ALTECH SYSTEMS

Product Technical Statement

SKYRAIL Dx SERIES

Glass Infill Balustrade System

Product Description

The Skyrail Dx Series is a premium aluminium and glass balustrade and fencing system, distinguished by its ability to deliver exceptional strength and safety in modern architectural applications. Available in both partially and fully framed configurations, it has been specifically engineered to withstand extreme conditions, including the extreme wind pressures common in high-rise buildings and the greater live load demands of more severe occupancies, in full compliance with NZS1170 (Table 3.3).

Engineered for versatility, the Skyrail Dx Series supports multiple installation methods, including both face-fixed and top-mounted configurations. This adaptability ensures the system can be seamlessly integrated into a variety of applications, from balconies and staircases to decks, boundary fencing, and privacy screens.

Beyond performance, the Dx Series offers extensive opportunities for customisation. Bespoke top rail profiles can be developed to complement large-scale architectural projects, while practical design solutions such as incorporating the bottom rail into a tile bar for tiled decks enhance both functionality and visual appeal. This flexibility allows designers and specifiers This flexibility allows designers and specifiers to tailor the system to the specific architectural, aesthetic, and performance requirements of each project, without compromising durability or compliance.

All Altech balustrades are supplied with a project-specific PS1.

Key Features

- High-strength fully framed balustrade system. Engineered for strength and safety in demanding environments.
- Designed to withstand extreme wind loads (e.g. high-rise buildings) and higher live loads in severe occupancies (per NZS1170, Table 3.3) for wind loads up to 4.5kPa.
- Available in both fully framed and partially framed configurations and supports both face-fixed and top-mounted configurations.
- Fully customisable design for project-specific requirements.
- Bespoke top rail profiles available for large-scale projects.
- Bottom rail can be incorporated into the tile bar for tiled decks.
- Combines robust performance with sleek, modern aesthetics.
- Suitable for balconies, staircases, decks, boundary fencing, and privacy screens.
- Compatible with both waterproof and floating deck systems.
- Engineered for fixing to timber, concrete, and steel substrates.
- Interoperability with other Altech balustrade products.
- Available in a wide range of durable powder coat finish or anodised premium finish.
- Design solutions available for cavity-clad building structures
- Warranty: 5-year on materials (excluding surface coating), 2-year on workmanship, Applicator warranty on powder-coating (eg 10-25 years; refer to applicator for other coating warranties).

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Scope of Use

Skyrail Dx Series is suitable for a wide range of residential and commercial applications, including:

- Decks, balconies, ramps, stairs, and pool fencing
- Screens in conjunction with balustrading
- Occupancies where people congregate
- Residential occupancy

The system is designed to meet the requirements of the following occupancy types in as defined in NZS 1170:

- A (Domestic and residential)
- A Other (External balconies)
- B, E (Offices and workspaces)
- C3/C2,C3, D (Areas where people may congregate)

Skyrail Dx Series has been engineered to fix to a range of substrates, including timber, concrete, and steel substrates, and is suitable for;

- All wind zones including very high and extra high as defined by NZS 3604
- Coastal, geothermal, and industrial environments

Limitations of Use

All Skyrail Dx extrusions, components, and hardware must be supplied by Altech Systems NZ Ltd or JW Projects Ltd.

All Skyrail Dr balustrade installations must be supported by a Producer Statement (PS1 – Design), available from Altech Systems Ltd.

Any deviation from standard fabrication or installation methods must be accompanied by a site-specific PS1 issued by a suitably qualified design professional.

Aluminium extrusions are manufactured to 6060 T5 or T6 specifications to ensure strength and durability.

Installation must be carried out by an Altech Systems NZ Ltd approved installer in accordance with its technical documentation.

Statement of Building Code Compliance

All products are designed by a Chartered Engineer and are manufactured and tested in accordance with the relevant sections of the New Zealand Building Code and New Zealand Standards listed below:

New Zealand Building Code Clauses

B1 Structure – B1.3.1, B1.3.2, B1.3.3 (C, F, H, J, M), B1.3.4

B2 Durability – B2.3.1 (B), B2.3.2 (A, B)

D1 Access Routes – D1.3.3 (J, K)

F2 Hazardous Building Materials – F2.3.1, F2.3.3 (A, B)

F4 Safety From Falling – F4.3.1

F9 Swimming Pools – F9.3.1, F9.3.3

Other Compliance Documents

NZS 1170 – Loadings

NZS 4223.1 and 4223.3 – Glazing in Buildings

AS/NZS 1664 – Aluminium Structures

Powder Coating Systems – Compliant with Window & Glass Association NZ Powder Coating Quality Assurance Systems (PQAS)

Powder coated surface finishes – Formulated to meet AS 3715 and AAMA 2605

Anodised surface finishes – Compliant with WGANZ Voluntary Specification SFA 3503-03-2005

Warranty

Altech Systems NZ Ltd offers the following warranties for the Skyrail Dx Series:

Workmanship: 2-year warranty

Materials (excluding surface finishes): 5-year warranty

Surface Finishes: Covered by the applicator or manufacturer's warranty. The duration of this warranty may vary depending on the specified coating system.

Altech Systems Ltd recommends the use of Duratec or an equivalent high-performance surface finish specification, which may offer up to 20 years durability warranty and 20 years colour warranty, subject to environmental conditions and compliance with the coating manufacturer's maintenance requirements. For further information on warranties, please refer to the Altech Systems "Balustrade Warranty" document.

In Service History

Skyrail Dx balustrades have been in use since the early 1990s, installed on thousands of balconies, landings, stairs, and pool areas throughout New Zealand. Some of the earliest installations are still performing to a high standard and remain in excellent condition.

Notable projects include

- Union & Co Apartments
- Vulcan Apartments
- Sugartee Stage 3 Apartments
- Greys Avenue Kainga Ora

