

THERMOSASH

DeltaGuard™

LOW TO MEDIUM SECURITY WINDOW SYSTEM



Thermosash
BUILDING ENVELOPE SOLUTIONS™

Thermosash Commercial Ltd

158 Central Park Drive, Henderson
Auckland 0610, New Zealand

www.thermosash.co.nz



Our Unitised Facades offer the benefits of local off-site fabrication, modern construction techniques, and near limitless design possibilities...

bringing your boldest architectural visions to life whilst delivering practical benefits such as speed of installation, reduced risk, just-in-time site delivery, and single point warranty.

Shape the future of urban design and aesthetics with a high performance Thermosash Unitised Facade solution. We have five decades of building envelope experience to bring to your table.

Our Aluminium is green to the core.

Thermosash is partnered with the lowest embodied carbon NZ-owned extruder in the world*.

The combination of high recycled content and low carbon virgin material forms the super-low embodied carbon high quality extrusion that Thermosash uses.

* Achieving Toitū Carbonreduce certification which far out performs the global average. (Independent audits to stringent European standard PAS 2050 are regularly undertaken, please contact us for the most up to date carbonreduce CO2e/kg of aluminium figures).

Thermosash recycles 100% of all metal waste products produced during manufacturing operations.

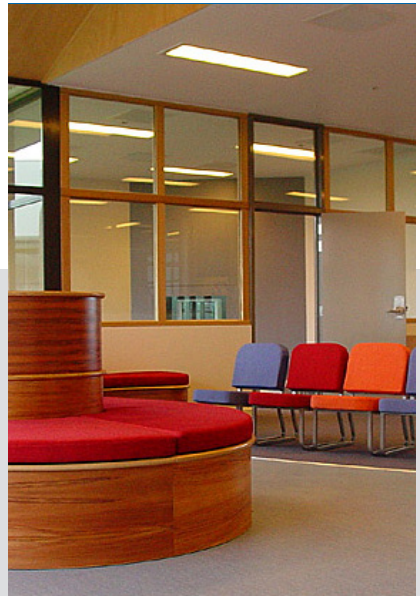
We exclusively use local powder coaters who have stringent chemical handling processes and reuse or responsibly dispose of all waste powder.



Mason Clinic WDH
AUCKLAND



Wiri Prison
AUCKLAND



Youth Justice
CHRISTCHURCH

LOW TO MEDIUM SECURITY WINDOWS

DELTA GUARD™

Thermosash DelatGuard™ is a security window system developed for low to medium security human and physical structural impact project requirements. A specifically engineered frame and combined glass suite offering correctional facilities, youth detention, acute and forensic mental health facilities and data centre projects the peace of mind on entry and exit restriction and ballistic and blast control - offering protection to those in the building.

Please Note: DeltaGuard™ is not intended for high security protection where we recommend to use SÄLZER for medium to high end security, ballistic, intruder and blast protection. These exceptional security products are made in Germany by SÄLZER and installed by Thermosash in New Zealand. Please contact us to discuss your project so that we can offer the best solutions for your requirements.



PRODUCT SPECIFICATION

Each system is custom engineered for the intended use, span, and building construction. Please contact us to discuss so that we can provide the best security solution for your project.

The DeltaGuard™ suite has undergone continual development over the last 25 years - originally developed for youth detention facilities it has been further utilised in New Zealand Government buildings, consulates, biocontainment facilities, correctional facilities and forensic and acute mental health facilities - designed to protect the users within the building, as much as the public, by having no accessible parts that can be used for weapons and self-harm, and by our blast systems that can absorb and mitigate the potential for shrapnel damage internally.

PRODUCT PERFORMANCE

KEY DESIGN FEATURES

- Reinforced frame to take high impact internal loading, external loading or both.
- Designed to mitigate frame parts converting to weapons
- Ability to quickly switch out primary glass if damaged to reduce time a room is unoccupied where necessary
- Glazing pocket designed to accommodate varying glass thickness to meet projects needs
- Glazing options include; polycarbonate, Glass or IGU
- Anti-ligature internal design
- Domestic / residential non-institutional aesthetic.
- Tested for tool damage / destruction - intrusion resistance.
- Each system is specifically engineered for your project's needs
- Options available to provide security to restrict transfer of contraband

The system can be thermally broken when combined in a double / secondary window system.

PERFORMANCE TESTING

Independently laboratory tested to IANZ (International Accreditation New Zealand)

B1/VM1 AS/NZS1170
Structural Design Actions

B2/AS1 Durability [based on in-service history]

F2 NZS4223

E2	Glazing in Buildings NZS/AS4284:2008 Water / Air Pressure/ Air Leakage - exceeds minimum requirements
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BUILDING CODE PERFORMANCE

Thermosash engineers to the design and performance requirements of each individual project in accordance with the relevant codes - view the table Building Code - Demonstration of Compliance on page 5 & 6

INTENDED USE

CLASSIFICATION

- Clause A1 Building Use Classification:
 - Housing, Communal residential, Communal non-residential, Commercial and Industrial
- Clause A3 Building Importance Levels from 1-5

BUILDING TYPE

- High-rise
- Low-rise
- Specific design

BUILDING LOCATION

Thermosash provides custom specific design solutions taking into consideration wind zones, climate zones, corrosion zones, seismic risk areas and building importance levels for each project.

CONDITIONS OF USE

The DeltaGuard™ window system must be installed by an approved Thermosash installer. The architect, engineer or specifier must confirm all of the project requirements prior to fabrication, including but not limited to climate conditions, glass selections, structural differential movement reports, performance requirements for glass and acoustics, surface finishes and hardware.

CAPABILITIES

FRAME SIZE

Sizing of units is subject to project security needs, and limitations may apply pending application and structural load intent - please contact us to discuss details / engineering requirements for your project

MAXIMUM SPANNING ABILITY

Thermosash specifically engineers the best suite option for your project taking into consideration span, structural system, and environmental loads (e.g. wind). The spanning ability will vary depending on the above.

ADAPTABILITY & INTEGRATION

The DeltGuard™ window system can accommodate for:

- integrated isolated automated Venetian blinds for anti-ligature mitigation or microbial cleaning separation
- passive ventilation options
- anit-contraband to eliminate the transfer of items

MATERIALS

MATERIAL COMPOSITION

Each project will have specific engineered and designed component solutions, fabricated in New Zealand and provided as a complete custom system, which incorporates common materials such as:

Aluminium, Steel, Glass, Structural Silicone, Gaskets, Neoprene Rubber, Nylon, Molybdenum Disulfide, and PVB Polyvinal Butyral.

MATERIAL GRADE

Alloy designation to comply with AS/NZS 1866. Extruded for anodising or powder coating. Aluminium extrusions from 6060 grade and with a Temper T6 alloy.

FINISH

Polyester powdercoat - both standard and special colours available. (Polyester powder organic coating in accordance with WGANZ PQAS and AS 3715, and AAMA 2604).

Anodised - all anodised colours available - commercial grade 20 Micron finish recommended

PVF2 Fluorocarbon finishes - available on request

FIXINGS

Fixings and fastenings exposed to the weather are type 316 or 314 stainless steel typically but other suitable fixings back to structure may be designed for specific project requirements complying with AS/NZS 4680.

Fixing gauge and length in accordance with Thermosash PS1.

MAINTENANCE REQUIREMENTS

A maintenance manual is provided on completion of each project. It is recommended by almost all material suppliers that building washing should occur every 3-6 months, depending on location, to prevent environmental pollutants from corroding metals and to maintain the material warranties.

WARRANTY

The standard warranty is 5 years from the date of practical completion for these products. This covers workmanship and weather tightness, providing the subcontract includes fabrication, installation and glazing of all components.

All warranties are subject to service and maintenance requirements.

SUSTAINABILITY

SUSTAINABLE MANUFACTURING

Thermosash manufactures all system components in New Zealand, and primarily source materials where available from the New Zealand market. We recycle 100% of all metal waste products produced during manufacturing operations.

ALUMINIUM EXTRUSIONS

Our extrusions are a combination of high recycled content and low carbon virgin material from a local NZ remelt facility - achieving a super low carbon footprint that significantly outperforms readily available global alternatives.*

* Achieving Toitū Carbonreduce certification which far out performs the global average. (Independent audits to stringent European standard PAS 2050 are regularly undertaken, please contact us for the most up to date carbonreduce CO2e/kg of aluminium figures).

We exclusively use local powder coaters who have stringent chemical handling processes and reuse or responsibly dispose of all waste powder.

REDUCTION OF OPERATIONAL EMISSIONS

Through a full measurement and target reductions audit undertaken by Toitū Envirocare, Thermosash Commercial Ltd achieved Carbonreduce Certification with result of 1,369.93 tCO2e (tons of carbon dioxide equivalent) in the 2021/2022 NZ financial year period. This baseline for subsequent emission reduction targets going forwards. Please contact us for up to date certification figures.

BENEFITS

Thermosash is a New Zealand based business and has been engineering and manufacturing specific design facade solutions across the country since 1973. We deliver solutions using our trusted and proven systems, offering increased value in terms of;

- 50 years of experience and expertise in the facade solutions industry in New Zealand
- ongoing trust within the industry
- high performance solutions
- durability of systems and longevity of product lifespan
- totally integrated service with ECI /ECE - engineering, producer statement generation, full shop drawings, manufacture and installation.
- design and detail to accommodate seismic loads and inter-storey differential movement, as well as wind loads
- risk mitigation through one provider construction methodology and one warranty.

UNITISED SYSTEM ADVANTAGES

- Off-site fabrication and glazing
- Quality assurance controlled within a factory environment
- Speeds up site installation process due to modular construction - enclosing buildings rapidly and reducing on-site programme time
- Reduces on-site delays related to inclement weather - fabrication can continue even if site falls behind Unitised panels can be stored on completed floors in loading crates ready for installation
- Dramatically reduces scaffold and crane requirements
- Specifically engineered to accommodate environmental conditions and design constraints of the project
- Can incorporate a variety of cladding materials and integrated elements

COST SAVINGS

- Reduced number of junctions with other trades if Thermosash engineers, manufactures and installs the building envelope elements such as curtainwall, glazed and non-vision unitised panels, rainscreen, skylights, mechanical air louvres, solar shading and integrated elements, architectural metal folding, canopies, balustrades, flashings etc.
- Reduced number of council inspections during construction and possible delays, saving on compliance costs
- Specifically designed and engineered facade solutions that offer high performance and durability which contribute to cost savings on energy and maintenance over the lifespan of the building.



Wiri Prison, Auckland
SECURITY WINDOWS WITH BESPOKE SASH WINDERS

BUILDING CODE - DEMONSTRATION OF COMPLIANCE

Thermosash expertly engineers and designs each bespoke facade to the design and performance requirements of the individual project. We ensure that all compliance claims are backed by a comprehensive set of documents, including PS1 Design and PS3 Construction Producer Statements as a compliance pathway.

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
<p>B1 STRUCTURE</p>	<p>COMPLIANCE BY B1/VM1</p> <p>Compliance with B1 is shown by way of engineering calculations and/or testing, and reports are attached to the compliance pathway submission.</p>
<p>B2 DURABILITY</p>	<p>ACCEPTABLE SOLUTIONS B2/AS1</p> <p>There are no Acceptable Solutions available for aluminium and steel, and protection is provided through surface treatment in accordance with:</p> <ul style="list-style-type: none"> • AS/NZS 2312:2014 - Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. • AAMA 2605-05 - Voluntary specification, performance requirements and test procedures for superior performing organic coatings on aluminium extrusions and panels. • AS 37155:2002 - Metal finishing thermoset powder coatings for architectural applications of aluminium and aluminium alloys. • AS 1231:2000 - Aluminium and aluminium alloys - anodic oxidation coatings. • WENZ - Specification for powder coatings on architectural aluminium products. • SNZ TS 3404:2018 - Durability requirements for steel structures and components <p>COMPLIANCE BY B2/VM1</p> <p>All elements of the Thermosash product/system are specified by Thermosash to (with only normal maintenance) satisfy the performance requirements of the Building Code for 5 years (Surface Finish), 15 years (System), 50 years (Fixings/Connections) as appropriate.</p> <p>Generally, all elements are designed from aluminium. Where engineering requirements demand stronger materials stainless steel (304 or 316 as appropriate), or steel (coated to SNZ TS 3404:2018) will be used.</p>

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
C3 FIRE affecting areas beyond the source	<p>COMPLIANCE IF APPLICABLE</p> <p>In the event that the incorporation of an element into our facade solution is necessary to adhere to Building Code C3 Fire affecting areas beyond the source, Thermosash will provide an engineered solution along with a comprehensive compliance pathway for approval including a PS3 Construction Producer Statement (PS1 Design by Fire Engineer).</p> <p>We are not fire engineers and do not engage in the fire design of buildings, however, our products can be tailored to support compliance with Clause C3. We recommend collaborating with a fire engineer to ensure proper customization and adherence to fire safety requirements.</p>
E2 EXTERNAL MOISTURE	<p>COMPLIANCE BY E2 ALTERNATIVE SOLUTIONS</p> <p>Compliance of E2 Alternative solution testing to AS/NZS4284 and good practice detailing as shown by way of testing, and test results are attached to every compliance pathway submission. Any complex/high-risk details that arise will be checked specifically for weather tightness by our in-house Producer Statement Author following best practice design principles, making use of pressure-equalised drained cavities and specialist expertise and experience.</p> <p>If required by the Client's Peer Reviewer, Thermosash can complete QA/QC site water testing in accordance with the following:</p> <ul style="list-style-type: none"> • AAMA 501.2 test - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems (for fixed elements).
F2 HAZARDOUS MATERIALS	<p>Generally, all elements are designed from aluminium. Where engineering requirements demand stronger materials stainless steel (304 or 316 as appropriate), or steel (coated to SNZ TS 3404:2018) will be used.</p>
F4 SAFETY FROM FALLING	<p>COMPLIANCE BY NZ/AS 1170.1</p> <p>Thermosash follows the safety in design intent on the architectural drawings and designs the doors/windows/curtainwall/balustrading for C3 barrier loads where protecting a fall greater than 1 m (NZS/AS 1170.1 Table 3.3). Thermosash's responsibility is limited to the door/window/curtainwall.and balustrading - where integrated into our package.</p>
G4 VENTILATIONS	<p>COMPLIANCE IF APPLICABLE</p> <p>While we do not assume responsibility for fenestration and ventilation design within buildings, we offer fenestration advice and have the capacity to customize our products to aid in achieving compliance with Clause G4 standards if applicable, by providing an engineered solution along with a comprehensive compliance pathway for approval.</p>
G7 NATURAL LIGHT	<p>COMPLIANCE IF APPLICABLE</p> <p>While we do not assume responsibility for fenestration and lighting design within buildings, Thermosash will provide an engineered solution along with a comprehensive compliance pathway for approval if compliance to this clause is applicable.</p>
H1 ENERGY EFFICIENCY	<p>COMPLIANCE IF APPLICABLE</p> <p>In the event that our facade solution is required to comply with Building Code H1 Energy Efficiency, compliance will be shown by way of Engineer's report, Acceptable Solution H1/AS2 or Verification Method H1/VM2 where applicable, or an alternative solution should this be necessary, and include test results attached to a compliance pathway submission, including a PS3 Construction Producer Statement for our product solution.</p>

NOTE: THIS BROCHURE CONTAINS A SUMMARISED VERSION OF BUILDING PRODUCT INFORMATION REQUIREMENTS (BPIR) CLASS 2 DISCLOSURE INFORMATION - OUR COMPREHENSIVE DOCUMENTS CAN BE DOWNLOADED FROM:
[HTTPS://WWW.THERMOSASH.CO.NZ/DOWNLOADS-RESOURCES/BPIR-DOCUMENTS/](https://www.thermosash.co.nz/downloads-resources/bpir-documents/)



Mason Clinic, Te Whatu Ora, Auckland - DeltaGuard™ security windows with integrated isolated venetian blinds for anti-ligature mitigation.

OUR BRANCHES

AUCKLAND

158-164 Central Park Drive
Auckland 0610, New Zealand
PO BOX 100-340 North Shore,
Auckland 0745, New Zealand
09 444 4944

WELLINGTON

17-19 Marine Parade, Petone,
Lower Hutt 5012, New Zealand
PO BOX 38-645 Wellington Mail Centre,
Lower Hutt 5045 New Zealand
04 939 4500

LEVIN

13 Enterprise Drive,
Levin 5571, New Zealand
PO BOX 38-645 Wellington Mail Centre,
Lower Hutt 5045 New Zealand
06 949 1717

CHRISTCHURCH

12 Braeburn Drive
Hornby, Christchurch 8042
PO BOX 313, Christchurch 8140
New Zealand
03 348 4004

www.thermosash.co.nz
info@thermosash.co.nz

Thermosash are members of:



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