glass projects

Product Data Sheet

Smart Lock – Frameless Glass Balustrade Channel System

Product Name

Smart Lock – Frameless Glass Balustrade Channel

Product Line

Glass Projects ***Pro Line series balustrades***

Description of Product

The Smart Lock Balustrade System is a frameless glass balustrade channel system suitable for use as a balustrade or pool fence for residential or commercial applications. The continuous channel system has no visible fixings and can be recessed for a completely frameless look, as well as top or side fixed.

The unique design uses a special high strength hollow-core aluminium extrusion and special (single-side adjustment) glass clamp kits that secure and locate the glass into the aluminium section.

Compatible with Glass Projects Pro Tuf, Pro LSG Tuf, Pro LSG Tuf+ ***Safety Range*** of glass products.

Note: An interlinking handrail or top rail is required when Pro Tuf and Pro LSG Tuf products are used, the handrail or top must also be connected to the building structure at each end of the balustrade. An interlinking handrail, top rail, or stiffener brackets are required when Pro LSG Tuf+ laminated toughened glass with SentryGlas interlayer is used and panel width is below the minimum requirements. Refer to PS1 document for more information.

Intended Use

Glass balustrades and pool fences. Options for AS/NZS 1170.1 barrier occupancy types A, C3, C1/C2 & D.

Building types: residential, retail, commercial, assembly buildings (not suitable for balustrades in areas susceptible to overcrowding/occupancy C5).

Uses: balustrades, pool fences, and screens.

Designs: frameless glass designs with or without handrails

Product Identifier

The Smart Lock frameless glass channel balustrade system is part of the Glass Projects Pro Line balustrade range.

Relevant Building Code Clauses and Compliance

Smart Lock balustrading, supplied by Glass Projects, utilise certified Grade A safety glass manufactured in accordance with AS/NZS 2208 Safety Glazing Materials in Buildings.

When designed, installed, and maintained according to Glass Projects' standard details and requirements, Smart Lock balustrades comply with or contribute to the 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: Smart Lock balustrades are 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 (a), B2.3.1 (b).

Compliance: When designed, installed, and maintained in accordance with Glass Projects standard details and requirements, Smart Lock Balustrade glass and supporting channel are easily accessible for inspection for failure and to replace as required and will therefore satisfy the durability performance requirements for a minimum serviceability life of 15 years.

Processed glass has an in-service history of more than 50 years when used in ordinary conditions of exposure.

When designed, installed, and maintained in accordance with Glass Projects standard details and requirement's, hidden fixings attaching the Smart Lock channel to structure will satisfy the durability performance requirements for a minimum serviceability life of 50 years.

F2 ***Hazardous Building Materials***
Clause: F2.3.3 for use of safety glass.

Compliance: Smart Lock balustrades utilise Glass Project safety glass manufactured in accordance with NZS4223.3 for human impact locations to project requirements. Safety glass is marked in accordance with NZS4223.3 clause 2.8.

F4 ***Safety From Falling***
Clause: F4.3.4.

Compliance: Smart Lock balustrades are designed and tested in accordance with NZS4223.3 clause 22 Barriers, in order to comply with NZBC F4.

F9 ***Means of Restricting Access to Residential Pools***
Clause: F9.3.2, F9.3.3
Compliance: Smart Loack balustrades can be designed in such a manner that the balustrade (a) surrounds and encloses a swimming pool area, and (b) has no permanent objects or projections on the outside that could assist children in negotiating the barrier.
Smart Lock balustrades are tested in accordance with NZS 8500:2006 Safety Barriers and Fences Around Swimming Pools, Spas, and Hot Tubs.

Limitations of use

1. Limitations of Glass Projects Pro Tuf, Pro LSG Tuf, and Pro LSG Tuf+ glass products apply. Refer to individual product data sheets for specific information.
2. Smart Lock balustrades are specifically designed and tested to meet NZBC requirements, and as such there are limitations to the maximum glass panels height and width depending on application. Proprietary design information and producer statement for design (PS1) documentation is available on request.
3. The use of toughened glass involves a small risk of breakage resulting from nickel sulphide or other inclusions. Heat soaking is not mandatory but is highly recommended to reduce inclusion failures, particularly important in barriers from falling such as balustrades.
4. Minor edge delamination can occur in laminate glass and delamination's that occur up to 6mm in from the edge of the glass is not considered a defect.
5. Structural adequacy of the building substrate the balustrade is connected to is to be verified by others prior to installation of the balustrade and is not the responsibility of Glass Projects. Resultant loads to structure from imposed loads will be provided on request.
6. Design of the Smart Lock balustrade system is based on a maximum SLS deflection limit of 50mm. While greater than the suggested limit of height/60 as specified in NZS1170.0 for post and rail handrail systems, this is deemed acceptable based on the nature of the cantilevered glass system.
7. An interlinking rail must be used with Pro Tuf (monolithic toughened safety glass), and the interlinking rail must also be connected to the building structure at each end of the balustrade when used with this glass type.
8. An interlinking rail must be used with Pro LSG Tuf (laminated toughened glass with a PVB interlayer) glass products are used, and the interlinking rail must also be connected to the building structure at each end of the balustrade when used with this glass type.
9. When Pro LSG Tuf+ (laminated toughened glass with SentryGlas interlayer)is used and panel widths are below minimum requirements as stipulated in the PS1 an interlinking rail or stiffener brackets must be used.
10. The PS1 must be strictly adhered to in all cases when Smart Lock is used as a barrier protecting a fall of 1 meter or more or is used as a pool fence. PS1 is available on request.

Design Requirements

Smart Lock balustrades can be used 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.

To establish suitability for the use of Smart Lock balustrade in a project the following details must be confirmed by the specifier:

- Structural adequacy of the building substrate the balustrade is connected to is to be verified by others prior to installation of the balustrade and is not the responsibility of Glass Projects. Resultant loads to structure from imposed loads will be provided on request.
- Project wind zone or design wind pressure.
- The required Minimum Imposed Action for Barrier Occupancy (AS/NZS 1170.1 table 3.3) the balustrade is required to resist.

Installation requirements

Smart Lock balustrades must be designed and installed by Glass Projects.

Cleaning & Maintenance

Care must always be taken when cleaning any glass and aluminium or stainless-steel hardware. 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 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.

Maintenance of powder coated aluminium

The following guidelines apply:

a) Just a gentle clean with a soft brush and mild detergent, followed by a freshwater rinse, will maintain the long-term performance of the powder coated or anodised aluminium. In rural or normal urban environments cleaning should occur every six months. In areas of high pollution, such as industrial areas, geothermal areas or coastal environments, cleaning should occur every three months. In particularly hazardous locations, such as beachfronts, severe marine environments or areas of high industrial pollution, cleaning should be increased to monthly.
b) Sheltered areas can be at more risk of coating degradation than exposed areas. This is because wind-blown salt and other pollutants may adhere to the surface. These areas should be inspected and cleaned, if necessary, on a more regular basis.
c) Adequate on-site protection of delivered and/or installed hardware must be provided. Hardware may get knocked, scratched, or splattered with mortar, plaster, or paint during the later stages of construction. If splashes occur immediately wash down the hardware unit affected with water or methylated spirits* (*wash area thoroughly afterwards). Do not allow splashes to harden.
d) To restore powder coated surfaces that have lost gloss or are chalking, polishing with a high-quality crème polish in accordance with the manufacturer's instructions is recommended. Avoid polishes that contain cutting compounds unless the surface is extremely weathered.

DO NOT USE SOLVENTS Strong solvent type cleaners should not be used. These are harmful to the extended life of your hardware system.

Maintenance of anodised aluminium

Regular cleaning is essential to preserve the finish of anodised aluminium over an extended period. The following guidelines apply:

a) Anodised aluminium should be washed with warm water and a suitable wetting agent or mild soap solution, in a similar manner to washing a car. A fine brush may be used to loosen dirt or grime. The use of anything stiffer or more abrasive may result in damage to the surface. Acid or alkali cleaners should not be used, as these will damage anodic films and may discolour coloured hardware.
b) Where greasy deposits or hard to remove grime is present, the anodising may be cleaned with a soft cloth dipped in white spirit, turpentine, kerosene, or a mild liquid scourer, followed by wiping it with a dry rag. However, the cleaner must ensure none of these solvents come into contact with other parts of the system. All solvents must be kept from contact with the Santoprene glazing gasket materials (the “rubber” seal around the glass), as most solvents will damage them.
c) It is essential to rinse anodised aluminium thoroughly with copious applications of clean water after cleaning, particularly where crevices are present, and then dry the glass to prevent water spots.

Regularly washing anodised hardware will ensure a long-lasting product. In general, the following programme is recommended:

- Rural environments: every six months.

- Urban environments: every three months.

- Industrial and marine environments: every six months, as well as a monthly cold-water wash.

For additional protection, especially in harsh environments, waxing with good quality car wax after washing will assist in lifting and maintaining the appearance of your anodised hardware.

Damage to anodised surfaces may occur during building. Painters may accidentally splash paint on newly installed hardware, marring their appearance. The cleaner must act quickly and remove such splashes with a soft cloth moistened with water. Using water-based paints allows the cleaner to clean with water - using solvents may put your hardware at risk.

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.