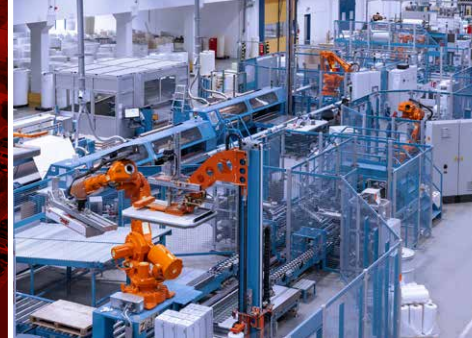


Graphic Innovations

Digital Printing Materials



Engineered to Achieve Perfection™

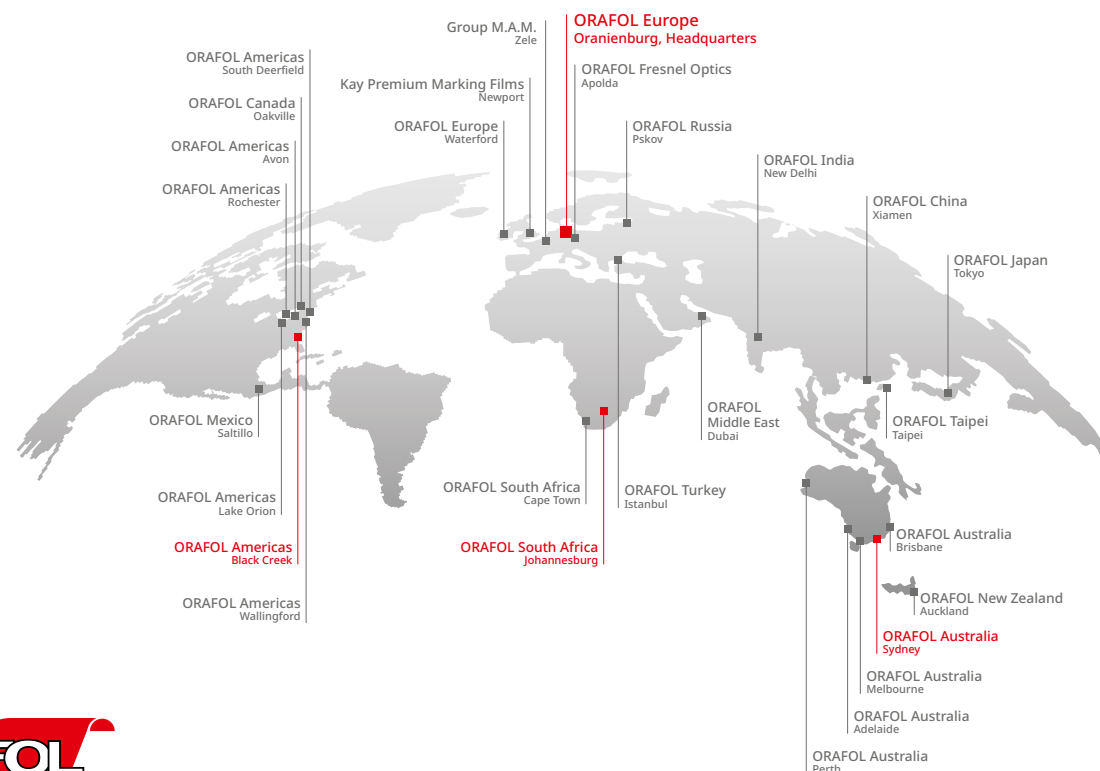


ORAFOL Europe GmbH

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



Digital Printing Materials

ORAFOL offers a vast range of high performance materials for digital printing applications. Explore the range and unleash your creativity.

Made in Germany.

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Films for solvent based inkjet printing

Description						Technical Data					Recommendations																
Product	Front Material	Colours / surfaces Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release Liner	Areas of use		Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Service life (unprinted) in years ❸	Standard sizes ❹ of rolls on 3" cores		ORAGUARD® Laminating Films														
											Widths (mm)	Lengths (m)	293 / 293F	297GF	279	289F	290/290F/ 290DU*	259	215 / 215DU *	213	210 / 210DU *	200	236	255AS	250AS	252F	
ORAJET® 3951RA+ ProSlide	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated RapidAir® ProSlide paper, one side siliconised, 158 g/m²	For long-term outdoor graphic applications with the highest degree of brilliancy and durability e.g. for complete car wrapping. The RapidAir® technology enables easy and rapid application without air inclusion.		14	+8° C	-50° C to +100° C	10	1050 1370 1520	50	★		★	★	★										
ORAJET® 3951	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term graphic applications with the highest degree of brilliancy and durability in outdoor applications, e.g. complete car wrapping.		18	+8° C	-50° C to +100° C	10	1050 1370 1520	50	★		★	★	★										
		Transparent (G)	Solvent polyacrylate, repositionable with permanent final adhesion							8																	
ORAJET® 3951HT	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, permanent, with high initial tack and high final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term graphic applications, markings and decorations with the highest degree of brilliancy and durability in extreme outdoor conditions and on "hard-to-stick" substrates.		28	+4° C	-50° C to +100° C	7	1370 1520 ❹	50	★		★	★	★										
		Transparent (G)	Solvent polyacrylate, permanent, with high initial tack and high final adhesion							5																	
ORAJET® 3954 Brick Stone Film	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, permanent, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful outdoor advertising on flat or simple curved unsealed textured surfaces, e.g. on brick, concrete block and poured concrete. Easily removable by slight heating.		30	+10° C	-50° C to +100° C	10***	1370 1520	50	★			★	★										
ORAJET® 3961RA	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, permanent, with high aggressive initial tack and high final adhesion, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For special decorations on challenging surfaces (uneven, porous, or textured, e.g. hammer finish varnish) of caravans and trailers. Especially recommended for applications on low energy plastics (polyethylene, polypropylene), that require high resistance long-term. Ideal adjustment on surface structure. The RapidAir® technology enables easy and quick application, without air inclusion.		20	+4° C	-50° C to +100° C	10	1370 1520	50	★			★	★										
ORAJET® 3961	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, permanent, with high aggressive initial tack and high final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For special decorations on challenging surfaces (uneven, porous, or textured, e.g. hammer finish varnish) of caravans and trailers. Especially recommended for applications on low energy plastics (polyethylene, polypropylene), that require high resistance long-term. Ideal adjustment on surface structure.		30	+4° C	-50° C to +100° C	10	1370 1520	50	★			★	★										
ORAJET® 3959	Premium Cast PVC film, 55 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	In combination with the gasoline resistant laminating film ORAGUARD® 259 suited for long-term graphic applications and promotions on petrol stations, gas tanks, on tankers or trucks.		18	+8° C	-50° C to +100° C	8	1370	50						★									
ORAJET® 3952F	Premium Cast PVC film, 50 micron	Optical clear (G)	Solvent polyacrylate, semi permanent	Silicone coated polyester film, 75 µm	For ultra clear and colour intensive printed glass decorations both indoor and outdoor.		12	+10° C	-30° C to +70° C	7	1370 1520	50														★	
ORAJET® 3967AC	Perforated Premium Cast PVC film, 65 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	Perforated Premium Cast PVC film for short-term exterior graphic applications on aircrafts, such as markings or decorations. Especially recommended in combination with ORAGUARD® 293AC.		18	+10° C	-50° C to +100° C	2	1520	25 50	★ only 293AC														
ORAJET® 3930	Premium Cast PVC film, 150 micron	Light yellow (G)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	For indoor and outdoor marking of emergency exits and danger spots. For outdoor marking recommended in combination with ORAGUARD® 293.		18	+8° C	-40° C to +100° C	5	1370	10 25 50	★														
ORAJET® 3751	Polymeric PVC film, 60 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.		18	+8° C	-50° C to +90° C	8	760 ❹ 1370 1520 ❹	50	★				★		★								
		Transparent (G)	Solvent polyacrylate, repositionable with permanent final adhesion																								
ORAJET® 3551RA+ ProSlide	Polymeric PVC film, 70 micron	White (G), (M)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated RapidAir® ProSlide™ paper, one side siliconised, 158 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. The RapidAir® technology enables easy and rapid application without air inclusion. The new ProSlide technology enables quick and easy application thanks to its further improved repositionability.		14	+8° C	-50° C to +90° C	7	1050 1370 1520	50	★				★		★								
ORAJET® 3551RA	Polymeric PVC film, 70 micron	White (G), (M)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. The RapidAir® technology enables easy and rapid application without air inclusion.		16	+8° C	-50° C to +90° C	7	760 ❹ 1050 ❹ 1370 1520 ❹ 1600 ❹	50	★				★		★								
ORAJET® 3551	Polymeric PVC film 70 micron	White (G), (M)	Solvent polyacrylate, repositionable with permanent final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.		18	+8° C	-50° C to +90° C	7	1050 ❹ 1370 1520 ❹ 1600 ❹	50	★				★		★								
		Transparent (G), (M)	Solvent polyacrylate, repositionable with permanent final adhesions																								

❶ Measurement after 24 h

❷ Adhered to aluminium, short-term exposure

❸ Special sizes available upon request

❹ Under vertical outdoor exposure (normal climate of central Europe)

❺ Not available in transparent matt

❻ Only available in white gloss

*) For UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.

***) Experience has shown that when graphics that have been applied to bricks are removed, a difference in colour of the substrate between the covered and uncovered part occurs after approximately one year. This difference results from the fading of the bricks, whereby the covered part is protected from sunlight. For short-term applications it is therefore recommended to remove the film before the end of a year.

Films for solvent based inkjet printing

Description						Technical Data				Recommendations																
Product	Front Material	Colours / surfaces Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release Liner	Areas of use	Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Service life (unprinted) in years ❹	Standard sizes ❸ of rolls on 3" cores		ORAGUARD® Laminating Films														
										Widths (mm)	Lengths (m)	293 / 293F	297GF	279	289F	290/290F/ 290DU*	259	215 / 215DU *	213	210 / 210DU *	200	236	255AS	250AS	252F	
ORAJET® 3550	Polymeric PVC film, 70 micron	White (G)	Solvent polyacrylate, repositionable with permanent final adhesion	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term displays with highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.	18	+8° C	-50° C to +90° C	7	1050 1370 1520	1600	50	★				★		★							
ORAJET® 3591RA	Polymeric PVC film, 70 micron	White (G)	Solvent polyacrylate, removable, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. The RapidAir® technology enables easy and rapid application without air inclusion.	8	+8° C	-50° C to +90° C	7	1370 1520		50	★				★		★							
ORAJET® 3591	Polymeric PVC film, 70 micron	White (G)	Solvent polyacrylate, removable, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.	8	+8° C	-50° C to +90° C	7	760 1370 1520	50	★					★		★							
		Transparent (G)	Solvent polyacrylate removable																							
ORAJET® 3551DT	Polymeric PVC film, 70 micron	White (G)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	Good processing properties at low temperatures. For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.	18	-5° C	-50° C to +90° C	7	1370		50	★				★		★							
ORAJET® 3554 Brick Stone Film	Polymeric PVC film, 70 micron	White (M)	Solvent polyacrylate, permanent, grey	Double sided PE coated paper, one side siliconised 143 g/m²	For brilliant and colourful outdoor advertising on flat or simple curved unsealed textured surfaces, e.g. on brick, concrete block and poured concrete. Easily removable by slight heating.	24	+10° C	-50° C to +100° C	7***	1370		50	★				★		★							
ORAJET® 3105	Polymeric PVC film, 100 micron	White (G), (M), (SG)	Solvent polyacrylate permanent, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant, digital large-format prints and displays in long-term outdoor applications.	18	+8° C	-50° C to +90° C	7	1370 1520 ❹	50	★					★		★							
		Transparent (G)	Solvent polyacrylate permanent																							
ORAJET® 3105HT	High performance PVC film, 100 micron	White (G)	Solvent polyacrylate, permanent, with high initial tack and high final adhesion, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant, long-term, digital large-format prints and displays in extreme outdoor conditions and on "hard-to-stick" substrates.	28	+4° C	-50° C to +100° C	5	1370 1520		50	★				★		★							
ORAJET® 3109	Polymeric PVC film, 100 micron	White (G)	Solvent polyacrylate, removable, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For digital large-format prints and displays in outdoor applications.	8	+8° C	-50° C to +90° C	7	1370 1520		50	★				★		★							
ORAJET® 3106SG Caravan Film	Polymeric PVC film, 100 micron	White (SG)	Solvent polyacrylate, permanent, with high initial tack and high final adhesion	Double sided PE coated paper, one side siliconised, 143 g/m²	Designed for applications on "hard-to-stick" surfaces such as low energy plastics (polyethylene, polypropylene) and rough or textured surfaces. Recommended for long-term outdoor graphic applications and markings on caravans and car trailers.	28	+4° C	-50° C to +100° C	7	1370		50					★		★							
ORAJET® 3850	Translucent Polymeric PVC film, 80 micron	White (SG)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	For illuminated displays for long-term outdoor applications, e.g. application on light boxes.	18	+8° C	-40° C to +80° C	7	1000 1370 1520		50	★				★		★							
ORAJET® 3851	Polymeric PVC film, 80 micron	Silvergrey with fine structure (090)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	Digital printing glass decor film, for decorative design of shop windows and glass doors.	glass: 18 acrylic glass: 16	+8° C	-40° C to +90° C	7	1370		50														
ORALITE® 5600	Retroreflective Cast PVC film, 150 micron ❶	11 colours	Solvent polyacrylate, permanent, removable by heat	Double sided PE coated paper, one side siliconised	Developed for high quality vehicle livery, to produce lettering, markings and decorations. Suitable for use on cutting plotters; provides good adaptability also to corrugations and rivets.	17 ❸ 16 ❷	+15° C	-50° C to +95° C	7	610 760 ❸ 1235 ❸	1370 ❸ 1520 ❸	25 50	★				★									
ORALITE® 5600E	Retroreflective Cast PVC film, 140 micron ❶	11 colours	Solvent polyacrylate, permanent, removable by heat	Double sided PE coated paper, one side siliconised	Developed for high quality vehicle livery, to produce lettering, markings and decorations, which may be applied within contour markings according to ECE 104. Suitable for use on cutting plotters; provides good adaptability also to corrugations and rivets.	15 ❸ 12 ❷	+15° C	-50° C to +95° C	7	610 760 920	1235 1370 1520	50	★				★									
ORALITE® 5650RA	Retroreflective Cast PVC film, 150 micron ❶	11 colours	Solvent polyacrylate, permanent	Double sided PE coated RapidAir® paper, one side siliconised	Developed for large-format high quality vehicle livery, to produce lettering, markings and decorations. The RapidAir® technology enables easy and rapid application without air inclusion, especially of large-sized graphics or decals. Suitable for even or slightly curved surfaces.	18 ❸ 14 ❷	+15° C	-50° C to +95° C	7	610 760 ❸ 1235 1370 1520		25 50	★				★									
ORALITE® 5400	Retroreflective Special Cast PVC film, 135 micron ❶	6 colours	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised	Developed for the manufacture of guidance and information signs as well as for reflective advertising. For short-term outdoor use. Suitable for digital printing with solvent based inks and for use on cutting plotters. Good adaptability to uneven surfaces.	15 ❸	+10° C	-50° C to +82° C	4	610 1235		50	★				★									
ORALITE® 5200	Retroreflective Special Cast PVC film, 100 micron ❶	6 colours	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised	For the manufacture of temporary sign boards and reflective advertising.	15 ❸	+10° C	-50° C to +82° C	3	610 1235		50	★				★									
ORAJET® 3651RA	Blended Polymeric PVC film, 70 micron	White (G)	Solvent polyacrylate, permanent, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor application. The RapidAir® technology enables easy and rapid application without air inclusion.	16	+8° C	-40° C to +80° C	5	1050 1370 1520		50	★				★		★							

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

The films are printable with solvent-based, UV-curable and latex inkjet printers

STANDARD SPLICE-FREE

For information about ICC profiles please see www.orafol.com
The films are printable with solvent based, UV curable and latex inkjet printers
STANDARD SPLICE-FREE

❶ Measurement after 24 h
❷ Adhered to aluminium, short-term exposure
❸ Special sizes available upon request
❹ Under vertical outdoor exposure (normal climate of central Europe)

❷ Adhered to acrylic glass
❸ Only available in white
❹ Only available in gloss and matt
❺ Adhered to steel

❶ Only available in gloss
❷ Only available in transparent
❸ Front material including adhesive

*) For UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.
***) Experience has shown that when graphics that have been applied to bricks are removed, a difference in colour of the substrate between the covered and uncovered part occurs after approximately one year. This difference results from the fading of the bricks, whereby the covered part is protected from sunlight. For short-term applications it is therefore recommended to remove the film before the end of a year.

Films for solvent based inkjet printing

Description						Technical Data					Recommendations																	
Product	Front Material	Colours / surfaces Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release Liner	Areas of use		Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Service life (unprinted) in years ❹	Standard sizes ❸ of rolls on 3" cores		ORAGUARD® Laminating Films															
											Widths (mm)	Lengths (m)	293 / 293F	297GF	279	289F	290/290F/ 290DU*	259	215 / 215DU *	213	210 / 210DU *	200	236	255AS	250AS	252F		
ORAJET® 3651	Blended Polymeric PVC film, 70 micron	White (G), (M)	Solvent polyacrylate, permanent, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor applications.		18	+8° C	-40° C to +80° C	5	1050 ❷ 1260 ❷ ❸ 1370 ❷ ❸ 1520 ❷ ❸ 1600 ❷ ❸	50	★				★		★	★								
		Transparent (G), (M)	Solvent polyacrylate, permanent																									
ORAJET® 3650	Blended Polymeric PVC film, 70 micron	White (G), (M)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor applications.		18	+8° C	-40° C to +80° C	5	1050 1370 1520	50	★				★		★	★								
ORAJET® 3691	Blended Polymeric PVC film, 70 micron	White (G), (M)	Solvent polyacrylate, removable, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor applications.		8	+8° C	-40° C to +80° C	5	1050 ❹ 1370 1520	50	★				★		★	★								
		Transparent (G)	Solvent polyacrylate, removable																									
ORAJET® 3165RA	Blended Polymeric PVC film, 100 micron	White (G), (M)	Solvent polyacrylate, permanent, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor application. The RapidAir® technology enables easy and rapid application without air inclusion.		16	+8° C	-40° C to +80° C	5	1050 ❹ 1370 1520	50	★				★		★	★								
ORAJET® 3165	Blended Polymeric PVC film, 100 micron	White (G), (M)	Solvent polyacrylate, permanent, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor applications.		18	+8° C	-40° C to +80° C	5	1050 ❷❸ 1370 1520	50	★				★		★	★								
		Transparent (G), (M)	Solvent polyacrylate, permanent																									
ORAJET® 3169	Blended Polymeric PVC film, 100 micron	White (G), (M), (SG)	Solvent polyacrylate removable, grey	Double sided PE coated paper, one side siliconised, 143 g/m²	For brilliant and colourful displays for digital large-format prints in outdoor applications.		8	+8° C	-40° C to +80° C	5	1050 ❸ 1370 1520	50	★				★		★	★								
		Transparent (G)	Solvent polyacrylate, removable																									
ORAJET® 3451	Highly Flexible Special PVC film, 80 micron	White (SG)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	For displays on flexible substrates in outdoor applications, e.g. banners.		14	+8° C	-20° C to +65° C	4	1370 1520	50	★				★		★	★								
ORAJET® 3641	Soft PVC film, 80 micron	White (G), (M)	Polyacrylate, permanent, grey	Silicone coated paper, 135 g/m²	For brilliant and colourful displays in short- and medium-term outdoor applications.		16	+10° C	-40° C to +80° C	4	1000 1050 1260	1370 1520 1600 2000	50							★	★	★						
ORAJET® 3640	Soft PVC film, 80 micron	White (G), (M) Transparent (G), (M)	Polyacrylate, permanent	Silicone coated paper, 135 g/m²	For brilliant and colourful displays in short- and medium-term outdoor applications.		16	+10° C	-40° C to +80° C	4	1000 1050 1260	1370 1520 1600 2000	50							★	★	★						
ORAJET® 3621	Soft PVC film, 80 micron	White (G), (M)	Polyacrylate, removable, grey	Silicone coated paper, 135 g/m²	For brilliant and colourful displays in short- and medium-term outdoor applications.		7	+10° C	-40° C to +80° C	4	1000 1260 1370	1520 1600 2000	50							★	★	★						
ORAJET® 3620	Soft PVC film, 80 micron	White (G), (M) Transparent (G)	Polyacrylate, removable	Silicone coated paper, 135 g/m²	For brilliant and colourful displays in short- and medium-term outdoor applications.		7	+10° C	-40° C to +80° C	4	1050 ❹ 1260 ❹	1370 ❹ 1520 ❹ 1600 ❹ 2000 ❹	50							★	★	★						
ORAJET® 3164XRA	Soft PVC film, 100 micron	White (G), (M)	Polyacrylate, permanent, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For brilliant and colourful digital advertising prints in short- and medium-term outdoor applications. The RapidAir® technology enables easy and rapid application without air inclusion.		14	+10° C	-40° C to +80° C	4	1050 1370 1520	50								★	★	★						
ORAJET® 3164X	Soft PVC film, 100 micron	White (G), (M)	Polyacrylate, permanent, grey	Silicone coated paper one side, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		16	+10° C	-40° C to +80° C	4	760 1050 1260	1370 1520 1600 2000	50							★	★	★						
ORAJET® 3164	Soft PVC film, 100 micron	White (G), (M) Transparent (G), (M)	Polyacrylate, permanent	Silicone coated paper one side, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		16	+10° C	-40° C to +80° C	4	760 1050 1260	1370 1520 1600 2000	50							★	★	★						
ORAJET® 3164HT	Soft PVC film, 100 micron	White (G), (M)	Polyacrylate, permanent, with high initial tack and high final adhesion	Silicone coated paper one side, 135 g/m²	For brilliant and colourful advertising for short- and medium-term outdoor use. Indoor exposure is almost unlimited. The strong permanent adhesive exhibits excellent initial peel adhesion even onto apolar surfaces.		22	+10° C	-40° C to +80° C	4	1370	50								★	★	★						
ORAJET® 3161DT	Soft PVC film, 100 micron	White (G), (M) Transparent (G)	Solvent polyacrylate, permanent	Silicone coated paper, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications. Good processing properties at low temperatures.		18	-5° C	-40° C to +80° C	4	1370 1520	50								★	★	★						
ORAJET® 3162XRA	Soft PVC film, 100 micron	White (G), (M)	Polyacrylate, removable, grey	Double sided PE coated RapidAir® paper, one side siliconised, 143 g/m²	For brilliant and colourful digital advertising prints in short- and medium-term outdoor applications. The RapidAir® technology enables easy and rapid application without air inclusion.		6	+10° C	-40° C to +80° C	4	1050 1370 1520	50								★	★	★						

❶ Measurement after 24 h

❷ Adhered to aluminium, short-term exposure

❸ Special sizes available upon request

❹ Under vertical outdoor exposure (normal climate of central Europe)

❷ Not available in transparent matt








❸ Only in white gloss

❹ Only available in gloss

❷❸❹ Not available in transparent matt, transparent gloss and white matt

*) for UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.

Films for solvent based inkjet printing

Description						Technical Data						Recommendations																	
Product	Front Material	Colours / surfaces Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release Liner	Areas of use		Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Service life (unprinted) in years ❹	Standard sizes ❸ of rolls on 3" cores		ORAGUARD® Laminating Films																
											Widths (mm)	Lengths (m)	293 / 293F	297GF	279	289F	290/290F/ 290DU*	259	215 / 215DU *	213	210 / 210DU *	200	236	255AS	250AS	252F			
ORAJET® 3162X	Soft PVC film, 100 micron	White (G), (M)	Polyacrylate, removable, grey	Silicone coated paper, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		6	+10° C	-40° C to +80° C	4	1050 1260	1370 1520 1600	50								★	★	★						
ORAJET® 3162	Soft PVC film, 100 micron	White (G), (M) Transparent (G), (M)	Polyacrylate, removable	Silicone coated paper, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		6	+10° C	-40° C to +80° C	4	1050 1260 7	1370 1520 1600	50								★	★	★						
ORAJET® 3264	Soft PVC film, 200 micron	White (G)	Polyacrylate, permanent	Silicone coated paper, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		16	+10° C	-40° C to +80° C	4	1370		50								★	★	★						
ORAJET® 3262	Soft PVC film, 200 micron	White (G)	Polyacrylate, removable	Silicone coated paper one side, 135 g/m²	For brilliant and colourful short- and medium-term outdoor applications.		6	+10° C	-40° C to +80° C	4	1370		50								★	★	★						
ORAJET® 3628	Extra thick soft PVC film, 80 micron	White (G), (M)	Polyacrylate, easily removable	Silicone coated paper one side, 135 g/m²	For indoor applications onto wall paper, e.g. decorations and advertisements.		6	+10° C	-	2 6	1370		50								★	★	★						
ORAJET® 3268	Extra thick soft PVC film, 150 micron	White (M)	Polyacrylate, easily removable	Silicone coated paper one side, 135 g/m²	For indoor applications onto wall paper, e.g. decorations and advertisements.		6	+10° C	-	2 6	1370 1520		50								★	★	★						
ORAJET® 3675	Perforated Special PVC film, 140 micron	White (G) with black backing	Solvent polyacrylate, permanent	Silicone coated paper, non- perforated, 135 g/m²	Window Graphics Film for advertising on even, transparent glass surfaces that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF), 50% printable area.		12	+10° C	-40° C to +80° C	4	1370 1520		50			★													
ORAJET® 3635	Perforated Special PVC film, 140 micron	White (G) with black backing	Solvent polyacrylate, removable	Silicone coated paper, non- perforated, 135 g/m²	Window Graphics Film for advertising on even, transparent glass surfaces that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF), 50% printable area.		3	+10° C	-40° C to +80° C	4	1370 1520		25 50			★													
ORAJET® 3676	Perforated Special PVC film, 140 micron	White (G) with black backing	Solvent polyacrylate, permanent	Silicone coated paper, non- perforated, 135 g/m²	Window Graphics Film for advertising on even, transparent glass surfaces that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF), 60% printable area.		12	+10° C	-40° C to +80° C	4	1370 1520		50			★													
ORAJET® 3636	Perforated Special PVC film, 140 micron	White (G) with black backing	Solvent polyacrylate, removable	Silicone coated paper, non- perforated one side, 135 g/m²	Window Graphics Film for advertising on even, transparent glass surfaces that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF), 60% printable area.		3	+10° C	-40° C to +80° C	4	1370 1520		50			★													
ORACAL® 1663	Highly Pigmented opaque PVC film, 110 micron	White (G), (M)	Solvent polyacrylate, removable	Silicone coated paper, 135 g/m²	For ORAFOL® Floor Graphics systems in connection with ORAGUARD® 250AS or 255AS. Excellent opacity suppressing colour shadows of the floor surface. The adhesive guarantees clean removal.		5	+8° C	-40° C to +80° C	3	1000 8 1260 8 1370	1400 8 1520	50								★	★	★		★	★			
ORACAL® 1660	Highly Pigmented Opaque PVC film, 110 micron	White (G), (M)	Polyacrylate, removable	Silicone coated paper, 135 g/m²	For marking and decoration with high demands on resistance and durability, e.g. lettering on vehicles and means of transportation.		6	+10° C	-40° C to +80° C	3	1000 1260 1370	1400 1520	50							★	★	★							
ORACAL® 1670	Highly Pigmented Opaque PVC film, 110 micron	White (G)	Polyacrylate, permanent	Silicone coated paper one side, 135 g/m²	For marking and decoration with high demands on resistance and durability, e.g. lettering on vehicles and means of transportation.		16	+10° C	-40° C to +80° C	3	1000		50							★	★	★							
ORAJET® 3301F 	Metallised Polyester film, top-coated, 50 micron	Chrome, Chrome brushed	Solvent polyacrylate, permanent, with high initial tack and high final adhesion	Silicone coated polyester film one side, 100 micron	Especially for doming applications.		25 HDPE: 10	+8° C	-40° C to +120° C	2	1370		25 50																
ORAJET® 3350 	Metallised Polyester film, top-coated, 50 micron	Chrome	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 143 g/m²	For labels, name tags, technical ID labels, moldings and safety labels.		12	+8° C	-40° C to +120° C	2	1370		25 50																
ORAJET® 3352F 	Ultra clear, Polyester film, top-coated, 70 micron	Transparent (G)	Solvent polyacrylate, removable	Silicone coated polyester film, 36 micron	For ultra clear, colourful indoor and short-term outdoor advertising efforts and glass decorations on windows.		2	+10° C	-30° C to +70° C	1	1370 1520		25 50																
ORAJET® 3174X 3174 	Polypropylene film, top-coated, PVC-free, 100 micron	3174X: White (G), (M) 3174: White (G)	Polyacrylate permanent, grey Polyacrylate permanent	Silicone coated paper, 135 g/m²	For eco-friendly brilliant and colourful advertising for indoor and short-term outdoor use. Suitable for even and slightly curved surfaces (recommended: ORAGUARD® 236).		16	+10° C	-40° C to +80° C	2	1370		50												★				
ORAJET® 3172X 	Polypropylene film, top-coated, PVC-free, 100 micron	White (G)	Polyacrylate, removable, grey	Silicone coated paper, 135 g/m²	For eco-friendly brilliant and colourful advertising for indoor and short-term outdoor use. Suitable for even and slightly curved surfaces (recommended: ORAGUARD® 236).		2	+10° C	-40° C to +80° C	2	1370		50												★				
ORAJET® 3720 	Polypropylene film, top-coated, PVC-free, 60 micron	White (M)	Polyacrylate, removable	Silicone coated paper, 135 g/m²	For eco-friendly brilliant and colourful advertising for indoor and short-term outdoor use. Suitable for even and slightly curved surfaces (recommended: ORAGUARD® 236).		5	+10° C	-40° C to +80° C	2	1050 1370		50												★				
ORAJET® 3740 	Polypropylene film, top-coated, PVC-free, 60 micron	White (M)	Polyacrylate, permanent	Silicone coated paper, 135 g/m²	For eco-friendly brilliant and colourful advertising for indoor and short-term outdoor use. Suitable for even and slightly curved surfaces (recommended: ORAGUARD® 236).		5	+10° C	-40° C to +80° C	2	1050 1370		50												★				

❶ Measurement after 24 h
❷ Adhered to aluminium, short-term exposure
❸ Special sizes available upon request
❹ Under vertical outdoor exposure (normal climate of central Europe)

❺ Experience has shown that when graphics that have been applied to bricks are removed, a difference in colour of the substrate between the covered and uncovered part occurs after approx. one year. This difference results from the fading of the bricks, whereby the covered part is protected from sunlight. For short-term applications it is therefore recommended to remove the film before the end of a year.

❻ Only interior use
❼ Not available in transparent matt
❽ Only in white gloss

*) for UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.
***) ORAJET® 3675, 3635, 3676 and 3636 are not printable with UV-curable inks.

Films for thermotransfer printing

Description						Technical Data						
Product	Front Material	Colours / surface finish ❹ Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release liner	Areas of use	Recommended inks 1) dye inks 2) pigmented 3) oil-based 4) mild solvent	Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Service life (unprinted) in years ❸	Standard sizes ❸ of rolls	
											Widths (mm)	Lengths (m)
ORACAL® 951	Premium Cast PVC film, 50 micron	139 Colours (G) + Black (M) + White (M)	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For displays with highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. Particularly suitable for rivets and corrugations.	-	18	+8° C	-50° C to +120° C	10	1260	25 50
ORACAL® 751C	High Performance Cast PVC film, 60 micron	117 colours (G) + Black (M) + White (M)	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For displays with an excellent degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. Ideal for adhesion over rivets and to corrugations.	-	18	+8° C	-50° C to +120° C	8	1000	50
										7		
ORACAL® 551	High Performance Polymeric PVC film, 70 micron	98 Colours	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For displays with a high degree of brilliancy and durability in outdoor applications.	-	18	+8° C	-50° C to +90° C	8	1000	50
										7		
ORACAL® 651 Intermediate	Blended Polymeric PVC film, 70 micron	56 Colours (G), (M)	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For decorative and colourful outdoor advertising.	-	18	+8° C	-40° C to +80° C	5	1000	50
										4		
ORACAL® 641 Economy	Soft PVC film, 75 micron	59 Colours (G), (M)	Polyacrylate, permanent	Silicone coated paper one side, 135 g/m²	For decorative and colourful outdoor advertising.	-	16	+10° C	-40° C to +80° C	4	1000	50
										3		
ORACAL® 8500	Translucent Special PVC film, 80 micron	54 Colours (SG)	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For illuminated outdoor displays, e.g. application on light boxes.	-	18 (glass) 16 (acrylic glass)	+8° C	-40° C to +90° C	7	1000	50
ORACAL® 451	Highly Flexible Special PVC film, 80 micron	23 Colours (SG)	Solvent polyacrylate, permanent	Silicone coated paper one side, 137 g/m²	For advertising on flexible surfaces in outdoor applications.	-	14	+8° C	-20° C to +65° C	3	1000	50
ORACAL® 1663	Highly Pigmented Special PVC film, 110 micron	White (G) (M)	Solvent polyacrylate, removable	Silicone coated paper, 135 g/m²	For floor graphics when used in connection with ORAGUARD® laminating films 250AS or 255AS.	-	5	+8° C	-40° C to +80° C	3	1000 1260 1370 1400 1520	50
ORACAL® 820	Special Cast PVC film, 55 micron	White (G) (M)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side, siliconised, 143 g/m²	Safety film for very adherent labels suitable for official documents. Removal and reuse is impossible.	-	The adhesive power is higher than its tensile strength	+10° C	-40° C to +90° C	5	1000 1400	50

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

*) for UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.
**) ORAGUARD® 293F and 290F are covered with a release material consisting of a 36 micron polyester film.
The statements in this information sheet are based upon our knowledge and practical experience. This data is intended only as a source of information and is given without 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.

Materials for water-based inkjet printing

Description							Technical Data						Recommendations										
Product	Front Material	Colours / surface finish ④ Gloss (G) Matt (M) Semi-gloss (SG)	Adhesive	Release liner	Areas of use	Recommended inks 1) dye inks 2) pigmented 3) oil-based 4) eco-solvent	Adhesive power ① (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ② (no variation)	Service life (unprinted) in years ⑤	Standard sizes ③ of rolls on 2" cores		ORAGUARD® Laminating Films										
											Widths (mm)	Lengths (m)	293 / 293F **	297GF	290 / 290F**	215	210	200	236	255AS	250AS		
Outdoor Application	ORAJET® 1917	Special Soft PVC film with one-sided microporous waterproof inkjet coating, 140 micron	White (M)	Solvent polyacrylate, permanent	Silicone coated paper 135 g/m²	For brilliant and colourful large-format advertising. Long-term protection against UV-rays and mechanical stress when used in combination with ORAGUARD® laminating films. If you use dye-inks, lamination is also necessary for indoor applications. For outdoor applications with direct water contact, sealing of the edges is recommended.	For information about ICC profiles please see www.orafol.com	1, 2, 3 & 4	18	+10° C	-30° C to +60° C	1	914 1070 1270 1370 1520	20						★	★		
Indoor -	ORAJET® XP1902	Coated paper, 120 g/m² with one-sided special inkjet coating, 100 micron	White (M)	Polyacrylate, permanent	Silicone coated paper 80 g/m²	For inexpensive production of large-format prints for short-term indoor decoration.		1 & 2	16 (tear of the paper)	+10° C	-20° C to +60° C	1	914 1070 1270	20									

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

❶ Measurement after 24 h
❷ Adhered to aluminium, short-term exposure
❸ Special sizes available upon request
❹ Colours available on request
❺ Under vertical outdoor exposure (normal climate of central Europe)

*) for UV prints we offer the special laminating films ORAGUARD® 210DU, ORAGUARD® 215DU and ORAGUARD® 290DU.
**) ORAGUARD® 293F and 290F are covered with a release material consisting of a 36 micron polyester film.
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Laminating Films

Description						Technical Data					
Product	Front Material	Colours / Surface Finish Gloss (G), Semi-gloss (SG), Matt (M), High-gloss (HG), Sand-grain structure (SO)	Adhesive	Release liner	Areas of Use *	Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	service life of the combina- tion in years**	Standard sizes ❸ of rolls	
										Widths (mm)	Lengths (m)
ORAGUARD® 289F	Premium Polyurethane 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 ORAJET® 3981RA+.	12	+8° C	-50° C to +100° C	6	1370 1550	50
ORAGUARD® 279 <div>PCV-free</div>	Premium Polyurethane High Performance Laminating film, 50 micron	Transparent (G), (SG)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of large-format indoor and outdoor graphic applications. Recommended for car wrapping in combination with ORAJET® 3971RA+ Proslide.	10	+8° C	-50° C to +100° C	6	1370 1550	25 50
ORAGUARD® 293 <div>PCV-free</div>	Premium Cast PVC film, 30 micron, ultra flexible with highest level of UV-protection	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For indoor and outdoor protection of large-format digital prints. Because of its very good conformability especially to rivets and corrugations, ORAGUARD® 293 is recommended for car wrapping in combination with ORAJET® 3951 and 3951RA+.	12	+8° C	-50° C to +110° C	5	1050 1370	1400 1550
ORAGUARD® 293F	Premium Cast PVC film, 30 micron, ultra flexible with highest level of UV-protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated polyester film, 36 micron	For indoor and outdoor protection of large-format digital prints. Because of its very good conformability especially to rivets and corrugations, ORAGUARD® 293 is recommended for car wrapping in combination with ORAJET® 3951 and 3951RA+.	12	+8° C	-50° C to +110° C	5	760 1050 1370	1400 1550
ORAGUARD® 293AC	Perforated, Premium Cast PVC film,30 micron, ultra-flexible with highest level of UV-protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	In combination with ORAJET® 3967AC Aircraft Graphic Film for the short-term exterior protection of large-format digital prints on aircrafts.	12	+8° C	-50° C to +110° C	3	1550	25 50
ORAGUARD® 290	Premium Cast PVC film, 50 micron, with highest level of UV-protection	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications. In combination with respective ORAJET® digital printing films esp. for car livery and wrapping.	12	+8° C	-50° C to +110° C	5	1050 1300	1370 1400 1550
ORAGUARD® 290F	Premium Cast PVC film, 50 micron, with highest level of UV-protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated polyester film, 36 micron	For the protection of digitally printed large-format pictures in indoor and outdoor applications. Should be used in combination with the appropriate ORAJET® digital printing films, esp. for car livery and wrapping.	12	+8° C	-50° C to +110° C	5	1050 1300	1370 1400 1550
ORAGUARD® 290DU	Premium Cast PVC film, 50 micron, with highest level of UV protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications. Especially recommended for use on UV digital printing.	14	+8° C	-50° C to +110° C	5	1050 1370	1550
ORAGUARD® 297GF	Premium Cast PVC film, 70 micron, with highest level of UV-protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated polyester film, 36 micron	Developed for the protection of printed ORAJET® Window Graphics Film. The laminating film with its optimised hardness covers the perforated film so that no humidity, dust or other contaminants can penetrate the perforation of the film.	12	+8° C	-50° C to +110° C	5	1370 1400	1550
ORAGUARD® 259	Premium Cast PVC film, 55 micron, with highest level of UV protection	Transparent (G)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	In combination with the petrol-resistant digital printing film ORAJET® 3959, suitable for long-term advertising measures at petrol stations (e.g. on petrol pumps) and on tankers.	14	+8° C	-50° C to +110° C	5	1370 1550	50
ORAGUARD® 252F	Ultra Clear Premium Cast PVC film, 50 micron, with highest level of UV-protection	Highly transparent (G)	Solvent polyacrylate, permanent	Silicone coated polyester film, 75 micron	For the protection of digitally printed large-format pictures in indoor and outdoor applications. Recommended in combination with ORAJET® 3952F.	12	+8° C	-30° C to +70° C	5	1370 1520	50
ORAGUARD® 255AS	Special PVC film, 170 micron	Transparent, raised non-skid surface	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	With its high resistance to skidding and abrasion, this product is especially suitable for the protection of floor graphics. Extremely stress resistant.	12	+8° C	-40° C to +80° C	-	1050 1300	1400 1550
ORAGUARD® 250AS	Special PVC film, 120 micron	Transparent, raised non-skid surface	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	With its high resistance to skidding and abrasion, this product is especially suitable for the protection of floor graphics.	12	+8° C	-40° C to +80° C	-	1050 1300 1370	1400 1550
ORAGUARD® 215	Polymeric PVC film, 75 micron, with high-level of UV-protection	Transparent (G), (SG), (M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications.	12	+8° C	-50° C to +90° C	4	1050 1300 1370	1400 1550 1600 ❹
ORAGUARD® 215DU	Polymeric PVC film, 75 micron, with high-level of UV-protection	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications. Especially recommended on UV digital printings.	14	+8° C	-50° C to +90° C	4	760 1050 1300	1370 1400 1550
ORAGUARD® 213	Blended PVC film, 70 micron, with high-level of UV-protection	Transparent (G),(SG),(M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications.	12	+8° C	-50° C bis +90° C	3	1050 1370	1520 1600
ORAGUARD® 210	Soft PVC film, 70 micron, with high-level of UV-protection	Transparent (G), (SG), (M), (SO) ❺	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications.	12	+8° C	-40° C to +80° C	3	1050 1300	1370 1400 1550 ❹ ❹
ORAGUARD® 210DU	Soft PVC film, 70 micron, with high-level of UV-protection	Transparent (G), (M)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format images in indoor and outdoor applications. Especially recommended for use on UV digital printing.	14	+8° C	-40° C to +80° C	3	1050 1300 1370	1400 1550
ORAGUARD® 200	Soft PVC film, 70 micron, with high-level of UV-protection	Transparent (G), (SG), (M)	Polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the protection of digitally printed large-format pictures in indoor and outdoor applications.	10	+10° C	-40° C to +80° C	2	1050 1300	1370 1400 1550
ORAGUARD® 244G <div>PCV-free</div>	Special ETFE film, 70 micron, with high-level of UV-protection	Highly transparent (G)	Solvent polyacrylate, permanent	Silicone coated polyester film, 75 micron	Excellent protection against graffiti and environmental influences in indoor and outdoor applications (Anti Graffiti Film) on even and slightly curved surfaces.	12	+8° C	-50° C to +90° C	4	1260	50
ORAGUARD® 372 <div>PCV-free</div>	Special Polyester film, 23 micron, with high-level of UV-protection	Transparent (HG)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 160 g/m²	Surface protection especially against graffiti and environmental influences in indoor and outdoor applications (Anti Graffiti Film) on even surfaces.	12	+8° C	-40° C to +120° C	3	1260 1370	50
ORAGUARD® 373 <div>PCV-free</div>	Special Polyester film, 25 micron, with high-level of UV-protection	Transparent (HG)	Solvent polyacrylate, permanent	Double sided PE coated paper, one side siliconised, 155 g/m²	Surface protection especially against graffiti and environmental influences in indoor and outdoor applications (Anti Graffiti Film) on even surfaces.	12	+10° C	-40° C to +120° C	6	1260 1370	50
ORAGUARD® 220HG <div>PCV-free</div>	Polyester film, 36 micron, with high-level of UV-protection	Transparent (HG)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For indoor and outdoor protection of large-format digital prints on even surfaces.	12	+8° C	-40° C to +120° C	3	1050 1300	1400 1550
ORAGUARD® 221HG <div>PCV-free</div>	Polyester film, 75 micron, with high-level of UV-protection	Transparent (HG)	Solvent polyacrylate, permanent	Silicone coated paper, 90 g/m²	For indoor and outdoor protection of large-format digital prints on even surfaces. Provides a maximum value of brilliancy and luminosity.	12	+8° C	-40° C to +120° C	3	1050 1300	1400 1550
ORAGUARD® 236 <div>PCV-free</div>	Polypropylene film, 60 micron, with effective UV-protection, PVC-free	Highly transparent (G)	Polyacrylate, permanent	Silicone coated paper, 90 g/m²	For the eco-friendly protection of large digital prints for indoor and short-term outdoor use. Especially recommended in combination with ORAJET® 3174, 3174X and 3172X.	12	+10° C	-40° C to +80° C	2	1370	50

❶ Measurement after 24 h

❷ Adhered to aluminium, short-term exposure

❸ Special sizes available upon request

❹ Also available with double sided covering

❺ 210 (SO) not available in 760, 1400 mm and 1550 mm.

❻ Only available with gloss surface

❼ Not available in semi-gloss

❽ Not available in sand-optic and semi-gloss

❾ Not available in sand-optic

*) Laminating films increase the life of digitally printed pictures and graphics. In addition, they protect these against UV-A, -B and -C rays and abrasion. The life of a printed overlaminated film essentially depends on the materials (inks, resin or ribbons), their quality (durability and UV-resistance, please see product specifications of the manufacturers), their drying degree, curing times and on the conditions of their applications and use. Customers must carry out their own tests before use.

**) The service life refers to the recommended combination of printed film and laminating film when applied vertically in a normal European climate.

Mounting Films

Description						Technical Data					
Product	Front Material	Colours	Adhesive	Release liner	Areas of Use	Adhesive power ❶ (FINAT-TM 1) N/25 mm (average)	Minimum application temperature	Temperature resistance ❷ (no variation)	Standard sizes ❸ of rolls		
									Widths (mm)		Lengths (m)
ORABOND® 1375	None	Transparent	Pure acrylic	Double sided silicone coated PE paper, brown, 100 g/m²	For signs, decorations, front plates and displays; for smooth or lightly porous surfaces.	20	+18° C	-40° C to +170° C	305 610 1220		50
ORABOND® 1375S	None	Transparent	Pure acrylic	Double sided silicone coated PE paper, brown, 100 g/m²	Ideal as an adhesive medium for signs, decorations, front plates and displays that require an extremely high shear strength, adhesion strength and temperature resistance. For adhesion to smooth or lightly porous surfaces.	20	+18° C	-40° C to +170° C	Sheets: 610 x 914		
ORABOND® 1377	None	Transparent	Pure acrylic	Double sided silicone coated PE paper, brown, 100 g/m²	For signs, decorations, front plates and displays; for smooth or lightly porous surfaces.	24	+18° C	-40° C to +170° C	25 50 305	610 1220	50
ORABOND® 1377S	None	Transparent	Pure acrylic	Double sided silicone coated PE paper, brown, 100 g/m²	Ideal as an adhesive medium for signs, decorations, front plates and displays that require an extremely high shear strength, adhesion strength and temperature resistance. For adhesion to smooth or lightly porous surfaces.	24	+18° C	-40° C to +170° C	Sheets: 610 x 914		
ORABOND® 4052 ❹	Polyester film, 12 micron	Transparent	Polyacrylate (permanent, pH-neutral)	Double sided silicone coated PE paper, white, 120 g/m²	Mounting film for self-adhesive protection of smooth surfaces.	11	+8° C	-40° C to +150° C	1050 1300 1550		50
ORABOND® 4032 ❹	Polyester film, 12 micron	Transparent	Covered side: Solvent polyacrylate, removable Open side: Solvent polyacrylate, permanent	Double sided silicone coated PE paper, white, 120 g/m²	Mounting film for self-adhesive protection of smooth surfaces. The adhesive is guaranteed to be removable without leaving a residue, within 2 years of outdoor application.	Open side: 11 Covered side: 2	+8° C	-40° C to +120° C	1050 1300 1550		50
ORABOND® 4040 ❹	Polyester film, 12 micron	Transparent	Double sided polyacrylate, permanent	Double sided siliconised glassine paper, white, 90 g/m²	Mounting film for self-adhesive protection of smooth surfaces.	11	+8° C	-40° C to +150° C	1050 1300 1550		50
ORABOND® 1395TM	Polyester film, 12 micron	Transparent	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	For the attachment of signs, covers, scales, metal and plastic films and for general fixing.	28	+15° C	-40° C to +160° C	12 19 25 50	1000 1260 1550	50
ORABOND® 1397PP	Polyester film, 12 micron	Transparent	Double sided modified solvent acrylic adhesive, permanent	Double sided siliconized polypropylene film, 80 micron, red	POP displays, outdoor signs, banners, APET, fluted PP board, Falcon foam, Lexan, hi-impact Styrene etc., which have to be very stress-resistant.	35	+15° C	-40° C to +160° C	12 19 25 38 50	100 1000 1260 1372	50
ORABOND® 1392TM	Hard PVC film, 38 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	For the installation of heavy displays.	38	+15° C	-40° C to +70° C	12 19 25 50	1000 1260	50
ORABOND® 3331TG	Hard PVC film, 38 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with green ORAFOL branding, 90 g/m²	Used for the secure attachment of truck and car mirrors in plastic housings. Used as an adhesive medium for type, performance and information signs as well as for extruded synthetic profiles and for durable installation in the furniture industry. Used for the attachment of trims, bars and laminates to a variety of surfaces. For the fixing of covers and handles in the audio, household appliance and electrical industry.	37	+15° C	-40° C to +70° C	12 19 25 38 50	100 1000 1372	50
ORABOND® 1810	PE foam, 1000 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated PE paper, blue, 140 g/m²	Used for the installation of mirrors in the furniture and sanitary industry. For adhesion of aluminium, steel and GRP outer skins during the construction of truck containers, and fixing of type and capacity signs as well as displays and product prototypes in the advertising industry. For the fixing of panels and handles in the appliance and electrical industry. Ideal for use in exhibitions, conferences and interior fit-outs.	foam tear > 16	+18° C	-40° C to +95° C	12 19 25 50	1250	50
ORABOND® 1811	PE foam, 1000 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, blue, 90 g/m²	For the installation of heavy displays, adheres well even to rough and difficult surfaces.	foam tear > 18	+15° C	-40° C to +90° C	12 15 19 25 30 38	50 60 75 100 1250	50
ORABOND® 1812TM	PE foam, 1000 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	For the installation of spray cast and extruded plastic parts such as panels, bars and ducts, as well as plexiglass mirrors for interior fit-outs and displays. For use as an adhesive medium for hooks, signs, handles and dispensers. Ideal for exhibitions, conferences and interior fit-outs. Due to good UV, water and age resistance this product is also suitable for external applications.	foam tear > 18	+15° C	-40° C to +100° C	12 19 25 50	1250	50
ORABOND® 1831TM	PE foam, 1000 micron	White	Double sided solvent rubber adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	For fixing of boards, displays and for a variety of household applications. A universal, economical product. Good adhesion also on rough surfaces.	foam tear > 18	+15° C	-30° C to +70° C	12 19 25	50 1250	50
ORABOND® 1819TM	PE foam, 2000 micron	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	For the installation of spray cast and extruded plastic parts such as panels, bars and ducts, as well as plexiglass mirrors for interior fit-outs and displays. For use as an adhesive medium for hooks, signs, handles and dispensers on even surfaces. Due to good UV, water and age resistance this product is also suitable for external applications.	foam tear > 19	+15° C	-40° C to +100° C	12 19 25 50	1250	33
ORABOND® 1399TM	Paper tissue, 12,7 g/m²	White	Double sided modified solvent acrylic adhesive, permanent	Double sided silicone coated paper, white with blue ORAFOL branding, 90 g/m²	Used as an adhesive medium for polyethylene, polyester, and polyether foams as well as for the extension and splicing of paper, textiles, plastic and metal films where high shear strength, adhesion strength and temperature resistance are required.	35	+15° C	-40° C to +140° C	12 19 25	38 50 1000	50
ORABOND® 1459	Paper tissue, 12,7 g/m²	White	Double sided solvent rubber adhesive, permanent	Double sided silicone coated paper, brown, 80 g/m²	This tape is especially suitable as a self-adhesive medium for large pore, rough surface, fibrous material and foams as well as materials such as glass and paper. Limited consistency in the presence of chemicals inclined to migrate (plasticisers).	21	+15° C	-40° C to +70° C	12 15 19 25 30	50 75 100 1000 1200	50

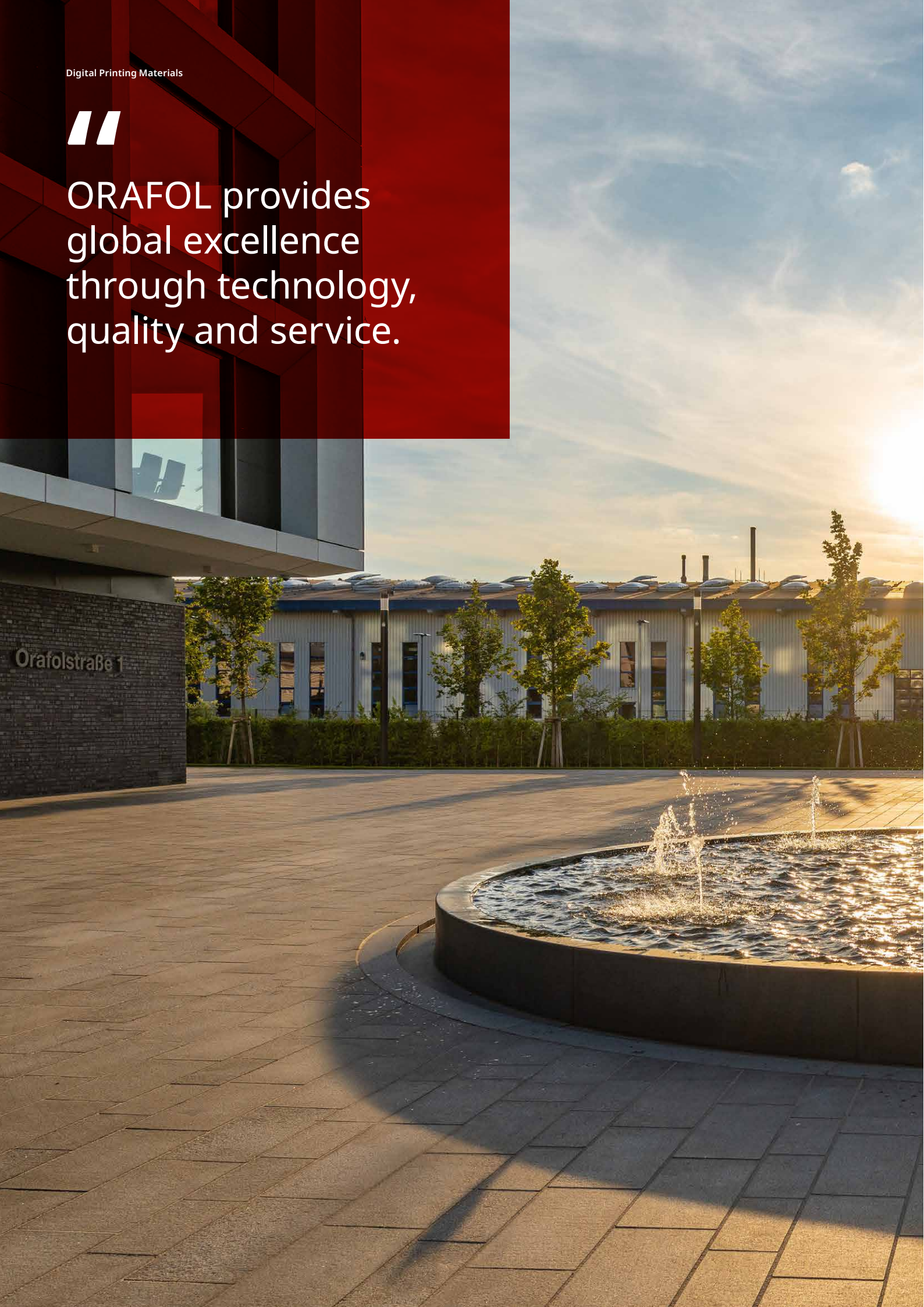
❶ Measurement after 24 h
❷ Adhered to aluminium, short-term exposure
❸ Special sizes available upon request

❹ Also available with double sided covering as 4052D, 4032D, 4040D and available as sheets

The statements in this catalogue are based upon our knowledge and practical experience. This data is intended only as a source of information and is given without 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 purposes, prior to use.



ORA FOL provides global excellence through technology, quality and service.



Notes on Processing and Handling

Introduction

ORA FOL offers a wide range of self-adhesive digital printing materials for many different applications. They come with a well-matched set of laminating films. To ensure that the films display the specified properties, it is important to follow the instructions for preparation and application which can be found on www.orafol.com. If you want to apply an ORA FOL material on a car, please also see our practical information for self-adhesive films for application on cars (can be downloaded also on www.orafol.com). ORA FOL recommends to use only material with the same batch number for one graphical application. In this context ORA FOL ensures that every roll of the same batch number consists of the same material and consequently does not have any splices. When different batch numbers are used the technician should conduct tests to find out possible differences in using the films and in the quality of the graphical application.

Storage and Processing Conditions

The self-adhesive products which ORA FOL supplies in rolls should at all times be stored either suspended (with end caps) or standing on end on the roll blocks, and never lying flat (without end caps). For storage and processing, they should be kept in a cool dry place, protected from daylight. Relative air humidity between 50% and 60% and a temperature between +18° C and +22° C should be ensured. Direct sunlight, storage beside radiators etc. should by all means be avoided. Please observe the shelf life instructions contained in the technical data sheet accompanying each film.

Instructions for Printing

The digital printing materials should generally be handled with a high degree of care. Cotton gloves should be used to prevent damage to the surface or soiling. Check the surface quality prior to printing or application. Also check the print file with profiling. The ORACAL® / ORAJET® digital printing media require (due to their different qualities like the thickness of the adhesive layer) different parameter settings of the printer and the selecting software (RIP). Make sure you take the relevant amount of ink and specific colour definitions into account. In addition, check the specifications of the digital printing materials and the inks for their respective applications (indoor / outdoor) and durability, and match them accordingly.

Drying up

Freshly printed films should be spread out and left to dry after printing, to allow the residual solvent to evaporate. If freshly printed vinyls are plotted in the printed areas, the vinyl might shrink. Depending on the ink used, laminating too early may affect the functionality of the film (adhesive power, service life) by preventing residual solvents to evaporate. Printed and non-sufficiently dried films shrink after printing, during the drying process.

If the drying process of the vinyls takes place after application of the substrate, the film may shrink and come off at the edges, from corrugations and rivets. Following these processing and handling instructions, we recommend to spread out and dry the film for at least 72 hours (lying flat or hanging).

Lamination

Lamination of inkjet prints is recommended to ensure longer lives at optimum quality (gloss, colour depth, mechanical damage). ORAGUARD® laminating films enhance the colour effect for the desired appearance of the surface (glossy, matt, semi-gloss), provide excellent protection against the UV-rays of the sun destroying the colour pigments, and against humidity and abrasion. Soiling can easily be removed by using common cleaning agents. We recommend only using films of the same manufacture and type (e.g. monomeric PVC film on monomeric PVC film, and polymeric PVC film on polymeric PVC film) as their raw materials are accurately matched with each other. Lamination has to be done stress free to prevent a deformation of the film compound. For the same reason we recommend to ensure that the temperature of the compactor is not higher than +30° C. Furthermore, we refer to our list of recommendations for complementary application of the printing materials in inkjet and thermotransfer printing, and to the specific laminating films provided for their surface protection. For product information about ORAGUARD® laminates, please see www.orafol.com.

Application

The application is described in the practical information for plotter films. For application onto cars, please see in addition the practical information on how to apply self-adhesive films on cars. For application onto car windows, the remarks in the practical information for self-adhesive films for application onto cars are to be followed.

Removability

Please see the practical information for plotter films.

General Information

ORA FOL provides information on ICC profiles for various printers. Please go to www.orafol.com. The information in here is based on our knowledge and experience. We cannot cover all variations on application methods. Specialised or occupational knowledge and competence of a professional sign maker is presupposed. Due to the diversity of potential influencing factors during application and use, we recommend customers who wish to use the films for special applications to make their own tests of our products. No legally binding warranty of certain qualities can be derived from our information.



Engineered to Achieve Perfection™

Digital Printing Materials

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Find out more about our products at:
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