

# UNEX X3000 Framed Baluster

## BPIR Declaration

Version: A.1

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### Designated building product: Class 2

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### Declaration

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

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### Product/system

<b>Name</b>	UNEX X3000 Framed Baluster
<b>Line</b>	X3000 Framed Baluster style balustrade from Extreme Barriers series
<b>Identifier</b>	X3000 Framed Baluster

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### Description

- X3000 Framed Baluster style balustrade is a standard design. It has been engineered to adhere with the NZBC standards.
  - The X3000 Framed Baluster style is designed for, but not limited to, use on residential homes and apartments.
  - X3000 Framed Baluster 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 is possible for aesthetic or compliance requirements.
  - X3000 Framed Baluster 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

X3000 Framed Baluster 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 all occupancy types for part of the building or structure.

Can be used in all wind zones up to and including Extra High. In rare or extreme locations wind reverberation can be caused.

Building height up to three stores or more.

X3000 Framed Baluster balustrade style is custom fabricated to the requirements of each project. Prior to fabrication, the following project selections must be confirmed by the specifier:

- Height above floor level
- Substrate fixing specification
- Lower rail position
- Baluster profile

Can be used in side fixed applications. Specifications allow fixing into concrete, masonry, timber and steel.

X3000 Framed Baluster balustrade style is compatible with other features such as gates, handrails and custom aluminum sheets.

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## Conditions of use

Suitable for all occupancy loading types. All loading types shall reduce heights or post centers.

X3000 Framed Baluster balustrade style has a minor effect from wind loading, when custom designs implement sheet metal there are limitations on heights and post centers due to the increased loading.

X3000 Framed Baluster balustrade is limited by height and this is directly proportionate to the post center limitations.

X3000 Framed Baluster balustrade must be kept within supplied specifications.

In rare or extreme locations wind reverberation can be caused.

All X3000 Framed Baluster extrusions are aluminum and are limited in locations where there is contact of dis-similar materials.

X3000 Framed Baluster balustrade style must be installed in accordance with the UNEX Fabricators Manual.

X3000 Framed Baluster 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

X3000 Framed Baluster balustrade style must be installed in accordance with the requirements of D1/AS1 or equivalent

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## 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

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## Contributions to compliance

B1.3.3 - X3000 Framed Baluster balustrade adheres with the minimum barrier height in respect to the location and building type (As per Table 3.1 minimum barrier heights). Stair barriers in areas likely to be frequently used by children under six years of age require no gaps larger than 100mm and 150mm in the stair tread. Balustrade geometry shall follow the dimensions illustrated barriers in figure 3.3 (Example of barrier geometries).

B1.3.4 - X3000 Framed Baluster 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 - X3000 Framed Baluster balustrade style displacement is recommended to not exceed 30mm under barrier and wind loads as described in B1/VM1.

B1.3.7 - X3000 Framed Baluster 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 - X3000 Framed Baluster balustrade has a durability requirement of no less than 15 years.

B1.3.9 - X3000 Framed Baluster 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 - X3000 Framed Baluster 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 - X3000 Framed Baluster balustrade element "Balustrade" must have a durability requirement of no less than 50 years.

D1.1.7.1 - X3000 Framed Baluster balustrade prevents falling from access routes and complies with NZBC F4

D1.2.3.1 - X3000 Framed Baluster balustrade lower rail height is adjusted to where the surface of an accessible route is more than 25 mm above the adjacent ground to provide protection from falling.

F4.1.1 - X3000 Framed Baluster balustrade adheres to the minimum barrier heights (F4/AS1 Table 1) in the respective area installed

F4.1.2.1 - X3000 Framed Baluster 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.

F4.1.2.2 - In areas used exclusively for emergency or maintenance purposes in buildings, and in other buildings not frequented by children, barriers may have openings with maximum dimensions of either: 300mm horizontally between vertical balustrade members or 460mm vertically between longitudinal rails.

F4.1.2.3 - X3000 Framed Baluster 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 X3000 Framed Baluster balustrade can be used as a pool barrier when at the minimum height of 1200mm. X3000 Framed Baluster has been design to best relate to Figure 1 (b) and (d) balustrade to ensure compliance.

F9.2.4 - X3000 Framed Baluster adheres with appendices C, D, E & F which are acceptable methods for assessing the strength of pool barriers.

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## Supporting documentation

The following additional documentation supports the above statements:

<b>Framed Balustrade Fabricators Manual</b>	2023	<a href="https://unex.co.nz/fabricators/fabrication-manuals/">https://unex.co.nz/fabricators/fabrication-manuals/</a>
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For further information supporting UNEX X3000 Framed Baluster claims refer to our website.

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## Contact details

<b>Manufacture location</b>	New Zealand
<b>Legal and trading name of manufacturer</b>	UNEX systems
<b>Manufacturer address for service</b>	42 Bryant Road Hamilton 3200
<b>Manufacturer website</b>	<a href="https://unex.co.nz/">unex.co.nz/</a>
<b>Manufacturer email</b>	info@unex.co.nz
<b>Manufacturer phone number</b>	07 850 9464
<b>Manufacturer NZBN</b>	94649429032846720

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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 X3000 Framed Baluster is not subject to a warning or ban under [s26 of the Building Act](#).

Signed for and on behalf of UNEX systems:

A handwritten signature in black ink, appearing to read 'E Lankshear', with a long horizontal flourish extending to the right.

Ethan Lankshear  
Design Engineer  
November, 2023

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**UNEX SYSTEMS**  
42 Bryant Road Hamilton 3200 New Zealand  
07 850 9464 | [unex.co.nz/](http://unex.co.nz/)

# Appendix

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## BPIR Ready selections

Category: Balustrades systems

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

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## 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.