



— STAINLESS STEEL

PROCESS & PROTECTIVE FILMS,
MACHINES & LAMINATORS, TECHNICAL TAPES



CONTENT

Introduction	3
Novacel's CSR Strategy	4
Oxygen, Novacel's Eco-conceived Range	5
Laser Fiber and CO ₂ cutting films	6
Deep Drawing films	8
Multipurpose films	10
Lamination Machines	12
Technical Tapes	13
Find your match	14

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 Compagnie Chargeurs Invest Group.

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** (up 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.

A DEDICATED RECOMMANDATION TEAM

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

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

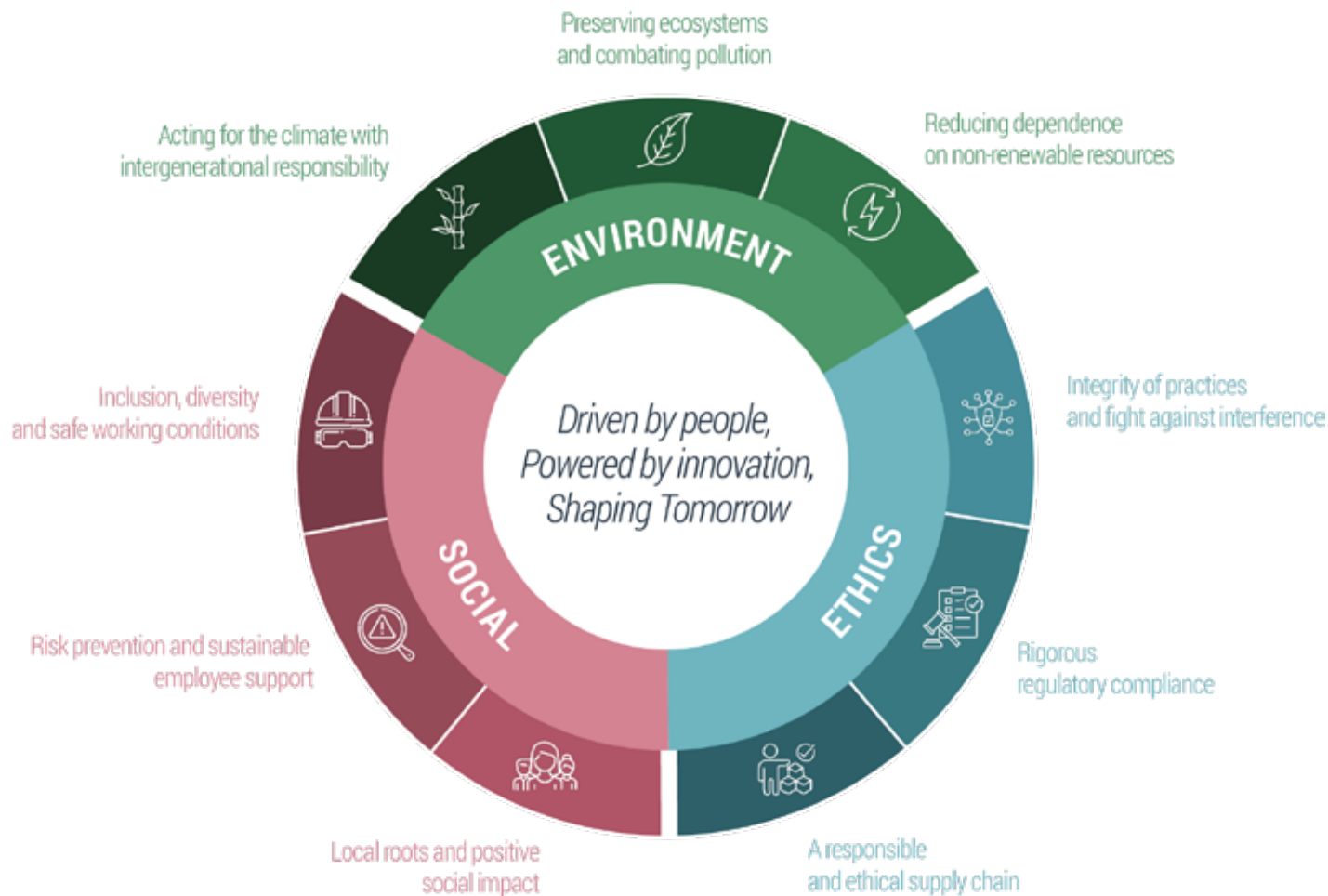
Our recommendation team is dedicated to advising you on the most suitable and customised process and protective films. This service, offered at no extra cost, is supported by a cutting-edge R&D laboratory equipped for detailed surface analysis and product testing.

By continually monitoring market trends and collaborating closely with our customers and partners, we strive for optimal results: minimal waste, high productivity, and a flawless end product.



— NOVACEL'S CSR STRATEGY

Aware of the current environmental, social, and ethics challenges, Novacel is committed to an ambitious Corporate Social Responsibility 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.

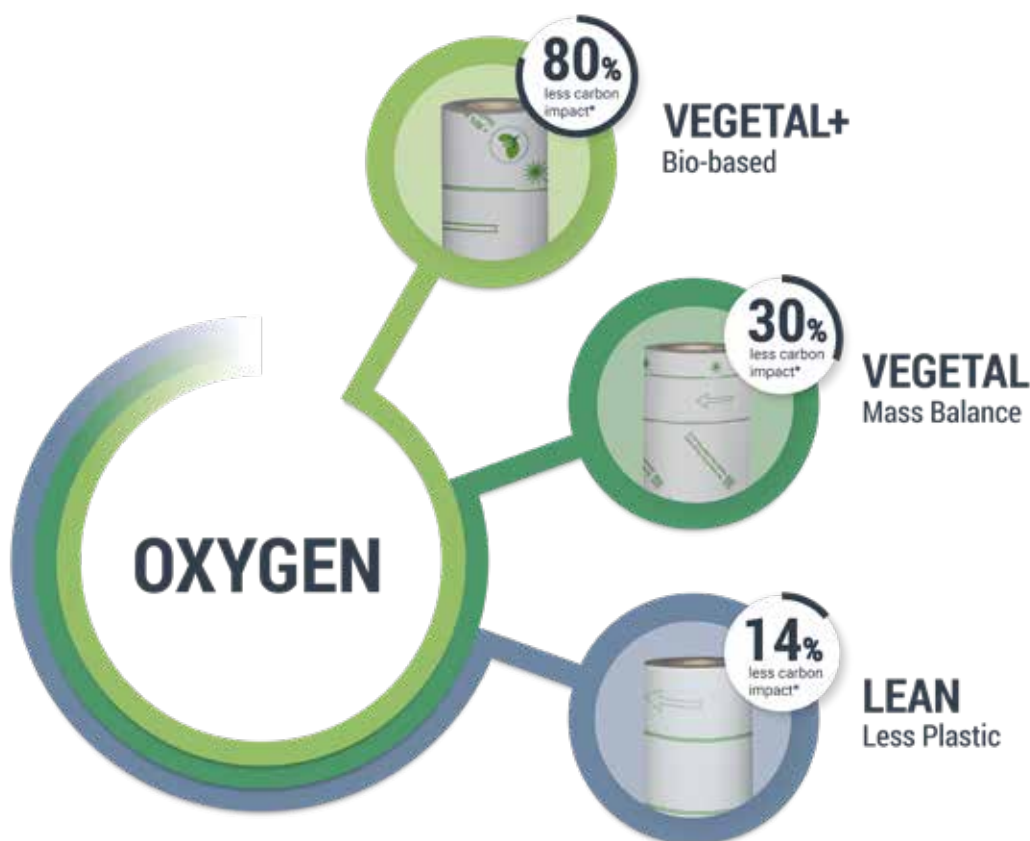


— OXYGEN, NOVACEL'S ECO-CONCEIVED RANGE

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 more eco-responsible range of process and protective films**, adapted from its successful and well-established products engineered for Stainless Steel.

Novacel OXYGEN, 3 technologies for Stainless Steel surfaces:



THE 3300GAC OXYGEN VEGETAL+ FOR STAINLESS STEEL *The most eco-responsible solution of the market*

- **Eco-conceived alternative of the 4228, the global laser cutting benchmark**, with the same exceptional performances
- **More than 80% of renewable materials**, without deforestation and food competition
- **Recyclable****



Novacel is certified ISCC+ for its Oxygen vegetal range. By sourcing ISCC-certified mass-balanced material, Novacel helps replace virgin fossil resources with renewable feedstocks and reaffirms its commitment to best environmental practices.

Find all Oxygen codes and their specificities in green in the tables inside the brochure.

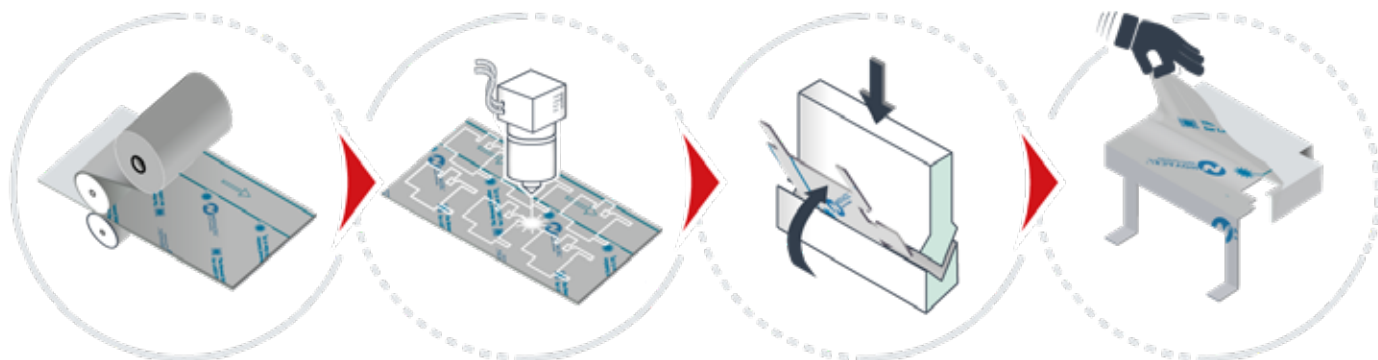
*Estimation based on the certified LCIs (Life Cycle Inventories) of similar standard products.

**Recyclable by the forms of recycling as defined by ISO 472:2013 Plastics

— 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'S EXPERTISE

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



- **Around 30% less carbon emission*** than an equivalent traditional film
- **Uses 30% vegetal oil waste** with mass balance concept
- **Performance characteristics identical to standard films:** mechanical, adhesive, UV resistance, etc.

> **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.



*Estimation based on the certified LCIs (Life Cycle Inventories) of similar standard products.



Grade	Thickness (µm/mils)	Adhesion	Outdoor resistance	Specific features
4273RES	105µm/4.1mils	Ultra high	6 months	For textured finishes
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
3300GAC	100µm/3.9mils	Very High	6 months	For all kinds of finishes The most eco-responsible solution (Oxygen Vegetal+)
3030GAB	100µm/3.9mils	Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Vegetal)
3200GAB	100µm/3.9mils	Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Lean)
4188REF	100µm/3.9mils	Very High	None	Indoor use for all kinds of finishes
4329REH	80µm/3.2mils	High	6 months	For glossy and lightly brushed finishes
4318REM	75µm/3.0mils	Medium	6 months	For glossy finishes on thin sheets (<1mm)
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

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



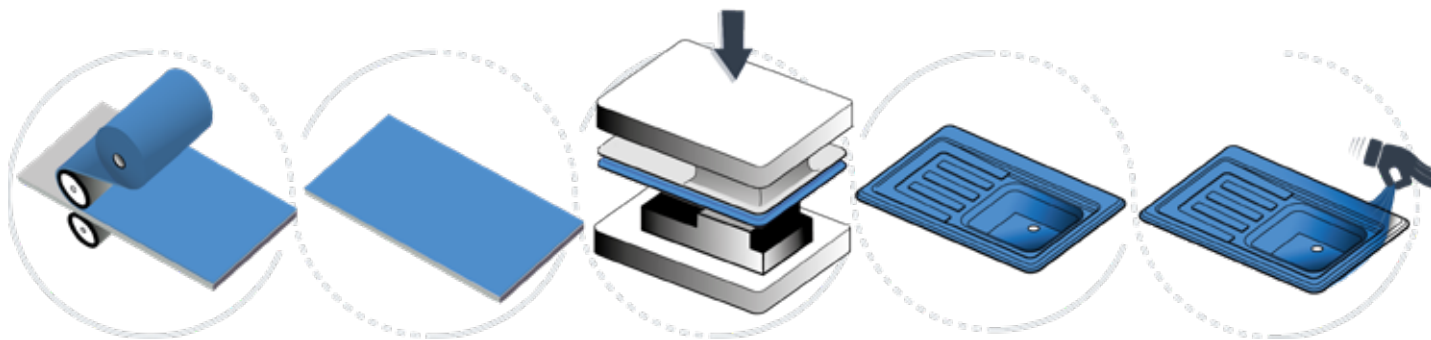
— DEEP DRAWING FILMS

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 Drawing technology**, a PVC-free protective film with outstanding conformability.

Deep Drawing 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**, **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.

Novacel Deep Drawing 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.

NOVACEL'S EXPERTISE

> The **DEEP DRAWING 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.

> The **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
9309	75µm/3mils	High	Exceptional conformability
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
4241	60µm/2.4mils	Medium - High	Versatile solution, suitable for a wide variety of applications
4432	45µm/1.8mils	Medium - Low	Versatile solution, easy to remove

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.

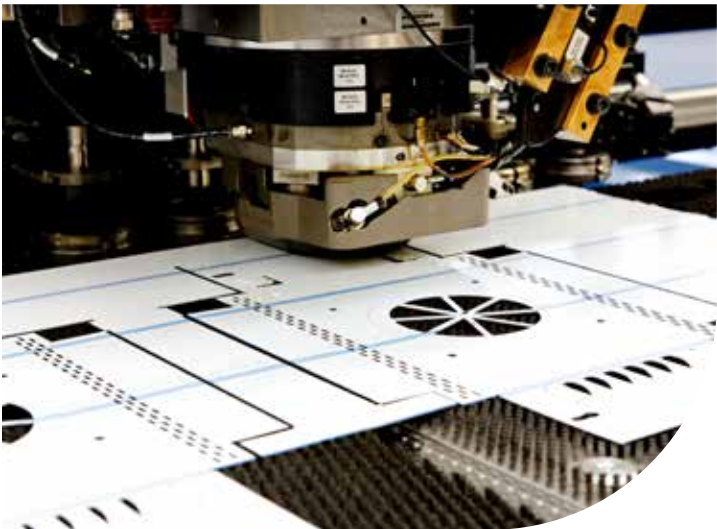
With Novacel process and protective films, **you can be sure that your Stainless Steel surfaces will reach your customer in a perfect condition**, with no scratches, scuffs or soiling. You can be free from any worry, as **your surfaces will be preserved during a wide range of processes** using Novacel 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 **multipurpose films for Stainless Steel** has been developed by Novacel.

NOVACEL ASSETS

Novacel's versatile range matches your need perfectly:

- > Premium adhesion to protect the most common Stainless Steel finishes
- > Optimum protection during all 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
9251	50µm/1.9mils	Medium - Low	/	Versatile solution, easy to peel, blue transparent

All grades are black/white, except 9251 which is blue transparent.



LAMINATION MACHINES

Through its Omma and Walco brands, the **Novacel Special Machines (NSM)** division offers **cutting-edge gluing and lamination technology** dedicated to the aluminum industry. For decades, our expertise and know-how have driven the development of innovative, reliable, and unique solutions.

Our **Laminators** provide easy and fast lamination with wrinkle and bubble-free film application on flat surfaces of any size. They can be integrated into new or existing production lines or used as stand-alone machines, equipped with either manual or automatic cutting technology.

NOVACEL ASSETS

- **High-quality machines** for **precise and damage-free application** of film to aluminum surfaces
- **Integration into new or existing production lines**, or as **stand-alone machines**
- **Manual or automatic cutting** technology
- **Services:** Installation and startup, maintenance, troubleshooting and software updates.
- **Auto-switch:** automatically replaces the roll of process film, allowing lamination to continue seamlessly, saving time, costs and material.

CUSTOM DESIGNED

We design and manufacture custom gluing, composition, and lamination lines tailored to your specific technical requirements. Whether you need standalone machines or fully integrated solutions, we adapt to your needs.

From small to large working widths, high-speed operations, asymmetrical substrates, or unique layout configurations, our technical team is dedicated to supporting you throughout your project and finding the best possible solutions.

Walco and Omma also specialize in applying consumables beyond standard process and protective films. Thanks to our extensive technical expertise, we provide solutions that address even your most complex challenges!

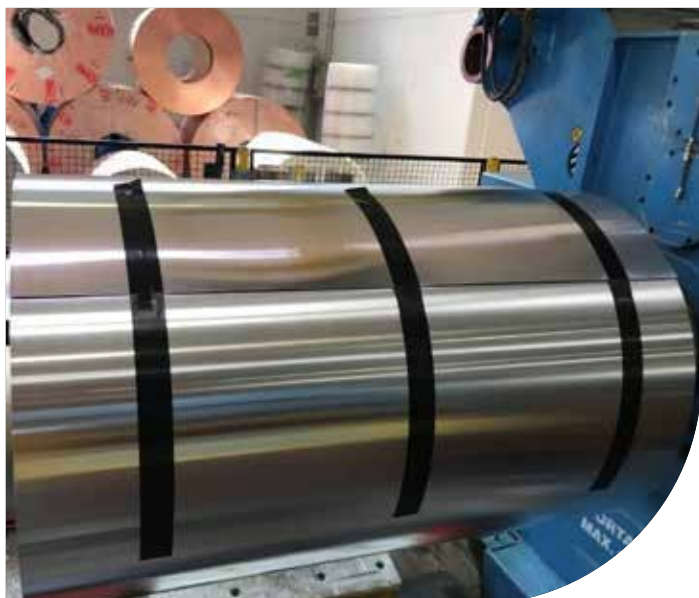


Lamination	Machine	Standard dimension	Thickness	Film application	Specific features
Horizontal	TX	Widths: 1 300mm (51") up to 2 200mm (86")	Up to 80mm (3.15")	Single or double-sided	- Automatic length detection - Automatic cut
Horizontal	PRO-JET	Widths: 1 400mm (55") up to 2 000 mm (78")	Up to 80mm (3.1")	Single or double-sided	- Entry-level applicator - Manual cut
Horizontal	PRO-J	Widths: 1 300mm (51") up to 2 200mm (86")	Up to 80mm (3.2")	Single or double-sided	- Automatic cut - Wide customization possibilities
Horizontal	I-Walco	Widths: 1 220 mm (48") to 4 570 mm (180")*	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**.

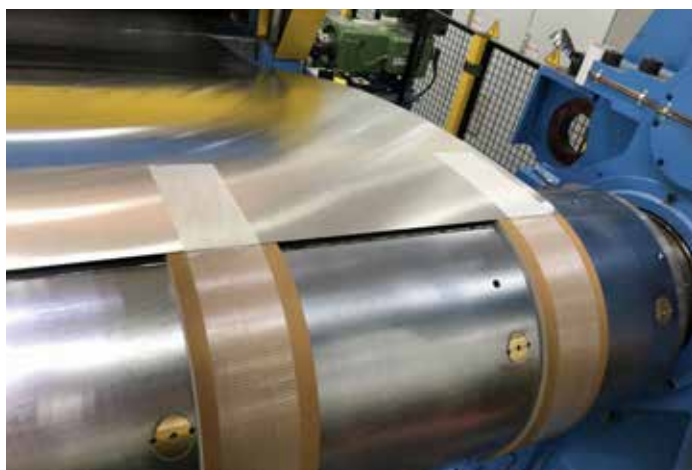


NOVACEL ASSETS

- > **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



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	4273RES	105µm/4.1mils		Ultra high	6 months	For textured finishes
	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
	3300GAC	100µm/3.9mils		Very High	6 months	For all kinds of finishes The most eco-responsible solution (Oxygen Vegetal+)
	3030GAB	100µm/3.9mils		Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Vegetal)
	3200GAB	100µm/3.9mils		Very High	6 months	For all kinds of finishes Eco-responsible solution (Oxygen Lean)
	4188REF	100µm/3.9mils		Very High	None	Indoor use for all kinds of finishes
	4329REH	80µm/3.2mils		High	6 months	For glossy and lightly brushed finishes
	4318REM	75µm/3.0mils		Medium	6 months	For glossy finishes on thin sheets (<1mm)
	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
DEEP DRAWING	9309	75µm/3mils		High	/	Exceptional conformability
	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
	4241	60µm/2.4mils		Medium - High	/	Versatile solution, suitable for a wide variety of applications
	4432	45µm/1.8mils		Medium - Low	/	Versatile solution, easy to remove
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
	9251	50µm/1.9mils		Medium - Low	/	Versatile solution, easy to peel, blue transparent

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.*

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*

NA*: Not Applicable

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



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