NatSteel Reinforcing steel

- GreenTag and EcoChoice certified + EPD

- Green Building Summary Sheet

Product Name	**NatSteel GreenTag GreenRate Level A + Eco Choice certified reinforcing steel with EPD**
Document Type	Green Building Rating Compatibility Analysis
Document Code	ES-GSNZ-25-107a
Client	Nauhria Reinforcing Ltd

Nauhria offers a complete range of both grade 300E and 500E plain, deformed and threaded reinforcing steel, in a variety of sizes. The product comes from NatSteel Singapore and it made using predominantly waste recycled steel, smelted in an Electric Arc Furnace. The Reinforced Bar, Precut, Deformed Bar In Coil, Hard Drawn Wire and Wire Rod
Is GreenTag GreenRate Level A certified and carries a product specific EPD.

When taking into account the above certification, this achieves RPV = 15 in accordance with the GBCA Scorechecker at the time of writing this document

Green Star Buildings	Credit 06	Up to 5 points
	Credit 21	Contribution Potential
	Credit 26	Contribution Potential
Green Star Design & As Built NZ (V1.1)	Credit 19	Contribution Potential
	Credit 20	1 point
	Credit 21	Sustainability Factor (SF) = 1

Homestar V5	EN2	Contribution Potential

Manner in which the product may contribute towards points	Legend of Symbols in EnviroSpec
Products must meet specific criteria (e.g. Paint VOC emissions, carpets, etc)	✔
Products may help achieve points by their very nature, if they are specified and installed (e.g. bicycle racks)	●
Products may help achieve an outcome but they must be used in a specific manner (e.g. lighting control and zoning systems) OR The nominated product(s) can contribute towards the outcome but many other products or factor influence that same outcome (E.g. Potable Water Calculator)	○

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Rating Tool	Credit / category	Points available	Requirements	Contribution symbol	Contribution Potential	Details of compliance
Green Star *Buildings NZ*	Credit 06	5	The building's structure is comprised of responsibly manufactured products. Credit achievement: • 1 point is available if >20% of all structural components (by cost) meet a Responsible Products Value (RPV) ≥ 10. • 2 points can be claimed if compliant structural components are >35% by cost, and • 3 points can be claimed if they are >50% by cost. Exceptional Performance: In conjunction with the above credit achievement, additional points are available as follows: • 1 point is available if either >65% of all structural components (by cost) achieve > RPV10, or 5% of these components achieve > RPV15. • 2 points are available if either >80% of all structural components (by cost) achieve > RPV10, or 10% of these components achieve > RPV15. *The structure is defined as load bearing and stability components of a building, including steel, timber, concrete load bearing elements. Temporary formwork is excluded from meeting compliance with the Responsible Products Value part of the credit, however, is included in the cost of the structure where projects choose to use the 'total cost' approach.*	✓	Up to 5 points	The nominated product holds a combination of eco-labels that equate to RPV 15 in accordance with the GBCA Score-checker. *Note: achieving the targeted points outcome is dependent on the remaining products in the category also being compliant in order to achieve necessary % by cost benchmarks.*
	Credit 21	8	The building's upfront carbon emissions from materials and products have been reduced. Minimum Expectation – The building's upfront carbon emissions are at least 10% less than those of a reference building. *Note: This reduction target does not include demolition works.* Credit Achievement In conjunction with the above minimum expectation, additional points are available if upfront carbon emissions are further reduced as follows: **Reduction** 15% 20% 26% 31% 38% 45% 50% 53% **Points** 1 pt 2 pts 3 pts 4 pts 5 pts 6 pts 7 pts 8 pts In addition to these upfront reductions: • Where an existing building less than 30 years old has been fully or partly demolished for construction, an embodied carbon calculation must be done for the demolished portion and these emissions offset. • Where the existing building is between 30 to 50 years old, the contribution must be calculated and discounted at 10% for every two additional years past year 30. • Beyond 50 years, there are no requirements.	○	Contribution potential	The nominated product imported from Singapore exhibits significantly reduced embodied carbon emissions from Cradle to Gate (A1-A3) compared to a number of alternatives, and remains a beneficial choice even when factoring in the Transport and Installation (A4, A5) modules which can be assigned as default values in the Green Star embodied carbon calculator. *Note: achieving the targeted points outcome is dependent on the remaining products included in the carbon calculations to also provide a reduction potential.*
	Credit 26	2	The building has lower environmental impacts from resource use over its lifespan than a typical building. Credit Achievement 1 point can be claimed if the project LCA results show a 15% reduction compared to a reference building. Exceptional Performance 2 points can be claimed if the project LCA results show a 30% reduction compared to a reference building.	○	Contribution potential	The nominated product may contribute positively towards an overall LCA analysis. While LCA results vary NatSteel presents reduced GWP, Acidification and Eutrophication potential. *Note: achieving the targeted points outcome is dependent on the remaining products included in the LCA calculations to also provide a reduction potential.*

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Rating Tool	Credit / category	Points available	Requirements	Contribution symbol	Contribution Potential	Details of compliance
Green Star Design & As Built NZ (V1.1)	Credit 19	11	This credit rewards the following: • Up to 6 points are available for a reduction in upfront carbon emissions from materials and products compared to a reference building, as follows: ***Reduction*** 10% | 15% | 20% | 25% | 30% | 35% | 40% ***Points*** Min. | 1 pt | 2 pts | 3 pts | 4 pts | 5 pts | 6 pts • Up to 3 points are available for a reduction in total LCA impacts compared to a reference building. ***Reduction*** 10% | 20% | 30% ***Points*** 1 pt | 2 pts | 3 pts • Up to 2 points are available for the long-term storage of carbon in construction materials, as follows: 1 point where atmospheric carbon storage for a forecasted period of at least 50 years is between 50 & 100 kg CO2/m2, and 2 points if > 100 kg CO2/m2 is achieved.	○	Contribution potential	The nominated product imported from Singapore exhibits significantly reduced embodied carbon emissions from Cradle to Gate (A1-A3) compared to a number of alternatives, and remains a beneficial choice even when factoring in the Transport and Installation (A4, A5) modules which can be assigned as default values in the Green Star embodied carbon calculator. The nominated product may also contribute positively towards an overall LCA analysis. While LCA results vary NatSteel presents reduced GWP, Acidification and Eutrophication potential. *Note: achieving the targeted points outcome is dependent on the remaining products included in the carbon and LCA calculations to also provide a reduction potential.*
	Credit 20	3	This credit rewards the selection of building materials that are responsibly sourced or have a sustainable supply chain. Steel - 1 point is available where either: For steel framed buildings, > 60% of structural steelwork is supplied by a fabricator/contractor accredited to the SSC's Environmental Sustainability Charter + has either Enviromark GOLD, or ISO14001 certification. For concrete framed buildings, > 60% (by mass) of all reinforcing bar and mesh holds Eco Choice EC-41-15 certification, or produced using energy-reducing processed in its manufacture. 20.2 Timber 1 point is available where at least 95% (by cost) of all timber used in the building and construction works is certified by a recognised forest certification scheme, or is from a re-used source. 20.3 Permanent Formwork, Pipes, Flooring, Blinds and Cables 1 point is available where 90% (by cost) of these products are PVC free and have a recognised product declaration, or meet the GBCA's Best Practice Guidelines for PVC. --- Where the cost of any of the elements above is less than 1%, the requirements are N/A.	✓	1 point	The nominated product holds Eco Choice Aotearoa certification, contributing towards 1 point for concrete framed buildings.
	Credit 21	3	This credit rewards the selection of products that meet transparency and sustainability requirements. Points are awarded based on the Project Sustainability Value (PSV*) and comparing it with the Project Contract Value (PCV). Benchmarks are: - 1 point is awarded if PSV > 3% of PCV - 1 point is awarded if PSV > 6% of PCV - 1 point is awarded if PSV > 9% of PCV *The Project Sustainability Value is the sum of all the compliant product's "Product Sustainability Value" (PSV).* *The PSV = Sustainability Factor x cost of product*	✓	Sustainability Factor (SF) = 1	The NZGBC TQ published 08/23 clarifies an equivalency whereby an RPV may be converted to the previous levels A, B and C. • RPV 10 or above = Level A • RPV 7 – 9 = Level B • RPV 5 – 6 = Level C The nominated product(s) *achieve* an RPV of 15 in accordance with the GBCA Score-checker. Therefore the Product Sustainability Value (PSV) can be calculated as: "Product Cost x 1".

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<table>
<tr><th>Rating Tool</th><th>Credit / category</th><th>Points available</th><th>Requirements</th><th>Contribution symbol</th><th>Contribution Potential</th><th>Details of compliance</th></tr>
<tr>
<td>Homestar V5</td>
<td>EN2</td>
<td>6</td>
<td>
<u>Mandatory item:</u>
The project must undertake embodied carbon calculations for modules A through D (in accordance with ISO14040 and EN 15978) – 1 point is awarded for this.

<u>Additional points:</u>
Additional points are based on the predicted cradle-to-gate and construction stage emissions (modules A1-A5 of EN 15978), as follows:
<table>
<tr><td>A1-A5 emissions: (kg.CO2-e/m2)</td><td><156</td><td><132</td><td><108</td><td><84</td><td><60</td></tr>
<tr><td>Points</td><td>1 pt</td><td>2 pts</td><td>3 pts</td><td>4 pts</td><td>5 pts</td></tr>
</table>
Or, for non-NZS3604 buildings, use the 2-model (reference) pathway from Green Star Design and As-Built NZ v1.1. The reference building should be defined following the guidance in the Green Star Embodied Carbon Methodology, with points available as follows:
<table>
<tr><td>% reduction on reference building</td><td>>10</td><td>>20</td><td>>30</td><td>>40</td><td>>50</td></tr>
<tr><td>Points</td><td>1 pt</td><td>2 pts</td><td>3 pts</td><td>4 pts</td><td>5 pts</td></tr>
</table>
</td>
<td>○</td>
<td>Contribution potential</td>
<td>The nominated product imported from Singapore exhibits significantly reduced embodied carbon emissions from Cradle to Gate (A1-A3) compared to a number of alternatives, and remains a beneficial choice even when factoring in the Transport and Installation (A4, A5) modules which can be assigned as default values in the Green Star embodied carbon calculator (applicable to non-NZS3604 buildings)

<u>Note</u>: achieving the targeted points outcome is dependent on the remaining products included in the carbon calculations to also provide a reduction potential.</td>
</tr>
</table>