

UNEX GlasStrut

BPIR Declaration

Version: A.1

Designated building product: Class 2

Declaration

UNEX systems has provided this declaration to satisfy the provisions of Schedule 1(d) of the Building (Building Product Information Requirements) Regulations 2022.

Product/system

Name	UNEX GlasStrut
Line	GlasStrut style balustrade from Frameless Glass series
Identifier	GlasStrut

Description

- GlasStrut style balustrade is a standard design. It has been engineered to adhere with the NZBC standards.
 - The GlasStrut style is designed for, but not limited to, use on residential homes and apartments.
 - GlasStrut is custom fabricated to suit the requirements of each project. Panels are designed to fit each balcony, staircase or other required location at varying heights. Addition of sheet metal or handrails to this design are possible for aesthetic or compliance requirements.
 - GlasStrut can be used as part of a barrier enclosing a swimming pool the handrail options and comply with the requirements of D1/AS1 in regards to 6.0.8 and 6.0.9
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Scope of use

GlasStrut balustrade style is designed for, but is not limited to, use in projects within the following scope:

Can be used on but not limited to, internal and external decks, mezzanines, and stairways.

Suitability for the occupancy type for part of the building or structure but cannot be used for C5 or F/G.

Can be used in all wind zones up to and including Very High for balustrading or High wind zones for pool fencing. In rare or extreme locations wind reverberation can be caused.

Building height up to three stories or more.

GlasStrut balustrade style is custom fabricated to the requirements of each project. Prior to fabrication, the following project selections must be confirmed by the specifier: Balustrade height, fixing detail.

GlasStrut balustrade style is compatible with other features such as handrails.

Conditions of use

Not suitable for all occupancy loading types. All loading types shall reduce heights or post/fixing centers, however GlasStrut balustrade is not suitable for loading classes F/G and C5.

GlasStrut balustrade style has a minor effect from wind loading, when custom designs implement sheet metal there are limitations on heights and post/fixing centers due to the increased loading.

GlasStrut balustrade is limited by height and this is directly proportionate to the post/fixing center limitations. Glass Balustrade is limited on height and pane centres due to high wind loading locations.

GlasStrut balustrade must be kept within supplied specifications.

In rare or extreme locations wind reverberation can be caused.

All GlasStrut extrusions are aluminum and are limited in locations where there is contact of dis-similar materials.

GlasStrut balustrade style must be installed in accordance with the UNEX Fabricators Manual.

GlasStrut balustrade style can be used as a barrier preventing access to a swimming pool, have the details used in accordance with the details set of in F9/AS1

GlasStrut balustrade style must be installed in accordance with the requirements of D1/AS1 or equivalent

Relevant building code clauses

B1 Structure – B1.3.1, B1.3.2, B1.3.3 (f, h, j), B1.3.4

B2 Durability – B2.3.1 (a), B2.3.2 (a, b)

D1 Access Routes – D1.3.3 (j, k)

F2 Hazardous building materials – F2.3.1

F4 Safety from falling – F4.3.1

F9 Means of restricting access to residential pools – F9.3.1, F9.3.3

Contributions to compliance

B1.3.3 - GlasStrut balustrade adheres with the minimum barrier height in respect to the location and building type (As per Table 3.1 minimum barrier heights). Barriers in areas likely to be frequently used by children under six years of age require no gaps larger than 100mm. Balustrade geometry shall follow the dimensions illustrated barriers in figure 3.3 (Example of barrier geometries).

B1.3.4 - GlasStrut balustrade style loading aligns with the barrier loads set out in AS/NZS 1170.1 Clause 3.6 and Table 3.3. The magnitude of the barrier loads that need to be applied in the design depends specifically on the occupancy of that part of the building or structure

B1.3.5 - GlasStrut balustrade style displacement is recommended to not exceed 30mm under barrier and wind loads as described in B1/VM1.

B1.3.7 - GlasStrut balustrade style fixings and connections are designed to be suitable for the supporting structure (material and strength), the fixing (type, edge distance and spacing) and to be adequate to resist balustrade loads.

B1.3.8 - GlasStrut balustrade has a durability requirement of no less than 15 years.

B1.3.9 - GlasStrut balustrade style has no sharp edges or projections than can cause injury when restraining people. All extrusions have minor radii and any sharp edges are to be removed.

B1.4.3 - GlasStrut balustrade style uses aluminum that has been designed in accordance with AS/NZS 1170.0:2002 Appendix B. All product is powder coated or

anodized to the specifiers standards to ensure the best durability of the product in the installed location.

B2.3 - GlasStrut balustrade element "Balustrade" must have a durability requirement of no less than 50 years.

D1.1.7.1 - GlasStrut balustrade prevents falling from access routes and complies with NZBC F4

F2.1.1 - Glazing likely subject to human impact shall comply with NZS 4223: Part 3.

F4.1.1 - GlasStrut balustrade adheres to the minimum barrier heights (F4/AS1 Table 1) in the respective area installed

F4.1.2.1 - GlasStrut balustrade aligns with the barrier height and geometry as set out in Table 1, Figure 2, figure 3 and figure 4. The barrier design ensures that, anywhere over the full height of the barrier, a 100 mm diameter sphere cannot pass through. In applications where the barrier is on a staircase or similar application, The triangular opening formed by the riser, tread, and bottom rail of the barrier on a stair shall be of such a size that a 150 mm diameter sphere cannot pass through it.

F4.1.2.3 - GlasStrut style shall adhere to the acceptable methods of the construction of rail barriers in conjunction with parapets so they are not readily available to be used as seats, as required by Clause F4.3.4(h) for buildings other than housing.

F9.2.1 - The GlasStrut balustrade can be used as a pool barrier when at the minimum height of 1200mm. GlasStrut has been design to best relate to Figure 1 (b) and (d) balustrade to ensure compliance.

F9.2.4 - GlasStrut adheres with appendices C, D, E & F which are acceptable methods for assessing the strength of pool barriers.

Supporting documentation

The following additional documentation supports the above statements:

Framed Balustrade Fabricators Manual	2023	https://unex.co.nz/fabricators/fabrication-manuals/
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For further information supporting UNEX GlasStrut claims refer to our website.

Contact details

Manufacture location	New Zealand
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Responsible person

As the responsible person as set out in Regulation 3, I confirm that the information supplied in this declaration is based on information supplied to the company as well as the company's own processes and is therefore to the best of my knowledge, correct.

I can also confirm that UNEX GlasStrut is not subject to a warning on ban under [s26 of the Building Act](#).

Signed for and on behalf of **UNEX systems**:



Ethan Lankshear
Design Engineer
November, 2023

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Appendix

BPIR Ready selections

Category: Balustrades systems

	Yes	No
Use as pool fencing	×	
Provides an accessible handrail	×	
Use of glass or other brittle material	×	

Building code performance clauses

B1 Structure

B1.3.1

Buildings, building elements and *sitework* shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during *construction* or *alteration* and throughout their lives.

B1.3.2

Buildings, building elements and *sitework* shall have a low probability of causing loss of amenity through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during *construction* or *alteration* when the *building* is in use.

B1.3.3

Account shall be taken of all physical conditions likely to affect the stability of *buildings, building elements* and *sitework*, including:

- (f) earthquake
- (h) wind
- (j) impact

B1.3.4

Due allowances shall be made for:

- a. the consequences of failure,
- b. the intended use of the *building*,
- c. effects of uncertainties resulting from *construction* activities, or the sequence in which *construction* activities occur,
- d. variation in the properties of materials and the characteristics of the site, and
- e. accuracy limitations inherent in the methods used to predict the stability of *buildings*

B2 Durability

B2.3.1

Building elements must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the *specified intended life* of the *building*, if stated, or:

- (a) the life of the building, being not less than 50 years, if: those building elements (including floors, walls, and fixings) provide structural stability to the building, or those building elements are difficult to access or replace, or failure of those building elements to comply with the building code would go undetected during both normal use and maintenance of the building

B2.3.2

Individual *building elements* which are components of a *building* system and are difficult to access or replace must either:

- (a) all have the same durability
- (b) be installed in a manner that permits the replacement of building elements of lesser durability without removing building elements that have greater durability and are not specifically designed for removal and replacement

D1 Access Routes

D1.3.3

Access routes shall:

- (j) have smooth, reachable and graspable handrails to provide support and to assist with movement along a stair or barrier
- (k) have handrails of adequate strength and rigidity as required by Clause B1 Structure

F2 Hazardous building materials

F2.3.1

The quantities of gas, liquid, radiation or solid particles emitted by materials used in the *construction* of *buildings*, shall not give rise to harmful concentrations at the surface of the material where the material is exposed, or in the atmosphere of any space.

F4 Safety from falling

F4.3.1

Where people could fall 1 metre or more from an opening in the external envelope or floor of a *building*, or from a sudden change of level within or associated with a *building*, a barrier shall be provided.

F9 Means of restricting access to residential pools

F9.3.1

Residential pools must have or be provided with physical barriers that restrict access to the pool or the *immediate pool area* by unsupervised young children (ie, under 5 years of age).

F9.3.3

A barrier surrounding a *pool* must have no permanent objects or projections on the outside that could assist children in negotiating the barrier. Any gates must

- a. open away from the pool; and
- b. not be able to be readily opened by children; and
- c. automatically return to the closed position after use.