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 a NZ-owned extruder providing the lowest embodied carbon aluminium readily available in New Zealand*. The combination of high recycled content and low carbon virgin material forms the 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.

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.

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)

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

BUILDING CODE PERFORMANCE

Thermosash engineers to the specific 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 suite requires a formed air barrier wall (Rigid Air Barrier - RAB) located behind with a suitably considered primary structure (concrete panel, timber or steel framing) to receive the cladding rail system.

A typical installation uses a rail system that allows the off-site prefabricated panels to 'hook-on' and often requires external access such as scaffolding. It is best suited to low rise buildings due to the limitations of RABs in multi-storey applications.

The Thermosash 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 criteria.

INTEGRATED ELEMENTS

Systems integrate with other Thermosash Suites and elements. The systems can incorporate almost any solid metal or ACP type material.

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 and large format porcelain.

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 10 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. Our precision machinery ensures optimised material usage with 100% of all metal waste products recycled in the factory, saving on-site waste. We recycle 100% uncontaminated soft plastics, timber, cardboard, paper and 99.5% commercial float glass and IGUs.

LOW CARBON ALUMINIUM EXTRUSIONS

Thermosash DecarbAL™ delivers a super low sustainable embodied carbon footprint per kilogram of aluminium. At the heart of Thermosash's sustainability journey is a partnership with a local New Zealand owned remelt facility producing extrusions with 80% recycled content and low carbon virgin material. Our aluminium supplier is audited annually, for up to date carbon figures please contact us.

LOW CARBON GLASS

Thermosash's commitment to sustainability also extends to our glass selection. With access to worldwide low-carbon glass suppliers, we ensure that our projects benefit from environmentally friendly and high performance glazing options, further reducing the carbon footprint

FACADE OPTIMISATION STRATEGIES

To achieve optimised high performance outcomes we offer our clients the option of a Project Sustainability Analysis that covers different aspects of the full sustainability cycle. When specifying our facade systems, clients can engage us to implement one or several of our Facade Optimisation Strategies to achieve their project sustainability goals. To gain the most from our strategies, talk to us early on in the design phase of your project.

Our Thermosash Sustainability Team can assess and provide analysis reports on embodied and operational carbon engineering optimisation and costs, energy and comfort optimisation and costs, as well as assistance with Green Star credits - these strategies help to guide material selection, shape a more efficient design and provide clarity on ROI payback periods.

REDUCTION OF OPERATIONAL EMISSIONS

Through a full measurement and target reductions audit undertaken by Toitū Envirocare, Thermosash Commercial Ltd achieved Carbonreduce Certification. This provides 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.

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 onsite 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.

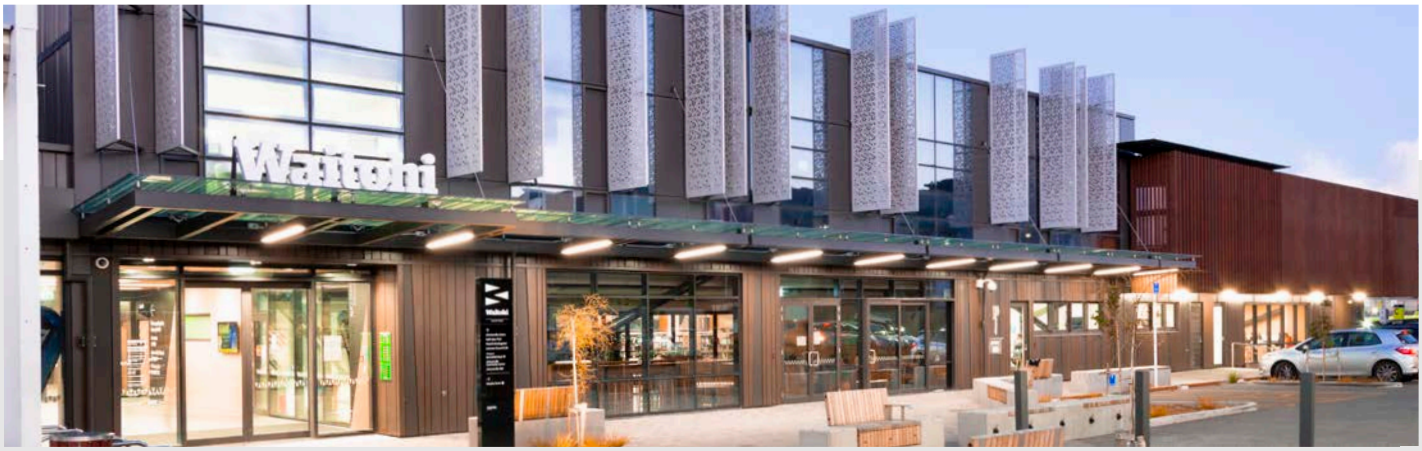
BUILDING CODE - DEMONSTRATION OF COMPLIANCE

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
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 no 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.

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
C3 **FIRE** affecting areas beyond the source	**COMPLIANCE IF APPLICABLE** 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). 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.
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 by the Client's Peer Reviewer, 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).
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 (occasionally terracotta tiles or porcelain stone may be integrated).
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.
G4 **VENTILATIONS**	**COMPLIANCE IF APPLICABLE**
G7 **NATURAL LIGHT**	**COMPLIANCE IF APPLICABLE**
H1 **ENERGY EFFICIENCY**	**COMPLIANCE IF APPLICABLE**

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/



Johnsonville Library, Waitohi

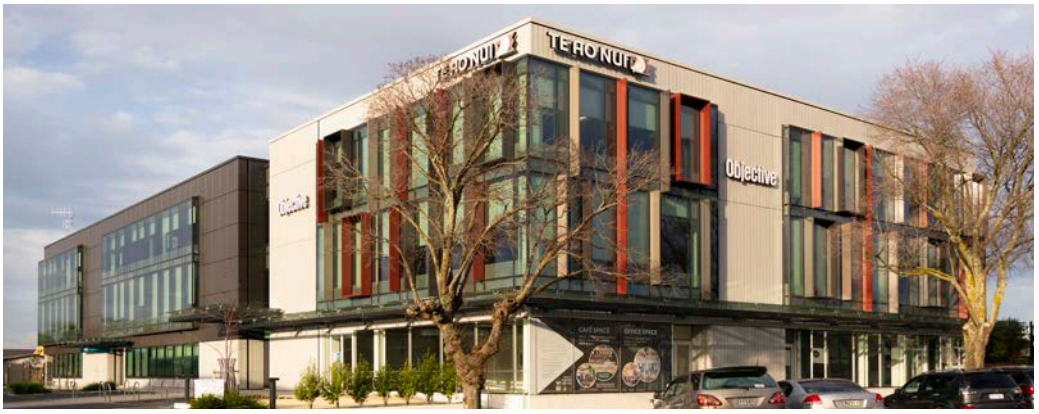
THERMOSASH RS1000 PRESSURE EQUALISED OPEN JOINT CLADDING

Hutt City Events Centre and Town Hall - RS1000 Cladding System

Wellington Regional Children's Hospital - RWS1000 cladding system

Toyota, Palmerston North - WS1000 system curved aluminium column claddings

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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Thermosash are members of:

NZGBC
TE KAUNIHERA HANGANGA TAUTAIAO

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