

Product Environmental Attributes

Thermoshield's unique Elastomeric Radiation Control Coatings for roofs and walls delivers the following advantages:

Reduces temperatures within a building.

The solar reflective heat barrier properties of Thermoshield will contribute to reducing temperatures within a building.

Reduces Life Cycle Costs

Thermoshield improves the life cycle costs of existing and new roofs by reducing thermal ageing and thermal shock from high heat loads and Ultra Violet penetration and degradation. When applied to existing roofs Thermoshield converts rust and increases metal life. This can reduce roof maintenance by up to 80%;

Contributes to reductions in power consumption and GHG emissions.

Improved thermal properties of a building will reduce the demand on air conditioning and refrigeration equipment thereby reducing power consumption, Green House Gas Emissions and running costs. (Refer to Thermoshield Supplementary Heat Load Calculations Guidelines)

Independently certified as environmentally preferable

Thermoshield has been independently certified as an environmentally preferable by Good Environmental

Choice Australia (GECA). The product has reduced health and environmental impacts through excellent durability, recycleable packaging, low levels of VOC's and Titanium dioxide and contains no glycol ethers, heavy metals, carcinogenic substances, APEO's or solvents. For details refer to the GEC Environmental Performance declaration (EPD)

Environmental Choice Australia Ecolabel

Thermoshield liquid thermal coatings are certified as environmentally preferable by GECA.

The Environmental Choice Australia Label is recognised by architects, manufacturers, designers and building industry professionals as the leading LCA based ecolabelling program in Australia. The program is managed by Good Environmental Choice Australia Ltd (GECA), a not for profit national environmental research and certification organisation in accordance to ISO 14 024 – International Standard for Third Party Environmental Labelling and Declaration.

Where the Environmental Choice Australia Ecolabel is displayed, it acknowledges the products as meeting or exceeding the voluntary environmental standards set by GECA.



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Architectural and Protective

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Green Star Rating Tools

Created by the Green Building Council of Australia, the Green Star rating system is designed to evaluate the environmental design and performance of buildings, and to drive the adoption of green building practices through market-based solutions.

The Green Star™ rating system is based on a number of criteria within nine environmental impact categories. It's objectives are to clearly define "green" building and establish a common standard of measurement, promote integrated whole of building design, to raise awareness of "green" building benefits, identify building life cycle impacts and to recognise and reward environmental leadership.

Green Star™ Environmental Impact Categories

All Green Star™ rating tools operate under the same framework of nine Environmental Impact Categories. These include:

- Management Indoor Environment Quality
- Energy Transport
- Water Materials
- Land Use & Ecology Emissions
- Innovation

Each category is divided into specific credits that aim to improve the environmental performance of the building. Points are awarded for each credit for actions that

demonstrate that the project has met the overall objectives of Green Star. Thermoshield products address specific credits in the Energy Category.

Green Star™ Compatibility for Thermoshield products

The thermal and solar performance potential benefit will vary depending on a number of factors including climate data, surface orientation, duration of exposure, etc. Thermal Simulation modelling will determine predictive performance.

Thermoshield products may contribute to the credit points for the Green Star™ Rating Tools outlined in the table on the following pages:

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Green Star™ Compatibility for Thermoshield products

Green Star Office Design v3 Tool				
Environmental Impact Category	Credit Title	Credit No	Available Credits	Credit Compliance Criteria
Energy	Conditional Requirement	Ene -	0	<p>Credit Criteria: To meet the conditional requirement: The project's predicted greenhouse gas emissions must not exceed 110 kgCO₂/m²/annum as determined using energy modelling in accordance with: The Australian Building Greenhouse Rating (ABGR) Validation Protocol for Computer Simulations. OR The final and current version of the Green Star Energy Calculator Guide.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof is likely to contribute towards achievement of the conditional requirement for the design of the base building.</p>
	Greenhouse Gas Emissions	Ene - 1	20	<p>Credit Criteria: Up to twenty points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions have been further reduced below the Conditional Requirement.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement of 110 kg/CO₂/m²/annum.</p>
Green Star Office Interiors v1.1 Tool				
Energy	Energy Efficiency	Ene - 1	0	<p>Credit Criteria: To meet the conditional requirement: the tenancy fitout achieves a minimum predicted rating of Four Stars using the Australian Building Greenhouse Rating (ABGR) scheme's 'Validation Protocol for Tenancy Energy Estimation Version 2005-02'.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof is likely to contribute towards achievement of the conditional requirement for the design of the base building.</p>
	Energy Improvements	Ene - 2	12	<p>Credit Criteria: Up to twelve points are awarded where there is an improvement in energy efficiency and greenhouse gas emissions above the conditional Four Star ABGR (refer to Ene-1). Points are awarded as follows:</p> <ul style="list-style-type: none"> • 3 points = 4.5 Star ABGR • 6 points = 5 Star ABGR • 9 points = 5 Star ABGR + 20% CO₂ reduction on 5 Star • 12 points = 5 Star ABGR + 40% CO₂ reduction on 5 Star <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional Four Star ABGR requirement.</p>
Green Star Education v1 Tool				
Energy	Conditional Requirement	Ene -	0	<p>Credit Criteria: To meet the conditional requirement: The project's predicted greenhouse gas emissions must meet the GHG emission benchmark in kgCO₂/m²/annum for each space defined in the Green Star Education v1 Tool as determined by the current version of the Green Star Education v1 Energy Calculator.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof is likely to contribute towards achievement of the conditional requirement for the design of the base building.</p>
	Greenhouse Gas Emissions	Ene-1	20	<p>Credit Criteria: Up to twenty points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions have been further reduced below the Conditional Requirement.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement defined for each space in the Green Star Education v1 Tool.</p>
	Peak Energy Demand Reduction	Ene-3	2	<p>Credit Criteria: Up to two points are awarded where it is demonstrated that the building has reduced its peak energy demand load on electricity infrastructure as follows:</p> <ul style="list-style-type: none"> • One point where: <ul style="list-style-type: none"> Peak energy demand is actively reduced by 15%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 40%; and • Two points where: <ul style="list-style-type: none"> Peak energy demand is actively reduced by 30%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 20%. <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards a reduction in peak energy demand for cooling.</p>

Environmental Impact Category	Credit Title	Credit No	Available Credits	Credit Compliance Criteria
Green Star Healthcare v1 Tool				
Energy	Conditional Requirement	Ene -	0	<p>Credit Criteria: To meet the conditional requirement: The project's predicted greenhouse gas emissions must be equal to, or show an improvement over, the predicted greenhouse gas emissions of the 'benchmark building' as determined by the Green Star – Healthcare v1 Greenhouse Gas Emissions Calculator.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof is likely to contribute towards achievement of the conditional requirement for the design of the base building.</p>
	Greenhouse Gas Emissions	Ene - 1	20	<p>Credit Criteria: Up to twenty points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions (GGE) have been further reduced below that of the 'benchmark building'.</p> <p>The number of points achieved is determined as follows: For every 5% reduction in predicted GHG Emissions, one point is awarded. Zero net operating emissions = 20 points.</p> <p>The predicted greenhouse gas emissions of the 'proposed building' and the 'benchmark building' must be calculated in accordance with the Green Star – Healthcare v1 Greenhouse Gas Emissions Calculator Guide.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement defined for each space in the Green Star Education v1 Tool.</p>
	Peak Energy Demand Reduction	Ene-3	2	<p>Credit Criteria: Up to two points are awarded where it is demonstrated that the building has reduced its peak energy demand load on electricity infrastructure as follows:</p> <ul style="list-style-type: none"> • One point where: Peak energy demand is actively reduced by 15%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 40%; and • Two points where: Peak energy demand is actively reduced by 30%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 20%. <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards a reduction in peak energy demand for cooling.</p>
Green Star Retail Centre v1				
Energy	Greenhouse Gas Emissions	Ene - 1	20	<p>Credit Criteria: Up to twenty points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions have been reduced below the 'standard practice benchmark'. The Green Star – Retail Centre v1 Energy Calculator determines the benchmark for each project based on the composition of space types within each project.</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement defined for each space in the Green Star Education v1 Tool.</p>
	Peak energy Demand Reduction	Ene - 3	2	<p>Credit Criteria: Up to two points are awarded where it is demonstrated that the building has reduced its peak energy demand load on electricity infrastructure as follows:</p> <ul style="list-style-type: none"> • One point where: Peak energy demand is actively reduced by 15%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 40%; and • Two points where: Peak energy demand is actively reduced by 30%; OR A flatter demand curve is achieved, i.e. the difference between the peak and average demand does not exceed 20%. <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards a reduction in peak energy demand for cooling.</p>
Green Star Multi Unit Residential v1				
Energy	Conditional Requirement	Ene -	0	<p>Credit Criteria: To meet the conditional requirement, the average thermal performance of the dwellings must be improved by 10% compared to the regulated thermal performance standard in the relevant jurisdiction.</p> <p>The Ene-Con Calculator is completed to determine compliance with the Conditional Requirement</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement defined for each space in the Green Star Education v1 Tool.</p>
	Greenhouse Gas Emissions	Ene - 1	20	<p>Credit Criteria: Up to 20 points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions has been reduced compared to the Green Star - Multi Unit Residential standard practice energy benchmark. 100% reduction refers to Zero net operating emissions.</p> <p>The building's predicted greenhouse gas emissions must be calculated in accordance with the Green Star – Multi Unit Residential Greenhouse Gas Emissions Calculator Guide, available from www.gbca.org.au</p> <p>Use of Thermoshield Liquid coatings onto exterior walls and roof may contribute towards achievement of credits for reducing predicted GHG below the conditional requirement defined for each space in the Green Multi Unit Residential v1 Tool.</p>
	Peak energy Demand Reduction	Ene - 3	2	<p>Credit Criteria: Up to two points are awarded where it is demonstrated that the building has reduced its peak demand load on electricity infrastructure as follows:</p> <ul style="list-style-type: none"> • One point where the building includes one of the features below (Table Ene-3.1 in the Technical Manual): • Two points where either: - No air-conditioning or heating system is installed and two points are awarded under IEQ-5 'Thermal Comfort'; OR - The building includes two of the features below (Table Ene-3.1 in the Technical Manual): <p>Building features recognised as reducing Peak Electricity Demand.</p> <ul style="list-style-type: none"> • All cooking appliances provided as part of the building are non-electric. • On-site energy generation can provide 1kW per apartment at time of peak electricity demand in the supply network. • All installed air-conditioning equipment is within one star of the best available energy star rating (www.energyrating.gov.au) • A heating system with a non-electric primary energy source is installed. • Two points are awarded under IEQ-5 'Thermal Comfort'.