THERMOSASH

ENCLAD™

RAINSCREEN SUPPORT SYSTEMS

Thermosash
BUILDING ENVELOPE SOLUTIONS™

Thermosash Commercial Ltd

158 Central Park Drive, Henderson
Auckland 0610, New Zealand

www.thermosash.co.nz

TE AO NUI
PALMERSTON NORTH

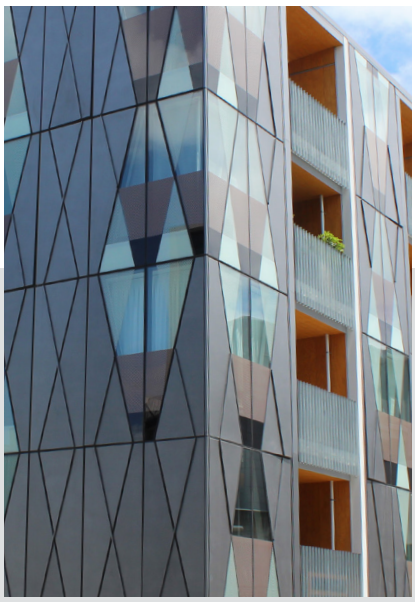
Our Aluminium is **green** to the core.

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.



ARIA APARTMENTS
AUCKLAND

OTAGO POLYTECHNIC TTB
DUNEDIN

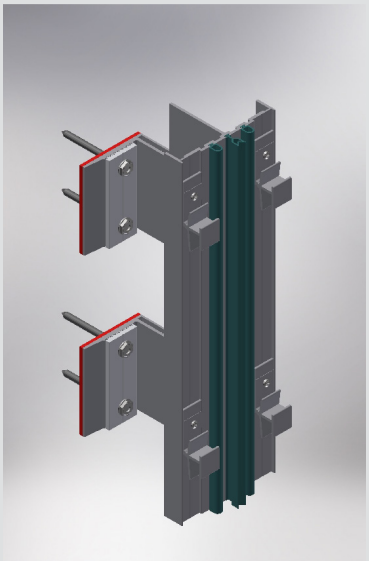
MIDDLEMORE HOSPITAL
AUCKLAND

OVERVIEW
ENCLAD™ SUPPORT SYSTEMS

ENCLAD™ is Thermosash's proprietary range of bracket profile systems engineered specifically to support various types of rainscreen cladding.

Our systems support a wide variety of rainscreen cladding materials including but not limited to:

- High Pressure Laminate
- Solid Sheet Metals
- Extruded Aluminium
- Porcelain Tiles
- Terracotta Tiles
- Glass Fibre Reinforced Concrete (GRC)



PRODUCT PERFORMANCE

KEY FEATURES

- Non-combustible.
- Accommodates insulation/firestops within cladding cavity zone.
- Adjusts to take up building tolerance & plumb level.
- Fixing methods include visible or secret fixed - based on materials and design.

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 6.

PRODUCT SPECIFICATION

MASTERSPEC

We recommend using Masterspec 4216IR RAINSCREEN CLADDING SUPPORT SYSTEM when specifying this system type.

CAD DOWNLOADS

ENCLAD™ downloads are available from our website:

https://www.thermosash.co.nz/downloads-resources/cad-downloads/rainscreen-downloads/rainscreen-support-systems/

INTENDED USE

CLASSIFICATION

Housing, Communal Residential and Communal Non-residential, Commercial, Industrial and Ancillary use in accordance with A1 Building Use Classification and A3 building importance levels 1-5.

BUILDING TYPE

- High-rise
- Mid-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.

BUILDING PART

- Building Envelope
- Exterior Facade
- Interior Facade

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, cladding materials, glass selections, structural differential movement reports, performance requirements, 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.

APPLICATION

The systems support a wide range of cladding types, including:

- Extruded Aluminium Plank (Horizontally Laid)
- Extruded Aluminium Plank (Vertically Laid)
- Solid Aluminium
- Perforated Aluminium
- Alucolux®
- Stainless Steel
- Copper
- Solid Zinc
- High Pressure Laminate (HPL)
- Terracotta Tiles / Planks (Horizontally Laid)
- Terracotta Tiles / Planks (Vertically Laid)
- Porcelain Tiles
- Glass Fibre Reinforced Concrete (GRC)

ENCLAD™ Rainscreen Support Systems are adjustable to accommodate cavity depth requirements, insulation and firestops and take up building construction tolerances.

ENCLAD™ SYSTEM TYPES

CLADDING TYPE	EN01	EN02	EN03	EN04	EN05-FF	EN06
Extruded Aluminium Plank (Horizontally Laid)	75mm*1 95mm*2 120mm*3	N/A	N/A	N/A	Contact Thermosash Commercial	Contact Thermosash Commercial
Extruded Aluminium Plank (Vertically Laid)	75mm*1 95mm*2 120mm*3	N/A	N/A	N/A	Contact Thermosash Commercial	Contact Thermosash Commercial
Solid Aluminium Alucolux® Perforated Aluminium Stainless Steel Copper Solid Zinc	75mm*1 95mm*2 120mm*3	N/A	N/A	119mm*1 128mm*2 153mm*3	121-146mm	Contact Thermosash Commercial
High Pressure Laminate (HPL) Facades	75mm*1 95mm*2 120mm*3	N/A	Contact Thermosash Commercial	125mm*1 137mm*2 162mm*3	125-150mm	Contact Thermosash Commercial
Terracotta Tiles / Planks (Horizontally Laid)	N/A	82mm*1 105mm*2	N/A	N/A	Contact Thermosash Commercial	Contact Thermosash Commercial
Terracotta Tiles / Planks (Vertically Laid)	N/A	N/A	107mm*1 132mm*2 152mm*3	N/A	Contact Thermosash Commercial	Contact Thermosash Commercial
Porcelain Tiles	N/A	N/A	101mm*1 111mm*2 136mm*3	N/A	128-152mm	Contact Thermosash Commercial
GRC	N/A	N/A	N/A	N/A	158-183mm	115-140mm

*1 for 50mm insulation; *2 for 75mm insulation; *3 for 100mm insulation

EN01

EN01 is suitable for visible or discrete rivet or face fixing of thin smooth cladding materials:

- HPL
- Solid Sheet
- Extruded Aluminium Plank

EN02

EN02 is suitable for secret clip mounting of Terracotta Tiles (horizontally laid).

EN03

EN03 is suitable for secret clip mounting of medium size or medium weight cladding material:

- HPL
- Porcelain
- Terracotta Tiles (vertically laid)

EN04

EN04 is suitable for secret hook on mounting of large size or heavy weight cladding materials:

- HPL
- Solid Sheet

EN05-FF

EN05-FF is suitable for secret hook on mounting of all cladding materials where floor to floor spans are required (i.e. non-load bearing walls):

- Solid Sheet
- HPL
- Porcelain
- GRC

EN06

EN06 is suitable for secret hook on mounting of large size or heavy weight cladding materials where minimal cavities are permitted, such as GRC.

MATERIALS

MATERIAL COMPOSITION

ENCLAD™ Rainscreen Support Systems are extruded from 3mm solid aluminium as a minimum to meet (B2) structure compliance, powdercoated (Durralloy) for enhanced (B2) Durability compliance.

FIXINGS

Fixed with stainless steel 304/316 fixings.

FINISH

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

MAINTENANCE REQUIREMENTS

A maintenance manual is provided on completion of a project for all the elements integrated within a project. Compliance to a maintenance schedule is essential to maintaining the quality of the installed product over time. Using Thermosash-approved facade maintenance contractor/personnel ensures the highest standards are met.

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.

ALUMINIUM EXTRUSIONS

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, that has resulted in a super low sustainable embodied carbon footprint per kilogram of Aluminium. Our aluminium supplier is audited annually, for up to date figures please contact us.

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 OF A THERMOSASH SOLUTION

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, with ongoing trust within the industry
- In-house expertise across the entire process
- Proven experience in complex project delivery
- Totally integrated service with ECI /ECE - engineering, producer statement generation, full shop drawings, manufacture and installation.
- Custom engineered high performance solutions tailored to architectural, environmental and structural requirements - design and detail to accommodate seismic loads and inter-storey differential movement, as well as wind and other live loads
- Proven durability of systems and longevity of product lifespan
- Responsible procurement and waste management
- Risk mitigation through one provider and one warranty - no multiple trades required
- Local precision manufacturing and site delivery logistics
- Expert installation with well-considered strategies and safety methodologies

PREFABRICATED UNITISED SYSTEM ADVANTAGES

- Off-site fabrication and glazing reduces on-site waste and clutter
- Unitised panels can seamlessly incorporate a variety of cladding materials and integrated elements
- Engineered to accommodate project specific environmental conditions and design constraints for high performance outcomes
- Quality assurance and control is implemented across the fabrication process and during on-site installation
- Site installation is quicker due to the modular construction - enclosing buildings rapidly and reducing on-site programme time
- On-site delays are reduced during inclement weather - fabrication can continue even if site falls behind and Unitised panels can be placed on completed floors in loading crates ready for installation on a just-in-time basis.
- Scaffold and crane requirements are dramatically reduced

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 operational energy and maintenance over the lifespan of the building, and maximises ROI

BUILDING CODE - DEMONSTRATION OF COMPLIANCE

Thermosash Commercial 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 and PS3.

BUILDING CODE	DEMONSTRATION OF COMPLIANCE
B1 **STRUCTURE**	B1.3.1, B1.3.2, B1.3.3, B.1.3.4 Compliance: B1/VM1 (NZS1170), B1/AS1 (NZS4223 Part 1, 3 & 4) Thermosash Commercial have engineered the product to maximum panel deflections of 1/60 under SLS loading. ENCLAD™ RAINSCREEN SUPPORT SYSTEMS are extruded from 3mm solid aluminium and incorporate slotted windload and fixed deadload connections fixed at required centres for loadings to NZS1170 supporting extruded frames with a maximum deflection span of 250 or a maximum ±20mm.
B2 **DURABILITY**	B2.3.1 (B) Compliance: B2/VM1 (In service history) ENCLAD™ RAINSCREEN SUPPORT SYSTEMS extrusions are Duralloy powdercoated for enhanced durability. Unpainted stainless-steel fixings will be provided in all exposed application 316 grade where visible, 304 grade where weathered but not exposed, and galvanised on internal faces.
E2 **EXTERNAL MOISTURE**	E2.3.2, E2.3.5, E2.3.7 Our systems may include perforations or open jointed designs. The critical weathering line relies on the design and integrity of the Rigid Air Barrier (RAB) with fully sealed joints installed by others to BRANZ recommended detail. We recommend the use of self-adhered vapour permeable air barrier membranes which Thermosash Commercial can provide and install if required.
C3 **FIRE** affecting areas beyond the source	C3.5, C3.6, C3.7 Compliance: Classified as non-combustible materials. While we are not fire engineers and do not engage in the fire design of buildings, our products can be tailored to support compliance with clause c3. We recommend collaborating with a fire engineer to ensure proper customisation and adherence to fire safety requirements. ENCLAD™ RAINSCREEN SUPPORT SYSTEMS are extruded from 3mm solid aluminium with coating thickness of less than 1mm. They can accommodate fire stops vertically and horizontally in cavity zone.
H1 **ENERGY EFFICIENCY**	If required on a project-to-project basis. Our support system is project specifically engineered to meet specification requirements.

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/

King's School, Auckland - Terracotta tiles horizontally installed with ENCLAD™ EN02 Rainscreen Support System.

One St Stephens, Auckland - black Terracotta tile cladding vertically installed with ENCLAD™ EN03 Rainscreen Support System.

Cordis Hotel, Auckland - sublimated woodgrain aluminium soffits installed with ENCLAD™ EN01 Support System

Commercial Bay, Auckland - interior PRODEMA High Pressure Laminate installed with ENCLAD™ EN01 Support System.

15 Huron St, Auckland - laser cut aluminium cladding installed with ENCLAD™ EN05-FF Support System.

Otago Polytechnic Trades Training Building, Dunedin - Terracotta tile cladding vertically installed with ENCLAD™ EN03 Rainscreen Support System.

Middlemore Hospital, recladding of Scott building, Auckland - FUNDERMAX high pressure laminate installed with ENCLAD™ EN01 Support System.

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:

NZGBC
TE KAUNIHERA HANGANGA TAUTAIAO

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