



PVC & ALUMINUM PROFILES

PROCESS & PROTECTIVE FILMS, MACHINES & LAMINATORS





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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 process films to technical tapes and 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 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 is part of the Compagnie Chargeurs Invest Group.

NOVACEL, YOUR EXPERT FOR PROFILE SURFACES

Profiles are used in a wide range of applications, from window frames to cladding and decking systems. Manufactured from aluminum, PVC, wood, or composite materials, each type of profile has its own specific characteristics and technical requirements. As a result, the profile manufacturing, assembly, and finishing processes are particularly demanding and **require dedicated solutions to ensure high performance and long-term durability**.

Each material offers specific advantages, from high weather resistance to optimized strength-to-weight ratios based on hybrid technologies. At the same time, global market trends increasingly favor colored window profiles, driven by decorative films that provide textured and aesthetic surfaces such as sanded, metallic, or shimmering finishes. These developments place even **greater importance on surface quality and protection throughout the production cycle**.

As a dedicated partner to PVC and aluminum profiles manufacturers, Novacel is constantly at the forefront of technological innovation, aiming to proactively address emerging risks and process constraints. We develop **high-performance process and protective films** specifically adapted to high-value finishes, **combining advanced technologies such as trap print, high-adhesion, long-length films, and easy-unwind rolls**. Novacel films ensure **reliable preservation and consistent adhesion** from extrusion through handling, storage, and up to final installation, contributing to efficient processes and flawless finished products.

A DEDICATED RECOMMENDATION TEAM

The materials market is vast and diverse: metals, plastics, glass, decorative laminates, each with a unique surface and manufacturing process.

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.

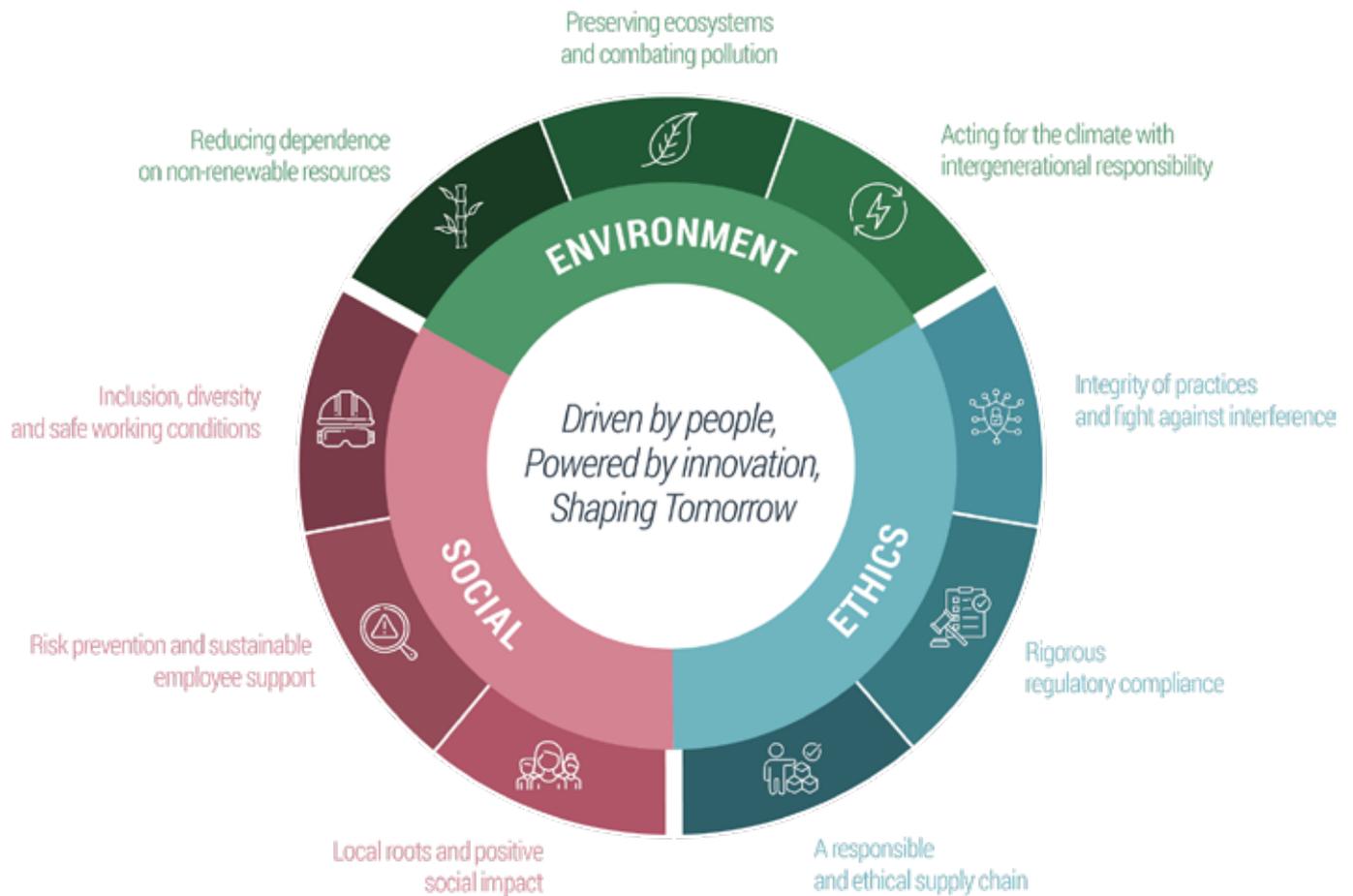
Our recommendation team is dedicated to advising you on the most suitable and customized process and protective films. This service, offered at no extra cost, is supported by a cutting-edge R&D laboratory equipped for detailed surface analysis and product testing.

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 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.

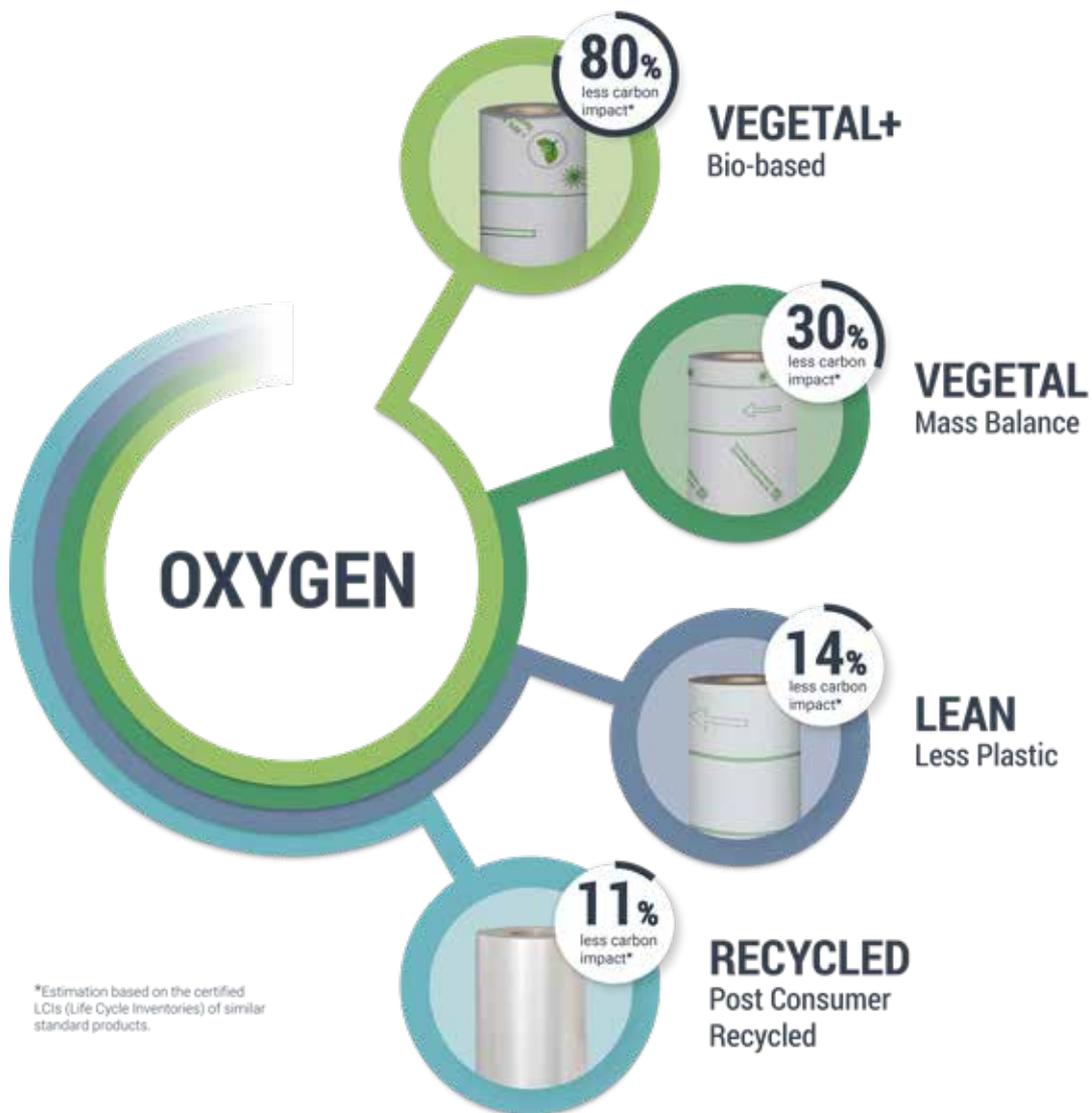


— OXYGEN, NOVACEL'S ECO-CONCEIVED RANGE

Manufacturers of PVC, aluminum and wood profiles are driven by sustainability and involved in preserving the environment. They are committed to reduce their carbon footprint by using more eco-responsible materials or even significantly increasing the overall post-consumer recycled content in PVC and aluminum profiles.

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

Novacel OXYGEN, 4 technologies to reduce your carbon impact



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



Novacel is certified Plastica Seconda Vida (audited by SGS) for its Oxygen recycled range. This certifies the percentage of recycled content in our products. It is a guarantee of trust and credibility towards our customers worldwide.

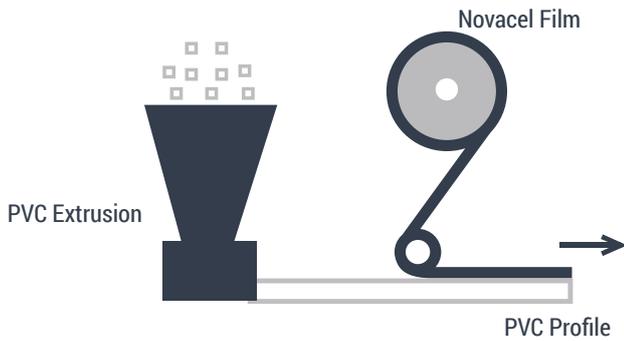
Find all Oxygen codes and their specificities in green in the tables inside the brochure.

FILMS FOR PVC WINDOW PROFILES

During extrusion and manufacturing processes, PVC profiles are exposed to scratching and surface damages. Novacel process and protective films provide a **reliable, high-quality solution to preserve the aesthetics of the material**. Applied online to PVC profiles immediately after the cooling phase of the extrusion

process, the film forms an **effective barrier against scratches** as the product is conveyed along the extrusion line. It ensures **continuous protection** of full-length 6-meter profiles, securing them during handling and transfers in and out of container boxes, through window manufacture and worksite installation.

PROFILE EXTRUSION LINE



OXYGEN 3143, AN ECO-CONCEIVED ALTERNATIVE:

- **Thickness:** 50 µm / 2 mils
- **> 25% recycled polyethylene content**
- **11% lower CO₂ emissions***
- **Recyclable****



NOVACEL ASSETS

- **Optimal protection** against soiling and surface damage at all stages: extrusion, fabrication, storage, installation, and finishing (dust, paint, residues)
- **Controlled telescoping** even for narrow widths and long lengths (15 mm to 1.000 m), optimizing industrial production
- **Worldwide outdoor resistance up to 6 months**
- **Safe, ink-free printing** with trap print technology
- **Existing offer with rubber-based glue** for more versatile behavior



Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive type	Surface finish
4333	50 µm / 2 mils	Transparent	6 months	Acrylic water	Smooth
4336	50 µm / 2 mils	Blue	6 months	Acrylic water	Smooth
9380	45 µm / 1.8 mils	Transparent	6 months	Acrylic water	Smooth and fine textured
4536	45 µm / 1.8 mils	Blue	6 months	Acrylic water	Smooth and fine textured
9373	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth and fine textured
3143 (recycled)	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth and fine textured
9306	60 µm / 2.4 mils	White	6 months	Rubber	Smooth and fine textured

*Minimum reduction based on certified LCIs (Life Cycle Inventories)

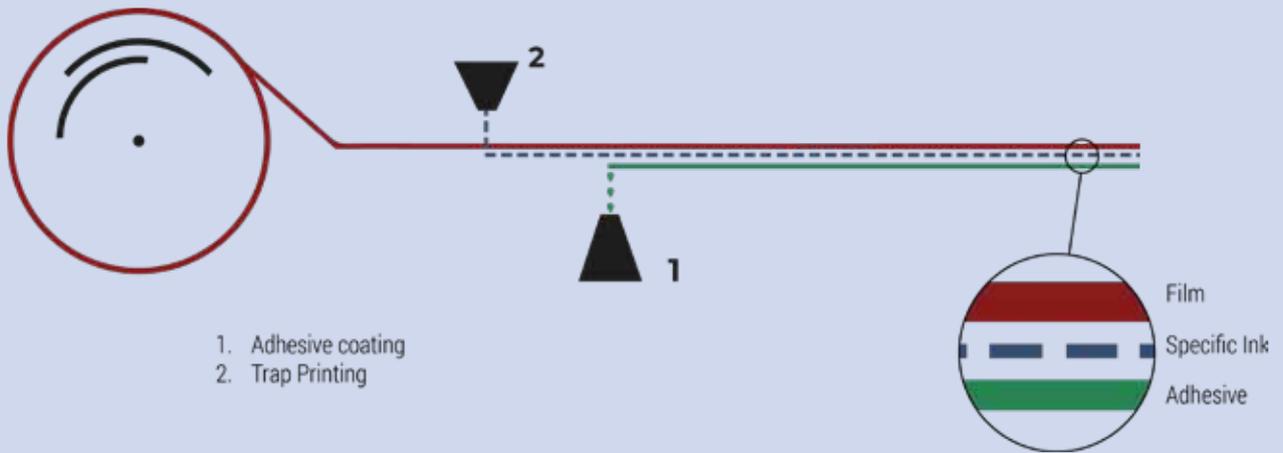
**Recyclable using forms of recycling defined by ISO 472:2013 Plastics

NOVACEL'S INNOVATIVE SOLUTION: TRAP PRINT

Novacel films are not only printable but come with Novacel's exclusive 100% **scratch- and solvent-resistant "trap printing" technology**, available with clear transparent backings, preventing the risk of ink transfer during fabrication.

This innovative varnish- and solvent-free process protects the print inside the film itself. The result: **outstanding resistance to abrasion and solvents, no ink transfer, and safe cleaning**, even after installation.

Trap Print is an **environmentally friendly and cost-effective solution** that protects industrial equipment, **reduces maintenance** and preserves brand identity from extrusion to installation.

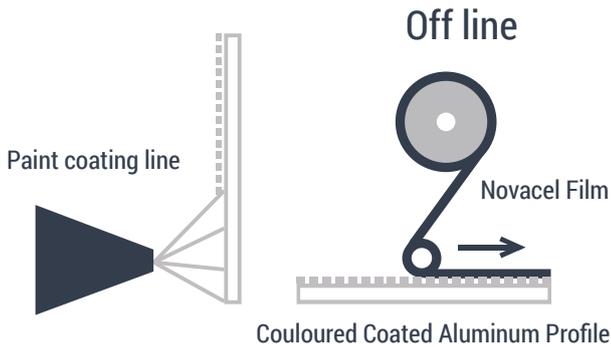


FILMS FOR ANODIZED AND PAINTED ALUMINUM PROFILES

In regions with extreme climates – high temperatures and/or high humidity – aluminum profiles are preferred over PVC for their durability and performance. To ensure a high-quality finish, aluminum profiles undergo advanced coating processes such as powder coating, as well as optional decorative effects like woodgrain or aged metal. To preserve these high-value

surfaces, Novacel has designed **high-performance process and protective films** that can be applied on completion of finishing operations – whether coating or anodizing – directly to 6-meter aluminum profiles. Applying a Novacel film to your surface guarantees its **preservation and quality right up to window installation.**

PAINT COATING LINE



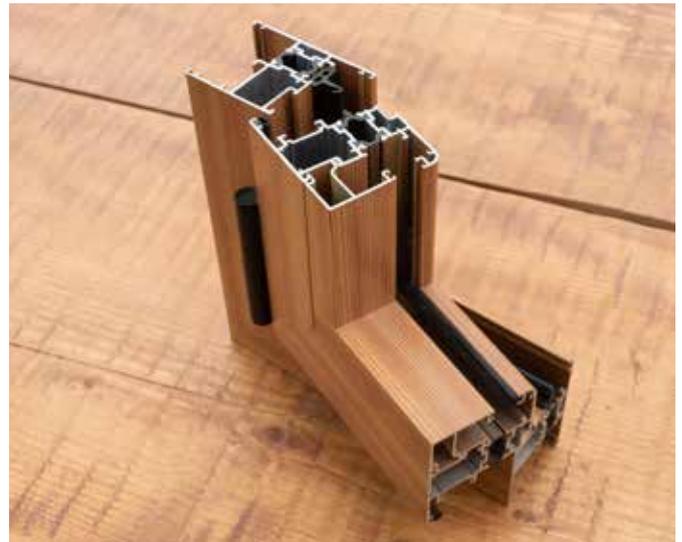
OXYGEN 3180, AN ECO-CONCEIVED ALTERNATIVE

- **Thickness:** 80 µm / 3.1 mils
- > 30% recycled polyethylene content
- 15% lower CO₂ emissions*
- Recyclable**



NOVACEL ASSETS

- **Optimal protection** against soiling and surface damage at all stages: fabrication, storage, installation and finishing (dust, paint, residues)
- **High-adhesion film** with low-noise technology for smooth, easy unwinding
- **Stable narrow rolls**, validated to prevent telescoping despite strong adhesion
- **Extended roll lengths** (500 to 1.000 m) for higher productivity
- **Worldwide outdoor resistance up to 12 months**



Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive type	Surface finish
4444	50 µm / 2 mils	Transparent	3 months	Heat activated	Smooth to rough
9373	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth
3143 (recycled)	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth
9706	60 µm / 2.4 mils	Black and white	12 months	Rubber	Textured
9207	70 µm / 2.8 mils	Black and white	6 months	Rubber	Rough
9564	90 µm / 3.2 mils	Black and white	6 months	Rubber	Very rough
3180 (recycled)	80 µm / 3.1 mils	Black and white	6 months	Rubber	Textured and rough

*Minimum reduction based on certified LCIs (Life Cycle Inventories)

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

NOVACEL'S EXPERTISE: LOW NOISE TECHNOLOGY

Our **Novacel 9207 and 9564 films** are designed to combine high adhesion performance with significantly **reduced unwinding force**. This makes the film particularly **easy to remove**, even in demanding processing conditions, ensuring smooth, reliable handling throughout production.

The reduced unwinding force greatly simplifies line set-up and day-to-day manual operations such as roll changes and film start-up.

Operators can handle the film with minimal effort, **improving comfort and efficiency** on the line and helping **limit physical strain and the risk of musculoskeletal disorders (MSD)**.

In addition, these films can be unwound at **controlled noise levels below 85 dB**, providing an extra benefit for operator comfort.



EASY UNWINDING



LOW NOISE

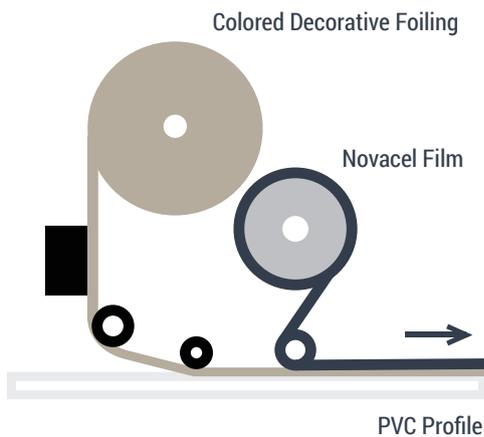


— FILMS FOR WINDOW PROFILES DECORATIVE FOILS

Colored window profiles represent a fast-growing, high-value segment of the fenestration market. Leading suppliers now offer innovative decorative foils with textured, metallic, and wood-grain finishes, delivering an appearance comparable to painted aluminum. As the trend toward colored profiles accelerates, such

premium surfaces call for appropriate covering solutions. Their rougher texture compared to standard white PVC makes high-adhesion process and protective films essential, ensuring **reliable surface coverage and preservation throughout manufacturing, transport and installation.**

WRAPPING FOILING LINE



Window profiles can be enhanced with a wide variety of finishes – wood-grain effects and aluminum-like textures, for example – by applying a 200µm decorative foil. The foil is bonded to the profile using a hot-melt adhesive in a discontinuous lamination process, using a dedicated wrapping line following extrusion.

Immediately after lamination, a process and protective film is applied to **preserve surface quality.** Depending on customer requirements, the Novacel film can **cover one or both sides** of the profile. Applied at the same line speed as the decorative foil, it integrates seamlessly into the production process.



NOVACEL ASSETS

- **Optimal protection** against soiling and surface damage at all stages: fabrication, storage, installation and finishing (dust, paint, residues)
- **High-adhesion film** with low-noise technology for smooth, easy unwinding
- **Stable narrow rolls**, validated to prevent telescoping despite strong adhesion
- **Extended roll lengths** (500 to 1.000 m) for higher productivity
- **Worldwide outdoor resistance up to 12 months**

FILM RECOMMENDATIONS FOR ALL DECORATIVE FOILS' EMBOSSING:

Our experts support customers in selecting the most suitable process and protective film solution based on the decorative foil type, embossing structure, and processing conditions. We provide dedicated protective films specifically developed for window profiles laminated with decorative foils, including **wood, grained, and matt/structured wood finishes**. Our solutions are compatible with both **SKAI and EXOFOL decorative foils embossing**.

Depending on surface characteristics, we offer **black & white process and protective films with up to 12 months of outdoor resistance**, or a **transparent multipurpose film with up to 3 months of outdoor resistance**. These solutions ensure **optimal surface preservation** during profile processing, handling, transport, and installation, while maintaining **perfect adhesion performance and clean removability** without affecting the decorative foil surface.

NOVACEL'S INNOVATIVE SOLUTION: VERSATIS, THE MULTIPURPOSE FILM

NOVACEL VERSATIS 4444 is suitable for a range of finishes and manufacturing processes. It is a heat-activated film formulation requiring a minimum of 40°C. Versatis is **easy to apply and remove**.

Offering a **"second-skin effect"** to your products, Versatis **perfectly adapts to multiple types of paint systems and decorative foils** both smooth and textured surfaces.

If you do not have the technology in place to apply this film, **Novacel can provide you with cost-effective options for heat application equipment**.

A specific module designed by WALCO, Novacel's special machines brand, can be easily added to your existing production line.

This comprehensive offer is tailored for all types of profile finishes and manufacturing processes, providing **unmatched versatility and efficiency** across multiple applications worldwide.



Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive Type	Surface finish
4444	50 µm / 2 mils	Transparent	3 months	Heat activated	Smooth to rough
9706	60 µm / 2.4 mils	Black and white	12 months	Rubber	Textured
9207	70 µm / 2.8 mils	Black and white	6 months	Rubber	Rough
9564	90 µm / 3.2 mils	Black and white	6 months	Rubber	Very rough

— FILMS FOR OTHER PROFILES APPLICATIONS

At Novacel, we understand the unique challenges involved in working with narrow-width extruded plastics. That is precisely why our **comprehensive product range** has been specifically designed to meet the specific demands of this type of applications, ensuring **consistent quality and high performance** across a wide range of industries. From PVC slats used in roofline systems to exterior cladding and interior paneling, and including solutions for window protection such as window boards and roller shutter boxes, Novacel delivers **durable, reliable products**. Our expertise also extends to

specialized applications including trucking components and cable tray ducts. In addition, we offer an innovative solution for Wood Plastic Composite (WPC) boards – ideal for cladding, terraces, and decking – that combines refined aesthetics with **long-lasting durability**. Choosing Novacel means benefiting from tailored solutions that perfectly match your extruded plastic applications. Backed by proven expertise and a diverse product portfolio, Novacel is your trusted partner for achieving durable, functional and visually appealing results – every time.

NOVACEL ASSETS

- **Optimal resistance** throughout the entire manufacturing process and up to installation
- **High-adhesion films that unwind easily** thanks to low-noise technology
- **Controlled telescoping behavior**, even for small widths and long lengths, enabling increased productivity
- **Worldwide outdoor resistance up to 6 months**



Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive type	Surface finish
4178	25 µm / 0.98 mils	Transparent	3 months	Acrylic water	Glossy
4154	33 µm / 1.3 mils	Transparent	3 months	Acrylic water	Glossy
3100	33 µm / 1.3 mils	Transparent	3 months	Acrylic water	Glossy
4333	50 µm / 2 mils	Transparent	6 months	Acrylic water	Smooth
4336	50 µm / 2 mils	Blue	6 months	Acrylic water	Smooth
9373	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth
3143 (recycled)	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth



— FIND YOUR MATCH

A formal approval process by Novacel experts is imperative before using our products. Our technical data sheets are available on request. Because the applications of NOVACEL films are very wide-ranging and use conditions 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.

FILMS FOR PVC WINDOW PROFILES

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4336	50 µm / 2 mils	Blue	6 months	Acrylic water	Smooth
9380	45 µm / 1.8 mils	Transparent	6 months	Acrylic water	Smooth and fine textured
4536	45 µm / 1.8 mils	Blue	6 months	Acrylic water	Smooth and fine textured
9373	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth and fine textured
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FILMS FOR ANODIZED AND PAINTED ALUMINUM PROFILES

Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive type	Surface finish
4444	50 µm / 2 mils	Transparent	3 months	Heat activated	Smooth to rough
9373	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth
3143 (recycled)	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth
9706	60 µm / 2.4 mils	Black and white	12 months	Rubber	Textured
9207	70 µm / 2.8 mils	Black and white	6 months	Rubber	Rough
9564	90 µm / 3.2 mils	Black and white	6 months	Rubber	Very rough
3180 (recycled)	80 µm / 3.1 mils	Black and white	6 months	Rubber	Textured and rough

FILMS FOR DECORATIVE FOILS OF WINDOW PROFILES

Grade	Film thickness (µm/mils)	Color	Worldwide outdoor resistance	Adhesive Type	Surface finish
4444	50 µm / 2 mils	Transparent	3 months	Heat activated	Smooth to rought
9706	60 µm / 2.4 mils	Black and white	12 months	Rubber	Textured
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FILMS FOR OTHER PROFILES APPLICATIONS

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3143 (recycled)	50 µm / 2 mils	Black and white	6 months	Rubber	Smooth

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



NOVACEL

Beyond The Surface



www.novacel-solutions.com

