THERMOSASH

Shadetread™ & Shadegrate™

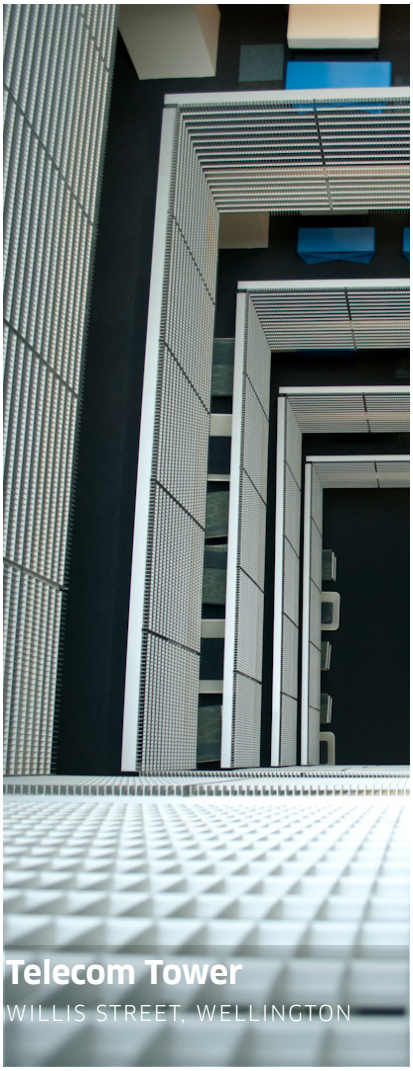
THERMOSASH FACADE SYSTEMS

Thermosash
BUILDING ENVELOPE SOLUTIONS™

Thermosash Commercial Ltd

158 Central Park Drive, Henderson
Auckland 0610, New Zealand

www.thermosash.co.nz



Telecom Tower
WILLIS STREET, WELLINGTON

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

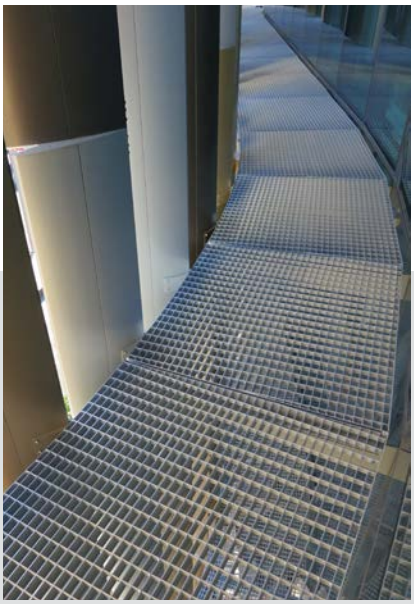
Thermosash is partnered with a NZ-owned extruder providing the lowest embodied carbon aluminium readily available in New Zealand*. The combination of high recycled content and low carbon virgin material forms the high quality extrusion that Thermosash uses.

*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).

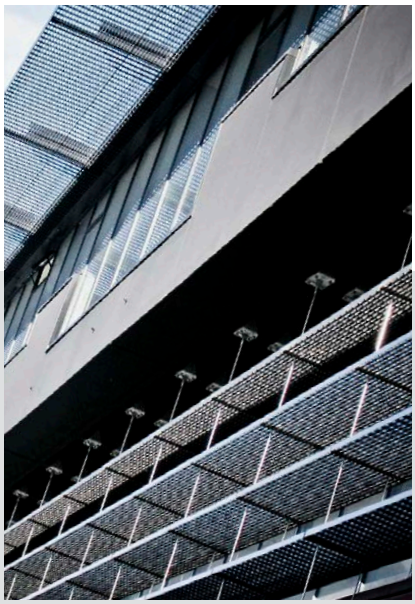
Thermosash recycles 100% of all metal waste products produced during manufacturing operations.

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

Telecom Tower
WILLIS STREET, WELLINGTON



ASB North Wharf
AUCKLAND



VUW- The Hub
WELLINGTON

OVERVIEW
SHADETREAD™ & SHADEGRATE™

Shadetread™ is an engineered open grate aluminium flooring system for maintenance and lightweight trafficable access used for example in twin-wall curtainwall systems, as well as for exterior facade platforms to facilitate safe access for cleaning whilst also doubling as an effective shading device.

Shadegrate™ is a versatile aluminium shading element engineered as a non-trafficable screen that can vary in grid pattern (within engineering and tooling constraints) to suit project needs. The element can be installed vertically or horizontally offering effective shading whilst enabling a good degree of visual sight-line, and it can also be used as code compliant balcony balustrades.

KEY FEATURES & USE

- Manufactured in New Zealand
- Specifically engineered and constructed to meet building performance and site specific requirements
- Made from lightweight aluminium to appropriate sized sections specific to each project
- Variability to grate grid sizes (within engineering tolerances).
- Integrated bracket systems - can connect to Thermosash systems without penetrating beyond 'wet-zone' of curtainwalling or unitised system.
- Can be powdercoated or anodised

SHADETREAD™ USES MAY INCLUDE

- Access Floors
- Exterior access to the building facade / trafficable sunscreens
- Safe roof access system

SHADEGRATE™ USES MAY INCLUDE

- Sunscreens - Horizontal & Vertical (non trafficable)
- Sliding and cantilevered facade
- Feature Fins
- Mechanical Plant screening
- Balustrades

BUILDING USE & IMPORTANCE CLASSIFICATION

A1 Classification; Commercial, Industrial and Communal Residential
A3 Classification: Importance levels 1-5.

FOR BUILDING TYPE

- High-rise
- Mid-rise
- Low-rise
- Specific design

BUILDING LOCATION & ENVIRONMENT

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

INSTALLATION REQUIREMENTS

Installation is typically carried out by a Thermosash approved installer.

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 of this brochure.

PRODUCT SPECIFICATION

Where traditionally the specification of 'webforge' or 'webgrate' systems are proposed, we offer a locally manufactured architectural solution to balustrades, solar shade or light weight heavy duty aluminium access walkways.

Our in-house engineers undertake analysis to provide the most structurally economic solution. The following factors need to be considered when specifying:

- Screen use - vertical or horizontal shade device
- Human traffic / ventilation
- Shade requirements
- Wind loading
- Seismic loading back to the structure
- Fixing locations

SIZING:

- Panel size is limited only by Anodise bath / Powdercoating or freighting limitations

SHADETREAD™ ITEM	SIZE	NOTES
Max Width	1230mm	**1200mm preferable***
Max Length	3200mm	Could do 3600mm but harder to handle. Shorter the better.
Bar Size	40 x 3mm **50 x 3mm***	**Square*** or round edge **Square*** or round edge
Slot	50 x 30 50 x 60 50 x 90 **100 x 30***	Centre to centre Centre to centre Centre to centre Centre to centre

***items are standard or preferred**

SHADEGRATE™ ITEM	SIZE	NOTES
Max Width	1230mm	**1200mm preferable***
Max Length	3200mm	**1200mm preferable***
Bar Size	40 x 3mm	**Square*** or round edge
Slot	50 x 30	Centre to centre
	50 x 60	Centre to centre
	50 x 90	Centre to centre
	100 x 30*	Centre to centre

***items are standard or preferred**

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 (304/316)
- Stainless Steel Bolts, Screws & Studs
- Galvanized Steel Bolts

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 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

BUILDING CODE - DEMONSTRATION OF COMPLIANCE

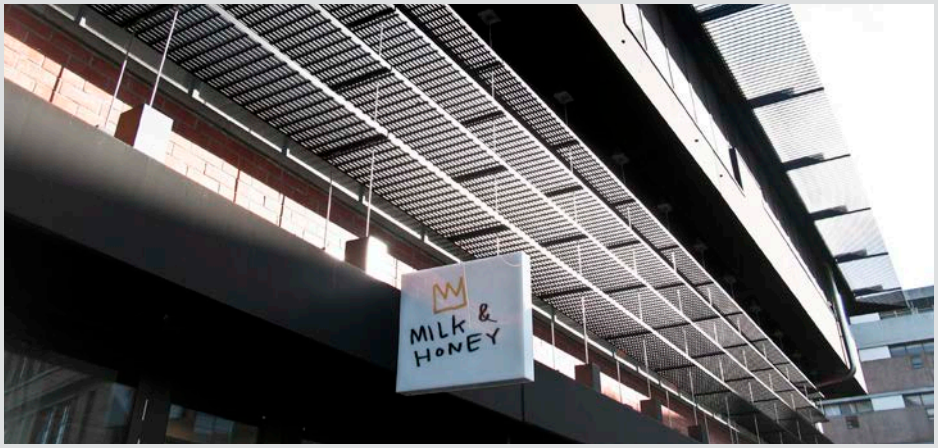
Thermosash expertly engineers and designs each bespoke facade to the design and performance requirements of the individual project. We ensure that all compliance claims are backed by a comprehensive set of documents, including PS1 Design and PS3 Construction Producer Statements as a compliance pathway.

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 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.
F4 **SAFETY FROM FALLING**	**COMPLIANCE BY NZ/AS 1170.1** Thermosash follows the safety in design intent on the architectural drawings and designs for C3 barrier loads where protecting a fall greater than 1 m (NZS/AS 1170.1 Table 3.3).
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.

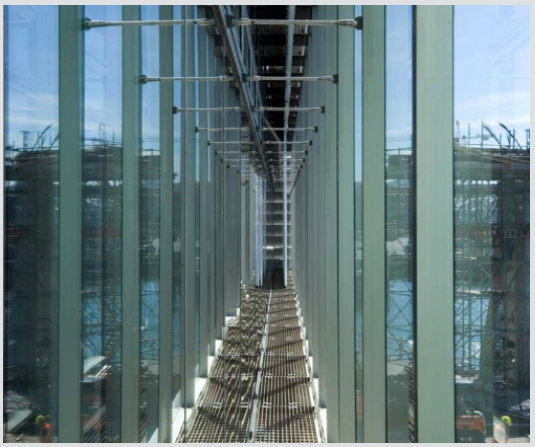
NOTE: THIS BROCHURE CONTAINS A SUMMARISED VERSION OF BUILDING PRODUCT INFORMATION REQUIREMENTS (BPIR) CLASS 2 DISCLOSURE INFORMATION - OUR COMPREHENSIVE DOCUMENTS CAN BE DOWNLOADED FROM:
HTTPS://WWW.THERMOSASH.CO.NZ/DOWNLOADS-RESOURCES/BPIR-DOCUMENTS/

Lysaght Building - Auckland

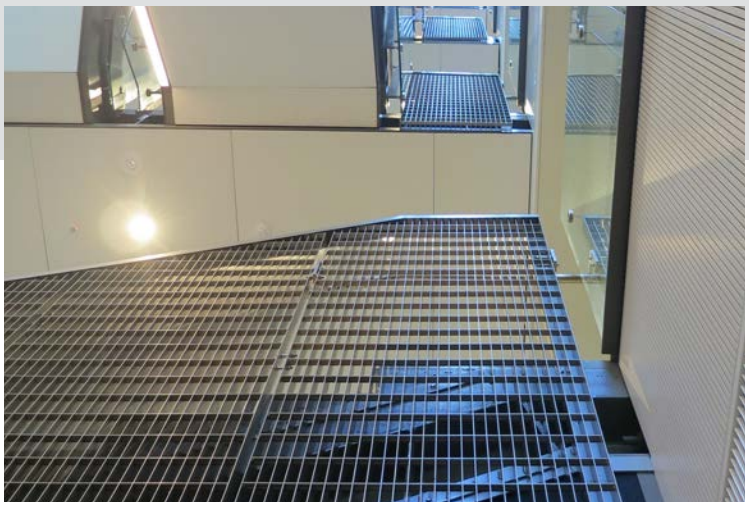
SLIDING AND CANTILEVERED THERMOSASH SHADEGRATE™ FACADE SYSTEM AND SHADETREAD™ ACCESS SYSTEM INTEGRATED INTO THERMOSASH PW1000 UNITISED FLUSH GLAZED SUITE ON THE NORTH EAST BUILDING FACE



Shadetread™ installed to facade as external trafficable sunscreens - Victoria University, The Hub, Kelburn Campus

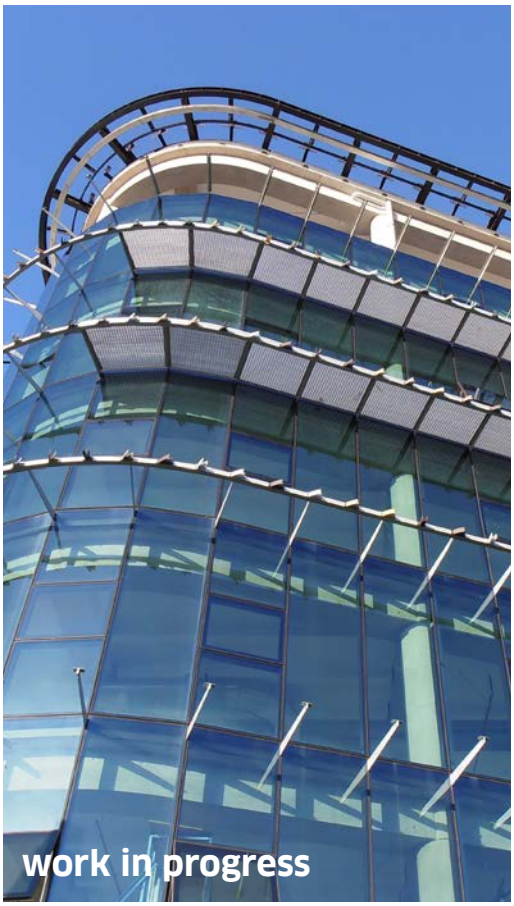


Shadetread™ lightweight access-way in twin-skin curtainwall system - Meridian Energy HQ, Wellington



Shadegrate™ installed internally as balustrades for the refurbishment of Transport HQ at 22 Boulcott Street, Wellington

Shadetread™ externally integrated in PW1000 flush glazed curtainwall and Shadegrate™ as internal balustrades - Telecom Tower, Willis St, Wellington



Shadetread™ access walkway in twin-skin curtainwall system - Deloitte, Auckland

Shadetread™ external facade service access behind vertical sunshade elements and integrated into PW1000 Unitised Curtainwall - ASB North Wharf, Auckland

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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