



AUTOMOTIVE MARKET

PROCESS & PROTECTIVE FILMS, LAMINATORS



NOVACEL
Beyond The Surface



CONTENT

About Novacel	2
Novacel's commitment to people and the planet	3
The automotive industry: introduction	4
Novacel solutions for exteriors	5
Novacel solutions for interiors	11
Machines	15
Novacel Services	16
Find your match	18

ABOUT NOVACEL

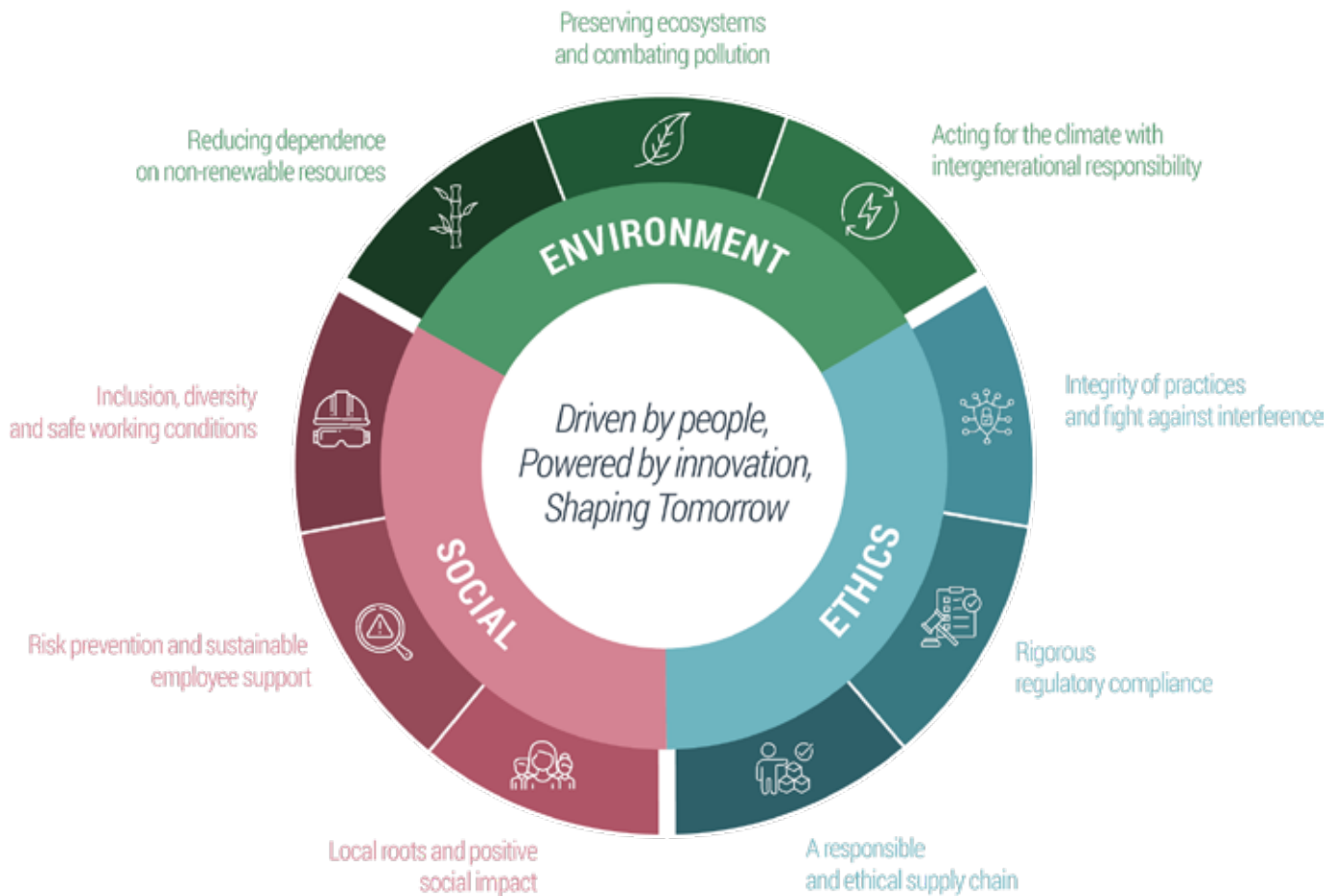
As a **40-year-old worldwide leader in surface solutions**, Novacel proposes a comprehensive offer to its customers, ranging from industrial process films to technical tapes and papers products, machines and the associated services.

Novacel continuously focuses on expertise and innovation to provide its customers and partners with the most appropriate recommendations to add value to their materials and to help enhance their industrial efficiency.

Novacel is present in **90 countries** with more than **750 employees** and several production sites worldwide. In line with its 'Beyond the Surface' ethos, Novacel is deeply committed to sustainability and innovation for People and the Planet.

— NOVACEL'S CSR STRATEGY

Aware of the current environmental, social, and ethics challenges, Novacel is committed to an ambitious and responsible CSR approach. This strategy is embodied through nine concrete commitments that guide our daily actions and strengthen our contribution to sustainable development, respecting all our stakeholders.



YOUR EXPERT OF SURFACE SOLUTIONS FOR THE AUTOMOTIVE MARKET

The automotive industry is undergoing transformative changes driven by several key trends. First of all, the Electric Vehicle market is complementing the industry, ushering in a new paradigm with its transformative technologies and new actors. Additionally, entry level car manufacturers are shifting towards premium finishes and global quality standards. Collectively, these trends highlight the industry's adaptability and commitment to meeting evolving consumer needs in a dynamic market.

These dynamic shifts in the automotive market necessitate tailored solutions to safeguard surfaces during both reconditioning and manufacturing processes. As your committed partner, Novacel offers a wide variety of solutions to preserve any type of surfaces of your vehicle interiors and exteriors.

A DEDICATED RECOMMANDATION TEAM

The materials market is vast and diverse – metals, plastics, glass, laminates – each with unique surfaces and manufacturing processes.

At Novacel, we master these materials and put our expertise at your service to find the best surface solutions that meet your quality, productivity and durability requirements.

Our recommendation department is dedicated to advising you with tailored solutions. It is supported by an advanced R&D lab equipped for detailed surface analysis and product testing.

Constantly monitoring market trends and collaborating with customers and partners, we aim for optimal results: minimal waste, high productivity, and a flawless final product.



NOVACEL SOLUTIONS FOR EXTERIORS



FILMS FOR PAINTED SURFACES

CAR BODY

Because paint retouching is the highest-cost quality expense for car manufacturers, Novacel offers you a solution to cover and preserve the car body, thereby preventing scratches, corrosive residues, mainly due to birds, and fading due to sunlight.

A white Novacel film solution is the most appropriate to avoid any heat or light absorption that could result into unwanted effect on the car body.

NOVACEL ASSETS

- Prevention of scratches, corrosive residues and fading due to sunlight, even outdoors
- White reflective solution
- Easy to remove
- Nine months worldwide outdoor guarantee



BUMPERS

The bumpers are the most vulnerable parts of the car due to space optimization during transportation with vehicles being placed close together.

Bumpers are usually composed of a single piece of thermoplastic material with complex shapes and curves. This means that a specific solution is required if bumpers are to arrive unscathed at the end of all fabrication processes.

NOVACEL ASSETS

- Masking solutions to take account of part curvatures
- Manual lamination

PAINT RETOUCHING

Even with the best attention and care, a car's paintjob sometimes requires retouching. Novacel is ready to provide you with a smooth backing support to avoid paint drips.

NOVACEL ASSETS

- Focus on less expensive products
- Satin backing support
- Low adhesion for easier removal



	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion
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CAR BODY

9275	WB	60 µm / 2.4 mils	White	9 months	High
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BUMPERS

9275	WB	60 µm / 2.4 mils	White	9 months	High
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PAINT RETOUCHING

4768	WB	30 µm / 1.2 mils	Clear transparent	3 months	Low
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FILMS FOR PLASTIC PARTS

LIGHTING

Since the 80's, car lighting have moved on from glass to plastic. Nowadays, cars are made mainly from polycarbonate. Contact with the environment (water, air, dust...) tends to degrade the properties of polycarbonate materials.

Lighting are the most frequently ordered aftermarket's parts. These components need to retain their initial esthetics and technical

integrity, for reasons of road safety for your end-customers.

Novacel has the solution for covering and preserving the car lighting throughout the manufacturing process and up to arrival at the car dealership.

NOVACEL ASSETS

- Thin products
- 1 to 6 months worldwide outdoor guarantee
- No residue after removal



	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Specific features
4768	WB	30 µm / 1.2 mils	Clear transparent	3 months	Low	Cost effective solution
4368	WB	35 µm / 1.4 mils	Clear transparent	1 month	Medium	Cost effective solution
4407	WB	55 µm / 2.2 mils	Clear transparent	1 month	Low	Easy Peel
4701	WB	50 µm / 2.0 mils	Clear transparent	3 months	Low	Interiors & panels
4333	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels
4365	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels

*WB = Water Based

— FILMS FOR GLASS PARTS

WINDSHIELD, LATERAL GLASS & SUNROOF

The windshield is the first thing end-users look through. As well as the lateral glass and sunroof, its esthetic appearance needs to be perfect. To match the specifications of the glass parts and their individual purposes, Novacel's products range has been developed for non-forming surfaces to preserve the surface during all manufacturing processes, and especially installation on the vehicle body.

NOVACEL ASSETS

- Clear transparent films
- 6 to 12 months worldwide outdoor guarantee
- Thickness adjusted for easy peeling and desired grip characteristics



	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion
9343	WB	49 µm / 1.9 mils	Clear transparent	12 months	Low
9561	WB	70 µm / 2.8 mils	Clear transparent	12 months	Low

*WB = Water Based



— FILMS FOR METAL PARTS

METAL TRIMS & MOLDERS

Metal trims and molders are the most visible finishing parts. Made from aluminum or stainless steel, they are indicators of vehicle trade-up and high-end ranges. To emphasize their importance, car manufacturers usually use blue transparent solutions.

Novacel provides tailor-made solutions in partnership with the OEMs to provide resistance to bending processes for these surfaces.



WHEELS

Wheels are part of the vehicle esthetic. Materials and shapes have evolved to enhance the simple wheel with decorative hubcaps, increasing the perceived value of the wheels. They now require a solution to ensure they retain that value. These parts require a high-adhesion process & protective film because wheels lack surfaces for adherence. It is also useful to protect brake rotors and pads from humidity.

All wheels are different (sizes, finishing, empty spaces...) and we recommend working directly with OEMs on tailor-made solutions.





EMBLEMS

The final touch is often seen as the main decision factor in the car purchase process. The brand emblem embodies the car maker 's expertise.

It is commonly in metal and glued to the car body at the very end of the process. This means that it needs to be preserved from all damage and scratches up to the point of delivery to the end-user.

	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Material
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METAL TRIMS & MOLDERS

4241	SolR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
9518	SolR	75 µm / 3.0 mils	Blue transparent	None	Very-high	Stainless Steel /Aluminum
4800	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Aluminum
4805	WB	50 µm / 2.0 mils	Blue transparent	2 months	Medium-high	Aluminum
4508	WB	50 µm / 2.0 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
4100	WB	50 µm / 2.0 mils	White/transparent	None	Very-low	Stainless Steel /Aluminum

WHEELS

4226	SolR	100 µm / 3.9 mils	White	6 months	Very-high	Stainless Steel /Aluminum
9275	WB	60 µm / 2.4 mils	White	9 months	Medium	Stainless Steel /Aluminum

EMBLEMS

4241	SolR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
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*WB=Water Based / SolR=Rubber adhesive

NOVACEL SOLUTIONS FOR INTERIORS



FILMS FOR TEXTILES

CARPETS & FABRICS

Automotive carpets and fabrics require a solution for the entire car manufacturing process. Some need a solution for their forming process, and manufacturers often carry out removal at the very end of the production. These components need a film that adheres perfectly to both on fiber and PVC materials and which leaves no residues or adverse surface changes. Protective film is also used after processing to prevent dirt and stains during all the vehicle handling phases.

NOVACEL ASSETS

- Very high adhesion because toe and heel pads have different structures (PVC) compared with fiber materials which require a degree of versatility
- Die-cut rolls available



LEATHER

Leather interiors have been seen historically as luxury trade-up indicators, but they are vulnerable to vehicle handling and transportation. Novacel offers dedicated high-performance films for leather surfaces to avoid friction and stains. The film is applied either after production or during leather tanning and finishing.

NOVACEL ASSETS

- Very high adhesive solutions due to the nature of the surface
- See-through solution for visibility of leather details and quality



Technology*	Thickness	Color	Outdoor Guarantee	Adhesion
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CARPETS AND PP/PET FIBERS

9840	SolA	65 µm / 2.6 mils	Clear transparent	none	Very-high
9860	WB	65 µm / 2.6 mils	Clear transparent	none	Very-high
4486	SolA	100 µm / 3.9 mils	Clear transparent	none	Very-high

LEATHER

4160	SolR	61 µm / 2.4 mils	Clear transparent	none	High
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*WB=Water Based / SolA=Acrylic adhesive / SolR=Rubber adhesive

FILMS FOR METAL PARTS

STILL PLATES

Still plates are highly exposed during throughout the entire car manufacturing process. Seen as the doorstep of the car, they are subject to daily contacts by operatives, vehicle handlers, potential buyers, etc, and like trims and molders, still plates are usually in aluminum or stainless steel.

NOVACEL ASSETS

- Blue-transparent products for ease of identification
- Easy removal



METAL TRIMS

Aluminum and Stainless Steel are increasingly used for car interiors. These materials were originally common in high-end vehicles but are now seen in all vehicle types.

Vehicle trims must be visually perfect for end-customers. For that reason, they need to be preserved throughout all manufacturing processes.

NOVACEL ASSETS

- Best required level of adhesion for both aluminum and stainless steel (the range as a whole is blue transparent)

Novacel provides you with the best solutions to preserve these surfaces: high-performance blue-transparent films, with an adhesion level to match the finish of the surface.



	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Material
4241	SolR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
9518	SolR	75 µm / 3.0 mils	Blue transparent	None	Very-high	Stainless Steel
4800	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Aluminum
4805	WB	50 µm / 2.0 mils	Blue transparent	2 months	Medium-high	Aluminum
4508	WB	50 µm / 2.0 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
4100	WB	50 µm / 2.0 mils	Clear transparent	None	Very-low	Stainless Steel /Aluminum

*WB=Water Based / SolR=Rubber adhesive

FILMS FOR PLASTICS AND OTHER MATERIALS

PLASTICS & PANELS

Car manufacturers offer a wide range of materials and structures when it comes to interior plastics and panels. The luxury appearance of the interior, whether it is smooth, structured or even patterned, must be maintained. Novacel offers surface solutions to preserve this perfect finish with just the right level of adhesion, whatever the material or surface. Novacel's films are designed to be easily removed.

NOVACEL ASSETS

- A wide variety of products focusing on desired features for preservation of interior design and decor
- No residue and easy removal



INSTRUMENT CLUSTER LENSES

Instrument cluster lenses are made from polycarbonate or PET. A see-through solution is mandatory because they need to be visible for vehicle handlers, during vehicle maneuvering, and customers, for immersion in the driving experience. Novacel has the dedicated film solutions to ensure effective see-through characteristics and perfect condition for the materials.

NOVACEL ASSETS

- Clear transparent solutions
- Excellent reaction to the peeling process: no residue or adverse material changes



	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Specific features
4768	SolR	30 µm / 1.2 mils	Clear transparent	3 months	Low	Cost effective solution
4368	SolR	35 µm / 1.4 mils	Clear transparent	1 month	Medium	Cost effective solution
4407	WB	55 µm / 2.2 mils	Clear transparent	1 month	Low	Easy Peel
4701	WB	50 µm / 2.0 mils	Clear transparent	3 months	Low	Interiors & panels
4333	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels
4365	WB	50 µm / 2.0 mils	Clear transparent	6 months	Very-high	Interiors & panels

*WB=Water Based / SolR=Rubber adhesive

MACHINES

With its **Omma and Walco brands**, Novacel Special Machines offers the **ultimate lamination & coating technology** dedicated to the Automotive industry. With a total of 60 years and counting of deep experience, our brands offer unparalleled innovation and reliability: Our machines achieve the highest degree of consistency in the dosage and spreading of the adhesive on a multitude of substrates. They can be utilized either integrated in a production line or as a

stand-alone unit. Accessories such as mixing tanks and conveyance are also available where needed. Our Laminators provide easy, fast lamination with wrinkle and bubble-free film on any size and any flat surface. These machines are suitable either for a production line or as stand-alone units and can be equipped with a manual or automatic cutting technology.

NOVACEL ASSETS

- > **Acu-pur**, an in-line or standalone roller coater for the application of liquid polyurethane adhesives and polyols, suitable for headliner or clutch production
- > **I-Walco**, an in-line or standalone industrial laminator, applying protective or permanent film, allowing laminating any overlay material to sheet substrates in minimum set-up time
- > **Glue conditioning & feeding systems and other accessories:** Heater, Glue pump, Glue plate position control to avoid excess glue, etc
- > **Services:** Installation and startup, maintenance, remote servicing, troubleshooting and software updates



I-Walco: Horizontal Laminator



ACU-PUR: Roller Coater

Type	Machine	Standard dimension*	Thickness	Film application	Gluing/Lamination Characteristics	Specificities
Roller Coater	ACU-PUR	Widths: 1,600mm (') pour up to 1,900mm (')	2mm (") up to 30mm (")	Single or double-sided	Precise application of liquid polyurethane adhesives and polyols	Suitable for headliner production or clutch production
Laminator	I-WALCO	Widths: 1,220mm (48") up to 4,570mm (180")	0.5mm (0.02") up to 60mm (2.5")	Single or double-sided	Designed for sheet-to-sheet operation	Protective or permanent film application

*Other sizes available on customer request.

BENEFIT FROM NOVACEL SERVICES TO EASE YOUR

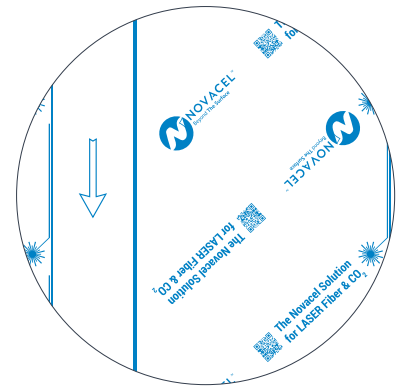


PRODUCT RECOMMENDATION

Benefit from Novacel expertise: choose the best solution for your materials and surfaces, make your processes even more efficient and your carbon impact even lower. A whole team is dedicated to product recommendations to make sure your expectations are satisfied more effectively, and this applies in all four corners of the world.

YOUR COMMUNICATION

Enhance the visibility of your brand with printed films. The printing is done in our factories in a range of colors. They comply with your requests: logo and brand names, technical guidance, slogans and generally any statements.



PRODUCT CUSTOMIZATION

Thanks to our numerous service centers worldwide, we can deliver our solutions anywhere on the planet. Thanks to our network of service centers, we are able to deliver products ready for widening as close as possible to our customers. Cutting and rewinding machines allow us to convert our rolls to any required width. Dedicated experts are available at all our locations to support you.

PACKAGING CUSTOMIZATION

Novacel is keen to ensure that you receive our products in the condition in which they left our site. With this objective in mind, we pay close attention to the packaging of our products. Adapting them to perfectly match the required conditions, we handle every stage in delivery: road, maritime, air transportation or special storage, using the right packaging appropriate to meet all safety standards. If you have a specific request, contact us and we will look into it with you.





TECHNICAL SUPPORT

In order to help you enhance the quality of your products, a dedicated team at Novacel will do everything in their power to assist you. Our team of experts is available at all times to respond to your queries and requests and help you define the best solution right up to final implementation, including determination of the adjustment settings for your application machinery.

RECYCLING SUPPORT

As a fully committed company, we work not only on the product, but also on its life cycle as a whole, including end-of-life. Novacel's foils are designed to be recyclable. Our current objective is to help our customers recycle their film remnants. We propose solutions in several countries - go to our website www.novacel-solutions.com/services to find the right contact for you.



CUSTOMER PORTAL

Need to get information outside of working hours? Go online to our new customer portal www.my.novacel.world and review online all your account activities with just a few clicks*: detailed Novacel order history, order status, product info, requests, bills.

*for direct customers only

**For more information or any request, please contact us:
contact@novacel-solutions.com**

FIND YOUR MATCH

A formal approval process by Novacel experts is imperative before using our products. Our technical and safety data sheets are available on request. As the applications of NOVACEL films are very wide-ranging and the conditions of use may vary from one company to another, NOVACEL recommends that you systematically carry out qualification tests on an industrial line before using the product and that you inform Novacel of the results.

PROCESS & PROTECTIVE FILMS

	Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Specific features
CAR BODY						
9275	WB	60 µm / 2.4 mils	White	9 months	High	/
BUMPERS						
9275	WB	60 µm / 2.4 mils	White	9 months	High	Price
PAINT RETOUCHING						
4768	WB	30 µm / 1.2 mils	Clear transparent	3 months	Low	Easy Peel
LIGHTING						
4768	WB	30 µm / 1.2 mils	Clear transparent	3 months	Low	Price
4368	WB	35 µm / 1.4 mils	Clear transparent	1 month	Medium	Price
4407	WB	55 µm / 2.2 mils	Clear transparent	1 month	Low	Easy Peel
4701	WB	50 µm / 2.0 mils	Clear transparent	3 months	Low	Interiors & panels
4333	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels
4365	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels
WINDSHIELD, LATERAL GLASS & SUNROOF						
9343	WB	49 µm / 1.9 mils	Clear transparent	12 months	Low	/
9561	WB	70 µm / 2.8 mils	Clear transparent	12 months	Low	/
METAL TRIMS & MOLDERS						
4241	SoLR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	/
9518	SoLR	75 µm / 3.0 mils	Blue transparent	None	Very-high	/
4800	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	/
4805	WB	50 µm / 2.0 mils	Blue transparent	2 months	Medium-high	/
4508	WB	50 µm / 2.0 mils	Blue transparent	None	Medium-high	/
4100	WB	50 µm / 2.0 mils	White/transparent	None	Very-low	/
WHEELS						
4226	SoLR	100 µm / 3.9 mils	White	6 months	Very-high	/
9275	WB	60 µm / 2.4 mils	White	9 months	Medium	/
EMBLEMS						
4241	SoLR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	/

*WB=Water Based / SoLA=Acrylic adhesive / SoLR=Rubber adhesive

Technology*	Thickness	Color	Outdoor Guarantee	Adhesion	Specific features
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CARPETS AND PP/PET FIBERS

9840	SolA	65 µm / 2.6 mils	Clear transparent	none	Very-high	/
9860	WB	65 µm / 2.6 mils	Clear transparent	none	Very-high	/
4486	SolA	100 µm / 3.9 mils	Clear transparent	none	Very-high	/

LEATHER

4160	SolR	61 µm / 2.4 mils	Clear transparent	none	Very-high	/
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METAL TRIMS

4241	SolR	60 µm / 2.4 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
9518	SolR	75 µm / 3.0 mils	Blue transparent	None	Very-high	Stainless Steel
4800	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Aluminum
4805	WB	50 µm / 2.0 mils	Blue transparent	2 months	Medium-high	Aluminum
4508	WB	50 µm / 2.0 mils	Blue transparent	None	Medium-high	Stainless Steel /Aluminum
4100	WB	50 µm / 2.0 mils	Clear transparent	None	Very-low	Stainless Steel /Aluminum

PLASTICS & PANELS

4768	SolR	30 µm / 1.2 mils	Clear transparent	3 months	Low	Price
4368	SolR	35 µm / 1.4 mils	Clear transparent	1 month	Medium	Price
4407	WB	55 µm / 2.2 mils	Clear transparent	1 month	Low	Easy Peel
4701	WB	50 µm / 2.0 mils	Clear transparent	3 months	Low	Interiors & panels
4333	WB	50 µm / 2.0 mils	Clear transparent	6 months	Medium-high	Interiors & panels
4365	WB	50 µm / 2.0 mils	Clear transparent	6 months	Very-high	Interiors & panels

*WB=Water Based / SolA=Acrylic adhesive / SolR=Rubber adhesive

MACHINES

Type	Machine	Standard dimension*	Thickness	Film application	Gluing/Lamination Characteristics	Specificities
Roller Coater	ACU-PUR	Widths: 1,600mm (63") pour up to 1,900mm (75")	2mm (0.08") up to 30mm (1.18")	Single or double-sided	Precise application of liquid polyurethane adhesives and polyols	Suitable for headliner production or clutch production
Laminator	I-WALCO	Widths: 1,220mm (48") up to 4,570mm (180")	0.5mm (0.02") up to 60mm (2.5")	Single or double- sided	Designed for sheet-to- sheet operation	Protective or permanent film applica- tion

*Other sizes available on customer request.

For more grades or information, please refer to your sales representative.



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