With RapidAir® technology for easy application. Recommended in combination with PVC- and plasticiser-free laminating film ORAGUARD® 289F.
	DRAJET® 3951	Premium Cast PVC film 55 micron	White (G) Transparent (G)	Solvent polyacrylate, repositionable, permanent, White film: grey adhesive Transp. film: transp. adhesive	PE-coated silicone paper 145 g/m ²	Developed for complete car wrapping with printed designs.
(DRAJET® 3951RA RapidAir®	Premium Cast PVC film 55 micron	White (G)	Solvent polyacrylate, RapidAir® adhesive, repositionable, permanent, grey	PE-coated silicone paper 145 g/m²	Developed for complete car wrapping of large vehicles with flat surfaces. With RapidAir® for easy application.

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

⁴ 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 Guidelines and Maintenance and Usage Terms on www.orafol.com







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

Adhesive power (FINAT-TM 1) N/25 mm	Minimum application temperature		resistance in years 4	on resistance in years 4 3" cores		3 of rolls on	ORAGUARD® Laminating films		
(average) 1	iom p orarei			Widths (mm)	Lengths (m)	293 / 293F*	289F	290 / 290F*	
16	+8° C	-50° C to +100° C	10 years	1370, 1520	50		*		
18	+8° C	-50° C to +100° C	White: 10 years Transp.: 8 years	760, 1050, 1370, 1520 914 (white only)	50 100	*		*	
16	+8° C	-50° C to +100° C	10 years	760, 1050, 1370, 1520	50 100	*		*	

*) 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.

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

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.

Product Overview - Car Wrapping Materials

Laminating Films

Product	Front material	Colours / surfaces Gloss (G) Matt (M)	Adhesive	Covering material	Area of use
ORAGUARD® 293	Ultra-flexible transparent Premium Cast PVC 30 micron	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone paper, white 90 g/m ²	For the protection of digitally printed car wrapping films
ORAGUARD® 293F	Ultra-flexible transparent Premium Cast PVC 30 micron	Transparent (G)	Solvent polyacrylate, permanent	Polyester film, 36 micron	For the protection of digitally printed car wrapping films
ORAGUARD® 289F	Premium PVC- and plasticizer-free high performance laminating film 50 micron	Transparent (G)	Solvent polyacrylate, permanent	Silicone-coated polyester film, 36 micron	For the protection of large-format indoor and outdoor graphic applications. Recommended in combination with the PVC- and plasticiser free ORAJET® 3981RA.
ORAGUARD® 290	Premium Cast PVC film 50 micron	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone paper, white 90 g/m ²	For the protection of digitally printed car wrapping films
ORAGUARD® 290F	Premium Cast PVC film 50 micron	Transparent (G), (M)	Solvent polyacrylate, permanent	Polyester film, 36 micron	For the protection of digitally printed car wrapping films

Stone Guard Films

Product	Short name	Front material	Colours / surfaces Gloss (G) Matt (M)	Adhesive	Covering material	Area of use
oraguard® 280	Stone Guard Film	Polyurethane film 200 micron	Transparent (G)	Solvent polyacrylate, permanent	Siliconised Kraft paper 137 g/m²	For application as a stone chipping protection film on vehicle body parts such as bumper, rear bumper deck or side skirt etc.
ORAGUARD® 280F	Stone Guard Film	Polyurethane film 200 micron	Transparent (G)	Solvent polyacrylate, permanent	Siliconised polyester film, 100 micron	
ORAGUARD® 283	Stone Guard Film	Polyurethane film 130 micron	Transparent (G)	Solvent polyacrylate, permanent	Siliconised Kraft paper 137 g/m ²	
ORAGUARD® 270	Stone Guard Film	Polymeric film 150 micron	Transparent (G)	Solvent polyacrylate, permanent	Siliconised Kraft paper 137 g/m²	
ORAGUARD® 285F	Stone Guard Film	Polyurethane film 50 micron	Transparent (G)	Solvent polyacrylate, permanent	Siliconised polyester film, 36 micron	

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

⁴ 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). The durability stated is for unprinted material. For additional specifications, download Processing Guidelines and Maintenance and Usage Terms on www.orafol.com







Adhesive power (FINAT-TM 1) N/25 mm (average) 1	Minimum application temperature	Temperature resistance no variation 2	Service life in years 4	Standard sizes 13 of rolls on 3" cores		
(average)	temperature	no variation <u>L</u>		Widths (mm)	Lengths (m)	
12	+8° C	-50° C to +110° C	8 years	760, 950, 1370, 1400, 1550	50	
12	+8° C	-50° C to +110° C	8 years	760, 950, 1370, 1400, 1550	50	
12	+8° C	-50° C to +110° C	10 years	1370, 1550	25 50	
12	+8° C	-50° C to +110° C	8 years	760, 950, 1050, 1300, 1370, 1400, 1550	50	
12	+8° C	-50° C to +110° C	8 years	760, 950, 1050, 1300, 1370, 1400, 1550	50	

Adhesive power (FINAT-TM 1) N/25 mm (average) II	Minimum Temperature Service life in years II application resistance temperature no variation II		Service life in years 4	Standard sizes 8 of rolls on 3" cores		
(average)	temperature	no variation E		Widths (mm)	Lengths (m)	
22	+10° C	-40° C to +110° C	7 years	1260, 1520	25 50	
22	+10° C	-40° C to +110° C	7 years	1260, 1520	25 50	
18	+10° C	-40° C to +110° C	7 years	1260, 1520	25 50	
20	+10° C	-40° C to +110° C	5 years	1260, 1400, 1520	25 50	
18	+10° C	-40° C to +100° C	5 years	1370, 1520	25 50	

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

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

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