THERMOSASH

Channel Glazing

CHANNEL GLAZE SYSTEMS & INTEGRATED GLASS FINS

Thermosash
BUILDING ENVELOPE SOLUTIONS™

Thermosash Commercial Ltd

158 Central Park Drive, Henderson
Auckland 0610, New Zealand

www.thermosash.co.nz

Westgate Library
AUCKLAND

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.

Commercial Bay
AUCKLAND CBD

Lumley Tower
AUCKLAND CBD

Boxer Hills Club
ARROWTOWN

OVERVIEW
CHANNEL GLAZING

Channel glazing is a method of window glazing which uses a “U” shaped aluminium channel with metal or rubber gaskets to hold the glass in place. Generally where large panes of glass are installed, they are integrated with an engineered glass fin or a tension truss system.

PRODUCT PERFORMANCE

KEY FEATURES

- Extremely versatile product - providing a modern low profile window suite
- Seamless incorporation of auto sliders, frameless glass doors etc.
- Glazing Channel can be recessed
- Frames and glazing are site installed
- Fins or a tension truss system can be integrated for large panes of glass
- Thermosash offers full service of consulting, engineering, procurement of glass or fittings, manufacturing and installation

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.

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

PRODUCT SPECIFICATION

MASTERSPEC

We recommend using Masterspec 4251T Commercial Windows when specifying this system type.

CAD DOWNLOADS

Channel Glazing CAD downloads are available from our website:

https://www.thermosash.co.nz/downloads-resources/cad-downloads/channel-glazing-downloads/channel-glazing-systems/

INTENDED USE

CLASSIFICATION

Commercial, Industrial and Residential use in accordance with A1 Building Use Classification and A3 building importance levels 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 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, surface finishes and hardware.

CAPABILITIES

MAXIMUM SPANNING ABILITY

Thermosash specifically engineers the best solution for your project taking into consideration span, structural system, load imposed by glass thickness, seismic, wind & snow loading. The spanning ability will vary depending on the above conditions.

INTEGRATED ELEMENTS

Channel glazing can be integrated with;

- glass fins
- tension truss system
- auto sliders
- frameless glass doors and sliders
- revolving doors

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 304 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 operation

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.

GLASS PRODUCTS

New Zealand does not manufacture glass therefore we procure from abroad. We bulk order cut to size and use nested freight to reduce waste and mileage. We encourage the use of performance improved glass for energy reduction in buildings.

We are able to recycle 99.5% average of commercial float and IGU glass - all other uncontaminated glass is 100% recycled.

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 established a 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.

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.

BUILDING CODE - DEMONSTRATION OF COMPLIANCE

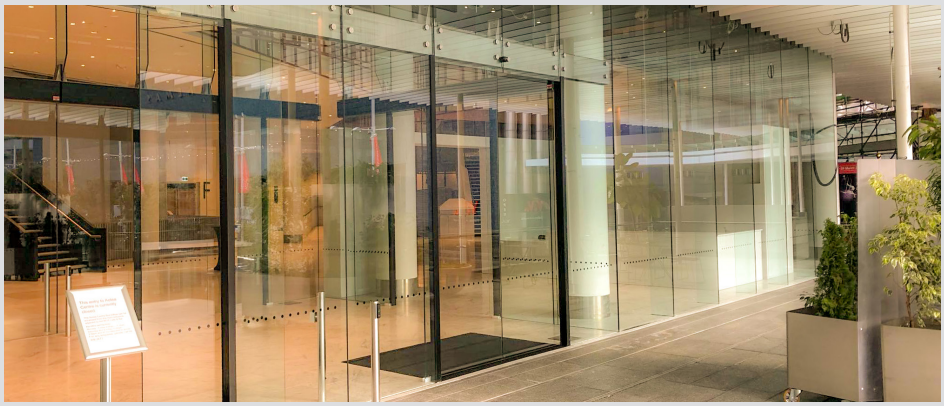
Thermosash expertly engineers and designs each bespoke facade to the design and performance requirements of the individual project. We ensure that all compliance claims are backed by a comprehensive set of documents, including a PS1, PS3 and PS4, as well as a submitted compliance pathway.

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
B1 **STRUCTURE**	**COMPLIANCE BY B1/VM1** Compliance with B1 is shown by way of engineering calculations and/or testing, and reports are attached to the compliance pathway submission.
B2 **DURABILITY**	**ACCEPTABLE SOLUTIONS B2/AS1** There are not Acceptable Solutions available for aluminium and steel, and protection is provided through surface treatment in accordance with: • 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. • WANZ - Specification for powder coatings on architectural aluminium products. • SNZ TS 3404:2018 - Durability requirements for steel structures and components **COMPLIANCE BY B2/VM1** 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. 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.
E2 **EXTERNAL MOISTURE**	**COMPLIANCE BY E2 ALTERNATIVE SOLUTIONS** 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. If required Thermosash can complete QA/QC site water testing in accordance with the following: AAMA 501.2 test - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems (for fixed elements).
C3 **FIRE** affecting areas beyond the source	**COMPLIANCE IF APPLICABLE** In the event that the incorporation of an element into our Channel Glazing solution is necessary to adhere to Building Code C3 Fire affecting areas beyond the source, Thermosash will provide an engineered solution along with a compliance pathway for approval including a PS3 Construction Producer Statement (PS1 Design by Fire Engineer). 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.
F2 **HAZARDOUS MATERIALS**	**COMPLIANCE BY F2/AS1 NZS4223.3** There are no hazardous materials except glass within our systems. Compliance with F2 Hazardous Materials for glass is shown by compliance with NZS4223.3 or specific design.
F4 **SAFETY FROM FALLING**	**COMPLIANCE BY NZ/AS 1170.1** Thermosash follows the safety in design intent on the architectural drawings and designs the doors/windows/curtainwall 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.

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
G4 **VENTILATIONS**	**COMPLIANCE IF APPLICABLE** 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.
G7 **NATURAL LIGHT**	**COMPLIANCE IF APPLICABLE** 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.
H1 **ENERGY EFFICIENCY**	**COMPLIANCE IF APPLICABLE** 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, using calculation methods contained in NZBC Acceptable Solution H1/AS1 or H1/AS2 or the modelling methods contained in NZBC Verification methods H1/VM1 or H1/VM2 and include test results attached to a compliance pathway submission, including a PS3 Construction Producer Statement for our product solution.

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/

Giltrap Prestige Building, 119 Gt North Road
AUCKLAND



Aotea Events Centre, Auckland CBD - channel glazed atrium incorporating glass auto doors

Giltrap Prestige, Auckland - channel glazed showroom with integrated glass fins and framed glass auto doors

Medcar Porche, Christchurch - showroom with recessed channel glazing and integrated glass fins

Constellation Bus Station, Auckland - channel glazed pedestrian overpass

UOA Engineering 405 - channel glazed entrance with frameless glass doors

Victoria University Wellington, The Hub, Kelburn Campus - channel glazing to upper level

Lumley Tower, Auckland - channel glazed entrance incorporating revolving door

OUR BRANCHES

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Thermosash are members of:

NZGBC
TE KAUNIHERA HANGANGA TAUTAIAO

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