glass projects

Product Data Sheet
Pro Comfort™ – Insulating Glass Unit (IGU)

Product Name

Pro Comfort – Insulating Glass Unit (IGU)

Product Line

Glass Projects ***Core Range*** and ***Energy Range***

Description of Product

Pro Comfort Insulating Glass Units (IGUs) comprise of two or more panes of glass spaced apart and hermetically sealed in a factory with dry air or special gas in the unit cavity. The thermal performance of glass is improved when manufactured into an IGU. The IGU makeup and design can be altered to meet specific performance values for any project. Glass Projects Pro E Low E glass is often used in Pro Comfort IGUs to achieve desired performance values.

Grade 'A' Safety Glass such as Projects Pro Tuf Toughened Grade 'A' Safety Glass and Pro LSG Laminated Grade 'A' Safety Glass can be incorporated into a Pro Comfort IGU as required to ensure glazing complies with NZBC clause F2 Hazardous Building Materials as well as F4 Safety from Falling in accordance with NZS 4223.3 2008 Human Impact Safety Requirements. For more information refer to Glass Projects Pro Tuf Toughened Safety Glass and Pro LSG Laminated Safety Glass technical information.

Intended Use

Anywhere.

Building types: residential, retail, commercial, assembly buildings

Uses: windows, facades, shopfronts, entranceways, doors, etc.

Designs: fully framed, partially framed, and frameless glass designs.

Product Identifier

Pro Comfort IGU is part of the Glass Projects Core Range and Energy Range.

Relevant Building Code Clauses and Compliance

When designed, installed, and maintained in accordance with Glass Projects standard details and requirements, Pro Comfort IGUs will comply with, or contribute to compliance of, the following performance clauses of the NZ Building Code:

B1 ***Structure***
Clause: B1.3.1, B1.3.2, B1.3.3, B1.3.4.

Compliance: Pro Comfort IGUs can be designed to meet project requirements in accordance with B1/AS1 clause 7.1 NZS4223.1, clause 7.2 NZS4223.2, clause 7.3 NZS4223.3 & Clause 7.4 NZS4223.4 or by specific engineering design to B1/VM1.

B2 ***Durability***
Clause: B2.3.1 (b).

Compliance: In compliance with B1/AS1 Pro Comfort IGUs are manufactured and tested in accordance with NZS4223.2.

E2 ***External Moisture***
Clause: E2.3.1, E2.3.2.

Compliance: Glass is impervious to water.

F2 ***Hazardous Building Materials***
Clause: F2.3.2 for unimpeded path of travel, F2.3.3 for use of safety glass.
Compliance: F2/AS1 clause 1.0 NZS4223.3. Pro Comfort IGUs can incorporate Glass Projects Pro Tuf Toughened Grade 'A' Safety Glass and Pro LSG Laminated Grade 'A' Safety Glass products which are manufactured in accordance with NZS4223.3 for human impact location to the project requirements. Safety glass is marked in accordance with NZS4223.3 clause 2.8.

F4 ***Safety From Falling***
Clause: F4.3.4.
Compliance: Pro Comfort IGUs can incorporate Pro Tuf Toughened Grade 'A' Safety Glass and Pro LSG Laminated Grade 'A' Safety Glass products which can be designed in accordance with NZS4223.3 clause 21 Window glazing safeguarding a fall, and clause 22 Barriers, to the meet project requirements, as well as other designs by specific engineering design to B1/VM1.

H1 ***Energy Efficiency***
Clause: H1.3.1, H1.3.2, H1.3.3.
Compliance: The Pro Comfort IGU makeup and design can be altered to meet specific performance values required for any project and contribute to overall window (R-value) performance. Depending on the window or door type and dimensions, R-values between R0.17 and R0.91 can be achieved, determined in accordance with either H1/AS1 Fifth Edition Amendment 1, Table E1.1.1, or with H1/VM1 Fifth Edition Amendment 1, Appendix E1.

Limitations of use

1. Pro Comfort IGUs available in the following sizes (design restrictions apply).

IGU Max Thickness	70 mm
Minimum Dimension	350 mm x 200 mm
Maximum Dimension	2500 mm x 4500 mm
IGU Max Weight	600 kg

Larger sized panes are available upon request and subject to longer lead time.

2. Pro Comfort IGUs are not classified as fire rated glazing.
3. Pro Comfort IGUs are *not* classified as safety glass as standard but can be used is glazed areas according to NZS 4223.3 human impact safety requirements.
4. For areas where safety glazing is required, Pro Comfort IGUs can incorporate Pro Tuf Toughened Grade 'A' Safety Glass and Pro LSG Laminated Grade 'A' Safety Glass products. Refer to associated information.
5. If Glass Projects is not the window framing materials provider, then coordination between Glass Projects and the glazing materials provider is required to establish compliance with NZBC H1 requirements for overall glazing Construction R value.
6. Silicone secondary seals must be used where the IGU edge seal is exposed to direct UV light.
7. Adequate drainage of window frames, preventing prolonged moisture contact with the IGU edge seal, is required to maintain product warranty. Glazing details must be approved by Glass Projects prior to glazing.

Design Requirements

Pro Comfort IGU can be designed for use in projects with the following scope.

Any design and installation that follows NZBC B1/AS1 section 7 and the following glazing standards:

NZS 4223.1	Glazing in buildings – Glass selection and glazing
NZS 4223.2	Glazing in buildings - Insulating glass units
NZS 4223.3	Glazing in buildings - Human impact safety requirements
NZS 4223.4	Glazing in buildings - Wind, dead, snow, and live actions

Wind Zones: All NZS 4223.4 wind zones as well as Specific Engineered Design wind pressures when designed, used, installed, and maintained in accordance with Glass Projects standard details and requirements.

Exposure Zones: All NZS 3604 exposure zones when designed, used, installed, and maintained in accordance with Glass Projects standard details and requirements.

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Pro Comfort IGUs are custom designed and fabricated to the requirements of each project. The following details must be confirmed by the specifier:

- Glass size
- Required support type or framing method.
- Project wind zone or design wind pressure.
- Any glazing performance requirements that the glass should meet including centre of glass U-value, Shading Coefficient (SC), and Visible Light Transmission (VLT) as a minimum.
- Overall Construction R value (include the effects of both the glazing materials and the frame materials) must be provided to ensure compliance with NZBC H1 requirements.
- Any impact or barrier loading the glass should resist.

Typical performance values that can be achieved with Pro Comfort IGUs. Note: these are indicative values only for guidance and lower centre of glass U value (U_g) values can be achieved by design.

Type of Glazing	Spacer Type	Example IGU Makeup	U_g (***W/m²K***)
Double pane IGU	Aluminium	Pro Float / Air / Pro Float	2.63
	Aluminium	Pro E / Argon Gas / Pro Float	1.90
	Thermally Improved	Pro E / Argon Gas / Pro Float	1.10 to 1.60
Triple Pane IGU	Thermally Improved	Pro Float / Pro Float / Pro Float Gas: Air	1.89
	Thermally Improved	Pro E / Pro Float / Pro Float Gas: Argon	1.00 to 1.20
	Thermally Improved	Pro E / Pro E / Pro Float Gas: Argon	0.6 to 0.7

Performance values taken from NZBC H1 Table E.1.1.1.

Installation requirements

Glazing systems utilising Pro Comfort IGUs must be designed and glazed by Glass Projects or an approved installer.

Cleaning & Maintenance

Care must always be taken when cleaning any glass and clean, grit free water, cleaning solutions, cloths, brushes, sponges, and squeegee products must be always used.

During construction
Check weekly and clean every 1 - 2 months, or as required, during construction. Protect the glass from weld and grinding splatter, concrete and mortar plashes, and impact or scratch damage from other trades.

Regular maintenance
Proprietary cleaners should be used with a soft cloth, brush, or sponge, but a mild soap or liquid detergent and warm water can work well. After washing rinse with clean water and use a clean squeegee to remove excess water.

Ensure the glass is dry and spot free. Excess water droplets will evaporate and can leave dissolved minerals on the glass that can cause surface staining particularly when a hard water supply is used.

Never use harsh solvent, abrasive, or alkaline cleaners.

Never use scrapers or razor blades to remove paint spots or sticky residue from the glass surface.

The condition of glass should be checked as part of a regular building maintenance regime and should be cleaned as soon as any build of dirt or foreign particles is noticed, but as a minimum the following is recommended.

Industrial sites – glass should be cleaned every 1 – 2 months.

Urban areas - glass should be cleaned every 3 months.

Rural areas - glass should be cleaned every 6 months.

Samples

During the design phase, choosing the right type of glass is critical and viewing a particular glass type up close is essential to get a good understanding of its visual characteristics.

300 x 300mm glass samples are available from Glass Projects upon request. There are guidelines on how glass samples should be viewed to properly understand how different qualities of light and how different glazing methods and designs can affect a person's visual perspective of glass.

An alternative to glass samples is to view a project reference in real life. Glass Projects has an extensive range of case studies available to view on our website at glassprojects.co.nz/projects.

Please contact Glass Projects to discuss your needs.

Product Selection & Technical Assistance

We work closely with our clients to understand their specific needs and develop innovative design concepts that seamlessly integrate with the overall architecture of their building. Our team of sales and engineering experts specialise in custom glass design and have a deep understanding of New Zealand regulations. We are available to provide advice on glass products to suit any application.