



— STAINLESS STEEL

PROCESS & PROTECTIVE FILMS,
LAMINATORS, TECHNICAL TAPES

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ABOUT NOVACEL

As a 40-year-old worldwide leader in surface solutions, Novacel proposes a comprehensive offer to its customers, ranging from industrial processing films to technical tapes, paper products, machines and 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 contribute to enhance their industrial efficiency.

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

NOVACEL'S COMMITMENT TO PEOPLE AND THE PLANET

Novacel's Corporate Social Responsibility Strategy is organized around 3 pillars:

- **Creating a responsible industrial community**
- **Minimizing our environmental impact**
- **Eco-designing our products**

As a responsible manufacturer, Novacel takes responsibility for the impacts of its decisions and activities on society and the environment. Given this, Novacel promotes operational excellence and staff engagement through regular team upskilling and training. Moreover, through our responsible purchasing charter, we strive to adhere to ethical business practices with our partners and our employees' approach to their work is governed at all times by the Chargeurs Group Code of Conduct.

Reducing the environmental impact of our products by innovating right from their initial conception up to their life and taking care of teams' and customers' health are at the heart of Novacel's CSR Strategy.

Tackling the ecological impact of our products on the planet is a daily challenge. **Oxygen**, Novacel's unique range of responsible products, promises to:

- **Reduce fossil raw materials use to save non-renewable resources**
- **Use a maximum of recycled resources to limit the production of new fossil-based films**
- **Minimize CO₂ emissions**
- **Be recyclable**



Increasing human wellbeing at work is a daily preoccupation at Novacel both internally and externally. Novacel is constantly developing technologies with this in mind in order to decrease repetitive strain injury (RSI) and increase the quality of the work environment:



Ask now for a free sample roll for formal approval on your fabrication line!

NOVACEL, AN EXPERT FOR YOUR STAINLESS STEEL SURFACES

Stainless Steel is an outstanding material with a range of technical advantages. It is durable, formable, weldable and of course there is its key feature: resistance to oxidation and corrosion. Architecture, industry, transport, elevators and appliances are just a few applications in which Stainless Steel shines thanks to its outstanding properties and benefits.

The manufacturing process from flat Stainless Steel coil/sheet to the final product is demanding. Many steps are necessary in order to make the Stainless Steel items we use in our daily lives. All these processes are harsh, involving heavy tools, heavy pressure, friction, and more, and they can result in surface impacts, dents and scratches that are not acceptable for the end-customer.

Novacel processing films **avoid manufacturing defects in your Stainless Steel** throughout the entire manufacturing process.

Novacel is committed to bringing you **reliable, trouble-free solutions**, with stable and controlled adhesion throughout all processing cycles. We also guarantee you **significant outdoor resistance** (2 to 6 months) and **easy removal without tearing**. Novacel's goal is to preserve the quality and impeccable finish of your surfaces, leaving no residues, stains or marking once the film is removed.

WHY USE NOVACEL SOLUTIONS?

> A Global Solution Provider

Novacel offers complete solutions with processing films, technical tapes, paper products, machines and associated services.

> Unique features for your specific needs

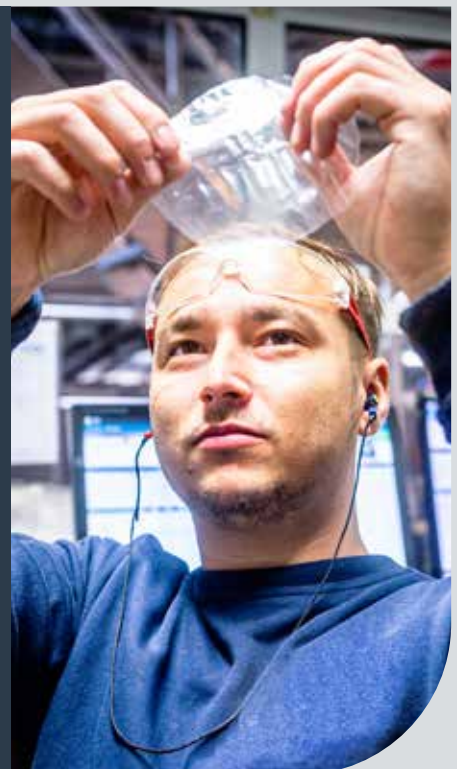
We create innovative solutions to improve your industrial efficiency and to take care of people; like films dedicated to new surfaces or processes, low noise, easy peel or easy unwind.

> Expertise & Technical support

Our teams are dedicated to providing you with the best experience and assisting you from the initial search for the right solution right up to its final implementation.

> A Strong CSR Commitment

Novacel works continuously on its carbon footprint by improving its production, creating eco-responsible solutions and placing human well-being at the heart of its strategy.

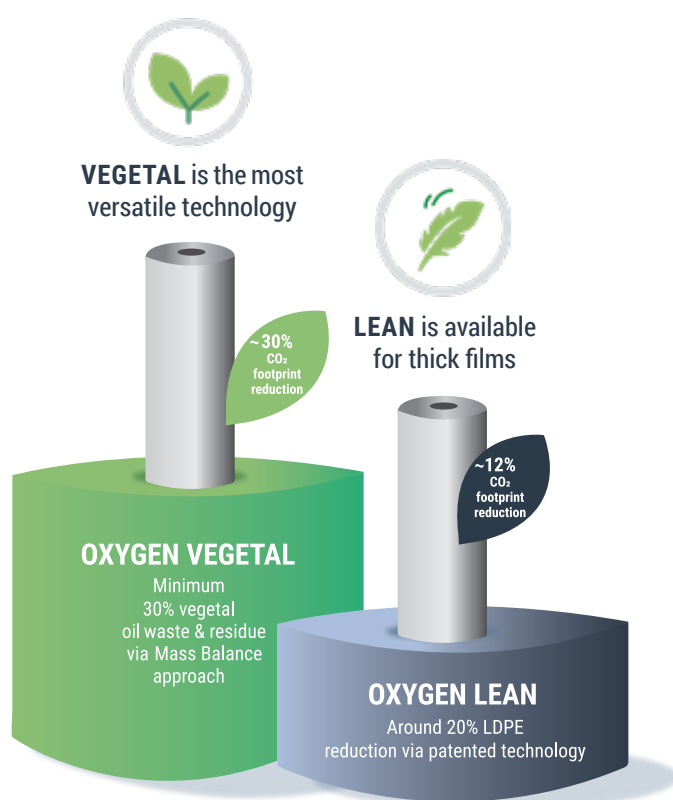


— OXYGEN, NOVACEL'S ECO-RESPONSIBLE RANGE

Manufacturers of Stainless Steel are driven by sustainability and involved in preserving the environment. They are committed to reducing their carbon footprint by using less fossil-based films on their materials or even significantly increasing the overall post-consumer recycled content.

In this context, on top of its commitment to responsibility, **Novacel has designed the first eco-responsible range of process and protective films**, adapted from its successful and well-established products engineered for Stainless Steel.

Novacel OXYGEN, 2 technologies for Stainless Steel surfaces:



3030GAB Oxygen Vegetal for Stainless Steel:

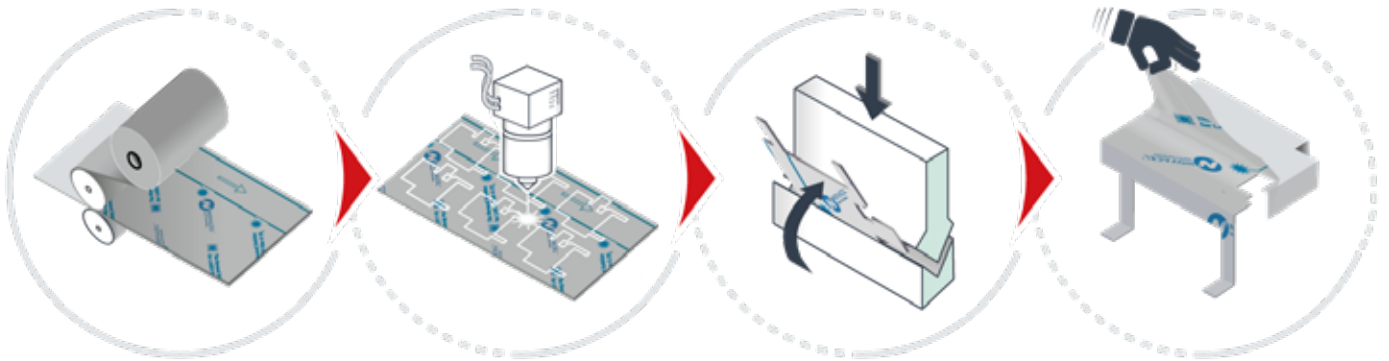
- **Minimum 30% of vegetal oil waste & residue** via mass balance approach
- **35% CO₂ emissions reduction**, with 0.22 CO₂ eq kg/m²
- **100% recyclable**
- **Easy switch to an Oxygen film**: no risk for your surfaces because performance is identical to the standard films



— LASER FIBER AND CO₂ CUTTING FILMS

The laser cutting process has always been demanding, beginning with the original CO₂ sources and continuing up to the newest fiber technologies, and films for this process need to be resilient. Appropriate laser absorption and resistance to cutting gas pressure have always been the main prerequisites for a film dedicated to laser cutting.

Novacel is the **worldwide leader for solutions for use during laser cutting operations**. Thanks to years of experience and innovation, Novacel offers the widest range on the market to meet all needs. Novacel is at your side to help you overcome the industrial challenges you face daily.



NOVACEL ASSETS

For the full benefit of your state-of-the-art laser installation, Novacel gives you:

- > Single-step, full-speed cutting
- > No bubbling, minimal shrinkage, accurate film edges
- > No surface marking, peel-off in one piece
- > Secure protection of metals & preservation of their integrity

NOVACEL INNOVATIONS

> Our dedicated **eco-responsible OXYGEN: 3030GAB:**

- **35% less carbon emission** than an equivalent traditional film
- **0.22 CO₂ eq kg/m²**
- **Uses 30% vegetal oil waste**
- **Performance characteristics identical to standard films:** mechanical, adhesive, UV resistance



> **Low noise technology** with our **4464RLN solution:**

This allows **very high adhesion** processing and protective film rolls to be unwound at **noise levels below 85dB**. The level achieved is below that required by existing international standards.



> **Protect your employees' health** with the Low Noise range that reduces unwinding noise to a minimum and limits risks of musculoskeletal disorders (MSD) for your teams.





Grade	Thickness (µm/mils)	Adhesion	Outdoor resistance	Specific features
4228REF	100µm/3.9mils	Very High	6 months	For all kinds of finishes
4464RLN	100µm/3.9mils	Very High	6 months	For all kinds of finishes - Low Noise
3030GAB	100µm/3.9mils	Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Vegetal)
3200GAB	100µm/3.9mils	Very High	3 months	For all kinds of finishes Eco-responsible solution (Oxygen Lean)
4188REF	100µm/3.9mils	Very High	None	Clear transparent - Indoor use For all kinds of finishes
4273RES	105µm/4.1mils	Ultra high	6 months	For textured finishes
4329REH	80µm/3.2mils	High	6 months	For glossy and lightly brushed finishes
4327RFA	70µm/2.8mils	High	6 months	For glossy and lightly brushed finishes
4236RET	60µm/2.4mils	High	6 months	For glossy and lightly brushed finishes on thin sheets (<1mm) Perfect for coverage of sheet bottom side
4318REM	75µm/3.0mils	Medium	6 months	For glossy finishes on thin sheets (<1mm)

All grades are grey/black films, except 4188REF, which is a clear transparent film.



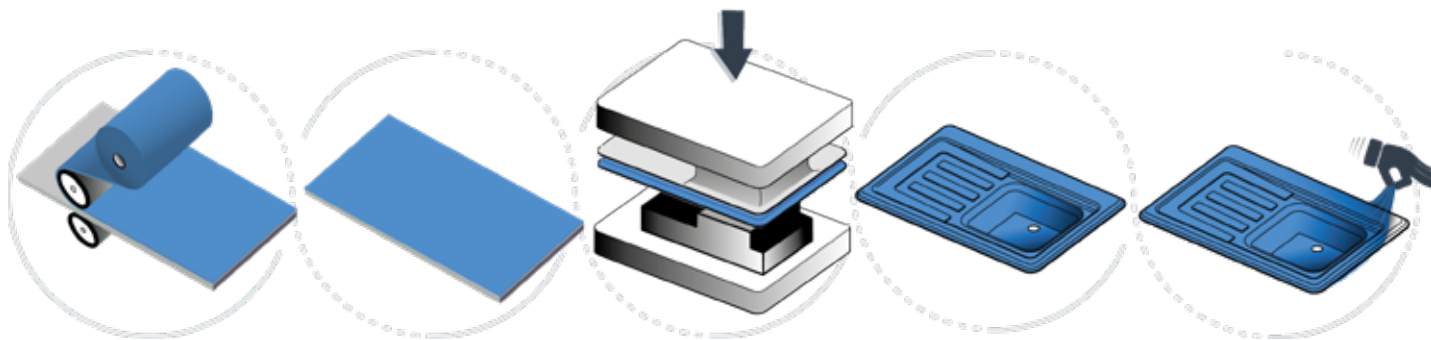
— DEEP DRAWING FILMS

Whatever the application - design & decoration, lighting, furniture, household appliances or other general products - the deep drawing process for Stainless Steel surfaces is among the most widespread operations for shaping sheets to make end-products.

Novacel is there to help you to find a match for each new shape or model you need to produce. Novacel continues to innovate to add new tools to your armory for deep-drawing applications with **Deep Blue technology**, a PVC-free protective film with outstanding conformability.

Deep Blue Technology is revolutionizing pressing. This smart technology greatly improves the behavior of films during pressing operations. It allows the plastic deformation capacity of plasticized PVC to be achieved. In association with **high performance glue systems**, **Deep Blue by Novacel offers optimal solutions for every drawing depth, shape and process**. This range exhibits **unmatched and unprecedented conformability** on the market for a polyolefin backing.

Deep Blue is an exclusive range of PVC-free films dedicated to the highly demanding Deep Drawing process.



WHY USE PVC-FREE FILMS?

- **Take care of your personnel's health** with films free of PVC and phthalate, substances classed as being of concern for human health and the environment.
- **Completely recyclable films:** despite the fact that PVC is very hard to recycle, Novacel films are completely recyclable in any recycling center.

NOVACEL'S EXPERTISE

> The **DEEP BLUE RANGE** offers multiple advantages:

- **Perfect conformability** to the shape of your piece
- **High-quality backing and coating** to eliminate impacts and scratches during application of pressure
- **Premium adhesion** adapted to your depth, finish and time between steps
- **No lifting** during the process



With **Novacel's 4432 and 4241 solutions**, you benefit from perfect preservation of your surface and no lift-up during deep drawing operations.

> **EASY PEEL TECHNOLOGY:**

In addition to improved performance, you can **protect your workers from musculoskeletal disorders (MSD)** by making unwinding pain free.

Novacel Easy Peel films, such as **9245 and 4105**, offer the perfect solution right up to the end of the production line with no compromise to adhesion during the manufacturing process.



Quality inspection is a must at the end of the manufacturing line: **Novacel's easy-peel solution is 10 times faster and easier to remove than other products**, allowing quality control with no compromise to productivity.



Grade	Thickness (µm/mils)	Adhesion	Specific features
4105 /4107	60µm/2.4mils	Easy Peel	For glossy finishes on continuous processes
9245	60µm/2.4mils	Easy Peel	For glossy finishes on continuous processes Exceptional conformability
4432	45µm/1.8mils	Medium - Low	Versatile solution, easy to remove
4241	60µm/2.4mils	Medium - High	Versatile solution, suitable for a wide variety of applications
9309	75µm/3mils	High	Exceptional conformability

All grades are blue transparent.

MULTIPURPOSE FILMS

Stainless steel surfaces are exposed to many other processes, each with its own specific features, during the making of the final product, such as:

- drilling,
- bending,
- slitting,
- punching,
- profiling,
- stamping, etc.

Those processes subject Stainless Steel sheets/coils to high levels of stress and can even result in damage to surfaces.

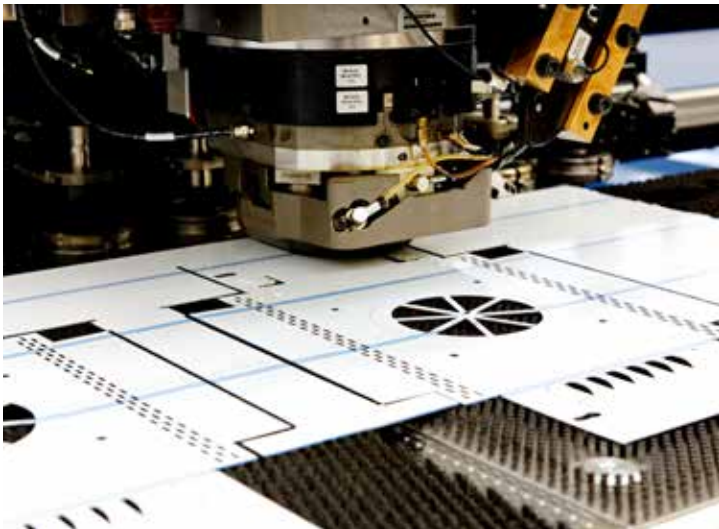
With Novacel process and protective films, **you can be sure that your Stainless Steel surfaces will reach your customer in a perfect condition**, with no scratches, scuffs or soiling. You can be free from any worry, as **your surfaces will be preserved during a wide range of processes** using Novacel versatile solutions. This means that all manufacturing processes on Stainless Steel can be carried out without constraints or post-operational treatments.

Our experience in the industry allows us to offer you high-quality films that are specifically tailored for your needs. That's why a wide variety of

NOVACEL ASSETS

Novacel's versatile range matches your need perfectly:

- > Premium adhesion to protect the most common Stainless Steel finishes
- > Optimum protection during mechanical processing (bending, punching, etc.).
- > Easy to remove
- > Outdoor warranty



Grade	Thickness (µm/mils)	Adhesion	Outdoor resistance	Specific features
4233	70µm/2.8mils	Medium	6 months	Versatile solution for mechanical processes
3000	70µm/2.8mils	Medium	6 months	Versatile solution for mechanical processes Eco-responsible solution (Oxygen Vegetal)
3230	70µm/2.8mils	Medium	6 months	Versatile solution for mechanical processes Eco-responsible solution (Oxygen Lean)
4256	60µm/2.4mils	Medium - Low	3 months	Versatile solution, easy to peel
4410	60µm/2.4mils	Medium - Low	/	Versatile solution, easy to peel, blue transparent

All grades are black/white, except 4410 which is blue transparent.



— LAMINATION MACHINES

With its Omma and Walco brands, **Novacel Special Machines (NSM)** proposes the **ultimate lamination technology** dedicated to the Stainless Steel industry. Based on long experience and know-how with innovative, often exclusive and always reliable solutions:

Our **Laminators** provide easy, fast lamination with wrinkle and bubble-free film on any size and any flat surface. They can be used both on a production line or as stand-alone units and can be equipped with either manual or automatic cutting technology.

NOVACEL ASSETS

- > **TX Precision**, an in-line and off-line laminator with a high-precision automatic cutting system, designed and patented for the application of films on Stainless Steel surfaces
- > **Pro-jet and I-Walco**, with manual cutting, is the entry-level laminators. Specifically for off-line use, it is suitable for low/medium batch production.
- > **Services**: Installation and startup, maintenance, troubleshooting and software updates
- > **Auto-switch**: The auto-switch automatically replaces the roll of process film, allowing the lamination process to continue seamlessly, saving time, costs and waste.

CUSTOM DESIGNED

WALCO® develops **custom-made laminators to meet your technical needs**: large widths or heights, high speeds, different widths or heights for each substrate, special layouts, application of consumables other than protective film, and more.



Vertical laminators for Stainless Steel: improve your team's efficiency, minimize handling and save space in your plant with our vertical laminators for Stainless Steel.

Thanks to WALCO®'s technical know-how, we can meet your application requirements.



TX precision: Horizontal Laminator



Pro-jet: Horizontal Laminator



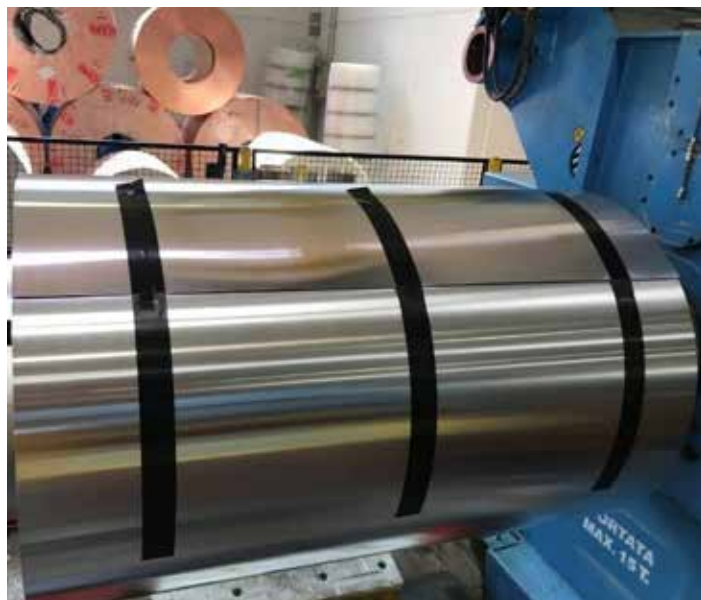
I-Walco: Horizontal Laminator

Lamination	Machine	Standard dimension	Thickness	Film application	Specific features
Horizontal	TX precision	Widths: 1,400mm (55") up to 1,700mm (67")	0.4mm (0.01") up to 80mm (3.15")	Single or double-sided	- Automatic length detection - Automatic cut
Horizontal	Pro-jet	Widths: 1,400mm (55") up to 3,300mm (132")	0.4mm (0.01") up to 80mm (3.15")	Single or double-sided	- Entry-level applicator - Manual cut
Vertical	I-Walco	Widths from 1,220 mm (48") to 4,570 mm (180")*	0.5mm (0.02") up to 60mm (2.5")	Single or double-sided	- Designed for sheet fed operation - Protective or permanent film application

**Other sizes available on customer request.*

— TECHNICAL TAPES

Whether you are producing or shipping steel, securing metal coils with **reliable tapes is essential for the safety of your staff and the protection of your products**. Novacel has developed a range of **technical tapes** that provide high tensile strength and long elongation to **avoid lift-up or tearing during goods handling**.

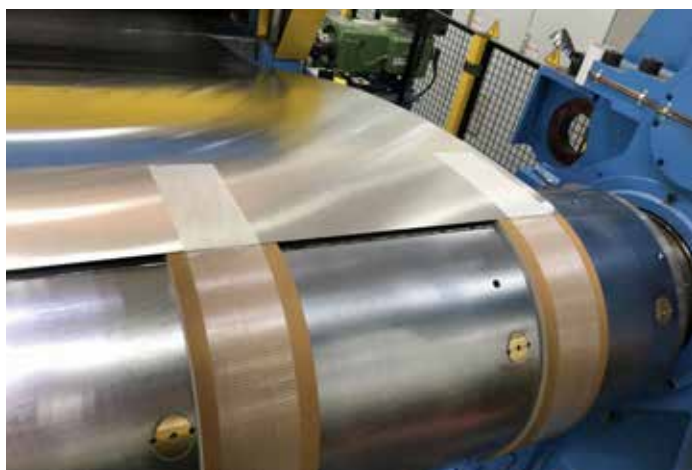


NOVACEL ASSETS

- > **Metal coil end tabbing tapes:** a single-sided adhesive range which offering strong adhesion and high tensile strength for secure metal coils fastening, easy to remove and leaving no residue on coils
- > **Metal overlap splicing tapes:** double-sided adhesive tape with heavy stress and high temperature resistance, providing high efficiency in metal-manufacturing processes
- > **Metal butt splicing and coil core starting tapes:** a high adhesive single-sided reinforced range that provides the highest efficiency for metal splicing and coil core starting applications

Grade	Color	Carrier/backing	Type of adhesive	Total thickness (μm)	Tensile Strength (daN/cm)	Removability
BN6489	●	MOPP	Rubber Based	100	28MD*	*
BN6490	●	MOPP	Rubber Based	110	30MD*	***
BN811	○	PET	Acrylic Solvent	90	/	No
BN53	●	PET	Silicone	80	/	**
BN6440 (mono-oriented)	○	PP reinforced	Synthetic Rubber Based	130	25 MD*	No
BN6441 (cross weave)	○	PP reinforced	Synthetic Rubber Based	130	27 MD*	No

*MD : Machine Direction







BENEFIT FROM NOVACEL SERVICES TO

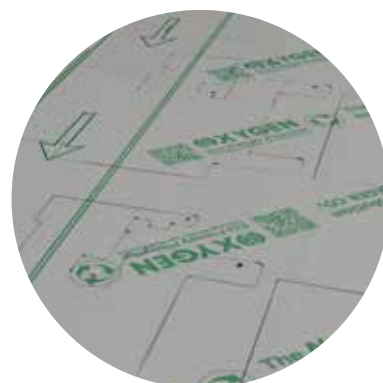


PRODUCT RECOMMENDATION

Benefit from Novacel expertise! Choose the best solution for your materials and surfaces, and 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 prints are made in our factories in different colours. They are made upon your requests: logo and brand name, technical guidance, slogan or any other element.



PRODUCT CUSTOMIZATION

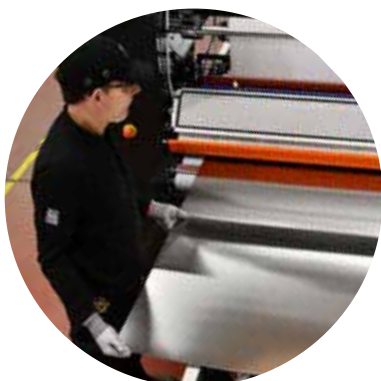
Thanks to our six service centers worldwide, we can deliver our solutions anywhere on the planet. We benefit from extensive storage capacity enabling us to respond rapidly to any type of request. Cutting and rewinding machines allow us to convert our rolls to any desired width and length. Dedicated experts 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 will 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.



EASE YOUR BUSINESS



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 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. Over 95% of Novacel's foils are designed to be recyclable. Our objective now 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 informations 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

	Grade	Thickness (µm/mils)	Color	Adhesion	Outdoor Resistance	Specific features
LASER FIBER AND CO ₂ CUTTING	4228REF	100µm/3.9mils		Very High	6 months	For all kinds of finishes
	4464RLN	100µm/3.9mils		Very High	6 months	For all kinds of finishes, Low Noise
	3030GAB	100µm/3.9mils		Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Vegetal)
	3200GAB	100µm/3.9mils		Very High	3 months	For all kinds of finishes Eco-responsible solution (Oxygen Lean)
	4188REF	100µm/3.9mils		Very High	/	Clear transparent, Indoor use For all kinds of finishes
	4273RES	105µm/4.1mils		Ultra high	6 months	For textured finishes
	4329REH	80µm/3.2mils		High	6 months	For glossy and light brushed finishes
	4327RFA	70µm/2.8mils		High	6 months	For glossy and light brushed finishes
	4236RET	60µm/2.4mils		High	6 months	For glossy and lightly brushed finishes on thin sheets (<1mm) Perfect for bottom side sheet coverage
	4318REM	75µm/3.0mils		Medium	6 months	For glossy finishes of thin sheets (<1mm)
DEEP DRAWING	4105 /4107	60µm/2.4mils		EasyPeel	/	For glossy finishes on continuous processes
	9245	60µm/2.4mils		Easy Peel	/	For glossy finishes on continuous processes Exceptional conformability
	4432	45µm/1.8mils		Medium - Low	/	Versatile solution, easy to peel
	4241	60µm/2.4mils		Medium - High	/	Versatile solution, suitable for a wide variety of applications
	9309	75µm/3mils		High	/	Exceptional conformability
MULTIPURPOSE	4233	70µm/2.8mils		Medium	6 months	Versatile solution for mechanical processes
	3000	70µm/2.8mils		Medium	6 months	Versatile solution for mechanical processes Eco-responsible solution (Oxygen Vegetal)
	3230	70µm/2.8mils		Medium	6 months	Versatile solution for mechanical processes Eco-responsible solution (Oxygen Lean)
	4256	60µm/2.4mils		Medium - Low	3 months	Versatile solution, easy to peel
	4410	60µm/2.4mils		Medium - Low	/	Versatile solution, easy to peel, blue transparent

Technical Tapes

Grade	Color	Carrier/backing	Type of adhesive	Total thickness (µm)	Tensile Strength (daN/cm)	Removability
BN6489	●	MOPP	Rubber Based	100	28MD*	★
BN6490	●	MOPP	Rubber Based	110	30MD*	★★★
BN811	○	PET	Acrylic Solvent	90	/	No
BN53	●	PET	Silicone	80	/	★★
BN6440 (mono-oriented)	○	PP reinforced	Synthetic Rubber Based	130	25 MD*	No
BN6441 (cross weave)	○	PP reinforced	Synthetic Rubber Based	130	27 MD*	No

*MD : Machine Direction

Lamination machines

Lamination	Machine	Standard dimension	Thickness	Film application	Specific features
Horizontal	TX precision	Widths: 1,400mm (55") up to 1,700mm (67")	0,4mm (0.01") up to 80mm (3.15")	Single or double-sided	- Automatic length detection - Automatic cut - Auto-switch of the rolls
Horizontal	Pro-jet	Widths: 1,400mm (55") up to 3,300mm (132")	0,4mm (0.01") up to 80mm (3.1")	Single or double-sided	- Entry-level applicator - Manual cut
Vertical	I-Walco	Widths from 1,220 mm (48") to 4,570 mm (180")*	0.5mm (0.02") up to 60mm (2.5")	Single or double-sided	- Designed for sheet fed operation - Protective or permanent film application

*Other sizes available on customer request.

NA*: Not Applicable

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



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