



— GLASS & MIRRORS

PROCESS & PROTECTIVE FILMS,
LAMINATORS, TECHNICAL TAPES

CONTENTS

| | |
|--|----|
| Novacel Commitment to People and the Planet..... | 4 |
| Insulated Glazing Units..... | 5 |
| Coated Glass..... | 8 |
| Acid Etching Process..... | 9 |
| Mirrors & Lacquered Glass..... | 10 |
| Find your match..... | 11 |

ABOUT NOVACEL

As a 40-year-old worldwide leader in surface solutions, Novacel proposes a full 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 value their materials and to contribute to their industrial efficiency.

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

NOVACEL, AN EXPERT FOR YOUR GLASS SURFACES

Glass is increasingly considered as highly stylish for its transparency and for its capacity to create unique lighting and optical effects. Glass also brings environmental benefits with its high durability. Due to continuous improvements made by research laboratories, savings and comfort brought by glass keeps increasing: thermal and acoustic insulation, safety, etc. Glass is the versatile material par excellence, it can be found all around us every day: in buildings (glazing, facades, railings, doors, partitions...), furniture (tables, shelves...), electronics and household appliances.

Due to its increasing value and technical capabilities glass needs to be preserved all along its transformations. With this objective in mind, Novacel has been working closely with its customers and partners to analyze their needs from the beginning of the glass fabrication up to its installation, in order to reach the best solution for them. **As such, Novacel has developed in-depth knowledge of the unique characteristics of glass worldwide. The value of our technical support is recognized by our customers.**



WHY USE NOVACEL SOLUTIONS?

> A Global Solution Provider

Novacel offers complete solutions with industrial 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; i.e. films dedicated to new surfaces or processes, low noise, easy peel or easy to unwind.

> Expertise & Technical support

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

> A Strong CSR Commitment

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

NOVACEL'S COMMITMENT TO PEOPLE AND THE PLANET

Novacel's CSR Strategy is organized around three 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's Code of Conduct.

Reducing the environmental impact of our products by innovating right from their initial conception up to their end-of-life and taking care of teams' and customers' health are at the heart of Novacel 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 virgin 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!

— INSULATED GLAZING UNITS (IGUs)

Produced by long and complex industrial processes, window glass, known as Insulated Glazed Units (IGUs), are highly valued. In addition to their architectural advantages, IGUs also offer other features: high-quality light, solar protection, heat and noise insulation, and even safety are provided by recent glazing innovations. As such, IGUs are now even more valuable and customers need to ensure that their characteristics are preserved from damage during every stage of the window manufacturing process.

NOVACEL FILMS

Novacel offers a broad range of process and protective films for use in conjunction with your IGU surfaces, from fabrication to reception at the construction site.



NOVACEL ASSETS

- > Worldwide outdoor resistance with **12 months** applicable from Arizona to Australia.
- > **Shield against** all types of damage on construction sites: cement, paint, silicone, grinding sparks and more.
- > Combine Novacel machines and films to allow **perfect lamination and to ensure film efficiency over time.**

Dedicated eco-responsible range OXYGEN for IGU surfaces: 3110

- > 25% recycled content
- > -11% CO2 emission
- > Recyclable
- > Compatible with VX2 laminator
- > Same performances as standard products: mechanical, adhesive, UV resistance



| Grade | Thickness (µm/mils) | Color | Outdoor resistance | Features |
|-------------|---------------------|-------------------|--------------------|--|
| 9343 | 49 / 2 | Clear transparent | 12 months | Compatible with VX2 new generation |
| 4565 | 49 / 2 | Blue | 12 months | Compatible with VX2 new generation |
| 9561 | 70 / 2.8 | Clear transparent | 12 months | Compatible with VX2 + VX2 new generation |
| 3110 | 70 / 2.8 | Clear transparent | 12 months | Compatible with VX2 + VX2 new generation - Eco-responsible solution |

NOVACEL MACHINE LAMINATORS

Novacel offers the widest range of lamination machines dedicated to the horizontal or vertical application of adhesive films. WALCO®, the Novacel machine brand, designs the **most innovative, reliable, robust and safe laminating machines for the glass industry.**

NOVACEL ASSETS

High performance equipment which allows an easy and fast lamination of adhesive films without wrinkles or bubbles in any size and on any flat surface.

- > VX2 is the **unique vertical laminator custom-designed** and patented for the application of temporary adhesive film on Insulated Glass Units and flat glass latest **patented technologies.** It allows double-sided protection of your glazing unit in a single pass.
- > Also available :
 - > TX Precision
 - > Pro-jet

TXprecision



Pro-Jet



| Lamination | Machine | Standard Dimension | IGU Thickness | Film Application | Lamination Characteristics | Features |
|------------|--------------|---|-----------------------------------|---------------------------|----------------------------|--|
| Vertical | VX2 | Height: 200mm (7.9") up to 3,200mm (126") Length: 500mm (19.7") + conveyors length | 4 mm (0.16") up to 80mm (3.2") | Single or Double-sided | Precise film application | - 30 sec film lamination cycle time - Automatic glass size calculation - Automatic cut |
| Horizontal | TX Precision | Widths: 1,400mm (55") 1,700mm (67") | 4 mm (0.16") up to 80mm (3.2") | Single or Double-sided | Precise film application | - Automatic length detection - Automatic cut |
| Horizontal | Pro-Jet | Widths: 1,400 mm (55") up to 3,300 mm (132") | 5 mm (0.2") up to 80mm (3.2") | Single or Double-sided | - | - Entry-level Laminator - Manual cut |



NOVACEL TECHNICAL TAPES

Novacel offers dedicated masking tapes for the laminated glass industry. **They prevent the EVA or PVB interlayers from melting and overflowing the edge of the laminated glass during the oven heating process.**

NOVACEL ASSETS

- > High temperature resistance
- > Does not flow at high temperature
- > Good conformability
- > Residue-free removability
- > Easy to apply

| Grade | Thickness (µm/mils) | Color | Outdoor resistance | Features |
|-------|---------------------|-------|--------------------|---|
| BN53 | 80 / 3.2 | Green | NA* | PET carrier with silicone adhesive High temperature resistance up to 180°C / 355°F |
| BN23 | 60 / 2.4 | Green | NA* | PET carrier with silicone adhesive High temperature resistance up to 130°C / 265°F |

NA*: Not Applicable



— COATED GLASS

Low e-coated or Low emissivity glass is treated with an invisible coating to improve glass insulating properties. As a result, coated glass can significantly improve your window energy performance.

Low-e glass enables better internal regulation and control of temperature, enabling a decrease in the use of air conditioning or central heating. It helps to **protect our environment**.

Low-e coatings are vulnerable to corrosion and need to be protected immediately after fabrication.



NOVACEL ASSETS

- > Compatible with the majority of coatings - consult with our experts
- > Preserve the chemical and optical properties of coated glass
- > A film applied with an adapted lamination machine will protect coated glass from downstream processes such as edge deletion, cutting, washing, etc.

| Grade | Thickness (µm/mils) | Color | Outdoor resistance |
|-------|---------------------|-------------------|--------------------|
| 4201 | 50 / 2 | Clear transparent | none |



— ACID ETCHING PROCESSES

Acid-etched glass allows light to penetrate while preserving room privacy. Acid-etching is a specific glass manufacturing process involving the application of hydrofluoric acid to leave the surface of the glass creating a **frosted appearance**. As this process involves various chemical compounds, it requires a **high-quality processing film**.

NOVACEL ASSETS

- > Prevent any damage like acid fumes and splashing
- > Even after acid contact, the film can be removed in one piece without glue residue



Dedicated eco-responsible range OXYGEN for Acid Etching surfaces: 3120

- > 25% recycled content
- > -11% CO2 emissions
- > Recyclable



| Grade | Thickness (µm/mils) | Color | Outdoor resistance | Features |
|-------------|---------------------|-------------------|--------------------|--|
| 4178 | 25 / 1 | Clear transparent | none | Withstands acid contact without residue |
| 3120 | 28 / 1,1 | Clear transparent | none | Withstands acid contact without residue Eco-responsible solution |

MIRRORS & LACQUERED GLASS

The functionality of mirrors and lacquered glass has never been greater. They expand space, reflect light, and are used as splashbacks and interior decoration for a modern aesthetic.

Permanent films offer **premium solutions** to preserve your valuable mirror and lacquered glass from any backing damage and guarantee end users' safety from beginning to end of fabrication. **Permanent film** is designed to be applied to the back of a mirror as a **safety measure**. In case of impact or accidental damage, the film will hold the shattered pieces of the mirror or lacquered glass together.

NOVACEL ASSETS

- > Guarantee operator and end user safety
- > Protection against scratches and corrosion
- > Better resistance to warm and humid conditions
- > Adapted products for challenging environment :
 - > 9212 complies with EN12600 requirements (level 2B2)
 - > 8028 Cat I for USA
- > Large widths: 9212 covers up to 2 550 mm (100 in) and 1830mm (72 in) for 8028
- > Easy lamination
- > No liner



| Grade | Thickness (µm/mils) | Color | Outdoor resistance | Features |
|-------|---------------------|-------------------|--------------------|------------------------------|
| 9212 | 70 / 2.8 | Clear transparent | NA* | Permanant PET // EN12600 2B2 |
| 8028 | 145 / 5.7 | White | NA* | Permanant PE // USA - Cat I |

NA*: Not Applicable



FIND YOUR MATCH

| Application | Grade | Product Type | Thickness (µm/mils) | Color | Outdoor Resistance | Features |
|--------------------|-------|--------------|---------------------|-------------------|--------------------|---|
| IGU | 9343 | Film | 49 / 2 | Clear transparent | 12 months | Compatible with VX2 new generation |
| IGU | 4565 | Film | 49 / 2 | Blue | 12 months | Compatible with VX2 new generation |
| IGU | 9561 | Film | 70 / 2.8 | Clear transparent | 12 months | Compatible with VX2 + VX2 new generation |
| IGU | 3110 | Film | 70 / 2.8 | Clear transparent | 12 months | Compatible with VX2 + VX2 new generation - Eco-responsible solution |
| Mirror safety back | 9212 | Film | 70 / 2.8 | Clear transparent | NA* | Permanent PET EN12600 2B2 |
| Mirror safety back | 8028 | Film | 145 / 5.7 | White | NA* | Permanent PE USA - Cat I |
| Coated glass | 4201 | Film | 50 / 2 | Clear transparent | none | - |
| Acid etching | 4178 | Film | 25 / 1 | Clear transparent | none | - |
| Acid etching | 3120 | Film | 28 / 1,1 | Clear transparent | none | Eco-responsible solution |
| IGU | BN53 | Masking Tape | 80 / 3.2 | Green | NA* | PET carrier with silicone adhesive High temperature resistance up to 180°C / 355°F |
| IGU | BN23 | Masking Tape | 60 / 2.4 | Green | NA* | PET carrier with silicone adhesive Tape, high temperature resistance up to 130°C / 265°F |

| Lamination | Machine | Standard Dimension | IGU Thickness | Film Application | Lamination Characteristics | Features |
|------------|-----------------|---|----------------------------------|---------------------------|-----------------------------|---|
| Vertical | VX2 | Height: 200mm (7.9") up to 3.200 (126") Length: 500mm (19.7") + conveyors length | 4mm (0.16") up to 80mm (3.2") | Single or Double-sided | Precise film application | - 30 sec. film lamination cycle time - Automatic glass size calculation - Automatic cut |
| Horizontal | TX precision | Width: 1.400mm (55") 1.700mm (67") | 4mm (0.16") up to 80mm (3.2") | Single or Double-sided | Precise film application | - Automatic length detection - Automatic cut |
| Horizontal | Pro-Jet | Width: 1.400mm (55") up to 3.300mm (132") | 5mm (0.2") up to 80mm (3.2") | Single or Double-sided | - | - Entry level Laminator - Manual cut |

NA*: Not Applicable

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



www.novacel-solutions.com

