

THERMOSASH
RS1000 &
WS1000

**PRESSURE EQUALISED OPEN JOINT CLADDING &
FULLY FLUSHED SEALED JOINT CLADDING**



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.



123 Carlton Gore Str
AUCKLAND - WS1000 SYSTEM



Anderson Lloyd House, Gloucester Str
CHRISTCHURCH - RS1000 SYSTEM

RAINSCREEN CLADDING

RS1000 & WS1000

Both the Thermosash RS1000 Pressure Equalized Open Joint Cladding suite, and the WS1000 Fully Flushed Sealed Joint Cladding suite - are engineered cavity rainscreen cladding systems, incorporating a unique cavity-creating bracketing system. The suites most commonly utilises ACP (Aluminium Composite Panel) as the rainscreen material, but equally also can incorporate almost any other solid metal or ACP type material, such as a cassette cartridge in zinc, stainless steel, terracotta, or powder coated aluminium etc.

Both suites require a formed air barrier wall (Rigid Air Barrier - RAB) located behind a suitably considered primary structure (concrete panel, timber, or steel framing) to receive the cladding rail system. The systems provide the opportunity to overclad buildings and provide a modern sophisticated appearance for a relatively low cost, where an existing durable wall already exists.



PRODUCT SPECIFICATION

MASTERSPEC

We recommend using Masterspec 4251TS Commercial Windows when specifying the RS1000 suite.

Please also see **Conditions of Use**

CAD DOWNLOADS

CAD downloads are available from our website:

RS1000

<https://www.thermosash.co.nz/downloads-resources/cad-downloads/rainscreen-downloads/rainscreen-open-joint-cladding/rs1000-downloads/>

WS1000

<https://www.thermosash.co.nz/downloads-resources/cad-downloads/rainscreen-downloads/rainscreen-sealed-joint-cladding/ws1000-downloads/>

PRODUCT PERFORMANCE

KEY DESIGN FEATURES - RS1000 & WS1000

- Pressure Equalized Open Joint system / or Fully Flushed Sealed Joint system
- Engineered cavity cladding system
- Prefabricated off-site
- Drained cavity system
- Economic refurbishment and overclad solution
- Engineered panels ensure longevity from delamination or folded corner metal fatigue
- All projects are in-house engineered and fully shop drawn reducing the amount of detailing required by the architectural documenter
- Fire safety: subject to fire engineer's detail

None of our products support combustion and all are designed with non-combustible materials

THERMAL PERFORMANCE

The final performance of the facade is subject to many variables, from size of individual panels to glass performance.

Our team of designers and engineers are able to review your project

and advise around the best suite solution for your project's thermal performance requirements. Please contact us to discuss further.

PERFORMANCE TESTING

Independently laboratory tested to IANZ (International Accreditation New Zealand)

- AS/NZS1170
Structural Design Actions
- NZS4223
Glazing in Buildings
- NZS/AS4284:2008
Water / Air Pressure/ Air Leakage - Exceeds minimum requirements

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, Industrial and Ancillary
- Clause A3 Building Importance Levels from 1-5

BUILDING TYPE

- 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 RS1000 and WS1000 suites require a fully constructed wall with air barrier installed to a coordinated design. The air barrier wall should include insulation and all flashings required to meet the requirements of the New Zealand Building Code. Due to the limitations of some building wraps to withstand high wind loads, Thermosash recommends a rigid air barrier (RAB) where calculated. Due to the movement such as wind, live loading or seismic that buildings can be subjected to, Thermosash recommends that RAB detailing should

compensate for the movement in flashings and fixings so the RAB does not suffer air leakage and therefore potential moisture transfer through rainscreen cladding systems.

The RS1000 & WS1000 cladding suite must be installed by an approved Thermosash installer.

CAPABILITIES

SECTION SIZES

The Designer should allow a zone from the face of the air barrier of 60mm.

Panel size limitations are calculated on the project location (wind zone / seismic), height, primary structure movement calculations (ULS) and eventual material selection.

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.

Thermosash Suites are recognized as having the largest spanning systems on the market due to our specific engineering capability and the customised nature of the work we complete.

INTEGRATED ELEMENTS

Integration with other Thermosash Suites and elements. Any rainscreen material can be incorporated.

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, stainless steel, stainless steel bolts, screws and studs, galvanised steel bolts, structural silicone.

Cladding materials are project specific and could include for example terracotta tiles, aluminium sheet, Zinc, large format porcelain etc.

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 - our NZ-owned extruding partner achieves one of the lowest embodied carbon per kg anywhere in the world.*

* 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 established a baseline for subsequent emission reduction targets going forwards. Please contact us for up to date certification figures.

BENEFITS

UNITISED SYSTEM ADVANTAGES

- Off-site fabrication and glazing
- Quality assurance controlled within a factory environment
- Speeds up site installation process due to modular construction
- 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
- Incorporation of a variety of cladding materials and integrated elements

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 - 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 warranty.

COST SAVINGS

- Reduced on-site programme time - with our unitised suites we are able to enclose buildings rapidly.
- 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
- Reduced number of trades involved if Thermosash engineers, manufactures and installs the building envelope elements such as curtainwall, glazed and non-vision unitised panels, rainscreen, skylights, and integrated elements such as mechanical air louvres, solar shading, architectural metal folding, canopies, balustrades, flashings etc.
- 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 | <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> |
| B2 DURABILITY | <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. • WAZN - 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> |
| 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.</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> |

| BUILDING CODE | DEMONSTRATION OF COMPLIANCE |
|---|---|
| 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>COMPLIANCE BY F2/AS1 NZS4223.3</p> <p>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.</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 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.</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.</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/)



Hutt City Events Centre and Town Hall - RS1000 Cladding System



Toyota, Palmerston North - WS1000 system curved aluminium column claddings



Johnsonville Library - RS1000 Cladding System incorporating powdercoated aluminium vertically and horizontally fixed



Giltrap Prestige Building, Auckland - WS1000



Te Ao Nui (IL4) Building, Palmerston North - RS1000 Cladding System hooked-on folded sheet metal and aluminium plank cladding, vertically and horizontally fixed.



Halsey St, Auckland - RS1000 Cladding System

OUR BRANCHES

AUCKLAND

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PO BOX 100-340 North Shore,
Auckland 0745, New Zealand
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Thermosash are members of:



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