

Maxgrow – Almaxco PVDF Coated Aluminium Composite Panel [ECG-Premium]

Overview

Lightweight aluminium composite panel composed of two aluminium skins with recycled polyethylene plastic core and fluorocarbon surface coating. It is suitable for use in exterior and interior use in commercial and industrial applications for signage and cladding.



Product Description

Almaxco Aluminium Composite Panel (ACP) is used for cladding of buildings, canopies, pillar & column wraps, roofing and cladding of tunnel walls. It is flat, rigid, light weight and easily formable. *Almaxco ACP* is made of recycled polyethylene core sandwiched between two thin aluminium skins which also have recycled content. The fluorocarbon coating guarantees UV and corrosion resistance and also contributes in reducing urban heat island effect by reflecting sunlight.

Depending on the installation, *Almaxco ACP* may contribute in thermal and acoustic insulation.

The panels are available in a wide range of colours and varying thicknesses.

PRODUCT SPECIFICATIONS

Options	thickness: 2mm, 3mm, 4mm, 5mm, 6mm
Colours	50 standard solid and metallic colours custom colours available on request
Warranty	20 years
Expected Life	35 years
Indicative Costs	Contact supplier
Purchase Options	Contact supplier
Constituents	<ul style="list-style-type: none">• 48.5% Aluminium skin, with 50% recycled content which is made up from 45% post-consumer and 55% post-industrial content• 50% PE core, which is made up from 60% post-consumer and 40% post-industrial recycled content• 1% Paint coating• 0.5% Adhesive All materials are sourced from China.
National & International Standards	For PVDF coating standards click here Adhesive: ASTM D792, ASTM D1238, ASTM D3418, ASTM D1525
Country of Origin	China
Projects	Hudson Rd, Commercial Building (Brisbane Australia) KBRB WATPAC Project (Brisbane Australia) Eco Science WATPAC Project (Brisbane Australia) Serangoon & Marymount MRT Stations, (Singapore) Bishan & Toh Yi Lift Shafts for Lift Upgrading Programme (LUP) Raffles Junior College, Singapore Itihad Tower, Ajman, UAE Pear Continental Creek Hotel, Deira, Dubai, UAE A3 Tower Jumeirah Lake Residency Doha City Centre (Shangrila & Marriot Hotel Towers) Phase 1,2 & 3
Preparation	Refer to Processing & Jointing Methods Catalogue



ECOSPECIFIER LIFE-CYCLE ASSESSMENT

INTEGRATED DESIGN AND POLICY ISSUES

Depending on the colour selected the total solar reflectance value of the finish may contribute to the reduction of energy requirements of the building.

Although *Almaxco ACP* is not an insulation panel, the still air layer composed between the wall and the panel may have insulation properties.

HUMAN HEALTH

Health

Product does not have adverse effects on human health.

Comfort

Product itself does not impact on passive or active thermal comfort strategies, however, if applied as sun louvers, shade screens or canopy claddings, it may contribute to thermal comfort.

Indoor Environment Quality

All coatings are factory applied using a coating line with an in line regenerative thermal oxidizer which eliminates the majority of release of the VOC content of the coating. As *Almaxco ACP* is already pre-coated in the factory, it eliminates the need for field painting and thus the accompanying VOC's that would be released in the field, improving indoor environment quality if applied in interiors.

Independent test result shows *Almaxco ACP* emits 0.04 mg/m³/hrs after 24 hours which is considered as 'very low level'. See [Glossary](#) for more information about VOCs.

Electromagnetic Radiation

Not applicable

Safety

ACPs are lighter than solid aluminium panels with the same strength, therefore easier and safer to handle at installation and demolition.

Accessibility

Not applicable



ECOLOGICAL QUALITY

Considering the high recycled content of product, the adverse effects listed below are reduced significantly compared to similar products made from virgin material.

Terrestrial

Emissions – Product contains aluminium. The production of alumina from bauxite ores uses a chemical treatment, known as the Bayer Process (see [Glossary](#)). The alkaline mist associated with this process may have adverse land and vegetation impacts. Recycled content reduces those impacts.

Product also contains petrochemical products. The extraction of oil results in the release of toxic drilling by-products. The production of plastics and elastomers also has associated emissions to terrestrial environments. Recycled content reduces those emissions.

Physical – Mineral extraction of bauxite will disrupt landscapes and alter ecosystems. Because bauxite deposits are found near the Earth’s surface, mining requires removal of topsoil and overburden before deeper excavation occurs. Recycled content reduces adverse effects of mining.

The extraction of oil is responsible for the deforestation, degradation, and destruction of lands across the globe. In addition, the construction of roads for accessing remote oil sites opens wild lands to colonists and land developers. Recycled content reduces adverse effects of oil extraction.

Aquatic

Emissions – The oil extraction process and the production of plastics and elastomers have associated emissions to aquatic environments that have localised impacts around production facilities. Recycled content reduces those impacts.

Physical – Bauxite residues of red mud are disposed of in dams. The excess alumina-rich water is discharged into marine environments. Recycled content reduces the adverse effects of discharge.

Atmosphere

Greenhouse (GHG) – *Almaxco ACP* achieves the same strength as solid aluminium panels by using approximately the half amount of aluminium. Energy used for production of *Almaxco ACP* is therefore significantly lower than energy used producing solid aluminium panels. Alumina processing requires high-energy consumption and therefore greenhouse gas emissions are associated with the production of refined alumina. Recycled content reduces greenhouse gas emissions.

Greenhouse intensity – a 4mm thick *Almaxco ACP* has a GHG intensity of 16.4 kgCO_{2e}/m²*

*Calculation is based on specific and proxy data sourced from Bath University, UK and D. Baggs, Ecospecifier.

Transport intensity – Product is manufactured in China from locally sourced materials, thus reducing energy and GHG intensity associated with transportation of raw materials. Energy and GHG intensities for shipping product are shown below:

Product weight	Energy Intensity - Container Shipping	GHG Intensity - Container Shipping
4mm thick panel: 5.5 kg / m ²	0.000135 MJ / kg.km	0.000011kgCO _{2e} / kg.km

Table below provides land transportation greenhouse intensity figures to help calculate the greenhouse gas intensity of land transportation from shipping port.

Light commercial vehicle	Rigid Truck	Articulated Truck
0.001451kgCO _{2e} / kg.km	0.000195kgCO _{2e} / kg.km	0.000169kgCO _{2e} / kg.km

Transport intensity figures sourced from Australian National Greenhouse Gas Inventory 1990, 1995 and 1999 and WWF International, Inland Navigations and Emissions, 2005.

Operational efficiency – Product may increase the energy/greenhouse efficiency of building, depending on the installation method.

Re-use Efficiency – Product is capable of reuse- although it is unlikely to be re-used.



Toxics and Pollutants – Considering the high recycled content of product emissions are significantly lower compared to similar products made from virgin aluminium. The process of alumina refinement generates plant emissions, including coal dust, fugitive lime dust, alumina dust and aerosol generated from plant process liquor including fluorine/fluoride emissions that are known toxins. Recycled content reduces adverse effects of alumina refining.

Ozone Depletion – Not applicable

Urban Heat Island Effects – Depending on the installation and colour/coating product may result in reduced urban heat build up.

Noise – Product has some acoustic properties.

Biodiversity

Considering the high recycled content of product the effects written below are less severe than that of similar products made from virgin materials.

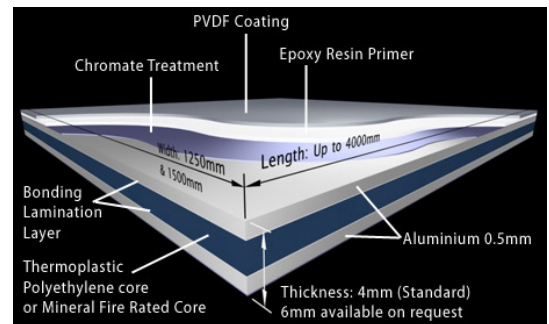
Bauxite mining leads to modified soil profiles, topography and drainage which impacts natural vegetation and biodiversity. The oil extraction process results in the release of toxic drilling by-products into local rivers, while broken pipelines and leakage result in persistent oil spillage.

RESOURCE DEPLETION

Resource Efficiency

The polyethylene core is made from 100% recycled material, while the aluminium skin contains approximately 50% recycled metal improving resource efficiency.

A further feature of product is that because of the sandwich structure it needs approximately the half amount of aluminium to achieve the same strength as solid aluminium panels, making the product more resource efficient than solid panels.



However, bauxite is a non-renewable mineral resource with an estimated 200 year supply. Crude oil is also a finite resource and although reserve estimates vary all agree that supply is rapidly dwindling and most predict that the world has less than 100 years supply of easily accessible crude oil. Recycled content reduces the consumption of raw resources.

Embodied Fossil Fuel Energy

A 4mm thick *Almaxco ACP* has an embodied energy of 309.4 MJ/m²*

*Calculation is based on specific and proxy data sourced from Bath University, UK and D. Baggs, Ecospecifier.

Embodied Water

Water for degreasing and coil cleaning process is re-used up to 10 times before being disposed off properly. Manufacturer claims 350 litres of water is used in the manufacturing process of 100,000 m² panels.

Durability

PVDF coating improves durability. Expected life time of PVDF coated *Almaxco ACP* is 35 years. [Click here](#) to see a comparison of weathering of different type of coatings in a 14 years timeframe. The PVDF coating used for *Almaxco ACP* is made from Kynar 500.



Reusability

Product is suitable for re-use but is unlikely to be re-used rather it is likely to be recycled.

Repairability

Panels are not suitable to be repaired. Small scratches should be left untouched.

Design for Dematerialisation

Because of the sandwich structure *Almaxco ACP* needs approximately the half amount of aluminium to achieve the same strength as solid aluminium panels.

Using as a cladding, *Almaxco ACP* eliminates the application of paints or other surface treatments. Within the expected lifetime of 35 years *Almaxco ACP* can save on material of many coats.

Design for Disassembly

Almaxco ACP itself is not designed for disassembly. However, as a component of a structure it may contribute in easy disassembly depending on the installation method.

Recyclability

Both aluminium and polyethylene are recyclable, however the recycled materials have lower quality. Both recycled aluminium and polyethylene can be used in production of new *Almaxco ACP*.

Maintenance

Almaxco ACP panels should be cleaned in certain intervals using water and pH neutral cleaning agent.

Product Takeback Scheme

No

Extended Producer Responsibility (EPR)

No

CORPORATE AND SOCIAL SUSTAINABILITY**Audits and Environmental Reporting**

No

Convictions

No

Environmental Policy

Yes

Social Enhancement Programs

No

Technology Transfer Programs

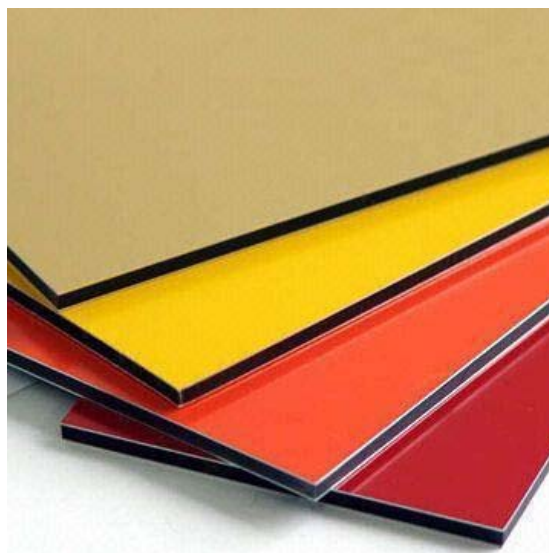
No

Environmental Management Systems (EMS)

The supplier operates ISO 14001 compliant EMS, however it is not third party certified. Supplier is committed to certify its EMS in the second half of 2010.

ECOSPECIFIER ISSUES OF CONCERN / RED LIGHTS

None



ECOSPECIFIER GREENRATE GREEN BUILDING SCHEME PRE-ASSESSMENT

The Pearl Design System for ESTIDAMA

LIVEABLE BUILDINGS

LBo: Liveable Outdoors

<p>LBo-r1: Outdoor Thermal Comfort Strategy (if used for shading)</p> <p>Product may assist in a project obtaining this requirement by reducing heat in urban open space through passive cooling strategies such as shading, high-albedo surfaces, ventilation, evaporative cooling, radiative cooling, and thermal mass. Shading elements must have a minimum Solar Reflectance Index (SRI) of 29.</p>	<p><i>Required</i></p>
<p>LBo-1 Improved Outdoor Thermal Comfort (if used for shading, and depending on colour and reflectance)</p> <p>Product may assist in a project obtaining credit points by reducing heat in urban space through shading. Shading elements must have a minimum SRI of 29. Number of points awarded is determined by the percentage of shading over open space, car parking, walkways, and cycle tracks.</p>	<p><i>Points Available</i> 2</p>

LBi: Liveable Indoors

<p>LBi-9: Indoor Noise Pollution (depending on the function and design)</p> <p>Product may assist in a project obtaining this credit by improving the noise isolation of normally occupied premises/rooms to reduce impact of unwanted noise. Credit point is achieved if internal ambient noise levels do not exceed 50 dBA or the prescribed level for the nominated areas.</p>	<p><i>Points Available</i> 1</p>
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RESOURCEFUL ENERGY

<p>RE-r1: Minimum Energy Performance (depending on the function and design)</p> <p>Product may assist in a project obtaining this requirement if the building meets the prescribed percentage performance improvement compared to the baseline.</p>	<p><i>Required</i></p>
<p>RE-1: Improved Energy Performance (depending on the function and design)</p> <p>Product may assist in a project obtaining this credit for reduced energy consumption and carbon emissions during building operation compared to the baseline building consumption determined in RE-r1. Number of points awarded is determined by the percentage reduction from the baseline.</p>	<p><i>Points Available</i> 15</p>
<p>RE-2: Cool Building Strategies (depending on the function and design)</p> <p>Product may assist in a project obtaining this requirement by reducing external heat gain through the use of high solar reflective materials. Number of points awarded is determined by the percentage reduction in annual heat gain from the baseline. One point is awarded for the use of roofing materials with a Solar Reflectance Index (SRI) of at least 78.</p>	<p><i>Points Available</i> 6</p>

STEWARDING MATERIALS

<p>SM-1: Non-Polluting Materials</p> <p>Product may assist in a project obtaining this credit for non-polluting materials to eliminate long-term negative impacts on human health and pollution of natural systems. 1 Credit point is awarded when all thermal insulation materials and blowing agents used in manufacture have an ODP of zero and a GWP less than 5. 1 Credit point is awarded for replacing of chlorine-based materials including PVC, in accordance with the prescribed proportions. 1 Credit point is awarded for elimination of products containing the following R-Phrases: 20-29, 31-33, 36-39, 41, 43, 45-46, 48-65.</p>	<p><i>Points Available</i> 3</p>
<p>SM-10: Recycled Materials: Other Materials</p> <p>Product may assist in a project obtaining credit points through the use of recycled materials with a minimum of 30% post-consumer recycled content, a minimum of 80% post industrial recycled content, or 50% agricultural waste by-product.</p>	<p><i>Points Available</i> 1</p>

LEED® for Commercial Interiors - Version 3 (see disclaimer below)



ENERGY & ATMOSPHERE

<p>EA Prerequisite 2: Minimum Energy Performance (depending on the function and design)</p> <p>Product may assist a project to comply with the ANSI/ASHRAE/IESNA Standard 90.1-2007 for the tenant's scope or works, when appropriately included in combination with other elements, to establish the minimum energy efficiency of a tenant space in accordance with prescribed requirements.</p>	<p><i>Required</i></p>
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MATERIALS & RESOURCES

<p>MR Credit 4: Recycled Content</p> <p>Product is likely to assist in a project obtaining this credit. The project must incorporate post-consumer and pre-consumer recycled content of at least 10% or 20% based on the total value (cost) of materials used in the project, in accordance with the prescribed requirements.</p>	<p><i>Points Available</i> 2</p>
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LEED® for New Construction & Major Renovations - Version 3 (see disclaimer below)

SUSTAINABLE SITES

<p>SS Credit 7.1: Heat Island Effect: Non-Roof (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit as it reduces heat island effects to minimize impacts on microclimates and human and wildlife habitats. Credit point is achieved when the requirements for one of the two following options are met;</p> <p>Option 1: Use a combination of the following (within 5 years of landscape installation) for 50% of hardscapes, provide shade from existing tree canopy, provide shade structures covered from solar panels, architectural devices or structures with a Solar Reflectance Index (SRI) of at least 29 and an open-grid pavement system (at least 50% pervious) in accordance with prescribed requirements.</p> <p>Option 2: Includes placing a minimum of 50% of parking spaces under cover (any roof used to shade or cover parking must have a SRI of at least 29 or be covered with solar panels).</p> <p>Exemplary Performance: Innovation in Design & Process: Heat Island Effect: Non-Roof (additional 1 point)</p> <p>Possible achievement when either of the following options are met;</p> <p>Option 1 includes demonstrating that 100% of non-roof impervious surfaces have been constructed with high-albedo materials and/or open grid paving and/or will shade within 5 years, or</p> <p>Option 2 includes demonstrating of the on-site parking spaces have been located under cover.</p>	<p><i>Points Available</i> 1</p>
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<p>SS Credit 7.2: Heat Island Effect: Roof (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit as it reduces heat island effects to minimize impacts on microclimates and human and wildlife habitats. Credit point is achieved when the requirements for one of the following options are met;</p> <p>Option 1: Includes using roofing materials with a high Solar Reflective Index (SRI), for 75% of the roof surface in accordance with prescribed values.</p> <p>Option 2: Includes installing a vegetated roof that covers at least 50% of the roof area, and</p> <p>Option 3: Includes installing high albedo and vegetated roof surfaces that complies with the prescribed criteria.</p> <p>Exemplary Performance: Innovation in Design & Process: Heat Island Effect: Roof (additional 1 point)</p> <p>Possible achievement when 100% of the projects roof area (excluding mechanical equipment, photovoltaic panels, and skylights) is comprised of a green roof.</p>	<p><i>Points Available</i> 1</p>
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ENERGY & ATMOSPHERE

<p>EA Prerequisite 2: Minimum Energy Performance (depending on the function and</p>	
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design) Product may assist in combination with other systems in a project meeting the energy performance rating goal established using the EPA's Target Finder Rating Tool through a variety of options.	<i>Required</i>
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MATERIALS & RESOURCES

MR Credit 4.1: Recycled Content Product is likely to assist in a project obtaining this credit. The project must incorporate materials with recycled content such that the sum of postconsumer recycled content plus 1/2 of the preconsumer content constitutes recycled content of at least 10% or 20% based on the total value (cost) of materials used in the project.	<i>Points Available</i> 2
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LEED® is a registered mark of the U.S Green Building Council (USGBC). The listing constitutes an **ecospecifier** Technical Opinion and is not endorsed by the USGBC or its agents. For detailed technical information about Credit requirements refer to the relevant LEED® Reference Guide. Rating Systems and Reference Guides are subject to change by the USGBC and any decision regarding the award of credits towards a LEED® rating is at the sole discretion of the USGBC.

BREEAM Issue 3 (see disclaimer below)

HEALTH & WELLBEING

Hea 9 - Volatile Organic Compounds: Wall-coverings Product is likely to assist in a project obtaining credits as it meets the prescribed standards for VOCs, heavy metals, formaldehyde and Vinyl chloride for wall-coverings. Products that are within the BS EN standard for the material are compliant with this credit. To achieve credit point all material types under credit Hea 9 specified for the project must be in accordance with the prescribed requirements. NOTE- this credit relates to interior use only	<i>Points Available</i> 1
Hea 13 – Acoustic performance (depending on the function and design) Product is likely to assist in a project obtaining credits by providing acoustic insulation so that the building meets the appropriate acoustic performance standards for its purpose and meets the required sound insulation between acoustically sensitive rooms. The second point can be independently awarded when areas used for speech achieve reverberation times compliant with the prescribed standard.	<i>Points Available</i> 2

ENERGY

Ene 1 – Reduction of CO₂ emissions (depending on the function and design) Product is likely to assist in a project obtaining credits as it demonstrates an improvement in the energy efficiency of a building's systems and therefore achieves lower operational related CO ₂ emissions. Number of points awarded is dependent on percentage improvement over the established baseline.	<i>Points Available</i> 15
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MATERIALS

Mat 5 – Responsible Sourcing of Materials (this credit is available when the manufacturer's EMS becomes certified) Product is likely to assist in a project obtaining credits as it contributes to the responsible sourcing of materials for major building elements. Credit points are achieved where 80% of assessed materials for building elements (roof, frame, external walls, ground and upper floors, foundations/substructure, doors and windows) are responsibly sourced. 100% of timber used for these elements must have 3 rd party chain of custody certification.	<i>Points Available</i> 4
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BREEAM® is a registered mark of BRE. The listing constitutes an **ecospecifier** Technical Opinion and is not endorsed by the BRE or its agents. For detailed technical information about Credit requirements refer to the relevant BREEAM® Reference Guide. Rating Systems and Reference Guides are subject to change by the BRE and any decision regarding the award of credits towards a BREEAM® rating is at the sole discretion of the BRE.

BCA Greenmark Landed Houses v1 (see disclaimer below)



ENERGY EFFICIENCY

<p>1-3 Shading Device Design (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credit points by providing an external shading device over openings to reduce heat gain to the building. Number of points awarded determined by the percentage of shading over openings.</p>	<p><i>Points Available</i></p> <p>7</p>
<p>1-4 Maximum Permissible Wall U-Value (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credit points as it reduces the thermal transmittance value of external walls. Two points are awarded where the maximum U-value of wall is 1.5 W/m²K, three points where maximum is 1 W/m²K, and four points are awarded for finishes or external wall surface with an SRI of 70 or more.</p>	<p><i>Points Available</i></p> <p>4</p>

ENVIRONMENTAL PROTECTION

<p>3-1(c)(ii) Sustainable Products: Recycled Content</p> <p>Product is likely to assist in a project obtaining credit points as it has a recycled content of at least 30% by weight or volume. Number of points awarded is determined by the level of impact of the item(s).</p>	<p><i>Points Available</i></p> <p>2</p>
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BCA Greenmark Non-Residential Buildings v3 (see disclaimer below)

MANDATORY REQUIREMENTS

<p>M1 Building Envelope – ETTV (depending on the function and design)</p> <p>Product is likely to assist in a project complying with mandatory requirement by reducing heat conduction and radiation through walls and fenestrations. In order to comply, the envelope thermal transfer value (ETTV) of the building shall not exceed 50 W/m².</p>	<p><i>Required</i></p>
<p>M3 Roof – U Value (depending on the function and design)</p> <p>Product is likely to assist in a project complying with mandatory requirement by reducing the thermal transmittance of a roof without skylights and assisting in achieving an average U-value below the prescribed levels.</p>	<p><i>Required</i></p>

ENERGY EFFICIENCY

<p>1-1 Building Envelope - ETTV (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credit points by improving the overall thermal performance of the building envelope by reducing the envelope thermal transfer value (ETTV). Two points are awarded for every reduction of 1 W/m² from the 50 W/m² baseline.</p>	<p><i>Points Available</i></p> <p>15</p>
<p>1-3(b)(ii) Building Envelope – Design / Thermal Parameters: Sunshading (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credit points by providing sunshading devices for windows. Number of points awarded is determined by the percentage of west facing window areas with sunshading devices.</p>	<p><i>Points Available</i></p> <p>10</p>

ENVIRONMENTAL PROTECTION

<p>3-1(c)(ii) Sustainable Construction: Sustainable Materials</p> <p>Product is likely to assist in a project obtaining credit points as it contains at least 30% recycled content by weight or volume. Number of points awarded is determined by the level of impact of the item(s).</p>	<p><i>Points Available</i></p> <p>3</p>
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INDOOR ENVIRONMENT QUALITY

<p>4-2 Noise level (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credit points by assisting in the achievement of ambient sound levels recommended in the prescribed standard.</p>	<p><i>Points Available</i></p> <p>2</p>
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BCA Greenmark Office Interior v1 (see disclaimer below)



SUSTAINABLE MANAGEMENT & OPERATION

3-2(b) Sustainable Material Selection Product is likely to assist in a project obtaining credit points as it contains at least 30% recycled content by weight or volume and/or is certified under the Singapore Green Labelling Scheme. Number of points awarded is determined by the level of impact of the item(s).	<i>Points Available</i> 3
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INDOOR ENVIRONMENTAL QUALITY

4-5 Internal Noise Level (depending on the function and design) Product is likely to assist in a project obtaining credit points by assisting in the achievement of ambient sound levels recommended in the prescribed standard.	<i>Points Available</i> 2
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BCA Greenmark Infrastructure v1 (see disclaimer below)

ENERGY

2a-1 Energy Efficiency (depending on the function and design) Product is likely to assist in a project obtaining credit points by improving the energy efficiency of the project compared to code compliance facility or industry norm. Number of points awarded is determined by the percentage energy savings from the norm.	<i>Points Available</i> 13
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WASTE MANAGEMENT AND ENVIRONMENTAL PROTECTION

5-3 Recycled Material Product is likely to assist in a project obtaining credit points as it contains at least 30% recycled content by weight or volume or is certified under the Singapore Green Labelling Scheme. Number of points awarded is determined by the extensiveness of use of the item(s).	<i>Points Available</i> 6
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BCA Greenmark Residential Buildings v3 (see disclaimer below)

MANDATORY REQUIREMENTS

M1 Building Envelope – ETTV (depending on the function and design) Product is likely to assist in a project complying with mandatory requirement by reducing heat conduction and radiation through walls and fenestrations. In order to comply, the envelope thermal transfer value (ETTV) of the building shall not exceed 50 W/m ² .	<i>Required</i>
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ENERGY EFFICIENCY

1-3(b)(ii) Building Envelope – Design / Thermal Parameters: Sunshading (depending on the installation) Product is likely to assist in a project obtaining credit points by providing sunshading devices for windows. Number of points awarded is determined by the percentage of west facing window areas with sunshading devices.	<i>Points Available</i> 10
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ENVIRONMENTAL PROTECTION

3-1(c)(ii) Sustainable Construction: Sustainable Materials: Recycled Content Product is likely to assist in a project obtaining credit points as it contains at least 30% recycled content by weight or volume. Number of points awarded is determined by the level of impact of the item(s).	<i>Points Available</i> 4
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INDOOR ENVIRONMENT QUALITY

4-2 Noise level (depending on the function and design) Product is likely to assist in a project obtaining credit points by assisting in the achievement of ambient sound levels recommended in the prescribed standard.	<i>Points Available</i> 2
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BCA Greenmark Non-Residential Existing Buildings v2 (see disclaimer below)



ENERGY EFFICIENCY

1-1 Energy Efficiency (depending on the function and design) Product is likely to assist in a project obtaining credit points by contributing to increased energy efficiency of the building. Number of points awarded is determined by the percentage improvement from the specified benchmarks.	<i>Points Available</i> 22
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INDOOR ENVIRONMENTAL QUALITY

4-2(a) Environmental Protection: Sustainable Materials Product is likely to assist in a project obtaining credit points as it contains at least 30% recycled content by weight or volume, or is certified under the Singapore Green Label Scheme. Number of points awarded is determined by the level of impact of the item(s).	<i>Points Available</i> 2
4-5 Internal Noise Level (depending on the function and design) Product is likely to assist in a project obtaining credit points by assisting in the achievement of ambient sound levels recommended in the prescribed standard.	<i>Points Available</i> 2

Green Building Index Non-Residential New Construction Version 1 (see disclaimer below)

ENERGY EFFICIENCY

EE1 Minimum EE Performance (depending on the function and design) Product is likely to assist in a project obtaining credit point by improving thermal performance and contributing to a maximum Overall Thermal Transmittance Value of 50, and a maximum Roof Thermal Transmittance Value 25.	<i>Points available</i> 1
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INDOOR ENVIRONMENTAL QUALITY

EQ13 Internal Noise Levels (depending on the function and design) Product is likely to assist in a project obtaining credit points by directly reducing and maintaining internal noise levels below the specified sound levels.	<i>Points Available</i> 1
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MATERIALS & RESOURCES

MR2 Recycled Content Materials Product is likely to assist in a project obtaining credit points as a material that incorporates recycled content into its production. One point is awarded when the sum of post-consumer recycled content and one-half pre-consumer recycled content is greater than or equal to 10% (based on cost) of the total value of the materials in the project, two points are awarded where the sum of post-consumer recycled content and one-half pre-consumer recycled content is at least 30% (based on cost) of the total value of the materials in the project.	<i>Points Available</i> 2
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Green Building Index Residential New Construction Version 1 (see disclaimer below)

ENERGY EFFICIENCY

EE1 Minimum EE Performance (depending on the function and design) Product is likely to assist in a project obtaining credit points by improving thermal performance and contributing to a maximum Overall Thermal Transmittance Value of 50, and a maximum Roof Thermal Transmittance Value 25, and appropriate roof U values depending on weight.	<i>Points available</i> 3
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MATERIALS & RESOURCES

<p>MR4 Recycled Content Materials</p> <p>Product is likely to assist in a project obtaining credit point as a material that incorporates recycled content into its production. 0.5 point is awarded when the sum of post-consumer recycled content and one-half pre-consumer recycled content is greater than or equal to 10% (based on cost) of the total value of the materials in the project, and 0.25 point for every additional 5% for a maximum of one point.</p>	<p><i>Points Available</i></p> <p>1</p>
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National Australian Built Environment Rating System (NABERS) Compatibility

Product may assist in the achievement of Energy credits in this rating tool (depending on the function and design).

BASIX Building Sustainability Compatibility

Product may assist in the achievement of Thermal Comfort credits in this rating tool (depending on the function and design).

Green Star™ Office Interiors Version 1.1 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-10: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels through sound control or minimising noise generation. Credit points are achieved where ambient internal noise levels and reverberation times meet the prescribed requirements.</p>	<p><i>Points Available</i></p> <p>1</p>
<p>IEQ-11 Note 1: Volatile Organic Compounds: Paints</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-11 credits (paints) for using no paints or minimising painted surfaces.</p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>2</p>

ENERGY

<p>Ene-1: Energy Efficiency (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement for the design of a base building that achieves a predicted rating of 4 stars or greater using the Australian Building Greenhouse Rating (ABGR) scheme's <i>Validation Protocol for Tenancy Energy Estimation Version 2005-02</i>.</p>	<p><i>Required</i></p>
<p>Ene-2: Energy Improvements (depending on the function and design)</p> <p>Product is likely to assist obtaining credits for improvement in the overall energy efficiency of a project. Credit points achieved are determined by the star rating achieved above the conditional 4 star Australian Building Greenhouse Rating (ABGR). Product contribution to credit points is determined by project energy load simulation and needs to be included in the model to provide beneficial credits.</p>	<p><i>Points Available</i></p> <p>12</p>



MATERIALS

<p>Mat-3: Walls and Partitions</p> <p>Product is likely to assist in a project obtaining credits as it meets in whole (or in part) the prescribed requirements for wall and partitions. Credit points are achieved when a product has a reduced environmental impact as determined by the Mat-3 Walls and Partitions Calculator.</p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>5</p>
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Green Star™ Office Design Version 2 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-12: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels of <i>Building Services Design</i> or <i>Overall Building</i>. One Credit point is achieved where the <i>Building Services Design</i> meets the prescribed standards. One point is also achieved where the <i>Overall Building</i> meets the prescribed standards.</p>	<p><i>Points Available</i></p> <p>2</p>
<p>IEQ-13 Note 1: Volatile Organic Compounds: Paints</p> <p>Product is likely to assist in a project obtaining a credit point as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve the credit point 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for painted surfaces and assist a project in obtaining maximum IEQ-13 credits (paints) for using no paints.</i></p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>1</p>

ENERGY

<p>Ene-1: Conditional (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement for the design of a base building in which the project's greenhouse gas emissions do not exceed 110 kgCO₂/m²/annum as determined using the Australian Building Greenhouse Rating (ABGR) <i>Validation Protocol for Computer Simulations</i> or by using the final and current version of the Green Star™ Energy Calculator.</p>	<p><i>Required</i></p>
<p>Ene-2: Energy Improvement (depending on the function and design)</p> <p>Product is likely to assist in obtaining credits for minimising the greenhouse gas emissions of a project. Credit points achieved are determined by determining the reduction in predicted greenhouse gas emissions below the Conditional Requirement of 110 kgCO₂/m²/annum. Full points are available for carbon-neutral base buildings.</p>	<p><i>Points Available</i></p> <p>15</p>

Green Star™ Office Design Version 3 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-12: Internal Noise Levels</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels of <i>Building Services Design</i> or <i>Overall Building</i>. One Credit point is achieved where the <i>Building Services Design</i> meets the prescribed standards. One point is also achieved where the <i>Overall Building</i> meets the prescribed standards.</p>	<p><i>Points Available</i></p> <p>2</p>
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<p>IEQ-13 Note 1: Volatile Organic Compounds: Paints</p> <p>Product is likely to assist in a project obtaining a credit point as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve the credit point 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for painted surfaces and assist a project in obtaining maximum IEQ-13 credits (paints) for using no paints.</i></p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>1</p>
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ENERGY

<p>Ene-1: Conditional (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement for the design of a base building in which the project's greenhouse gas emissions do not exceed 110 kgCO₂/m²/annum as determined using the Australian Building Greenhouse Rating (ABGR) <i>Validation Protocol for Computer Simulations</i> or by using the final and current version of the Green Star™ Energy Calculator.</p>	<p><i>Required</i></p>
<p>Ene-2: Energy Improvement (depending on the function and design)</p> <p>Product is likely to assist in obtaining credits for minimising the greenhouse gas emissions of a project. Credit points achieved are determined by determining the reduction in predicted greenhouse gas emissions below the Conditional Requirement of 110 kgCO₂/m²/annum. Full points are available for carbon-neutral base buildings.</p>	<p><i>Points Available</i></p> <p>20</p>

MATERIALS

<p>Mat-9 Note-1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credits as it facilitates the disassembly of a projects structural framing, roofing or facade cladding system. Credit is point is achieved where 50% (by area) of the structural framing, roofing, and facade cladding systems are designed for disassembly, OR 95% of the total facade is designed for disassembly.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	<p><i>Points Available</i></p> <p>1</p>
<p>Mat-10: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively reducing material use in a combination of areas including structure, ductwork, building efficiency, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	<p><i>Points Available</i></p> <p>1</p>

Green Star™ Retail Centre Version 1 2008 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-7: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels for 95% of the projects nominated area (GLA and common area) in accordance with levels of Table 1 of AS/NZS 107:2000.</p>	<p><i>Points Available</i></p> <p>1</p>
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<p>IEQ-8 Note 1: Volatile Organic Compounds: Paints</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-11 credits (paints) for using no paints.</i></p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>1</p>
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ENERGY

<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist obtaining credits for improvement in the operational energy consumption of a project. Credit points achieved are determined by the predicted percentage of greenhouse gas emissions reduction below the "standard practice benchmark". This benchmark is determined by the Retail Centre V1 Energy Calculator.</p>	<p><i>Points Available</i></p> <p>20</p>
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MATERIALS

<p>Mat-3: Recycled Content and Re-used Products and Materials</p> <p>Product is likely to assist in a project obtaining credits as it meets in whole (or in part) the prescribed requirements for materials containing post consumer recycled content for base building construction, or reused products/materials. One Credit Point is achieved when 2% of the contract value is represented by reused products/materials and one and two points are achieved when 1% or 2% of the projects contract value represents materials with 50% post consumer content.</p>	<p><i>Points Available</i></p> <p>3</p>
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<p>Mat-8 Note 1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credit as it helps minimise the embodied energy and resources associated with demolition. Credit point is awarded where 50% (by area) of structural framing, roofing, facade and cladding systems are designed for disassembly or where 90% of total facade is designed for disassembly. If materials above represent less than 1% of the projects contract value this credit is not applicable.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	<p><i>Points Available</i></p> <p>1</p>
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<p>Mat-9: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively reducing material use in a combination of areas including structure, ductwork, building efficiency, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	<p><i>Points Available</i></p> <p>1</p>
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Green Star™ Education Version 1 2008 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-7: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by improving ambient noise levels in accordance with AS/NZS2107:2000 for the building services design and the overall building.</p>	<p><i>Points Available</i></p> <p>2</p>
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<p>IEQ-8 Note 1: Volatile Organic Compounds: Paints (relates to interior use only)</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-8 credits (paints) for using no paints.</i></p>	<p><i>Points Available</i></p> <p>1</p>
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ENERGY

<p>Ene: Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement by meeting the green house gas emissions '<i>benchmark</i>' determined by the energy calculator.</p>	<p><i>Required</i></p>
<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist obtaining in a project obtaining credits for designs that minimise greenhouse gas emissions associated with operational energy consumption. Credit points achieved are determined by the predicted % reduction of greenhouse gas emissions below the conditional requirement.</p>	<p><i>Points Available</i></p> <p>20</p>

MATERIALS

<p>Mat-3: Recycled Content & Re-used Products and Materials</p> <p>Product is likely to assist in a project obtaining credits as it contributes to 2% of the projects contract value for materials containing 20% post consumer recycled content, or reused products/materials, in accordance with prescribed requirements.</p>	<p><i>Points Available</i></p> <p>1</p>
<p>Mat-8 Note 1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credit as it helps minimise the embodied energy and resources associated with demolition. Credit point is awarded where 50% (by area) of structural framing, roofing, facade and cladding systems are designed for disassembly or where 90% of total facade is designed for disassembly. If materials above represent less than 1% of the projects contract value this credit is not applicable.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	<p><i>Points Available</i></p> <p>1</p>
<p>Mat-9: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively reducing material use in a combination of areas including structure, ductwork, building efficiency, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	<p><i>Points Available</i></p> <p>1</p>

Green Star™ Industrial Version 1 2010 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-7: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by maintaining internal noise levels at an appropriate level when appropriately designed in combination with other materials/elements. One point is available for the design of areas that have noise levels between 'satisfactory' plus/minus 3 dB. The reverberation time must meet the requirements as laid out in the standard. One additional point is available where noise insulation between acoustically sensitive rooms and other spaces complies with $D_w + LA_{eq,T}$ greater than 75. This additional point is applicable where the non-industrial occupied space is more than 2.5% of the nominated area of the GLA up to 500m², and where there is a non-industrial occupied space.</p>	<p><i>Points Available</i></p> <p>2</p>
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<p>IEQ-8 Note 1: Volatile Organic Compounds: Paints (relates to interior use only)</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-11 credits (paints) for using no paints.</i></p>	<p><i>Points Available</i> 1</p>
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ENERGY

<p>Ene Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement by meeting the green house gas emissions bench mark, determined by the Green Star - Industrial v1 Greenhouse Gas Emissions Calculator Guide.</p>	<p><i>Required</i></p>
<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist obtaining credits for improvement in the operational energy efficiency of a project. Credit points achieved are by the further reduction below the conditional requirement determined by Green Star - Industrial v1 Greenhouse Gas Emissions Calculator Guide.</p>	<p><i>Points Available</i> 20</p>

MATERIALS

<p>Mat-3: Recycled Content and Re-used Products and Materials</p> <p>Product is likely to assist in a project obtaining credits as it meets in whole (or in part) the prescribed requirements for materials containing recycled content, or reused products/materials. Products used for base building construction or integrated fit out must have at least 50% post consumer content. One point is achieved where 2% of the projects contract value represents reused products/materials. One point is achieved where recycled materials represent 1% of the project contract value and two points where recycled content represents 2% of the project contract value.</p>	<p><i>Points Available</i> 2</p>
<p>Mat-9: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively by reducing material use in a combination of areas including structure, ductwork, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements. For finishes and ductwork, credit is not applicable when occupied space is less than 5% of GEA.</p>	<p><i>Points Available</i> 1</p>

Green Star™ Multi Unit Residential Version 1 2009 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-7: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by maintaining internal noise levels at an appropriate level when appropriately designed in combination with other materials/elements. One credit point is achieved when building services noise meets satisfactory design sound levels and one point is achieved where building construction exceeds the Building Code of Australia in accordance with prescribed requirements.</p>	<p><i>Points Available</i> 2</p>
<p>IEQ-8 Note 1: Volatile Organic Compounds: Paints (relates to interior use only)</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve credit points 95% of all internal painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-8 credits (paints) for using no paints.</i></p>	<p><i>Points Available</i> 1</p>



ENERGY

<p>Ene: Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement for energy consumption and minimisation of greenhouse gases, through improved thermal performance. Average thermal performance for dwellings must be improved by 10% compared to the thermal performance standard in the relevant jurisdiction.</p>	Required
<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist obtaining credits for improvement in the operational energy efficiency of a project. Credit points achieved are determined by the predicted percentage of greenhouse gas emissions reduction below the “<i>standard practice benchmark</i>”. This benchmark is determined by the <i>MUR V1 Energy Calculator</i>.</p>	Points Available 20

MATERIALS

<p>Mat-3: Recycled Content and Re-used Products and Materials</p> <p>Product is likely to assist in a project obtaining credit point as it contributes towards 1% of the project contract value being made up of reused products and materials or products/materials with post consumer recycled content of at least 20%.</p>	Points Available 1
<p>Mat-8 Note-1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credit as it helps minimise the embodied energy and resources associated with demolition. Credit point is awarded where 50% (by area) of structural framing, roofing, facade and cladding systems are designed for disassembly or where 90% of total facade is designed for disassembly. If materials above represent less than 1% of the projects contract value this credit is not applicable.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	Points Available 1
<p>Mat-9: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Points may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively by reducing material use in a combination of areas including structure, ductwork, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	Points Available 2

Green Star™ Healthcare Version 1 2009 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-7: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels for 95% of the OFA in accordance with Table 1 of the AS/NZS 2107:2000.</p>	Points Available 1
<p>IEQ-8 Note 1: Volatile Organic Compounds: Paints (relates to interior use only)</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed VOC content standard for paints. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-8 credits (paints) for using no paints.</i></p>	Points Available 1

ENERGY

<p>Ene: Energy Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project meeting the energy conditional requirement. The project’s predicted greenhouse gas emissions must be equal to or an improvement, in the ‘<i>bench mark</i>’ building determined using <i>Healthcare v1 GHG Emissions Calculator</i>.</p>	Required
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Ene-1: Greenhouse Gas Emissions (depending on the function and design) Product is likely to assist in a project obtaining credits for reduction in operational energy consumption and greenhouse gas emissions of the base building. One point is achieved for every 5% reduction against the 'bench mark' building and zero net operating buildings receive 20 credit points.	<i>Points Available</i> 20
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MATERIALS

Mat-3: Recycled Content and Re-used Products and Materials Product is likely to assist in a project obtaining credits as it meets in whole (or in part) the prescribed requirements for materials containing recycled content, or reused products/materials. Products used for base building construction or integrated fit out must have at least 50% post consumer content. One point is achieved where recycled materials represent 1% of the project contract value and two points where recycled content represents 2% of the project contract value.	<i>Points Available</i> 2
Mat-8 Note 1: Design for Disassembly Product is likely to assist in a project obtaining credit as it helps minimise the embodied energy and resources associated with demolition. Credit point is awarded where 50% (by area) of structural framing, roofing, facade and cladding systems are designed for disassembly or where 95% of total facade is designed for disassembly. If materials above represent less than 1% of the projects contract value this credit is not applicable. <i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i>	<i>Points Available</i> 1
Mat-9: Dematerialisation Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Points may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively by reducing material use in a combination of areas including structure, ductwork, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.	<i>Points Available</i> 1

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Green Star SA™ Office Version 1 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

IEQ-12: Internal Noise Levels (depending on the function and design) Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels of <i>Building Services Design</i> or <i>Overall Building</i> . One Credit point is achieved where the <i>Building Services Design</i> meets the prescribed standards. One point is also achieved where the <i>Overall Building</i> meets the prescribed standards.	<i>Points Available</i> 2
IEQ-13 Note 1: Volatile Organic Compounds: Paints (relates to interior use only) Product is likely to assist in a project obtaining a credit point as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints. To achieve the credit point 95% of all painted surfaces in the project must be in accordance with the prescribed standard. <i>Product may eliminate the need for painted surfaces and assist a project in obtaining maximum IEQ-13 (paints) credits for using no paints.</i>	<i>Points Available</i> 1



ENERGY

<p>Ene: Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining the conditional requirement by improving energy performance equal to or better than a notional building constructed to the 'deemed to comply' fabric and building services clauses of SANS 204:2008 <i>Energy Efficiency in Buildings</i> demonstrated by using the Green Star SA energy calculator or fully comply with ASHRAE <i>Advanced Energy Design Guide for Small Office Buildings</i>.</p>	<p><i>Required</i></p>
<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist in obtaining credits for minimising the greenhouse gas emissions of a project. Credit points achieved are determined by demonstrating the reduction in predicted greenhouse gas emissions below the Conditional Requirement. Full points are available for carbon-neutral base buildings.</p> <p>Alternatively this product may assist in a project obtaining 4 points for offices smaller than 2,000m² UA by assisting in demonstration of compliance with ASHRAE <i>Advanced Energy Design Guide for Small Office Buildings</i>.</p>	<p><i>Points Available</i></p> <p>20 or 4</p>

MATERIALS

<p>Mat-9 Note-1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credits as it facilitates the disassembly of a projects structural framing, roofing or facade cladding system. Credit point is achieved where 50% (by area) of the structural framing, roofing, and facade cladding systems are designed for disassembly, OR 95% of the total facade is designed for disassembly.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	<p><i>Points Available</i></p> <p>1</p>
<p>Mat-10: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively reducing material use in a combination of areas including structure, ductwork, building efficiency, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	<p><i>Points Available</i></p> <p>1</p>

Green Star SA™ Retail Version 1 Compatibility (see disclaimer below)

INDOOR ENVIRONMENTAL QUALITY

<p>IEQ-12: Internal Noise Levels (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining this credit by directly reducing internal noise levels for 95% of the projects nominated area (GLA and common area) to 55dB(A)eq or below.</p>	<p><i>Points Available</i></p> <p>1</p>
<p>IEQ-13 Note 1: Volatile Organic Compounds: Paints</p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed Volatile Organic Compound (VOC) content standard for paints outlined in Table IEQ-13.1. To achieve credit points 95% of all painted surfaces in the project must be in accordance with the prescribed standard or no paint is used in the project.</p> <p><i>Product may eliminate the need for a painted surface and assist a project in obtaining maximum IEQ-11 credits (paints) for using no paints.</i></p> <p>NOTE- this credit relates to interior use only</p>	<p><i>Points Available</i></p> <p>1</p>



ENERGY

<p>Ene: Conditional Requirement (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credits by reducing operational energy consumption and maximising operational energy efficiency so that the predicted carbon emissions of the building are less than or equal to the predicted carbon emissions of the notational building in the same location established by the requirements of the <i>Retail Centre v1</i> Energy Calculator and the Modelling Protocol Guide or fully comply with ASHRAE <i>Advanced Energy Design Guide for Small Retail Buildings</i>.</p>	<p><i>Required</i></p>
<p>Ene-1: Greenhouse Gas Emissions (depending on the function and design)</p> <p>Product is likely to assist in a project obtaining credits for improvement in the operational energy consumption of a project. Credit points achieved are determined by the predicted percentage of greenhouse gas emissions reduction below the “standard practice benchmark”. One point is awarded for every 5% saving below the notional building level. This benchmark is determined by the <i>Retail Centre v1</i> Energy Calculator.</p>	<p><i>Points Available</i></p> <p>20</p>

MATERIALS

<p>Mat-3: Recycled Content and Re-used Products and Materials</p> <p>Product is likely to assist in a project obtaining credits as it meets in whole (or in part) the prescribed requirements for materials containing post consumer recycled content for base building construction, or reused products/materials. One Credit Point is achieved when 1% of the contract value is represented by reused products/materials. And one or two points are achieved when the total value of recycled material content represents 1% or 2% of the total contract value.</p>	<p><i>Points Available</i></p> <p>3</p>
<p>Mat-9 Note 1: Design for Disassembly</p> <p>Product is likely to assist in a project obtaining credit as it helps minimise the embodied energy and resources associated with demolition. Credit point is awarded where 50% (by area) of structural framing, roofing, facade and cladding systems are designed for disassembly or where 90% of total facade is designed for disassembly. If materials above represent less than 1% of the projects contract value this credit is not applicable.</p> <p><i>This product may assist a project in obtaining this credit in combination with other products in achieving the percentage of required as a structural framing, roofing or facade product which is designed for disassembly.</i></p>	<p><i>Points Available</i></p> <p>1</p>
<p>Mat-10: Dematerialisation</p> <p>Product is likely to assist in a project obtaining credits as it provides a means of reducing the total amount of material used. Point may be available where less material is used to provide for the buildings structural requirements but maintains integrity, or alternatively reducing material use in a combination of areas including structure, ductwork, building efficiency, finishes, cladding and/or piping. Point achievement dependant on satisfying specific percentage reduction requirements.</p>	<p><i>Points Available</i></p> <p>1</p>

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ASSESSMENT COMPARISON

cladding panel, facade cladding, sun shade

RELATED TOPICS

wall cladding, sun control



NBS CATEGORY & NUMBER

Building and Residential Services

H43 Metal panel cladding/ features

ASSESSMENT CRITERIA SATISFIED

ENERGY/GREENHOUSE
<ul style="list-style-type: none">• Low energy in production• Potential less GHG/ODP down stream
HABITAT & LAND
<ul style="list-style-type: none">• Reduced terrestrial impact• Reduced aquatic impact
RESOURCE DEPLETION & EFFICIENCY
<ul style="list-style-type: none">• Post-Industrial recycled content• Post-consumer recycled content• Reduced Material Use
HUMAN HEALTH
<ul style="list-style-type: none">• Low/Reduced Offgassing• Reduced toxics or carcinogens
REDUCES POLLUTION
<ul style="list-style-type: none">• Reduced Life Cycle Toxicity• Reduced Life Cycle Carcinogen
OTHER VITAL SIGNS
<ul style="list-style-type: none">• National / International Standard• MSDS• Doc Manuf Claim• Environmental Info about product• Environmental Policy

SUPPLIER / MANUFACTURER DETAILS


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Information last verified on 11/06/2010.

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