

Tiger Profiles & Insulation LLC – Solacoat Heat Reflective Render Coatings

Overview

Water based heat reflective render, surface and texture coatings suitable for brick and concrete surfaces in interior and exterior residential, commercial and industrial applications.



Product Description

Solacoat Heat Reflective Render Coatings reflect approximately between 22 - 82% depending on colour topcoat of heat rays, substantially reducing heat absorption of substrate material, minimising heat transfer into buildings. The coatings also assist in reducing ambient air temperatures in the built environment caused due to the heat absorption of high mass surfaces (urban heat island effect). Benefits include an increase of thermal comfort levels (interior and exterior) and a reduction of energy cooling loads placed on air conditioning systems in surrounding buildings.

The *Solacoat Heat Reflective Render Coating* range includes:

- *Solacoat All-In-One Heat Reflective Brick Render Coating* is a water based, durable, water resistant heat reflective coating. The product offers one pack and one coat convenience and is suitable for prepared brick, block work and concrete surfaces.
- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat* is a flexible, heavy duty, high build finish coating with heat reflective pigments. The coating is suitable for use as a stipple or textured sand finish for masonry, soffits or plaster ceilings.
- *Solacoat Heat Reflective Base Coat Concrete Render* is a water based heat reflective render preparation coating suitable for top coating with *Solacoat or Cool-it Ceram Heat Reflective Coatings* or *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat*. The product offers one pack convenience and is suitable for masonry and rendered surfaces.

PRODUCT SPECIFICATIONS

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| Options | <p><i>Solacoat Heat Reflective Base Coat Concrete Render</i> is available in 3 grades fine, medium and heavy.</p> <ul style="list-style-type: none">• Fine – for surfaces in very good condition• Medium – for surfaces in average to good condition• Heavy – for surfaces in poor condition |
| Colours | <ul style="list-style-type: none">• <i>Solacoat All-In-One Heat Reflective Brick Render Coating</i> is available in Sandstone & Terracotta |



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| | <ul style="list-style-type: none"> • <i>Solacoat Heat Reflective Concrete Render Topcoat</i> is available with a white base which may be tinted to a range of pastel to mid-tone colours or Cool-it Ceram range of colours. Topcoat can be also a Sand Finish. • <i>Solacoat Heat Reflective Base Coat Concrete Render</i> is available as off-white as standard, Sandstone and can also be factory tinted to be used as a finished surface. |
| Warranty | 10 year warranty covering solar reflectivity, colour uniformity, cracking, peeling or flaking. |
| Expected Life | 10 - 15 years |
| Indicative Costs | Contact supplier |
| Purchase Options | - |
| Constituents | Water based acrylic coating (constituents proprietary – sighted by ecospecifier for assessment) |
| National & International Standards | <ul style="list-style-type: none"> • Australian Paint Approval Scheme (APAS) accredited • Manufactured in NATA approved laboratory |
| Country of Origin | Australia |
| Availability | <p><i>Oceania</i></p> <ul style="list-style-type: none"> • Australia, Indonesia <p><i>Asia</i></p> <ul style="list-style-type: none"> • Malaysia, Philippines, Thailand, China, Japan, India, Pakistan, Singapore <p><i>Middle East</i></p> <ul style="list-style-type: none"> • UAE, Afghanistan, Iran and Saudi Arabia, Egypt <p><i>Africa</i></p> <ul style="list-style-type: none"> • South Africa |



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| | <p><i>Europe</i></p> <ul style="list-style-type: none"> Spain, Portugal, Western Europe and United Kingdom |
| Projects | Contact supplier |
| Preparation | Surface substrate must be clean, dry and free from all contamination. |

ECOSPECIFIER LIFE-CYCLE ASSESSMENT

INTEGRATED DESIGN AND POLICY ISSUES

Urban heat islands effects artificially raise ambient temperatures in urban areas resulting in thermal discomfort (interior and exterior) and disturbance of local microclimates, which in turn, adversely affect plants and animals in the local area.

Solacoat coatings can be used independently, or form part of an overall design strategy, to reduce heat absorption of a substrate material to promote energy efficiency and minimise urban heat island effects. The subsequent reduction of heat absorption and ambient temperatures can minimise loads placed on mechanical air conditioning systems in a building and potentially allow for the integration (or natural ventilation period) for mixed mode air conditioning (natural ventilation with optional mechanical air conditioning). This can lead to an increase in the overall energy performance levels of a building (and surrounds) and potential reduction in HVAC plant sizes.

Areas coated will be approximately 5 - 12°C cooler than conventional coatings. This will reduce surrounding ambient temperatures by approximately 3 – 8°C and increase water efficiency of immediately surrounding gardens or vegetated verge areas.

HUMAN HEALTH

Health

The un-reacted raw materials of this product include Crystalline Silica. Crystalline silica exists in a variety of other common materials such as concrete, render, grout, tile, glass etc. This issue relates to the cutting, grinding and other occupational production activities of products containing crystalline silica and is not an issue as installed in buildings.

The IARC classifies crystalline silica inhaled in the form of quartz, from occupational sources, as carcinogenic to humans (Group 1). However, the Australian body, ASCC/NOHSC (National Occupational Health and Safety Commission) have **not** classified crystalline silica as a carcinogen.

Accordingly the sanding, grinding and other occupational production activities of products containing Crystalline Silica, may present issues if appropriate precautions are not taken. Precautions for workers such as reducing exposure to product in dust form and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *low* risk in accordance with an **ecospecifier Risk Assessment**. Refer to Material Safety Data Sheet for further information.



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See *Ecospecifier Issues of Concern* section below for further information on health issues.

Comfort

Coating will assist in reducing urban heat island effects and improve thermal comfort levels.

Indoor Environment Quality

The coatings have moderate to low volatile organic compound (VOC) content, minimizing VOC emissions. The VOC content of the coatings meets the indoor environment quality requirements of some green building rating systems. See the *Ecospecifier GreenRate Green Building Scheme Pre-Assessment* section for further details. Content for each coating is:

- *Solacoat All-In-One Heat Reflective Brick Render Coating* – 36g/L
- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat* – 65g/L
- *Solacoat Heat Reflective Base Coat Concrete Render* – 39g/L

Electromagnetic Radiation

Not applicable

Safety

Not applicable

Accessibility

Not applicable

ECOLOGICAL QUALITY

Terrestrial

Emissions – Application tools should be cleaned in a contained treatment system to avoid contamination of topsoil. This product must be disposed of in accordance to local regulations.

Physical – Extraction of minerals used in the coatings results in the removal and stockpiling of topsoil and sub-soil, and from removing overburden and inter-burden, results in modified soil profiles, topography and drainage.

Aquatic

Emissions – Coatings contain small volumes of substances that are very toxic to marine environments and may cause long term adverse effects in the aquatic environment in liquid form. See *Ecospecifier Issues of Concern* section below



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Physical – Extraction of mineral based additives, such as titanium dioxide (pigment) and silica, is common in marine environments, such as lakes and coastal areas and will have localised disruptive impacts to ecosystems caused by mining processes.

Coatings contain polymers derived from petroleum. Petrochemical production can contribute to oil spills at sea.

Atmosphere

Greenhouse (GHG) – Coatings have comparable embodied energy and GHG intensity to other water based render coatings, which are low in comparison to solvent based coatings.

Greenhouse intensity –

- *Solacoat All-In-One Heat Reflective Brick Render Coating* - approximately 380gCO_{2e} / m^{2*}

*based on average coverage of approximately 0.5kg / m². Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat* – approximately 608gCO_{2e} to 1380gCO_{2e} / m^{2*}

*based on average coverage of approximately 0.74kg to 1.68kg / m² (dependent on application method and texture profile). Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

- *Solacoat Heat Reflective Base Coat Concrete Render* - approximately 150gCO_{2e} / m^{2*} (Fine), 160gCO_{2e} / m^{2*} (Medium), 200gCO_{2e} / m^{2*} (Heavy)

*based on average coverage of approximately 0.22kg / m² (fine), 0.26kg / m² (medium), 0.34kg / m² (heavy): Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

Transport intensity – Product is manufactured in Brisbane, Australia. Energy and GHG figures for shipping product are shown below.

| Product weight | Energy Intensity - Container Shipping | GHG Intensity - Container Shipping |
|---|---------------------------------------|------------------------------------|
| <i>Solacoat All-In-One Heat Reflective Brick Render Coating</i> – approximately 0.5kg / m ² | 0.000135MJ / kg.km | 0.000011kgCO _{2e} / kg.km |
| <i>Solacoat Heat Reflective Concrete Render Sand Finish Topcoat</i> – approximately 0.74kg to 1.68kg / m ² (dependent on application method and texture profile) | | |
| <i>Solacoat Heat Reflective Base Coat Concrete</i> | | |



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| <i>Render</i> - approximately 0.22kg / m ² (fine), 0.26kg / m ² (medium), 0.34kg / m ² (heavy) | | |
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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 – Coatings on walls or other building elements subject to direct or indirect solar radiation loads will lead to a reduction in cooling loads placed on air conditioning systems in a building, consequently reducing greenhouse gas emissions generated in energy production.

Re-use Efficiency – Not applicable

Toxics and Pollutants – Coatings emit limited VOCs into the air. VOCs can combine with other air pollutants to form photochemical smog.

Ozone Depletion – Coatings do not contain any ozone depleting (ODP) substances. Coatings may minimise the use of ODPs through reducing loads placed on mechanical air conditioning systems, which often use ODP refrigerants.

Urban Heat Island Effects – Coatings reflects high proportion of direct and indirect solar radiation and can substantially reduce heat gain of impervious horizontal and vertical surfaces minimising urban heat island effects.

Noise – Not applicable

Biodiversity

The extraction of petroleum for synthetic polymer based constituents will disrupt local landscapes and alter local ecosystems. In the event of an oil-spill, while rare, significant localised biodiversity impacts can result.

The process of extracting mineral based additives in primers, particularly titanium dioxide and silica, are sourced as a result of sand mining, a high biodiversity impact process. Sand mining can lead to loss of biodiversity, modified soil profiles, topography and drainage which additionally impact natural vegetation and surrounding biodiversity.

RESOURCE DEPLETION

Resource Efficiency

Synthetic polymer based constituents are derived from diminishing and non-renewable reserves of petroleum.



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Coating system contains silicon and titanium oxides which are abundant, but non-renewable resources.

Embodied Fossil Fuel Energy

- *Solacoat All-In-One Heat Reflective Brick Render Coating* – approximately 14MJ / m²*

*based on average coverage of approximately 0.5kg / m². Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat* – approximately 22MJ to 51MJ / m²*

*based on average coverage of approximately 0.74kg to 1.68kg / m² (dependent on application method and texture profile). Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

- *Solacoat Heat Reflective Base Coat Concrete Render* - approximately 5MJ / m²* (Fine and Medium), 7MJ / m²* (Heavy)

*based on average coverage of approximately 0.22kg / m² (fine), 0.26kg / m² (medium), 0.34kg / m² (heavy). Intensity figures used for constituents are a combination of specific and proxy data sourced from Alcorn, New Zealand and Bath University, United Kingdom.

Embodied Water

Information not available

Durability

Coatings provide a durable and protective coating for a surface substrate and have a 10 year performance warranty.

Reusability

Not applicable

Repairability

Damaged surface areas can be recoated.

Design for Dematerialisation

Coating can substantially reduce urban heat island levels and energy loads placed on HVAC systems in a building. This may also lead to reduced plant size, reduced operational times, and in some cases, possible elimination of mechanical air conditioning systems.

Design for Disassembly

Not applicable



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Recyclability

Not applicable

Maintenance

Coating will require periodic recoating. Recoating period will depend on application.

Coating will inhibit thermal expansion of substrate which may reduce maintenance requirements of overall system including substrate, sealants, renders and coatings.

Product Takeback Scheme

No

Extended Producer Responsibility (EPR)

No

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

No

Convictions

No

Environmental Policy

No

Social Enhancement Programs

No

Technology Transfer Programs

No

Environmental Management Systems (EMS)

No

ECOSPECIFIER ISSUES OF CONCERN / RED LIGHTS**Issues of Concern**

- *Solacoat All-In-One Heat Reflective Brick Render Coating*



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Coating contains a small percentage (less than 2% b/w) of titanium dioxide. In 2006, the International Agency for Research on Cancer (IARC) reclassified titanium dioxide as possibly carcinogenic to humans (Group 2B). This issue of concern relates to the inhalation of powdered and ultra-fine titanium dioxide dust. Accordingly the sanding, grinding and other occupational production activities of products containing titanium dioxide may present issues if appropriate precautions are not taken. Precautions for workers such as reducing exposure to product in dust form and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *low* risk in accordance with an **ecospecifier** Risk Assessment. Refer to Material Safety Data sheet for further information.

- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat*

Coating contains a small percentage (less than 4% b/w) of titanium dioxide. Precautions for workers such as reducing exposure to product in dust form and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *low* risk in accordance with an **ecospecifier** Risk Assessment.

- *Solacoat Heat Reflective Base Coat Concrete Render (Fine, Medium and Heavy)*

Coatings contain substances (approximately 6 - 7% b/w) unclassifiable as carcinogenic according to the IARC. Precautions for workers such as reducing skin contact, inhalation of vapours and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *low* risk in accordance with an **ecospecifier** Risk Assessment.

Coatings contain a approximately 16 – 18.5% b/w of titanium dioxide. Precautions for workers such as reducing exposure to product in dust form and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *low* risk in accordance with an **ecospecifier** Risk Assessment.

Red Light Comments

- *Solacoat All-In-One Heat Reflective Brick Render Coating*

Coating contains a small volume (less than 1% b/w) of a substance that may cause cancer (R45). Precautions for workers such as reducing skin contact, inhalation of vapours and using appropriate Personal Protective Equipment (PPE) mitigate potential issues to *medium* risk in accordance with an **ecospecifier** Risk Assessment.

Coatings contain a small volume (less than 0.3% b/w) of substances that are very toxic to marine environments (R50), in liquid form. This red light comment has been classified as *medium* risk in accordance with an **ecospecifier** Risk Assessment and primarily relates to the cleaning of application tools. Tools must be cleaned in a contained system. Contaminated cleaning water, or coating in liquid form, must not be allowed to stormwater and bodies of water. This product must be disposed of in accordance to local regulations.

- *Solacoat Heat Reflective Concrete Render Sand Finish Topcoat*

Coatings contain a small volume (less 0.3% b/w) of substances that are very toxic to marine environments (R50), in liquid form. This red light comment has been classified as *medium* risk in accordance with an **ecospecifier** Risk Assessment and primarily relates to the cleaning of application tools.

- *Solacoat Heat Reflective Base Coat Concrete Render (Fine, Medium and Heavy)*



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Coatings contain a small volume (approximately 1 – 1.5% b/w) of substances that are very toxic to marine environments (R50) and may cause long term adverse effects in the aquatic environment (R53), in liquid form. This red light comment has been classified as *medium* risk in accordance with an ecospecifier Risk Assessment and primarily relates to the cleaning of application tools.

ECOSPECIFIER GREENRATE GREEN BUILDING SCHEME PRE-ASSESSMENT

LEED® for Commercial Interiors - Version 2.0 (see LEED® disclaimer below)

ENERGY & ATMOSPHERE

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| <p><u>EA Prerequisite 2: Minimum Energy Performance</u> ^{1,2,3}</p> <p>Product may assist a project meet the Rating System Energy Prerequisite, when appropriately included in combination with other elements and assessed using a computer simulation model, to comply with the nominated standard or the local energy code (whichever is more stringent).</p> | <p><i>Points Available</i></p> <p>Required</p> |
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INDOOR ENVIRONMENTAL QUALITY

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| <p><u>EQ Credit 4.2: Low-Emitting Materials, Paints and Coatings</u> ²</p> <p>Product is likely to assist in a project obtaining this credit as it meets the prescribed standard/s for interior paint/s and/or coating/s applied on-site.</p> | <p><i>Points Available</i></p> <p>1</p> |
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LEED® for New Construction & Major Renovations - Version 2.2 (see LEED® disclaimer below)

SUSTAINABLE SITES

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| <p><u>SS Credit 7.1: Heat Island Effect: Non-Roof</u> ³</p> <p>Product is likely to assist in a project obtaining this credit as it reduces heat island effects. Credit point is achieved when the requirements for one of the two following options are met:</p> <ul style="list-style-type: none"> • Option 1 includes providing a combination of shade (within 5 years of occupancy), paving materials with a Solar | <p><i>Points Available</i></p> <p>1</p> |
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| <p>Reflectance Index (SRI) of at least 29 and an open grid pavement system for 50% of the site <i>hardscape</i> (including roads, sidewalks, courtyards and parking lots); or</p> <ul style="list-style-type: none"> • <i>Option 2</i> 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). <p><u>Exemplary Performance: Innovation in Design & Process: Heat Island Effect: Non-Roof</u> (<i>additional 1 point</i>)</p> <p>Possible achievement when either of the following options are met:</p> <ul style="list-style-type: none"> • 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 • Option 2 includes demonstrating of the on-site parking spaces have been located under cover. | 1 |
| <p><u>SS Credit 7.2: Heat Island Effect: Roof</u> ³</p> <p>Product is likely to assist in a project obtaining this credit as it reduces heat island effects. Credit point is achieved when the prescribed requirements for one of the three following options are met:</p> <ul style="list-style-type: none"> • Option 1 includes using roofing materials with a high Solar Reflective Index (SRI); or • Option 2 includes installing a vegetated roof, and Option 3 includes installing high albedo and vegetated roof surfaces. <p><u>Exemplary Performance: Innovation in Design & Process: Heat Island Effect: Roof</u> (<i>additional 1 point</i>)</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></p> <p>1</p> <p>1</p> |

ENERGY & ATMOSPHERE

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| <p><u>EA Prerequisite 2: Minimum Energy Performance</u> ^{1,3}</p> <p>Product may assist a project meet the Rating System Energy Prerequisite, when appropriately included in combination with</p> | <p><i>Points Available</i></p> <p>Required</p> |
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other elements and assessed using a computer simulation model, to comply with the nominated standard or the local energy code (whichever is more stringent).

EA Credit 1: Optimize Energy Performance ^{1,3}

Product may assist in a project obtaining credits, when appropriately designed in combination with other elements and assessed using a computer simulation model, for increasing the level of energy performance above the nominated baseline prerequisite standard.

Exemplary Performance: Innovation in Design & Process: Optimize Energy Performance (additional 1 point)

Possible achievement when minimum energy cost savings of 45.5% for New Buildings and 38.5% for Existing Buildings are obtained when using EA Credit 1 Option 1. An Innovation in Design & Process credit point is not available for Option 2, 3 or 4.

Points Available

10*

* 2 points mandatory performance level

1

INDOOR ENVIRONMENTAL QUALITY

EQ Credit 4.2: Low-Emitting Materials: Paints and Coatings ²

Product is likely to assist in a project obtaining this credit as it meets the prescribed standard/s for interior paint/s and/or coating/s applied on-site.

Points Available

1

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

INDOOR ENVIRONMENT QUALITY

IEQ-11: Volatile Organic Compounds: Paints ^{2,4}

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.

Points Available

2

Green Star™ Office Design Version 2 Compatibility (see Green Star™ disclaimer below)



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INDOOR ENVIRONMENT QUALITY

IEQ-13: Volatile Organic Compounds: Paints ^{2,4}

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.

Points Available

1

ENERGY

Ene-1: Energy ^{1,3}

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 *Validation Protocol for Tenancy Energy Estimation Version 2005-02*.

Points Available

Conditional

Ene-2: Energy Improvement ^{1,3}

Product is likely to assist in 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.

Points Available

15

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

INDOOR ENVIRONMENT QUALITY

IEQ-13: Volatile Organic Compounds: Paints ^{2,4}

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.

Points Available

1

ENERGY

Ene-: Conditional Requirement ^{1,3}

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 /

Points Available

Conditional



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annum as determined using the Australian Building Greenhouse Rating (ABGR) *Validation Protocol for Computer Simulations* or by using the final and current version of the Green Star™ Energy Calculator.

Ene-1: Greenhouse Gas Emissions^{1,3}

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.

Points Available

20

Green Star™ Retail version1 2008 Compatibility (see Green Star™ disclaimer below)

INDOOR ENVIRONMENT QUALITY

IEQ-8: Volatile Organic Compounds: Paint²

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.

Points Available

1

ENERGY

Ene-1: Greenhouse Gas Emissions¹

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.

Points Available

20

Green Star™ Education version1 2008 Compatibility (see Green Star™ disclaimer below)

INDOOR ENVIRONMENT QUALITY

IEQ-8: Volatile Organic Compounds: Paint²

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.

Points Available

1

ENERGY



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| <p><u>Ene: Conditional Requirement</u>¹</p> <p>Product is likely to assist in a project obtaining the conditional requirement by meeting the green house gas emissions 'benchmark' determined by the energy calculator.</p> | <p>Conditional</p> |
| <p><u>Ene-1: Greenhouse Gas Emissions</u>¹</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> |

Green Star™ Industrial Compatibility (see Green Star™ disclaimer below)

INDOOR ENVIRONMENT QUALITY

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| <p><u>IEQ-8: Volatile Organic Compounds: Paint</u>²</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>Points Available</i></p> <p>1</p> |
|--|--|

ENERGY

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| <p><u>Ene Conditional Requirement</u>¹</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 Pilot Energy Calculator.</p> | <p>conditional</p> |
| <p><u>Ene-1: Greenhouse Gas Emissions</u>¹</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 the Energy Calculator.</p> | <p><i>Points Available</i></p> <p>20</p> |

Green Star™ Multi Unit Residential version1 2009 Compatibility (see Green Star™ disclaimer below)

INDOOR ENVIRONMENT QUALITY

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| <p><u>IEQ-8: Volatile Organic Compounds: Paint</u>²</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>Points Available</i></p> <p>1</p> |
|--|--|



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ENERGY

Ene: Conditional Requirement¹

Conditional

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.

Ene-1: Greenhouse Gas Emissions¹

Points Available

20

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 “*standard practice benchmark*”. This benchmark is determined by the *Multi Unit Residential Centre V1* Energy Calculator.

Green Star™ Healthcare version1 2009 Compatibility (see Green Star™ disclaimer below)

INDOOR ENVIRONMENT QUALITY

IEQ-8: Volatile Organic Compounds: Paint²

Points Available

1

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.

ENERGY

Ene-Con: Energy Conditional Requirement¹

Conditional

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 ‘*bench mark*’ building determined using *Healthcare v1 Greenhouse Gas Emissions Calculator*.

Ene-1: Greenhouse Gas Emissions¹

Points Available

20

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.

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

INDOOR ENVIRONMENT QUALITY

IEQ-13: Volatile Organic Compounds: Paints²

Points Available

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.

1

ENERGY

Ene: Conditional Requirement¹

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 *Energy Efficiency in Buildings* demonstrated by using the Green Star SA energy calculator or fully comply with ASHRAE *Advanced Energy Design Guide for Small Office Buildings*.

Conditional

Ene-1: Greenhouse Gas Emissions¹

Points Available

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.

20

or

4

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 *Advanced Energy Design Guide for Small Office Buildings*.

Green Star SA™ Retail Pilot Compatibility (see disclaimer below)

INDOOR ENVIRONMENT QUALITY

IEQ-8: Volatile Organic Compounds: Paint²

Points Available

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.

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ENERGY



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| <p><u>Ene: Conditional Requirement</u>¹</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 PILOT</i> Energy Calculator and the Modelling Protocol Guide.</p> | <p>Conditional</p> |
| <p><u>Ene-1: Greenhouse Gas Emissions</u>¹</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”. This benchmark is determined by the <i>Retail Centre PILOT</i> Energy Calculator.</p> | <p><i>Points Available</i></p> <p>20</p> |

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The ESTIDAMA Pearls New Buildings Rating Method Vol- 4

RESOURCEFUL ENERGY

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| <p><u>RE-r1: Energy Conservation: Minimum</u>¹</p> <p>Product may assist in a project obtaining this requirement if the building meets the prescribed energy performance requirements, such as the required Prescriptive or Performance Requirements.</p> | <p><i>Points Available</i></p> <p>Requirement</p> |
| <p><u>RE-1: Energy Conservation Improvement: Carbon Reduction</u>¹</p> <p>Product may assist in a project obtaining this credit for Energy Conservation Improvement to reduce energy consumption and carbon emissions during building operation compared to either Budget Building or Benchmark building including renewable energy inputs or offsets.</p> <p>Up to 3 credit points may be achieved by products/materials in combination for passive environmental design.</p> | <p><i>Points Available</i></p> <p>20</p> |

LIVEABLE BUILDINGS



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| <p><u>LB-1 Community Walkability</u></p> <p>Product may assist in a project obtaining this credit where the ground floor level of the building is integrated into the surrounding urban fabric and supports a pedestrian-oriented urban environment by achieving measures determined in EPDS.</p> | <p><i>Points Available</i></p> <p style="text-align: center;">2</p> |
| <p><u>LB-26: Paints and Coatings Emissions²</u></p> <p>Product may assist in a project obtaining this credit by reducing indoor air contaminants resulting from the use of paints and coatings. Credit point is achieved where 95% of all surface areas covered by paints and coatings meet or are less than the maximum TVOC Content Limits Values for Paints and Varnishes as stated in Annex II, Table A of European Directive 2004/42/CE: 2004.</p> | <p><i>Points Available</i></p> <p style="text-align: center;">1</p> |

BREEAM Gulf Issue 2.0

ENERGY

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|---|---|
| <p><u>Ene 1 – Reduction of CO₂ emissions¹</u></p> <p>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 CO₂ emissions. Number of points awarded is dependent on percentage improvement over the established baseline.</p> | <p><i>Points Available</i></p> <p style="text-align: center;">15</p> |
| <p><u>Hea 9 – Volatile Organic Compounds: Decorative paints and varnishes²</u></p> <p>Product is likely to assist in a project obtaining credits as it meets the prescribed standards for VOC content and fungal and algal resistant for decorative paints and varnishes. Products that meet the BS EN 13300:2001 referred to the requirements of Decorative Paint Directive 2004/42/CE are compliant with this credit. To achieve credit point all product types under credit Hea 9 used in the project must be in accordance with the prescribed requirements.</p> | <p><i>Points Available</i></p> <p style="text-align: center;">1</p> |

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¹ Thermal benefits of coatings are not applicable when used in interior applications not exposed to solar radiation.

² This product is not likely to be used internally, but might be a contiguous finish with external painting (particularly in foyer areas).



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³ *Applicable for Solacoat Heat Reflective Base Coat Concrete Render when top coated with a heat reflective coating.*

⁴ *Applicable for Solacoat All-In-One Heat Reflective Brick Render Coating only*

ASSESSMENT COMPARISON

Non reflective and solvent based masonry surface coatings

RELATED TOPICS

Bricks & Blocks; Concrete, Admixture, Sealers, Forms; Floors; Insulation – Thermal Insulation; Landscaping & Outdoor; Roofs; Sealants; Walls; Waterproofing & Pest Control

CSI CATEGORY & NUMBER

| | |
|----------|--------------------------|
| 09 90 00 | Painting and Coating |
| 09920 | Exterior Paints |
| 09 96 00 | High-Performance Coating |
| 09 70 00 | Wall Finishes |

NBS CATEGORY & NUMBER

Building and Residential Services

| | |
|-----|----------------------------|
| M60 | Painting / Clear finishing |
| Z22 | Sealants |

Landscaping

| | |
|-----|----------------------------|
| M60 | Painting / Clear finishing |
| Z22 | Sealants |

NATSPEC CATEGORY & NUMBER

| | |
|------|--------------------------------|
| 0641 | Applied wall finishes |
| 0671 | Painting |
| 0672 | Textured and membrane coatings |



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ASSESSMENT CRITERIA SATISFIED

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|--|
| ENERGY/GREENHOUSE |
| <ul style="list-style-type: none">• Potential less GHG / ODP down stream |
| HABITAT & LAND |
| <ul style="list-style-type: none">• Reduced terrestrial impact |
| RESOURCE DEPLETION & EFFICIENCY |
| <ul style="list-style-type: none">• Reduced material use |
| HUMAN HEALTH |
| <ul style="list-style-type: none">• Low / Reduced Offgassing |
| POLLUTION TO ENVIRONMENT |
| <ul style="list-style-type: none">• Reduced chemical toxicity through Life Cycle• Low / no carcinogens through life-cycle• Reduced smog-forming potential |
| OTHER VITAL SIGNS |
| <ul style="list-style-type: none">• MSDS• Independent Verification• Documented Manufacturer Claim• Environmental info about product• National / International Standard• ISO 14001 Certification |



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MANUFACTURER DETAILS

Tiger Profiles & Insulation LLC

Sharjah Industrial Area 2

PO Box 23499

Sharjah, UAE

Telephone: + 971 6 5338449

Fax: + 971 6 5336673

Email: rosy.salameh@tigerprofiles.com

Web: www.solacoat.net

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David Baggs | Technical Director & Principal Consultant
Chartered Architect, FAIA, ABSA, Green Star AP, LEED AP, MRoySocAS



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