

Environmental Product Declaration

In accordance with ISO 14025
and EN 15804:2012+A2:2019



GALVABOND® steel

EPD



Programme: **EPD Australasia** | epd-australasia.com

Programme Operator: **EPD Australasia Limited**

EPD Registration number: **S-P-09342**

Version **1.0**

Publication date: **2023-07-28**

Version date: **2023-07-28**

Valid until: **2028-07-28**

Geographical scope: **Australia**

Galvabond®

Programme-Related Information and Verification

EPD Owner:	BlueScope Steel Ltd steeldirect@bluescopesteel.com www.bluescope.com Level 24, 181 William Street, Melbourne VIC 3000, Australia
EPD Produced by:	thinkstep-anz info@thinkstep-anz.com www.thinkstep-anz.com
Programme Operator:	EPD Australasia Ltd info@epd-australasia.com www.epd-australasia.com 315a Hardy Street, Nelson 7010, New Zealand
Product Category Rules (PCR):	PCR 2019:14 Construction Products, Version 1.11, 2021-02-05
PCR review conducted by:	The Technical Committee of the International EPD® System Chair: Claudia A. Peña Contact: info@environdec.com
Independent verification of the declaration and data, according to ISO 14025:	<input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification (external)
Third party verifier:	 Rob Rouwette, start2see Pty Ltd Rob.Rouwette@start2see.com.au
Verifier approved by:	EPD Australasia Ltd
Procedure for follow-up during EPD validity involves third party verifier:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Version History:	v1.0 Initial release.

General Information

- EPDs within the same product category but from different programmes may not be comparable.
- EPDs of construction products may not be comparable if they do not comply with EN 15804:2012+A2:2019 or if they are produced using different Product Category Rules (PCR).
- BlueScope Steel Limited has sole ownership, liability and responsibility for this EPD.

Deer Park Bypass
Melbourne, VIC

Architect: Peter Elliot
Architecture + Urban Design

Photography: John Gollings

Noise barrier panels made
from GALVABOND® steel



Environmental Product Declaration

GALVABOND® steel

BlueScope Steel Products

**Deer Park Bypass,
Melbourne, VIC**

More than 65,000 square metres of deeply ribbed steel noise wall panels are providing a colourful visual identity for one of Melbourne's major road corridors.

The 9.3 kilometres, four lane Deer Park Bypass in Western Melbourne stretches from the Western Highway at Caroline Springs to the Western Ring Road in Sunshine West. Rollforming company, ARM Rollforming, used nearly 800 tonnes of GALVABOND® steel in 2.4 mm and 1.6 mm thicknesses to manufacture the unique noise barrier panels.

Deer Park Bypass
Melbourne, VIC

Architect: Peter Elliot
Architecture + Urban Design

Photography: John Gollings

Noise barrier panels made
from GALVABOND® steel



Declared Unit

This EPD provides data for one flat square metre (1 m²) of GALVABOND® steel manufactured by BlueScope in Australia with a zinc coating class of Z100, Z200 and Z275, at certain Base Metal Thicknesses (BMTs) ranging from 0.37 to 2.90 mm.

Key Insights

Benefits of using this EPD

8

This EPD can contribute to the achievement of credits under green building rating schemes. It:

- Is independently verified
- Includes indicators for Green Star and IS Rating

BlueScope's Climate Action

10

Steel and embodied carbon	11
Achieving sustainable outcomes with steel	12

Product Information

16

Product description	16
Product content	17
Scope of the declaration	18
<ul style="list-style-type: none">• Cradle-to-gate (A1-A3) with modules C1-C4 and module D	

Environmental Performance

22

Results for one flat square metre (1 m²) of GALVABOND® steel in the following base metal thicknesses (BMTs) where the base metal is the steel:	
• 0.37 mm – zinc coating class Z100	24
• 0.40 mm – zinc coating class Z100	26
• 0.45 mm – zinc coating class Z100	28
• 0.50 mm – zinc coating class Z100	30
• 0.55 mm – zinc coating class Z100	32
• 0.70 mm – zinc coating class Z100	34
• 0.75 mm – zinc coating class Z100	36
• 1.00 mm – zinc coating class Z100	38
• 0.40 mm – zinc coating class Z200	40
• 0.50 mm – zinc coating class Z200	42
• 0.55 mm – zinc coating class Z200	44
• 1.40 mm – zinc coating class Z200	46
• 0.40 mm – zinc coating class Z275	48
• 0.50 mm – zinc coating class Z275	50
• 0.55 mm – zinc coating class Z275	52
• 0.60 mm – zinc coating class Z275	54
• 0.70 mm – zinc coating class Z275	56
• 0.75 mm – zinc coating class Z275	58
• 0.80 mm – zinc coating class Z275	60
• 0.85 mm – zinc coating class Z275	62
• 0.90 mm – zinc coating class Z275	64
• 0.95 mm – zinc coating class Z275	66
• 1.00 mm – zinc coating class Z275	68
• 1.10 mm – zinc coating class Z275	70
• 1.15 mm – zinc coating class Z275	72
• 1.20 mm – zinc coating class Z275	74
• 1.50 mm – zinc coating class Z275	76
• 1.55 mm – zinc coating class Z275	78
• 1.60 mm – zinc coating class Z275	80
• 1.90 mm – zinc coating class Z275	82
• 1.95 mm – zinc coating class Z275	84
• 2.40 mm – zinc coating class Z275	86
• 2.90 mm – zinc coating class Z275	88

Note: EN 15804:2012+A1:2013 compliant results are also given in this document to assist comparability across EPDs and support use in tools such as Green Star and IS Rating.

Benefits of using this EPD

This EPD can contribute to the achievement of credit points under Green Star rating tools, the IS Rating Scheme (IS) and other leading green building rating schemes.

Green Star

Green Star registered projects can score points for using products with EPDs. BlueScope's steel products and this EPD may help obtain points in:

- Green Star – Design and As Built v1.3
 - Credit 19A – Life Cycle Assessment
 - Credit 19B.2 – Life Cycle Impacts – Steel
 - Credit 20.1 – Responsible Building Materials
 - Credit 21 – Sustainable Products
- Green Star – Buildings
 - Credits 6 to 9 – Responsible Products (Structure, Envelope, Systems or Finishes)
 - Credit 21 – Upfront Carbon Emissions
 - Credit 26 – Life Cycle Impacts
- Green Star – Communities v1.1
 - Credit 26 – Materials

IS Rating

IS projects can claim points for using products with EPDs. EPD results can also be included in the IS Materials Calculator and may help a project achieve reductions compared to a 'base case' footprint.

BlueScope's steel products and this EPD may help obtain points in:

- IS Design & As Built v1.2
 - Mat-1 Materials Life Cycle Impact Measurement and Reduction
 - Mat-2 Environmentally Labelled Products and Supply Chains
- IS Design & As Built v2.1
 - Rso-6 Materials Life Cycle Impact Measurement and Reduction
 - Rso-7 Sustainability Labelled Products and Supply Chains

BlueScope's products are also included in the Infrastructure Sustainability Council (ISC) ISupply Directory which connects products and services with projects and assets undertaking IS ratings.

This EPD also provides:

- Environmental performance information from cradle to gate (modules A1-A3), plus modules C1-C4 and module D.
- Carbon footprint data for use in Scope 3 carbon footprint calculations of your supply chain.
- A wide range of environmental metrics, such as water, energy and waste.

For more information on how BlueScope's products can help achieve more sustainable project outcomes contact BlueScope Steel Direct on 1800 800 789.

Take care when comparing

When comparing EPDs it is important to consider:

- EPDs within the same product category but from different programmes or utilising different Product Category Rules (PCRs) may not be comparable.
- The results for EN 15804:2012+A1:2013 compliant EPDs are not comparable with EN 15804:2012+A2:2019 compliant ones, as the methodologies differ. This EPD provides additional results in accordance to EN 15804:2012+A1:2013 to assist comparability across EPDs and support use in rating tools such as Green Star and IS Rating.
- EPDs of construction products from a group of manufacturers (industry-wide EPD) may not be comparable to an EPD of a similar construction product that has been generated by a single manufacturer (product-specific or manufacturer-specific EPD).
- Understanding the detail is important in comparisons. Expert analysis is often required to understand the detail and ensure data is truly comparable, to avoid unintended distortions.
- The best way to compare products and materiality of differences is to place them into the context of a structure across the whole life cycle.

If you need help interpreting the data in this EPD, please contact BlueScope Steel Direct on 1800 800 789.

BlueScope's Climate Action

Steel is an essential material for modern society and a critical enabler of sustainable development. We recognise that steelmaking is emissions-intensive and we are committed to climate action. Our climate strategy outlines our decarbonisation plans, including our goal of net zero greenhouse gas emissions across our operations by 2050¹, dependent on several enablers based around technology, renewable energy and public policy.

We have a promising innovation pipeline including collaborations with Rio Tinto and others, to explore ways to decarbonise iron and steelmaking processes. We believe these projects will help take us to the cutting edge of current technologies and demonstrate our commitment to reduce the embodied carbon of our products.

More information on BlueScope's climate action, can be found on our website:
www.bluescope.com/sustainable-steel

OUR
PATHWAY

SET A GOAL FOR:

NET
ZERO

GHG emissions
across our operations
by 2050¹

SET TARGETS FOR:

12%

GHG emission intensity
reduction by 2030
for our steelmaking
activities
(based on 2018 levels)

30%

GHG emission intensity
reduction by 2030 for
our non-steelmaking
activities²
(based on 2018 levels)

1. Our net zero goal covers BlueScope's Scope 1 and 2 GHG emissions. Achieving the 2050 net zero goal is highly dependent on several enablers, including commerciality of emerging and breakthrough technologies, the availability of affordable and reliable renewable energy and hydrogen, availability of quality raw materials, and appropriate policy settings.

2. The Non-Steelmaking Target applies to our midstream activities that include our cold rolled, metal coating and painting lines and long and hollow products. It excludes our downstream activities.

3. Pickin J et al., National Waste Report 2020, Prepared for the Department of Agriculture, Water and the Environment; 2020, p. 39.

4. Refers to the carbon emissions, or emissions of greenhouse gases, associated with materials throughout the life cycle of a building or infrastructure, not to the carbon content in the metal alloy.

5. www.worldsteel.org/about-steel/steel-facts.html

6. www.iea.org/reports/iron-and-steel-technology-roadmap



Steel and Embodied Carbon

Steel is one of the most recycled materials in the world, with the inherent value of scrap driving its recovery. In Australia, this is evidenced by a recycling rate for metals of 90%³. The recyclability of steel is enabled by its magnetic properties, which mean that it can be easily separated for recycling and is less likely to end up in landfill.

The recycled content in a steel product can have a significant effect on embodied carbon. While specifying high levels of recycled content can be an effective way of minimising the embodied carbon⁴ of many materials, especially those likely to be disposed of at end of life, recycled content is not necessarily a useful metric for steel in the context of reduction of carbon emissions by the steel sector. This is because despite being one of the most recycled materials in the world⁵, there is not enough steel scrap available to meet the growing global demand for steel⁶.

Specification of 'secondary' steel or steel products with higher levels of recycled content as a means of reducing embodied carbon, is unlikely to cause more steel to be recycled. Rather, doing so may shift the environmental burden around the value chain, and in fact increase the burden, as scrap and the final product may be transported around the globe unnecessarily.

While global demand for scrap continues to outstrip supply, the development and deployment of new low GHG emissions technologies for 'primary' steel production (using raw material inputs such as iron ore and metallurgical coal) while increasing the role of 'secondary' steelmaking (principally using scrap steel), will be key to reducing carbon emissions in the steel sector.



BlueScope is a founding member of ResponsibleSteel™, the steel industry's first global independent multi-stakeholder standard and certification program. It has been designed to ensure customers, stakeholders and consumers can be confident that the steel they use has been sourced and produced responsibly.

Initiatives, such as ResponsibleSteel™, are incorporating new methodologies to ensure that the carbon emissions of steel products are calculated on a like-for-like basis, irrespective of the input materials used and the steel production technology.

Embodied carbon and climate transition in a hard-to-abate sector

There is growing recognition from research and standard setting organisations that the percentage of recycled content in steel is not a good proxy for climate transition for the steel sector.

New methodologies, tools and guidance are being developed by organisations such as ResponsibleSteel™, to enable steel companies to set targets that align with science-based decarbonisation pathways and consider the unique context of the sector.

BlueScope is a participant in the Expert Advisory Group convened by the Science Based Targets initiative (SBTi) for the development of science-based target setting methodologies, tools and guidance in the steel sector to help meet the 1.5 °C goal of the Paris Agreement.

These initiatives build on the work of the Net Zero Steel Pathway Methodology Project (NZSPMP), which developed recommendations to identify and recognise low carbon emissions steelmaking, irrespective of the proportion of scrap or iron ore used as the primary input material. This approach would enable users to identify and reward reductions in embodied carbon and efficiencies in manufacturing practices for the steel sector, rather than simply identifying products that use more or less scrap steel, creating another basis for downstream users of steel to contribute to the achievement of the Paris Agreement through their steel specifying and purchasing decisions, and to recognise responsible steelmakers for their own commitment.

More information: www.sciencebasedtargets.org/sectors/steel and www.netzerosteelpathwayproject.com

Achieving Sustainable Outcomes with Steel

Steel is central to a circular economy – one where resources and materials are kept in use for as long as possible and then repaired, returned or recycled. Steel can be infinitely recycled and is 100% recyclable without loss of quality.

Design considerations

Life cycle thinking. A focus on design is important to minimise the whole of life impact of any construction project. Steel is a strong, durable and versatile material. It lends itself well to structures that are designed for long life, resilience and flexibility to accommodate multiple future reuse options without reinvestment in structural alteration and refurbishment. Steel also supports designs where end of life considerations are key e.g. designing for disassembly and reuse.

Dematerialisation. BlueScope manufactures a range of standard and high strength steel grades in plate and coil form. High strength steel grades enhance the strength to weight performance in structural steel applications when the design is governed by strength; by maximising the strength grade, a reduced volume of steel would be required in these applications, e.g. columns and primary members. This in turn can result in embodied carbon savings relative to a reference building design that utilises standard steel grades.

Specification considerations

ResponsibleSteel™. ResponsibleSteel™ is the steel industry's first global independent multi-stakeholder standard and certification initiative. The ResponsibleSteel™ Standard covers a wide range of sustainability topics, including Climate Change and Greenhouse Gas Emissions, Biodiversity, Water Stewardship and Human Rights. Specifying steel from a ResponsibleSteel™ certified site supports steel manufacturers such as BlueScope who are committed to climate action and sustainability. It also supports those downstream to manage ESG (Environmental, Social and Governance) risks in the steel supply chain.

More information: www.responsiblesteel.org

EPDs and ecolabels. EPDs and ecolabels demonstrate a manufacturer's commitment to product transparency and stewardship. EPDs and ecolabels provide key sustainability information to support decision-making and the achievement of more sustainable outcomes.

Further information on the sustainability credentials of BlueScope's products: www.steel.com.au

Manufacturer commitments and investment. Understand the commitments manufacturers have made to sustainability and climate change action and consider their investment in Research & Development activities.

More information on BlueScope's commitments and activities can be found in our Climate Action Report and Sustainability Report: bluescope.com/sustainability/reports



Deer Park Bypass
Melbourne, VIC
Architect: Peter Elliot
Architecture + Urban Design
Photography: John Gollings
Noise barrier panels made
from GALVABOND® steel

Contributing to a Sustainable Future at BlueScope

BlueScope has a long-standing commitment to developing innovative, responsible products and services. You can design and specify with confidence, knowing that GALVABOND® steel is created with durability, performance and compliance top of mind.

Steel and the Circular Economy

Steel is strong, durable, and versatile and its inherent properties allow it to be recycled without loss of quality over and over again. In some cases, it can be reused without reprocessing, again saving on energy and resource use.

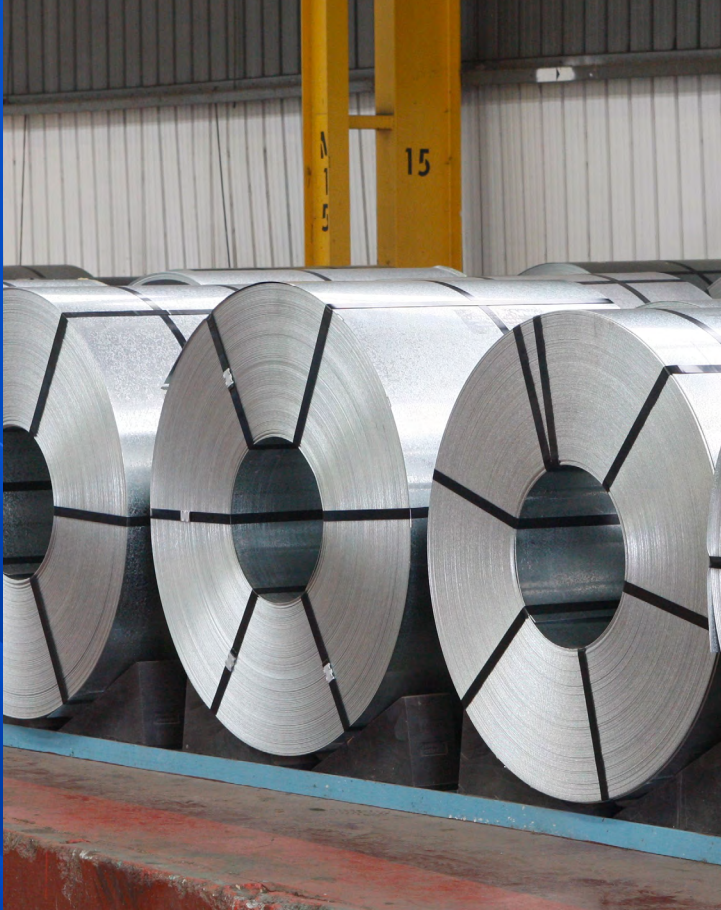
To help support a more sustainable 'circular economy', the steel manufactured by BlueScope in Australia incorporates pre- and post-consumer recycled content⁷. Steel is 100% recyclable and its magnetic properties mean that it can be easily separated for recycling and is less likely to end up in landfill.

Deer Park Bypass
Melbourne, VIC

Architect: Peter Elliot
Architecture + Urban Design

Photography: John Gollings

Noise barrier panels made from GALVABOND® steel



Certification of Port Kembla Steelworks

BlueScope's Port Kembla Steelworks is certified to the ResponsibleSteel™ Standard version 1.1. Australia's largest steel production facility has an annual production capacity of approximately 3 million tonnes of crude steel.

It manufactures slab, hot rolled coil and plate products. Branded products such as GALVABOND® steel COLORBOND® steel, TRUECORE® steel, and XLERPLATE® steel are manufactured from steel produced at the Port Kembla Steelworks.

⁷ Across the range of steel products manufactured by BlueScope in Australia, the average recycled content (according to recycled content categories defined in ISO 14021:2016) in the steel is 17.4%, which includes pre- and post-consumer recycled materials. Scrap and iron-bearing materials generated and reclaimed from BlueScope's steelmaking, coating and painting operations represent an additional 6.8% recovered content, which is not reported as recycled content. Scrap from rollforming and fabrication processes are included as pre-consumer recycled content. The figures provided represent our best estimate at the time of publication. For current recycled content figures please contact BlueScope Steel Direct on 1800 800 789.

Environmental Product Declaration

GALVABOND® steel

Declared Unit

This EPD is valid for one flat square metre (1 m²) of GALVABOND® steel with a zinc coating class of Z100, Z200 and Z275, manufactured by BlueScope in Australia.

Product Description

GALVABOND® steel is a general-purpose zinc-coated strip product designed for commercial forming applications with guaranteed minimum elongation properties. The product is suitable for moderate drawing applications and is suitable for lock seaming up to 1.6mm thick.

GALVABOND® steel is suitable for general manufacturing purposes including partition walling systems, tube formed products, air conditioning ducts and panels, meter boxes, trailers, cable trays, scaffolding, planks, rendering mesh, feeder troughs.

This EPD sets out information on the average GALVABOND® steel product⁸ manufactured by BlueScope in Australia with a zinc coating class of Z100, Z200 and Z275, in the base metal thicknesses (BMTs) presented in the table below.

The GALVABOND® steel products represented in this EPD consist of low carbon⁹ steel substrate (G2, G2S or G3N strength grade) that is coated with a zinc coating to provide to provide corrosion resistance. GALVABOND® steel with a G2S steel grade is skin passed to improve its surface quality.

The metallic coated base steel complies with AS 1397:2021: *Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium*.

Product	Metallic Coating	Base Metal Thickness (BMT)	Product mass (kg/m² flat product)	Metallic Coating	Base Metal Thickness (BMT)	Product mass (kg/m² flat product)
GALVABOND® steel	Z100	0.37 mm	3.05	Z275	0.75 mm	6.17
		0.40 mm	3.28		0.80 mm	6.56
		0.45 mm	3.68		0.85 mm	6.95
		0.50 mm	4.07		0.90 mm	7.35
		0.55 mm	4.46		0.95 mm	7.74
		0.70 mm	5.64		1.00 mm	8.13
		0.75 mm	6.03		1.10 mm	8.92
		1.00 mm	7.99		1.15 mm	9.31
	Z200	0.40 mm	3.35		1.20 mm	9.70
		0.50 mm	4.13		1.50 mm	12.06
		0.55 mm	4.52		1.55 mm	12.45
		1.40 mm	11.20		1.60 mm	12.84
	Z275	0.40 mm	3.42		1.90 mm	15.20
		0.50 mm	4.21		1.95 mm	15.59
		0.55 mm	4.60		2.40 mm	19.12
		0.60 mm	4.99		2.90 mm	23.05
		0.70 mm	5.78			

Manufacturing Process

In Australia, BlueScope manufactures steel from raw and recycled materials using an ‘integrated steelmaking’ method. This involves the use of iron ore, coal, steel scrap, fluxes (limestone and dolomite) and alloying materials to produce steel slab via the major processes of sintering, coke making, Blast Furnace/Basic Oxygen Furnace (BF-BOF) steelmaking and continuous slab casting, prior to hot rolling into hot rolled coil steel.

The hot rolled coil is then cold reduced. Cold reduction involves pickling (acid cleaning) the coil, followed by cold rolling, where the steel coil is compressed and elongated through rolls to reduce its thickness and increase the strength of the steel. Following cold reduction, the coil moves through a continuous hot-dipped metal coating line. At the metal coating line the steel is annealed to the required strength, metallic coated for corrosion resistance, and may be skin passed for improved surface finish. Finally, a chemical surface treatment is applied to provide protection from white rust and storage staining.

The coil is then packaged ready for shipment to customers for processing.

Downstream Processing

GALVABOND® steel is supplied by BlueScope to downstream processors in coils. The coils are uncoiled and processed/formed into products for a wide variety of applications, such as tube formed products, air conditioning ducts and panels, meter boxes, trailers, cable trays to scaffolding, planks, rendering mesh and feeder troughs.

This EPD does not cover downstream processing of GALVABOND® steel.

Product Content

The average composition¹⁰ of one flat square metre (1 m²) of GALVABOND® steel in Z100, Z200 and Z275 zinc coating classes is:

Product Composition		Mass (kg)	Recycled material (pre- and post-consumer)
Steel Substrate	Carbon Steel	2.90 (0.37 mm) – 7.85 (1.00 mm)	17.4% (average recycled content across the range of steel products manufactured by BlueScope in Australia) ¹¹
Metallic Coating (Z100)	Aluminium	<0.002	-
	Antimony	<0.001	-
	Zinc	0.114–0.143	-
Surface Treatment	Passivation	<0.001	-

Product Composition		Mass (kg)	Recycled material (pre- and post-consumer)
Steel Substrate	Carbon Steel	3.14 (0.40 mm) – 10.99 (1.40 mm)	17.4% (average recycled content across the range of steel products manufactured by BlueScope in Australia) ¹¹
Metallic Coating (Z200)	Aluminium	≤0.002	-
	Antimony	<0.001	-
	Zinc	0.203–0.225	-
SurfaceTtreatment	Passivation	<0.001	-

Product Composition		Mass (kg)	Recycled material (pre- and post-consumer)
Steel Substrate	Carbon Steel	3.14 (0.40 mm) – 22.77 (2.90 mm)	17.4% (average recycled content across the range of steel products manufactured by BlueScope in Australia) ¹¹
Metallic Coating (Z275)	Aluminium	<0.003	-
	Antimony	<0.001	-
	Zinc	0.278–0.292	-
Surface Treatment	Passivation	<0.001	-

Packaging Materials	Mass (kg)	Packaging (as % of product mass)
Steel	0.012	0.05%-0.39%
Plastic	0.002	0.01%-0.07%
Cardboard	0.001	0.00%-0.03%
Timber	0.007	0.03%-0.23%

GALVABOND® steel is compliant with the European REACH regulation¹². For safe use and maintenance, refer to the product Safety Data Sheet (SDS) at steel.com.au/library.

What is an SDS?

A Safety Data Sheet (SDS) is a document that describes the chemical and physical properties of a product or material and provides safe handling and use information.

Industry Classification

Product	Classification	Code	Category
GALVABOND® steel	UN CPC	41231	Flat-rolled products of non-alloy steel, clad, plated, coated or otherwise further worked
	ANZSIC	2110	Iron Smelting and Steel Manufacturing

8. Refer to the GALVABOND® steel datasheet at www.steel.com.au

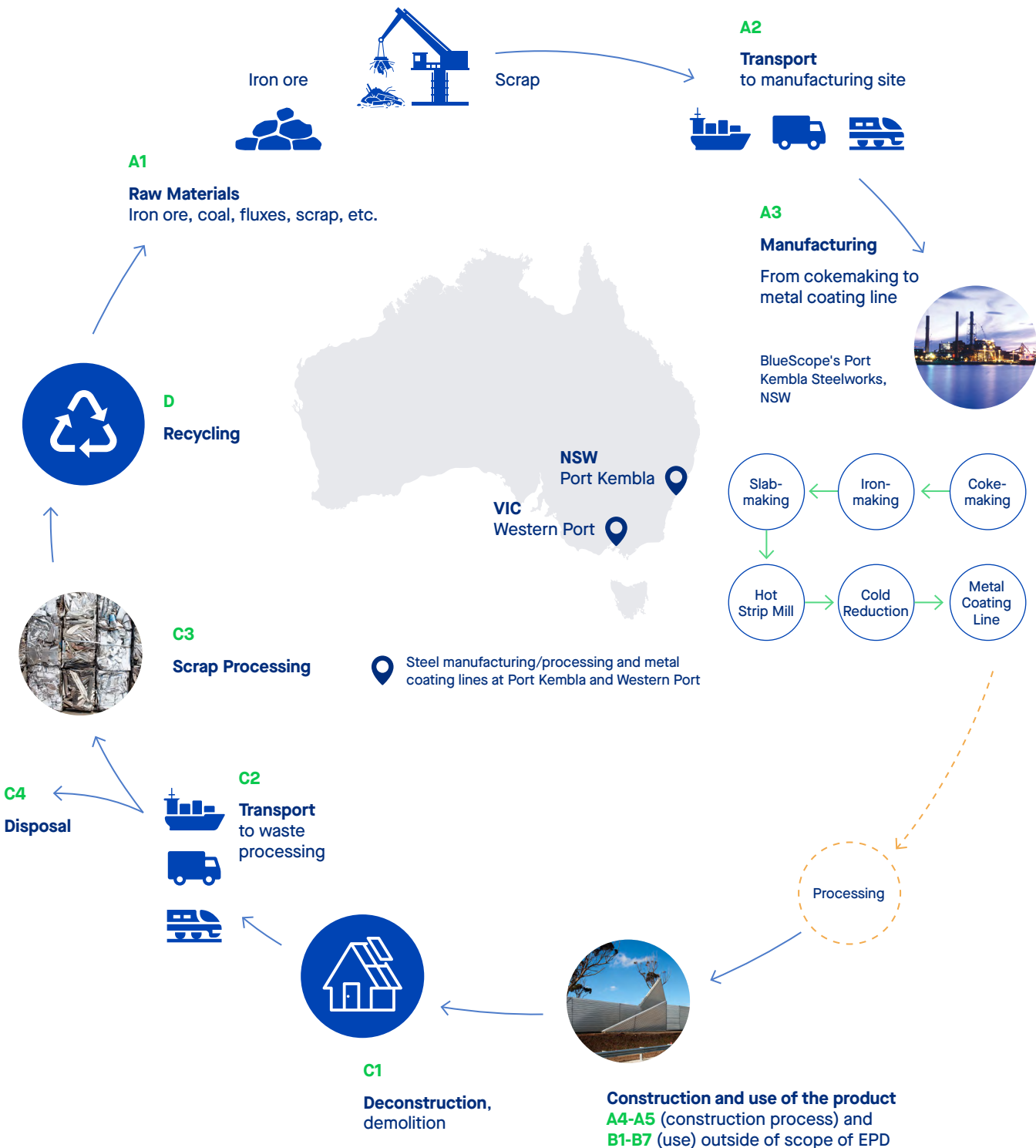
9. The term 'low carbon steel' refers to the carbon content in the metal alloy (which is typically less than 0.3% carbon content), and not to the carbon dioxide (CO₂) emissions associated with the product.

10. The product composition provided is an average and variability among individual products is expected. Please note that we are constantly working to improve our products and changes to their composition may occur over time. If clarification on a particular product is needed please contact BlueScope Steel Direct on 1800 800 789.

11. Across the range of steel products manufactured by BlueScope in Australia, the average recycled content (according to recycled content categories defined in ISO 14021:2016) in the steel is 17.4%, which includes pre- and post-consumer recycled materials. Scrap and iron-bearing materials generated and reclaimed from BlueScope's steelmaking, coating and painting operations represent an additional 6.8% recovered content, which is not reported as recycled content. Scrap from rollforming and fabrication processes are included as pre-consumer recycled content. The figures provided represent our best estimate at the time of publication. For current recycled content figures please contact BlueScope Steel Direct on 1800 800 789.

12. Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

GALVABOND® steel Manufacturing and Processing in Australia



Scope of Declaration

This declaration is for one flat square metre (1 m²) of GALVABOND® steel with a zinc coating class of Z100, Z200 and Z275, manufactured by BlueScope in Australia¹³. The scope of this declaration is from cradle to gate (modules A1-A3), with modules C1-C4 and module D.

Modules A4-A5 (construction process) and B1 B7 (use) have not been included due to the inability to predict how the material will be used following manufacture.

The system boundary applied in this study extends from mining of raw materials such as iron ore and coal; transport to and within the manufacturing site; coke, sinter, iron and steel manufacture; ancillary service operations; hot rolling of steel products, cold reduction, metallic coating and packaging for dispatch to direct customers at the exit gate of the manufacturing site.

The system boundary also includes manufacture of other required input materials, transport between processing operations, the production of external services such as electricity, natural gas and water, and the production of co-product materials within the steelmaking process, which have been removed by the use of allocation techniques. Wastes and emissions to air, land and water are also included, as are modules C1-C4 (end of life stage), and module D (reuse, recovery and/or recycling potential).

	Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundary
	Raw material supply	Transport	Manufacturing	Transport	Construction / installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction, demolition	Transport	Waste processing	Disposal	
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	AU	AU	AU	-	-	-	-	-	-	-	-	-	AU	AU	AU	AU	GLO
Specific data	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

X = Module declared; ND = Not declared (such a declaration shall not be regarded as an indicator of a zero result).

13. As described in the Product Description on page 16.

Life Cycle Assessment (LCA) Methodology

This EPD has been produced in conformance with the requirements of PCR 2019:14 v1.11 Construction Products, the Instructions of the Australasian EPD Programme v3.0 and the International EPD® System General Programme Instructions (GPI) v3.01.

Primary data

This study focuses on the further processing of steel beyond hot rolling to produce GALVABOND® steel with a zinc coating class of Z100, Z200 and Z275. Upstream hot rolled steel manufacturing data for low carbon¹⁴ Hot Rolled Coil used in this study was obtained from v2.0 of the EPD for Steel – Hot Rolled Coil (S-P-00557).

Primary data were collected for all relevant BlueScope manufacturing sites in Australia, for all inputs and outputs in the production stage (A1-A3). This study is based on an annual average for the time period July 2018 to June 2019. All direct emissions data were procured from the average results reported to the National Pollution Inventory over the 3-year period 2016 to 2019.

Secondary data

The secondary data used were procured from the GaBi Life Cycle Inventory Database 2022¹⁵. Most datasets used have a reference year between 2018 and 2021 and all fall within the 10-year limit allowable for generic data under EN 15804.

For the modelling for BlueScope's manufacturing sites, the electricity supply was based on GaBi's state-specific 1kV-60kV grid mix datasets for NSW and VIC as relevant to each BlueScope manufacturing site.

The 2019 1kV-60kV NSW grid mix dataset is highly reliant on hard coal (77%), with imports from VIC (6.5%) and QLD (5.6%), and generation from hydro (4.1%), natural gas (3.3%), wind (2.5%) and photovoltaics (0.74%). The emission factor for the 2019 1kV-60kV NSW grid for the GWP-GHG indicator is 0.987 kg CO₂-eq/kWh (GaBi database 2022).

The 2019 1kV-60kV VIC grid mix dataset is highly reliant on lignite (80%), with generation from hydro (6.3%), wind (6.2%), and natural gas (3.2%), and imports from TAS (2.4%), NSW (1.1%) and SA (0.68%). The emission factor for the 2019 1kV-60kV VIC grid for the GWP-GHG indicator is 1.13 kg CO₂-eq/kWh (GaBi database 2022).

Water use in relation to BlueScope's manufacturing sites was modelled using the specific watershed scarcity data for each BlueScope manufacturing site.

Cut off criteria

All relevant and available data were collected. While cut-off criteria according to the Product Category Rules (PCR) section 4.4 were employed, much of the data which would have fallen within that scope were included where available, resulting in a data set which is robust and captures all significant contributors to the LCA results. Inputs knowingly excluded are the transport and packaging of minor inputs, such as lubricants and greases, which are used in very small quantities.

Personnel is excluded as per section 4.3.1 in the PCR (EPD International, 2021). Thinkstep-anz consistently excludes environmental impacts from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process ('capital goods'). This is because high-quality infrastructure-related data isn't always available and there is no clear cut-off for what to include. For this reason, capital goods data may be applied to LCA studies inconsistently and could lead to reduced consistency and comparability of EPDs.

Allocation

For the modelling for BlueScope's manufacturing sites, where subdivision of processes was not possible, allocation was carried out using the most relevant physical quantity, predominantly the mass of throughput (e.g. steel coil) or surface area of the coil (e.g. surface coatings). Economic allocation was not used in this study. No use of system expansion was made (excepting Module D).

End of life

The modelling for Module C1 (deconstruction, demolition) was based on the use of a 100 kW construction excavator (fuel consumption of 0.172 kg diesel per tonne steel). The modelling for Module C2 (transport) assumed 50 km transport by truck to a waste processing facility or landfill.

The recycling scenario was based on the National Waste Report 2020¹⁶, which indicates that the average metals recycling rate in Australia is 90%. This is considered to be a conservative estimate for flat steel construction products but was used in the absence of verified higher recycling rates.

End of life allocation follows the requirements of EN 15804:2012+A2:2019 section 6.4.3.3 and generally follows the polluter pays principle. Any open scrap inputs into manufacturing remain unconnected, and so are treated as 'burden free'. At the end of life of a product, scrap is collected for recycling and is thus available to produce a recycling credit within Module D. A credit for net scrap is given in Module D based on the base metal used in the product.

Key assumptions and qualifications:

- Accuracy of data measurement falls within normal industrial weighing systems accuracy limits of +/-5%.
- Transport and packaging of minor materials is insignificant to the overall impacts.
- Nominally identical products are produced on a combination of production lines in parallel, and therefore the impacts of each product are a weighted average of the various production lines. The impact of any differences in the composition of the products, with the exception of any change in base metal thickness (BMT), is insignificant on the outcomes of the LCA.
- Proprietary chemicals can be sufficiently modelled using guidance from Safety Data Sheets and conservative assumptions on that basis.
- Upstream data taken from the GaBi LCA database reflects average or generic production and therefore does not correspond to BlueScope's actual suppliers.
- The Module D recovery stage assumes that metal coatings are lost as slag during the steel recycling process. This is a conservative assumption for metal coatings as they are likely to make up part of future steel alloys.

14. The term 'low carbon' steel refers to the carbon content in the metal alloy (which is typically less than 0.3% carbon content), and not to the carbon dioxide (CO₂) emissions associated with the product.

15. Sphera, GaBi LCA Database Documentation, 2022, <https://www.gabi-software.com/support/gabi/gabi-database-2022-lci-documentation/>

16. Pickin J et al., National Waste Report 2020, Prepared for the Department of Agriculture, Water and the Environment, 2020, p.39.

Environmental Performance

The environmental impact indicators included in this EPD are described in the table below. All the result tables from this point will contain the abbreviations only. All results reported in MJ are in net calorific value.

Indicator	Abbreviation	Units	Characterisation Method
Core Environmental Impact indicators, in accordance to EN 15804:2012+A2:2019			
Climate change – total	GWP-total	kg CO ₂ -eq.	EF3.0 (PEF)
Climate change – fossil	GWP-fossil	kg CO ₂ -eq.	EF3.0 (PEF)
Climate change – biogenic	GWP-biogenic	kg CO ₂ -eq.	EF3.0 (PEF)
Climate change – land use and land use change	GWP-luluc	kg CO ₂ -eq.	EF3.0 (PEF)
Ozone depletion	ODP	kg CFC-11-eq.	WMO 2014
Acidification	AP	mol H ⁺ -eq.	Accumulated Exceedance
Eutrophication aquatic freshwater	EP-freshwater	kg P-eq.	EUTREND model (ReCiPe)
Eutrophication aquatic marine	EP-marine	kg N-eq.	EUTREND model (ReCiPe)
Eutrophication terrestrial	EP-terrestrial	mol N-eq.	Accumulated Exceedance
Photochemical ozone formation	POCP	kg NMVOC-eq.	LOTOS-EUROS
Depletion of abiotic resources – minerals and metals	ADP-minerals & metals	kg Sb-eq.	CML 2002a
Depletion of abiotic resources – fossil fuels	ADP-fossil	MJ	CML 2002a
Water depletion potential	WDP	m³ world-eq. deprived	AWARE
Additional Environmental Impact indicators, in accordance to EN 15804:2012+A2:2019			
Climate change	GWP-GHG	kg CO ₂ -eq.	IPCC 2013 (AR5)
Particulate Matter emissions	PM	Disease incidence	SETAC-UNEP, Fantke et al. 2016
Ionising radiation – human health	IRP	kBq U-235-eq.	Human Health Effect model
Eco-toxicity – freshwater	ETP-fw	CTUe	Modified USEtox model from EC-JRC
Human toxicity potential – cancer effects	HTP-c	CTUh	Modified USEtox model from EC-JRC
Human toxicity potential – non-cancer effects	HTP-nc	CTUh	Modified USEtox model from EC-JRC
Land use related impacts / soil quality	SQP	dimensionless	Soil quality index (LANCA®)
Resource use parameters			
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ	n/a
Use of renewable primary energy resources used as raw materials	PERM	MJ	n/a
Total use of renewable primary energy resources	PERT	MJ	n/a
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ	n/a
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ	n/a
Total use of non-renewable primary energy resources	PENRT	MJ	n/a
Use of secondary material	SM	kg	n/a
Use of renewable secondary fuels	RSF	MJ	n/a
Use of non-renewable secondary fuels	NRSF	MJ	n/a
Net use of fresh water	FW	m³	n/a

Waste Categories and Output Flows			
Hazardous waste disposed	HWD	kg	n/a
Non-hazardous waste disposed	NHWD	kg	n/a
Radioactive waste disposed	RWD	kg	n/a
Components for re-use	CRU	kg	n/a
Materials for recycling	MFR	kg	n/a
Materials for energy recovery	MER	kg	n/a
Exported energy – electrical	EEE	MJ	n/a
Exported energy – thermal	EET	MJ	n/a
Additional Environmental Impact indicators, in accordance to EN 15804:2012+A1:2013			
Global warming potential	GWP	kg CO ₂ -eq.	IPCC 2007 (AR4)
Ozone depletion potential	ODP	kg CFC-11-eq.	WMO 2003
Acidification potential	AP	kg SO ₂ -eq.	CML 2002b
Eutrophication potential	EP	kg PO ₄ ³⁻ -eq.	CML 2002b
Photochemical ozone creation potential	POCP	kg C ₂ H ₄ -eq.	CML 2002b
Abiotic depletion potential for non-fossil resources	ADPE	kg Sb-eq.	CML 2002b
Abiotic depletion potential for fossil resources	ADPF	MJ	CML 2002b
Additional Green Star v1.3 indicators			
Human Toxicity – cancer effects	HTc - GS	CTUh	USEtox
Human Toxicity - non-cancer effects	HTnc - GS	CTUh	USEtox
Land use	LU - GS	kg C deficit-eq.	Soil Organic Matter method
Resource depletion – water	RDW - GS	m³-eq.	Water Stress Indicator
Ionising radiation	IR – GS	kBq U235-eq.	Human Health Effect model
Particulate matter	PM - GS	kg PM2.5-eq.	RiskPoll

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.37mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 3.05 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	9.80	0.00190	0.0145	0.134	0.0148	-3.38
GWP-fossil	kg CO ₂ -eq.	9.81	0.00190	0.0144	0.134	0.0147	-3.38
GWP-biogenic	kg CO ₂ -eq.	-0.00787	1.88E-07	4.82E-06	1.50E-04	2.91E-05	0.00200
GWP-luluc	kg CO ₂ -eq.	3.28E-04	1.38E-08	1.55E-07	5.15E-06	8.86E-06	-6.81E-05
ODP	kg CFC-11-eq.	5.99E-12	1.51E-16	1.45E-15	5.97E-13	1.94E-14	5.63E-14
AP	mol H ⁺ -eq.	0.0337	9.05E-06	3.73E-05	6.74E-04	4.65E-05	-0.00328
EP-freshwater	kg P-eq.	2.96E-06	3.34E-10	2.38E-09	7.33E-08	1.13E-08	-6.02E-07
EP-marine	kg N-eq.	0.00759	4.37E-06	1.68E-05	1.45E-04	1.13E-05	-2.32E-04
EP-terrestrial	mol N-eq.	0.0852	4.79E-05	1.85E-04	0.00158	1.24E-04	3.56E-04
POCP	kg NMVOC-eq.	0.0252	1.22E-05	3.60E-05	4.01E-04	3.58E-05	-0.00233
ADP-minerals & metals ¹⁷	kg Sb-eq.	2.70E-04	2.32E-11	2.60E-10	1.12E-08	1.03E-09	-1.71E-07
ADP-fossil ¹⁷	MJ	98.1	0.0253	0.192	1.45	0.209	-30.6
WDP ¹⁷	m³ world-eq. deprived	0.813	1.41E-05	9.14E-05	0.0524	9.99E-04	-0.650

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹⁸	kg CO ₂ -eq.	9.58	0.00188	0.0143	0.133	0.0143	-3.25
PM	Disease incidence	4.48E-07	1.02E-10	2.44E-10	6.57E-09	4.97E-10	-3.63E-08
IRP ¹⁹	kBq U-235-eq.	0.0550	4.79E-08	4.86E-06	2.54E-05	3.71E-04	0.0796
ETP-fw ¹⁷	CTUe	17.3	0.00635	0.0768	0.277	0.0619	-0.968
HTP-c ¹⁷	CTUh	9.33E-10	1.07E-13	1.30E-12	1.24E-11	7.34E-12	-1.42E-09
HTP-nc ¹⁷	CTUh	1.88E-07	6.65E-12	5.15E-11	4.13E-10	7.39E-10	-4.64E-08
SQP ¹⁷	dimensionless	2.62	5.80E-05	5.40E-04	0.185	0.0162	0.416

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	5.09	8.25E-05	9.36E-04	0.312	0.0171	2.08
PERM	MJ	0	0	0	0	0	0
PERT	MJ	5.09	8.25E-05	9.36E-04	0.312	0.0171	2.08
PENRE	MJ	98.2	0.0253	0.192	1.45	0.209	-30.6
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	98.2	0.0253	0.192	1.45	0.209	-30.6
SM	kg	0.613	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0149	2.13E-07	1.83E-06	7.37E-04	2.94E-05	-0.0147

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.20E-09	2.74E-14	3.11E-13	4.84E-11	3.15E-11	-2.30E-10
NHWD	kg	0.0697	3.61E-07	4.65E-06	4.52E-04	0.305	0.589
RWD	kg	4.53E-04	3.70E-10	3.74E-08	1.98E-07	2.52E-06	6.37E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.25	0	0	2.74	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	2.74
Steel collected with mixed construction waste	kg	0.305
Recovery for re-use	kg	0
Recovery for recycling	kg	2.74
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.305
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.37mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	9.51	0.00188	0.0143	0.132	0.0140	-3.21
ODP	kg CFC11-eq.	7.07E-12	1.78E-16	1.71E-15	7.02E-13	2.28E-14	6.50E-14
AP	kg SO ₂ -eq.	0.0271	6.29E-06	2.62E-05	5.51E-04	3.73E-05	-0.00301
EP	kg PO ₄ ³⁻ -eq.	0.00273	1.46E-06	5.70E-06	4.97E-05	3.98E-06	-7.77E-05
POCP	kg ethene-eq.	0.00414	6.20E-07	-6.97E-06	2.95E-05	3.48E-06	-0.00145
ADPE	kg Sb-eq.	2.70E-04	2.32E-11	2.60E-10	1.13E-08	1.04E-09	-1.65E-07
ADPF	MJ	96.1	0.0253	0.191	1.44	0.202	-31.4

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	1.76E-10	2.89E-15	3.98E-14	4.80E-12	6.42E-13	5.96E-11
HTnc - GS	CTUh	8.94E-11	1.38E-15	8.95E-15	1.53E-13	1.49E-14	1.66E-12
LU - GS	kg C deficit-eq.	1.37	4.79E-06	3.70E-05	0.0151	0.00141	0.173
RDW - GS	m³-eq.	0.00922	1.37E-07	1.16E-06	4.90E-04	1.48E-05	-0.00802
IR - GS	kBq U235-eq.	0.0550	4.79E-08	4.86E-06	2.54E-05	3.71E-04	0.0796
PM - GS	kg PM2.5-eq.	0.00230	4.51E-07	1.23E-06	3.62E-05	2.63E-06	-2.36E-04

17. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

18. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

19. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 3.28 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	10.4	0.00205	0.0156	0.145	0.0159	-3.66
GWP-fossil	kg CO ₂ -eq.	10.4	0.00205	0.0156	0.144	0.0159	-3.66
GWP-biogenic	kg CO ₂ -eq.	-0.00769	2.03E-07	5.19E-06	1.61E-04	3.13E-05	0.00216
GWP-luluc	kg CO ₂ -eq.	3.36E-04	1.49E-08	1.67E-07	5.54E-06	9.54E-06	-7.39E-05
ODP	kg CFC-11-eq.	6.20E-12	1.63E-16	1.56E-15	6.43E-13	2.09E-14	6.01E-14
AP	mol H ⁺ -eq.	0.0358	9.74E-06	4.02E-05	7.26E-04	5.01E-05	-0.00356
EP-freshwater	kg P-eq.	3.05E-06	3.60E-10	2.56E-09	7.90E-08	1.22E-08	-6.52E-07
EP-marine	kg N-eq.	0.00804	4.71E-06	1.81E-05	1.56E-04	1.22E-05	-2.55E-04
EP-terrestrial	mol N-eq.	0.0903	5.16E-05	2.00E-04	0.00170	1.34E-04	3.36E-04
POCP	kg NMVOC-eq.	0.0267	1.32E-05	3.88E-05	4.32E-04	3.86E-05	-0.00253
ADP-minerals & metals ²⁰	kg Sb-eq.	2.70E-04	2.50E-11	2.80E-10	1.21E-08	1.11E-09	-1.85E-07
ADP-fossil ²⁰	MJ	104	0.0272	0.206	1.56	0.225	-33.1
WDP ²⁰	m³ world-eq. deprived	0.840	1.52E-05	9.84E-05	0.0565	0.00108	-0.703

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ²¹	kg CO ₂ -eq.	10.2	0.00203	0.0154	0.143	0.0154	-3.52
PM	Disease incidence	4.75E-07	1.10E-10	2.63E-10	7.08E-09	5.35E-10	-3.95E-08
IRP ²²	kBq U-235-eq.	0.0559	5.16E-08	5.24E-06	2.73E-05	4.00E-04	0.0861
ETP-fw ²⁰	CTUe	18.1	0.00684	0.0828	0.298	0.0667	-1.05
HTP-c ²⁰	CTUh	9.80E-10	1.15E-13	1.40E-12	1.34E-11	7.91E-12	-1.53E-09
HTP-nc ²⁰	CTUh	2.00E-07	7.17E-12	5.55E-11	4.45E-10	7.97E-10	-5.02E-08
SQP ²⁰	dimensionless	2.77	6.25E-05	5.82E-04	0.200	0.0175	0.449

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	5.24	8.89E-05	0.00101	0.336	0.0184	2.25
PERM	MJ	0	0	0	0	0	0
PERT	MJ	5.24	8.89E-05	0.00101	0.336	0.0184	2.25
PENRE	MJ	104	0.0272	0.206	1.56	0.225	-33.1
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	104	0.0272	0.206	1.56	0.225	-33.1
SM	kg	0.659	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0154	2.29E-07	1.97E-06	7.94E-04	3.17E-05	-0.0159

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.31E-09	2.95E-14	3.35E-13	5.22E-11	3.40E-11	-2.50E-10
NHWD	kg	0.0719	3.89E-07	5.01E-06	4.87E-04	0.329	0.630
RWD	kg	4.59E-04	3.99E-10	4.03E-08	2.13E-07	2.71E-06	6.82E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.35	0	0	2.96	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	2.96
Steel collected with mixed construction waste	kg	0.328
Recovery for re-use	kg	0
Recovery for recycling	kg	2.96
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.328
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	10.1	0.00202	0.0154	0.142	0.0151	-3.48
ODP	kg CFC11-eq.	7.31E-12	1.92E-16	1.84E-15	7.57E-13	2.46E-14	6.95E-14
AP	kg SO ₂ -eq.	0.0288	6.77E-06	2.83E-05	5.94E-04	4.02E-05	-0.00327
EP	kg PO ₄ ³⁻ -eq.	0.00289	1.58E-06	6.15E-06	5.36E-05	4.29E-06	-8.56E-05
POCP	kg ethene-eq.	0.00442	6.68E-07	-7.50E-06	3.18E-05	3.75E-06	-0.00157
ADPE	kg Sb-eq.	2.70E-04	2.50E-11	2.81E-10	1.21E-08	1.12E-09	-1.78E-07
ADPF	MJ	102	0.0272	0.206	1.55	0.217	-34.0

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	1.80E-10	3.11E-15	4.28E-14	5.17E-12	6.92E-13	6.45E-11
HTnc - GS	CTUh	9.18E-11	1.49E-15	9.64E-15	1.65E-13	1.61E-14	1.80E-12
LU - GS	kg C deficit-eq.	1.43	5.16E-06	3.99E-05	0.0162	0.00152	0.187
RDW - GS	m³-eq.	0.00951	1.48E-07	1.25E-06	5.28E-04	1.59E-05	-0.00868
IR - GS	kBq U235-eq.	0.0559	5.16E-08	5.24E-06	2.73E-05	4.00E-04	0.0861
PM - GS	kg PM2.5-eq.	0.00244	4.86E-07	1.32E-06	3.89E-05	2.83E-06	-2.57E-04

20. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

21. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

22. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.45mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 3.68 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	11.4	0.00230	0.0174	0.162	0.0178	-4.12
GWP-fossil	kg CO ₂ -eq.	11.4	0.00230	0.0174	0.162	0.0178	-4.12
GWP-biogenic	kg CO ₂ -eq.	-0.00737	2.27E-07	5.81E-06	1.81E-04	3.50E-05	0.00242
GWP-luluc	kg CO ₂ -eq.	3.51E-04	1.67E-08	1.87E-07	6.21E-06	1.07E-05	-8.36E-05
ODP	kg CFC-11-eq.	6.54E-12	1.82E-16	1.75E-15	7.20E-13	2.34E-14	6.66E-14
AP	mol H ⁺ -eq.	0.0391	1.09E-05	4.50E-05	8.13E-04	5.60E-05	-0.00404
EP-freshwater	kg P-eq.	3.20E-06	4.03E-10	2.87E-09	8.84E-08	1.36E-08	-7.34E-07
EP-marine	kg N-eq.	0.00878	5.27E-06	2.03E-05	1.74E-04	1.37E-05	-2.94E-04
EP-terrestrial	mol N-eq.	0.0988	5.77E-05	2.23E-04	0.00190	1.50E-04	3.01E-04
POCP	kg NMVOC-eq.	0.0293	1.48E-05	4.34E-05	4.83E-04	4.32E-05	-0.00287
ADP-minerals & metals ²³	kg Sb-eq.	2.71E-04	2.80E-11	3.14E-10	1.36E-08	1.24E-09	-2.08E-07
ADP-fossil ²³	MJ	114	0.0305	0.231	1.75	0.252	-37.3
WDP ²³	m³ world-eq. deprived	0.884	1.70E-05	1.10E-04	0.0633	0.00120	-0.792

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ²⁴	kg CO ₂ -eq.	11.2	0.00227	0.0173	0.160	0.0172	-3.97
PM	Disease incidence	5.20E-07	1.23E-10	2.95E-10	7.92E-09	5.99E-10	-4.50E-08
IRP ²⁵	kBq U-235-eq.	0.0574	5.78E-08	5.87E-06	3.06E-05	4.48E-04	0.0970
ETP-fw ²³	CTUe	19.3	0.00766	0.0927	0.334	0.0747	-1.19
HTP-c ²³	CTUh	1.06E-09	1.28E-13	1.57E-12	1.50E-11	8.85E-12	-1.73E-09
HTP-nc ²³	CTUh	2.21E-07	8.02E-12	6.21E-11	4.98E-10	8.92E-10	-5.66E-08
SQP ²³	dimensionless	3.02	7.00E-05	6.52E-04	0.224	0.0196	0.505

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	5.50	9.95E-05	0.00113	0.376	0.0206	2.53
PERM	MJ	0	0	0	0	0	0
PERT	MJ	5.50	9.95E-05	0.00113	0.376	0.0206	2.53
PENRE	MJ	114	0.0305	0.231	1.75	0.252	-37.3
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	114	0.0305	0.231	1.75	0.252	-37.3
SM	kg	0.735	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0162	2.56E-07	2.20E-06	8.89E-04	3.55E-05	-0.0179

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.48E-09	3.31E-14	3.75E-13	5.84E-11	3.80E-11	-2.83E-10
NHWD	kg	0.0755	4.35E-07	5.60E-06	5.46E-04	0.368	0.697
RWD	kg	4.68E-04	4.47E-10	4.51E-08	2.38E-07	3.03E-06	7.57E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.52	0	0	3.31	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.31
Steel collected with mixed construction waste	kg	0.368
Recovery for re-use	kg	0
Recovery for recycling	kg	3.31
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.368
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.45mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	11.1	0.00226	0.0172	0.159	0.0169	-3.92
ODP	kg CFC11-eq.	7.73E-12	2.15E-16	2.06E-15	8.47E-13	2.75E-14	7.69E-14
AP	kg SO ₂ -eq.	0.0315	7.58E-06	3.16E-05	6.65E-04	4.50E-05	-0.00371
EP	kg PO ₄ ³⁻ -eq.	0.00316	1.77E-06	6.88E-06	6.00E-05	4.80E-06	-9.88E-05
POCP	kg ethene-eq.	0.00488	7.48E-07	-8.40E-06	3.56E-05	4.20E-06	-0.00177
ADPE	kg Sb-eq.	2.71E-04	2.80E-11	3.14E-10	1.36E-08	1.26E-09	-2.01E-07
ADPF	MJ	112	0.0305	0.230	1.74	0.243	-38.3

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	1.87E-10	3.48E-15	4.80E-14	5.79E-12	7.74E-13	7.26E-11
HTnc - GS	CTUh	9.60E-11	1.66E-15	1.08E-14	1.85E-13	1.80E-14	2.02E-12
LU - GS	kg C deficit-eq.	1.54	5.78E-06	4.47E-05	0.0182	0.00171	0.211
RDW - GS	m³-eq.	0.00999	1.65E-07	1.40E-06	5.91E-04	1.78E-05	-0.00978
IR - GS	kBq U235-eq.	0.0574	5.78E-08	5.87E-06	3.06E-05	4.48E-04	0.0970
PM - GS	kg PM2.5-eq.	0.00268	5.44E-07	1.48E-06	4.36E-05	3.17E-06	-2.91E-04

23. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

24. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

25. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.07 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	12.5	0.00254	0.0193	0.179	0.0197	-4.58
GWP-fossil	kg CO ₂ -eq.	12.5	0.00254	0.0193	0.179	0.0197	-4.58
GWP-biogenic	kg CO ₂ -eq.	-0.00706	2.52E-07	6.43E-06	2.00E-04	3.88E-05	0.00268
GWP-luluc	kg CO ₂ -eq.	3.66E-04	1.84E-08	2.08E-07	6.87E-06	1.18E-05	-9.33E-05
ODP	kg CFC-11-eq.	6.89E-12	2.02E-16	1.94E-15	7.96E-13	2.58E-14	7.30E-14
AP	mol H ⁺ -eq.	0.0425	1.21E-05	4.97E-05	9.00E-04	6.20E-05	-0.00452
EP-freshwater	kg P-eq.	3.35E-06	4.46E-10	3.17E-09	9.78E-08	1.51E-08	-8.17E-07
EP-marine	kg N-eq.	0.00953	5.83E-06	2.25E-05	1.93E-04	1.51E-05	-3.33E-04
EP-terrestrial	mol N-eq.	0.107	6.39E-05	2.47E-04	0.00211	1.66E-04	2.67E-04
POCP	kg NMVOC-eq.	0.0318	1.63E-05	4.80E-05	5.35E-04	4.78E-05	-0.00321
ADP-minerals & metals ²⁶	kg Sb-eq.	2.71E-04	3.10E-11	3.47E-10	1.50E-08	1.37E-09	-2.31E-07
ADP-fossil ²⁶	MJ	124	0.0337	0.256	1.93	0.279	-41.5
WDP ²⁶	m³ world-eq. deprived	0.929	1.89E-05	1.22E-04	0.0700	0.00133	-0.880

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ²⁷	kg CO ₂ -eq.	12.2	0.00251	0.0191	0.178	0.0191	-4.41
PM	Disease incidence	5.65E-07	1.37E-10	3.26E-10	8.77E-09	6.63E-10	-5.04E-08
IRP ²⁸	kBq U-235-eq.	0.0589	6.40E-08	6.49E-06	3.38E-05	4.96E-04	0.108
ETP-fw ²⁶	CTUe	20.6	0.00847	0.103	0.370	0.0827	-1.34
HTP-c ²⁶	CTUh	1.14E-09	1.42E-13	1.73E-12	1.66E-11	9.80E-12	-1.92E-09
HTP-nc ²⁶	CTUh	2.42E-07	8.88E-12	6.87E-11	5.51E-10	9.87E-10	-6.30E-08
SQP ²⁶	dimensionless	3.26	7.74E-05	7.21E-04	0.248	0.0217	0.561

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	5.76	1.10E-04	0.00125	0.416	0.0228	2.81
PERM	MJ	0	0	0	0	0	0
PERT	MJ	5.76	1.10E-04	0.00125	0.416	0.0228	2.81
PENRE	MJ	124	0.0337	0.256	1.93	0.279	-41.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	124	0.0337	0.256	1.93	0.279	-41.5
SM	kg	0.810	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0170	2.84E-07	2.44E-06	9.84E-04	3.93E-05	-0.0199

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.66E-09	3.66E-14	4.15E-13	6.47E-11	4.21E-11	-3.15E-10
NHWD	kg	0.0791	4.82E-07	6.20E-06	6.04E-04	0.407	0.764
RWD	kg	4.77E-04	4.94E-10	4.99E-08	2.64E-07	3.36E-06	8.32E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.68	0	0	3.66	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.66
Steel collected with mixed construction waste	kg	0.407
Recovery for re-use	kg	0
Recovery for recycling	kg	3.66
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.407
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	12.1	0.00250	0.0190	0.176	0.0187	-4.36
ODP	kg CFC11-eq.	8.14E-12	2.38E-16	2.28E-15	9.38E-13	3.04E-14	8.43E-14
AP	kg SO ₂ -eq.	0.0342	8.39E-06	3.50E-05	7.36E-04	4.98E-05	-0.00414
EP	kg PO ₄ ³⁻ -eq.	0.00343	1.95E-06	7.61E-06	6.64E-05	5.31E-06	-1.12E-04
POCP	kg ethene-eq.	0.00535	8.28E-07	-9.30E-06	3.94E-05	4.64E-06	-0.00197
ADPE	kg Sb-eq.	2.71E-04	3.10E-11	3.48E-10	1.50E-08	1.39E-09	-2.24E-07
ADPF	MJ	121	0.0337	0.255	1.93	0.269	-42.6

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	1.94E-10	3.85E-15	5.31E-14	6.41E-12	8.57E-13	8.07E-11
HTnc - GS	CTUh	1.00E-10	1.84E-15	1.19E-14	2.04E-13	1.99E-14	2.25E-12
LU - GS	kg C deficit-eq.	1.65	6.39E-06	4.94E-05	0.0201	0.00189	0.234
RDW - GS	m³-eq.	0.0105	1.83E-07	1.55E-06	6.54E-04	1.97E-05	-0.0109
IR - GS	kBq U235-eq.	0.0589	6.40E-08	6.49E-06	3.38E-05	4.96E-04	0.108
PM - GS	kg PM2.5-eq.	0.00291	6.03E-07	1.64E-06	4.83E-05	3.51E-06	-3.26E-04

26. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

27. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

28. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.46 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	13.5	0.00279	0.0212	0.197	0.0216	-5.04
GWP-fossil	kg CO ₂ -eq.	13.5	0.00279	0.0211	0.196	0.0216	-5.05
GWP-biogenic	kg CO ₂ -eq.	-0.00675	2.76E-07	7.05E-06	2.19E-04	4.25E-05	0.00295
GWP-luluc	kg CO ₂ -eq.	3.81E-04	2.02E-08	2.28E-07	7.53E-06	1.30E-05	-1.03E-04
ODP	kg CFC-11-eq.	7.24E-12	2.21E-16	2.12E-15	8.73E-13	2.83E-14	7.95E-14
AP	mol H ⁺ -eq.	0.0459	1.32E-05	5.45E-05	9.87E-04	6.80E-05	-0.00500
EP-freshwater	kg P-eq.	3.50E-06	4.89E-10	3.48E-09	1.07E-07	1.65E-08	-9.00E-07
EP-marine	kg N-eq.	0.0103	6.40E-06	2.47E-05	2.11E-04	1.66E-05	-3.73E-04
EP-terrestrial	mol N-eq.	0.116	7.01E-05	2.71E-04	0.00231	1.82E-04	2.33E-04
POCP	kg NMVOC-eq.	0.0344	1.79E-05	5.27E-05	5.87E-04	5.24E-05	-0.00355
ADP-minerals & metals ²⁹	kg Sb-eq.	2.71E-04	3.40E-11	3.81E-10	1.65E-08	1.50E-09	-2.55E-07
ADP-fossil ²⁹	MJ	133	0.0370	0.280	2.12	0.306	-45.7
WDP ²⁹	m³ world-eq. deprived	0.974	2.07E-05	1.34E-04	0.0768	0.00146	-0.969

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ³⁰	kg CO ₂ -eq.	13.2	0.00276	0.0209	0.195	0.0209	-4.86
PM	Disease incidence	6.09E-07	1.50E-10	3.57E-10	9.62E-09	7.27E-10	-5.58E-08
IRP ³¹	kBq U-235-eq.	0.0605	7.02E-08	7.12E-06	3.71E-05	5.44E-04	0.119
ETP-fw ²⁹	CTUe	21.8	0.00929	0.112	0.405	0.0907	-1.48
HTP-c ²⁹	CTUh	1.22E-09	1.56E-13	1.90E-12	1.82E-11	1.07E-11	-2.12E-09
HTP-nc ²⁹	CTUh	2.63E-07	9.73E-12	7.53E-11	6.05E-10	1.08E-09	-6.94E-08
SQP ²⁹	dimensionless	3.51	8.49E-05	7.91E-04	0.271	0.0237	0.617

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6.02	1.21E-04	0.00137	0.456	0.0250	3.10
PERM	MJ	0	0	0	0	0	0
PERT	MJ	6.02	1.21E-04	0.00137	0.456	0.0250	3.10
PENRE	MJ	133	0.0370	0.280	2.12	0.306	-45.7
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	133	0.0370	0.280	2.12	0.306	-45.7
SM	kg	0.886	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0178	3.11E-07	2.67E-06	0.00108	4.31E-05	-0.0219

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.83E-09	4.01E-14	4.55E-13	7.09E-11	4.62E-11	-3.48E-10
NHWD	kg	0.0828	5.28E-07	6.80E-06	6.62E-04	0.447	0.831
RWD	kg	4.86E-04	5.42E-10	5.48E-08	2.89E-07	3.68E-06	9.07E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.85	0	0	4.01	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	4.01
Steel collected with mixed construction waste	kg	0.446
Recovery for re-use	kg	0
Recovery for recycling	kg	4.01
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.446
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	13.1	0.00275	0.0209	0.193	0.0205	-4.80
ODP	kg CFC11-eq.	8.55E-12	2.60E-16	2.50E-15	1.03E-12	3.34E-14	9.18E-14
AP	kg SO ₂ -eq.	0.0369	9.20E-06	3.84E-05	8.07E-04	5.46E-05	-0.00458
EP	kg PO ₄ ³⁻ -eq.	0.00370	2.14E-06	8.35E-06	7.28E-05	5.82E-06	-1.25E-04
POCP	kg ethene-eq.	0.00582	9.08E-07	-1.02E-05	4.32E-05	5.09E-06	-0.00216
ADPE	kg Sb-eq.	2.71E-04	3.40E-11	3.81E-10	1.65E-08	1.53E-09	-2.46E-07
ADPF	MJ	131	0.0370	0.280	2.11	0.295	-47.0

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.01E-10	4.22E-15	5.82E-14	7.03E-12	9.40E-13	8.88E-11
HTnc - GS	CTUh	1.04E-10	2.02E-15	1.31E-14	2.24E-13	2.19E-14	2.47E-12
LU - GS	kg C deficit-eq.	1.76	7.01E-06	5.42E-05	0.0221	0.00207	0.258
RDW - GS	m³-eq.	0.0110	2.00E-07	1.70E-06	7.17E-04	2.16E-05	-0.0120
IR - GS	kBq U235-eq.	0.0605	7.02E-08	7.12E-06	3.71E-05	5.44E-04	0.119
PM - GS	kg PM2.5-eq.	0.00314	6.61E-07	1.80E-06	5.29E-05	3.84E-06	-3.60E-04

29. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

30. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

31. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.70mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 5.64 kg/m² flat

Note:The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	16.6	0.00352	0.0267	0.248	0.0273	-6.43
GWP-fossil	kg CO ₂ -eq.	16.6	0.00352	0.0267	0.248	0.0272	-6.44
GWP-biogenic	kg CO ₂ -eq.	-0.00581	3.49E-07	8.91E-06	2.77E-04	5.38E-05	0.00374
GWP-luluc	kg CO ₂ -eq.	4.26E-04	2.56E-08	2.88E-07	9.52E-06	1.64E-05	-1.32E-04
ODP	kg CFC-11-eq.	8.28E-12	2.80E-16	2.68E-15	1.10E-12	3.58E-14	9.88E-14
AP	mol H ⁺ -eq.	0.0560	1.67E-05	6.89E-05	0.00125	8.59E-05	-0.00643
EP-freshwater	kg P-eq.	3.94E-06	6.19E-10	4.40E-09	1.36E-07	2.09E-08	-1.15E-06
EP-marine	kg N-eq.	0.0125	8.09E-06	3.12E-05	2.67E-04	2.09E-05	-4.90E-04
EP-terrestrial	mol N-eq.	0.141	8.86E-05	3.43E-04	0.00292	2.30E-04	1.31E-04
POCP	kg NMVOC-eq.	0.0421	2.26E-05	6.66E-05	7.41E-04	6.63E-05	-0.00456
ADP-minerals & metals ³²	kg Sb-eq.	2.71E-04	4.30E-11	4.81E-10	2.08E-08	1.90E-09	-3.25E-07
ADP-fossil ³²	MJ	163	0.0467	0.354	2.68	0.386	-58.3
WDP ³²	m³ world-eq. deprived	1.11	2.61E-05	1.69E-04	0.0970	0.00185	-1.24

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ³³	kg CO ₂ -eq.	16.2	0.00348	0.0265	0.246	0.0264	-6.20
PM	Disease incidence	7.44E-07	1.89E-10	4.52E-10	1.22E-08	9.19E-10	-7.21E-08
IRP ³⁴	kBq U-235-eq.	0.0650	8.87E-08	9.00E-06	4.69E-05	6.87E-04	0.151
ETP-fw ³²	CTUe	25.5	0.0117	0.142	0.512	0.115	-1.90
HTP-c ³²	CTUh	1.45E-09	1.97E-13	2.40E-12	2.30E-11	1.36E-11	-2.70E-09
HTP-nc ³²	CTUh	3.25E-07	1.23E-11	9.52E-11	7.64E-10	1.37E-09	-8.85E-08
SQP ³²	dimensionless	4.24	1.07E-04	0.00100	0.343	0.0300	0.785

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6.79	1.53E-04	0.00173	0.577	0.0315	3.94
PERM	MJ	0	0	0	0	0	0
PERT	MJ	6.79	1.53E-04	0.00173	0.577	0.0315	3.94
PENRE	MJ	163	0.0467	0.354	2.68	0.386	-58.3
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	163	0.0467	0.354	2.68	0.386	-58.3
SM	kg	1.11	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0203	3.93E-07	3.38E-06	0.00136	5.44E-05	-0.0280

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.35E-09	5.07E-14	5.75E-13	8.96E-11	5.84E-11	-4.47E-10
NHWD	kg	0.0937	6.68E-07	8.60E-06	8.37E-04	0.565	1.03
RWD	kg	5.13E-04	6.85E-10	6.92E-08	3.66E-07	4.66E-06	1.13E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.34	0	0	5.07	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	5.07
Steel collected with mixed construction waste	kg	0.564
Recovery for re-use	kg	0
Recovery for recycling	kg	5.07
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.564
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.70mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	16.1	0.00347	0.0264	0.245	0.0259	-6.12
ODP	kg CFC11-eq.	9.78E-12	3.29E-16	3.16E-15	1.30E-12	4.22E-14	1.14E-13
AP	kg SO ₂ -eq.	0.0450	1.16E-05	4.85E-05	0.00102	6.90E-05	-0.00588
EP	kg PO ₄ ³⁻ -eq.	0.00451	2.71E-06	1.06E-05	9.20E-05	7.36E-06	-1.65E-04
POCP	kg ethene-eq.	0.00721	1.15E-06	-1.29E-05	5.46E-05	6.44E-06	-0.00276
ADPE	kg Sb-eq.	2.71E-04	4.30E-11	4.82E-10	2.08E-08	1.93E-09	-3.14E-07
ADPF	MJ	160	0.0467	0.354	2.67	0.373	-59.9

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.21E-10	5.34E-15	7.36E-14	8.88E-12	1.19E-12	1.13E-10
HTnc - GS	CTUh	1.17E-10	2.55E-15	1.66E-14	2.83E-13	2.76E-14	3.15E-12
LU - GS	kg C deficit-eq.	2.09	8.86E-06	6.85E-05	0.0279	0.00262	0.329
RDW - GS	m³-eq.	0.0124	2.53E-07	2.15E-06	9.06E-04	2.74E-05	-0.0153
IR - GS	kBq U235-eq.	0.0650	8.87E-08	9.00E-06	4.69E-05	6.87E-04	0.151
PM - GS	kg PM2.5-eq.	0.00383	8.35E-07	2.27E-06	6.69E-05	4.86E-06	-4.64E-04

32. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

33. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

34. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.75mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 6.03 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	17.6	0.00377	0.0286	0.266	0.0292	-6.90
GWP-fossil	kg CO ₂ -eq.	17.6	0.00377	0.0286	0.265	0.0291	-6.90
GWP-biogenic	kg CO ₂ -eq.	-0.00550	3.73E-07	9.53E-06	2.96E-04	5.75E-05	0.00400
GWP-luluc	kg CO ₂ -eq.	4.41E-04	2.73E-08	3.08E-07	1.02E-05	1.75E-05	-1.42E-04
ODP	kg CFC-11-eq.	8.63E-12	2.99E-16	2.87E-15	1.18E-12	3.83E-14	1.05E-13
AP	mol H ⁺ -eq.	0.0594	1.79E-05	7.37E-05	0.00133	9.19E-05	-0.00690
EP-freshwater	kg P-eq.	4.09E-06	6.62E-10	4.70E-09	1.45E-07	2.23E-08	-1.23E-06
EP-marine	kg N-eq.	0.0133	8.65E-06	3.33E-05	2.86E-04	2.24E-05	-5.29E-04
EP-terrestrial	mol N-eq.	0.150	9.47E-05	3.67E-04	0.00312	2.46E-04	9.72E-05
POCP	kg NMVOC-eq.	0.0447	2.42E-05	7.12E-05	7.93E-04	7.09E-05	-0.00490
ADP-minerals & metals ³⁵	kg Sb-eq.	2.71E-04	4.60E-11	5.15E-10	2.23E-08	2.03E-09	-3.48E-07
ADP-fossil ³⁵	MJ	172	0.0500	0.379	2.87	0.413	-62.5
WDP ³⁵	m³ world-eq. deprived	1.15	2.80E-05	1.81E-04	0.104	0.00198	-1.32

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ³⁶	kg CO ₂ -eq.	17.2	0.00373	0.0283	0.263	0.0283	-6.64
PM	Disease incidence	7.89E-07	2.03E-10	4.83E-10	1.30E-08	9.83E-10	-7.75E-08
IRP ³⁷	kBq U-235-eq.	0.0666	9.49E-08	9.62E-06	5.02E-05	7.35E-04	0.162
ETP-fw ³⁵	CTUe	26.7	0.0126	0.152	0.548	0.123	-2.05
HTP-c ³⁵	CTUh	1.53E-09	2.11E-13	2.57E-12	2.46E-11	1.45E-11	-2.89E-09
HTP-nc ³⁵	CTUh	3.46E-07	1.32E-11	1.02E-10	8.17E-10	1.46E-09	-9.49E-08
SQP ³⁵	dimensionless	4.49	1.15E-04	0.00107	0.367	0.0321	0.841

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	7.05	1.63E-04	0.00185	0.617	0.0337	4.23
PERM	MJ	0	0	0	0	0	0
PERT	MJ	7.05	1.63E-04	0.00185	0.617	0.0337	4.23
PENRE	MJ	172	0.0500	0.379	2.87	0.413	-62.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	172	0.0500	0.379	2.87	0.413	-62.5
SM	kg	1.19	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0211	4.21E-07	3.61E-06	0.00146	5.82E-05	-0.0300

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.53E-09	5.42E-14	6.15E-13	9.59E-11	6.24E-11	-4.80E-10
NHWD	kg	0.0974	7.14E-07	9.20E-06	8.95E-04	0.604	1.10
RWD	kg	5.22E-04	7.33E-10	7.40E-08	3.91E-07	4.98E-06	1.21E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.51	0	0	5.43	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	5.43
Steel collected with mixed construction waste	kg	0.603
Recovery for re-use	kg	0
Recovery for recycling	kg	5.43
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.603
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 0.75mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	17.1	0.00371	0.0282	0.262	0.0277	-6.56
ODP	kg CFC11-eq.	1.02E-11	3.52E-16	3.38E-15	1.39E-12	4.51E-14	1.22E-13
AP	kg SO ₂ -eq.	0.0477	1.24E-05	5.19E-05	0.00109	7.38E-05	-0.00632
EP	kg PO ₄ ³⁻ -eq.	0.00478	2.90E-06	1.13E-05	9.84E-05	7.87E-06	-1.78E-04
POCP	kg ethene-eq.	0.00768	1.23E-06	-1.38E-05	5.84E-05	6.89E-06	-0.00296
ADPE	kg Sb-eq.	2.71E-04	4.60E-11	5.15E-10	2.23E-08	2.06E-09	-3.36E-07
ADPF	MJ	170	0.0500	0.378	2.85	0.399	-64.2

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.28E-10	5.71E-15	7.87E-14	9.50E-12	1.27E-12	1.21E-10
HTnc - GS	CTUh	1.21E-10	2.73E-15	1.77E-14	3.03E-13	2.96E-14	3.37E-12
LU - GS	kg C deficit-eq.	2.20	9.48E-06	7.33E-05	0.0298	0.00280	0.352
RDW - GS	m³-eq.	0.0129	2.71E-07	2.30E-06	9.69E-04	2.93E-05	-0.0164
IR - GS	kBq U235-eq.	0.0666	9.49E-08	9.62E-06	5.02E-05	7.35E-04	0.162
PM - GS	kg PM2.5-eq.	0.00407	8.93E-07	2.43E-06	7.15E-05	5.20E-06	-4.98E-04

35. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

36. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

37. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 1.00mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 7.99 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	22.7	0.00499	0.0379	0.352	0.0387	-9.21
GWP-fossil	kg CO ₂ -eq.	22.7	0.00499	0.0379	0.352	0.0386	-9.22
GWP-biogenic	kg CO ₂ -eq.	-0.00394	4.94E-07	1.26E-05	3.93E-04	7.62E-05	0.00531
GWP-luluc	kg CO ₂ -eq.	5.16E-04	3.62E-08	4.08E-07	1.35E-05	2.32E-05	-1.90E-04
ODP	kg CFC-11-eq.	1.04E-11	3.96E-16	3.80E-15	1.56E-12	5.08E-14	1.38E-13
AP	mol H ⁺ -eq.	0.0762	2.37E-05	9.77E-05	0.00177	1.22E-04	-0.00929
EP-freshwater	kg P-eq.	4.84E-06	8.77E-10	6.23E-09	1.92E-07	2.96E-08	-1.65E-06
EP-marine	kg N-eq.	0.0170	1.15E-05	4.42E-05	3.79E-04	2.97E-05	-7.25E-04
EP-terrestrial	mol N-eq.	0.192	1.26E-04	4.86E-04	0.00414	3.26E-04	-7.30E-05
POCP	kg NMVOC-eq.	0.0575	3.21E-05	9.44E-05	0.00105	9.39E-05	-0.00659
ADP-minerals & metals ³⁸	kg Sb-eq.	2.71E-04	6.09E-11	6.82E-10	2.95E-08	2.69E-09	-4.65E-07
ADP-fossil ³⁸	MJ	221	0.0663	0.502	3.80	0.548	-83.5
WDP ³⁸	m³ world-eq. deprived	1.38	3.71E-05	2.40E-04	0.138	0.00262	-1.77

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ³⁹	kg CO ₂ -eq.	22.2	0.00494	0.0375	0.349	0.0375	-8.87
PM	Disease incidence	1.01E-06	2.68E-10	6.41E-10	1.72E-08	1.30E-09	-1.05E-07
IRP ⁴⁰	kBq U-235-eq.	0.0742	1.26E-07	1.28E-05	6.65E-05	9.74E-04	0.216
ETP-fw ³⁸	CTUe	32.9	0.0166	0.201	0.726	0.162	-2.76
HTP-c ³⁸	CTUh	1.92E-09	2.79E-13	3.40E-12	3.25E-11	1.93E-11	-3.86E-09
HTP-nc ³⁸	CTUh	4.50E-07	1.74E-11	1.35E-10	1.08E-09	1.94E-09	-1.27E-07
SQP ³⁸	dimensionless	5.72	1.52E-04	0.00142	0.486	0.0426	1.12

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	8.34	2.16E-04	0.00245	0.818	0.0447	5.64
PERM	MJ	0	0	0	0	0	0
PERT	MJ	8.34	2.16E-04	0.00245	0.818	0.0447	5.64
PENRE	MJ	221	0.0663	0.502	3.80	0.548	-83.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	221	0.0663	0.502	3.80	0.548	-83.5
SM	kg	1.57	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0252	5.58E-07	4.79E-06	0.00193	7.72E-05	-0.0400

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.40E-09	7.19E-14	8.15E-13	1.27E-10	8.27E-11	-6.44E-10
NHWD	kg	0.116	9.46E-07	1.22E-05	0.00119	0.800	1.43
RWD	kg	5.68E-04	9.71E-10	9.81E-08	5.18E-07	6.60E-06	1.58E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.33	0	0	719	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	719
Steel collected with mixed construction waste	kg	0.799
Recovery for re-use	kg	0
Recovery for recycling	kg	719
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.799
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00343

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z100 in 1.00mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	22.1	0.00492	0.0374	0.347	0.0367	-8.76
ODP	kg CFC11-eq.	1.22E-11	4.67E-16	4.48E-15	1.84E-12	5.98E-14	1.59E-13
AP	kg SO ₂ -eq.	0.0613	1.65E-05	6.88E-05	0.00145	9.78E-05	-0.00849
EP	kg PO ₄ ³⁻ -eq.	0.00612	3.84E-06	1.50E-05	1.30E-04	1.04E-05	-2.43E-04
POCP	kg ethene-eq.	0.0100	1.63E-06	-1.83E-05	7.75E-05	9.13E-06	-0.00396
ADPE	kg Sb-eq.	2.71E-04	6.10E-11	6.83E-10	2.95E-08	2.73E-09	-4.49E-07
ADPF	MJ	218	0.0662	0.501	3.78	0.529	-85.8

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.63E-10	7.57E-15	1.04E-13	1.26E-11	1.68E-12	1.62E-10
HTnc - GS	CTUh	1.41E-10	3.62E-15	2.35E-14	4.01E-13	3.92E-14	4.50E-12
LU - GS	kg C deficit-eq.	2.76	1.26E-05	9.72E-05	0.0395	0.00371	0.470
RDW - GS	m³-eq.	0.0153	3.59E-07	3.04E-06	0.00128	3.88E-05	-0.0218
IR - GS	kBq U235-eq.	0.0742	1.26E-07	1.28E-05	6.65E-05	9.74E-04	0.216
PM - GS	kg PM2.5-eq.	0.00522	1.18E-06	3.22E-06	9.48E-05	6.89E-06	-6.71E-04

38. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

39. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

40. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 3.35 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	10.6	0.00209	0.0159	0.147	0.0162	-3.65
GWP-fossil	kg CO ₂ -eq.	10.6	0.00209	0.0159	0.147	0.0162	-3.65
GWP-biogenic	kg CO ₂ -eq.	-0.00585	2.07E-07	5.29E-06	1.64E-04	3.19E-05	0.00220
GWP-luluc	kg CO ₂ -eq.	4.84E-04	1.52E-08	1.71E-07	5.65E-06	9.72E-06	-7.22E-05
ODP	kg CFC-11-eq.	7.81E-12	1.66E-16	1.59E-15	6.55E-13	2.13E-14	6.53E-14
AP	mol H ⁺ -eq.	0.0370	9.93E-06	4.09E-05	7.40E-04	5.10E-05	-0.00344
EP-freshwater	kg P-eq.	4.33E-06	3.67E-10	2.61E-09	8.05E-08	1.24E-08	-6.48E-07
EP-marine	kg N-eq.	0.00816	4.80E-06	1.85E-05	1.59E-04	1.24E-05	-2.23E-04
EP-terrestrial	mol N-eq.	0.0916	5.25E-05	2.03E-04	0.00173	1.36E-04	6.84E-04
POCP	kg NMVOC-eq.	0.0272	1.34E-05	3.95E-05	4.40E-04	3.93E-05	-0.00244
ADP-minerals & metals ⁴¹	kg Sb-eq.	4.06E-04	2.55E-11	2.86E-10	1.23E-08	1.13E-09	-1.84E-07
ADP-fossil ⁴¹	MJ	108	0.0277	0.210	1.59	0.229	-33.0
WDP ⁴¹	m³ world-eq. deprived	0.978	1.55E-05	1.00E-04	0.0576	0.00110	-0.702

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁴²	kg CO ₂ -eq.	10.4	0.00207	0.0157	0.146	0.0157	-3.51
PM	Disease incidence	5.00E-07	1.12E-10	2.68E-10	7.21E-09	5.45E-10	-3.76E-08
IRP ⁴³	kBq U-235-eq.	0.0879	5.26E-08	5.34E-06	2.78E-05	4.08E-04	0.0862
ETP-fw ⁴¹	CTUe	20.4	0.00697	0.0843	0.304	0.0680	-1.01
HTP-c ⁴¹	CTUh	1.08E-09	1.17E-13	1.42E-12	1.36E-11	8.06E-12	-1.53E-09
HTP-nc ⁴¹	CTUh	2.14E-07	7.30E-12	5.65E-11	4.53E-10	8.12E-10	-5.01E-08
SQP ⁴¹	dimensionless	3.19	6.37E-05	5.93E-04	0.204	0.0178	0.453

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6.74	9.06E-05	0.00103	0.342	0.0187	2.25
PERM	MJ	0	0	0	0	0	0
PERT	MJ	6.74	9.06E-05	0.00103	0.342	0.0187	2.25
PENRE	MJ	108	0.0277	0.210	1.59	0.229	-33.0
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	108	0.0277	0.210	1.59	0.229	-33.0
SM	kg	0.658	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0187	2.33E-07	2.00E-06	8.09E-04	3.23E-05	-0.0159

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	3.81E-09	3.01E-14	3.41E-13	5.32E-11	3.46E-11	-2.44E-10
NHWD	kg	0.0620	3.96E-07	5.10E-06	4.97E-04	0.335	0.686
RWD	kg	7.44E-04	4.06E-10	4.11E-08	2.17E-07	2.76E-06	7.33E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.33	0	0	3.01	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.01
Steel collected with mixed construction waste	kg	0.335
Recovery for re-use	kg	0
Recovery for recycling	kg	3.01
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.335
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00331

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	10.3	0.00206	0.0156	0.145	0.0153	-3.47
ODP	kg CFC11-eq.	9.21E-12	1.95E-16	1.87E-15	7.71E-13	2.50E-14	7.56E-14
AP	kg SO ₂ -eq.	0.0299	6.90E-06	2.88E-05	6.05E-04	4.09E-05	-0.00317
EP	kg PO ₄ ³⁻ -eq.	0.00294	1.61E-06	6.26E-06	5.46E-05	4.37E-06	-7.49E-05
POCP	kg ethene-eq.	0.00457	6.81E-07	-7.65E-06	3.24E-05	3.82E-06	-0.00156
ADPE	kg Sb-eq.	4.06E-04	2.55E-11	2.86E-10	1.24E-08	1.14E-09	-1.78E-07
ADPF	MJ	104	0.0277	0.210	1.58	0.221	-33.9

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.27E-10	3.17E-15	4.36E-14	5.27E-12	7.05E-13	6.46E-11
HTnc - GS	CTUh	9.33E-11	1.51E-15	9.82E-15	1.68E-13	1.64E-14	1.80E-12
LU - GS	kg C deficit-eq.	1.73	5.26E-06	4.07E-05	0.0165	0.00155	0.187
RDW - GS	m³-eq.	0.0116	1.50E-07	1.27E-06	5.38E-04	1.62E-05	-0.00867
IR - GS	kBq U235-eq.	0.0879	5.26E-08	5.34E-06	2.78E-05	4.08E-04	0.0862
PM - GS	kg PM2.5-eq.	0.00257	4.95E-07	1.35E-06	3.97E-05	2.88E-06	-2.47E-04

41. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

42. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

43. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.13 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	12.7	0.00258	0.0196	0.182	0.0200	-4.57
GWP-fossil	kg CO ₂ -eq.	12.7	0.00258	0.0196	0.182	0.0200	-4.58
GWP-biogenic	kg CO ₂ -eq.	-0.00522	2.55E-07	6.53E-06	2.03E-04	3.94E-05	0.00273
GWP-luluc	kg CO ₂ -eq.	5.13E-04	1.87E-08	2.11E-07	6.97E-06	1.20E-05	-9.15E-05
ODP	kg CFC-11-eq.	8.50E-12	2.05E-16	1.96E-15	8.08E-13	2.62E-14	7.82E-14
AP	mol H ⁺ -eq.	0.0438	1.23E-05	5.05E-05	9.14E-04	6.30E-05	-0.00439
EP-freshwater	kg P-eq.	4.63E-06	4.53E-10	3.22E-09	9.93E-08	1.53E-08	-8.14E-07
EP-marine	kg N-eq.	0.00965	5.92E-06	2.28E-05	1.96E-04	1.53E-05	-3.02E-04
EP-terrestrial	mol N-eq.	0.109	6.49E-05	2.51E-04	0.00214	1.68E-04	6.16E-04
POCP	kg NMVOC-eq.	0.0323	1.66E-05	4.88E-05	5.43E-04	4.85E-05	-0.00312
ADP-minerals & metals ⁴⁴	kg Sb-eq.	4.06E-04	3.15E-11	3.53E-10	1.52E-08	1.39E-09	-2.31E-07
ADP-fossil ⁴⁴	MJ	127	0.0342	0.260	1.96	0.283	-41.4
WDP ⁴⁴	m³ world-eq. deprived	1.07	1.91E-05	1.24E-04	0.0711	0.00135	-0.880

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁴⁵	kg CO ₂ -eq.	12.4	0.00255	0.0194	0.180	0.0194	-4.40
PM	Disease incidence	5.90E-07	1.39E-10	3.31E-10	8.90E-09	6.73E-10	-4.84E-08
IRP ⁴⁶	kBq U-235-eq.	0.0910	6.50E-08	6.59E-06	3.44E-05	5.03E-04	0.108
ETP-fw ⁴⁴	CTUe	22.8	0.00860	0.104	0.375	0.0839	-1.30
HTP-c ⁴⁴	CTUh	1.24E-09	1.44E-13	1.76E-12	1.68E-11	9.95E-12	-1.92E-09
HTP-nc ⁴⁴	CTUh	2.56E-07	9.01E-12	6.98E-11	5.60E-10	1.00E-09	-6.28E-08
SQP ⁴⁴	dimensionless	3.68	7.86E-05	7.32E-04	0.251	0.0220	0.565

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	7.25	1.12E-04	0.00127	0.423	0.0231	2.82
PERM	MJ	0	0	0	0	0	0
PERT	MJ	7.25	1.12E-04	0.00127	0.423	0.0231	2.82
PENRE	MJ	127	0.0342	0.260	1.96	0.283	-41.4
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	127	0.0342	0.260	1.96	0.283	-41.4
SM	kg	0.810	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0203	2.88E-07	2.47E-06	9.99E-04	3.99E-05	-0.0199

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.15E-09	3.71E-14	4.21E-13	6.56E-11	4.27E-11	-3.09E-10
NHWD	kg	0.0693	4.89E-07	6.30E-06	6.13E-04	0.414	0.820
RWD	kg	7.62E-04	5.02E-10	5.07E-08	2.68E-07	3.41E-06	8.83E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.66	0	0	3.72	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.72
Steel collected with mixed construction waste	kg	0.413
Recovery for re-use	kg	0
Recovery for recycling	kg	3.72
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.413
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00331

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	12.3	0.00254	0.0193	0.179	0.0189	-4.35
ODP	kg CFC11-eq.	1.00E-11	2.41E-16	2.31E-15	9.52E-13	3.09E-14	9.04E-14
AP	kg SO ₂ -eq.	0.0353	8.52E-06	3.55E-05	7.47E-04	5.05E-05	-0.00404
EP	kg PO ₄ ³⁻ -eq.	0.00348	1.98E-06	7.73E-06	6.74E-05	5.39E-06	-1.01E-04
POCP	kg ethene-eq.	0.00550	8.40E-07	-9.44E-06	4.00E-05	4.72E-06	-0.00196
ADPE	kg Sb-eq.	4.06E-04	3.15E-11	3.53E-10	1.52E-08	1.41E-09	-2.23E-07
ADPF	MJ	124	0.0342	0.259	1.96	0.273	-42.6

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.40E-10	3.91E-15	5.39E-14	6.51E-12	8.70E-13	8.08E-11
HTnc - GS	CTUh	1.02E-10	1.87E-15	1.21E-14	2.07E-13	2.03E-14	2.25E-12
LU - GS	kg C deficit-eq.	1.95	6.49E-06	5.02E-05	0.0204	0.00192	0.235
RDW - GS	m³-eq.	0.0126	1.86E-07	1.57E-06	6.64E-04	2.00E-05	-0.0109
IR - GS	kBq U235-eq.	0.0909	6.50E-08	6.59E-06	3.44E-05	5.03E-04	0.108
PM - GS	kg PM2.5-eq.	0.00304	6.12E-07	1.66E-06	4.90E-05	3.56E-06	-3.16E-04

44. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

45. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

46. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.52 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	13.7	0.00282	0.0214	0.199	0.0219	-5.04
GWP-fossil	kg CO ₂ -eq.	13.7	0.00282	0.0214	0.199	0.0219	-5.04
GWP-biogenic	kg CO ₂ -eq.	-0.00491	2.80E-07	7.15E-06	2.22E-04	4.31E-05	0.00299
GWP-luluc	kg CO ₂ -eq.	5.28E-04	2.05E-08	2.31E-07	7.64E-06	1.31E-05	-1.01E-04
ODP	kg CFC-11-eq.	8.85E-12	2.24E-16	2.15E-15	8.85E-13	2.87E-14	8.46E-14
AP	mol H ⁺ -eq.	0.0471	1.34E-05	5.53E-05	0.00100	6.89E-05	-0.00487
EP-freshwater	kg P-eq.	4.78E-06	4.96E-10	3.53E-09	1.09E-07	1.68E-08	-8.97E-07
EP-marine	kg N-eq.	0.0104	6.49E-06	2.50E-05	2.14E-04	1.68E-05	-3.41E-04
EP-terrestrial	mol N-eq.	0.117	7.10E-05	2.75E-04	0.00234	1.84E-04	5.82E-04
POCP	kg NMVOC-eq.	0.0349	1.82E-05	5.34E-05	5.95E-04	5.32E-05	-0.00346
ADP-minerals & metals ⁴⁷	kg Sb-eq.	4.06E-04	3.45E-11	3.86E-10	1.67E-08	1.52E-09	-2.54E-07
ADP-fossil ⁴⁷	MJ	137	0.0375	0.284	2.15	0.310	-45.6
WDP ⁴⁷	m³ world-eq. deprived	1.11	2.10E-05	1.36E-04	0.0778	0.00148	-0.969

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁴⁸	kg CO ₂ -eq.	13.4	0.00279	0.0212	0.197	0.0212	-4.85
PM	Disease incidence	6.35E-07	1.52E-10	3.62E-10	9.75E-09	7.37E-10	-5.38E-08
IRP ⁴⁹	kBq U-235-eq.	0.0925	7.11E-08	7.22E-06	3.76E-05	5.51E-04	0.119
ETP-fw ⁴⁷	CTUe	24.1	0.00942	0.114	0.411	0.0919	-1.44
HTP-c ⁴⁷	CTUh	1.32E-09	1.58E-13	1.93E-12	1.84E-11	1.09E-11	-2.11E-09
HTP-nc ⁴⁷	CTUh	2.77E-07	9.87E-12	7.64E-11	6.13E-10	1.10E-09	-6.92E-08
SQP ⁴⁷	dimensionless	3.93	8.61E-05	8.02E-04	0.275	0.0241	0.621

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	7.51	1.22E-04	0.00139	0.463	0.0253	3.10
PERM	MJ	0	0	0	0	0	0
PERT	MJ	7.51	1.22E-04	0.00139	0.463	0.0253	3.10
PENRE	MJ	137	0.0375	0.284	2.15	0.310	-45.6
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	137	0.0375	0.284	2.15	0.310	-45.6
SM	kg	0.886	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0211	3.16E-07	2.71E-06	0.00109	4.37E-05	-0.0219

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.33E-09	4.07E-14	4.61E-13	7.19E-11	4.68E-11	-3.42E-10
NHWD	kg	0.0729	5.36E-07	6.90E-06	6.71E-04	0.453	0.887
RWD	kg	7.71E-04	5.49E-10	5.55E-08	2.93E-07	3.73E-06	9.57E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.82	0	0	4.07	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	4.07
Steel collected with mixed construction waste	kg	0.452
Recovery for re-use	kg	0
Recovery for recycling	kg	4.07
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.452
Assumptions for scenario	-	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00331

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	13.3	0.00278	0.0211	0.196	0.0207	-4.79
ODP	kg CFC11-eq.	1.04E-11	2.64E-16	2.53E-15	1.04E-12	3.38E-14	9.79E-14
AP	kg SO ₂ -eq.	0.0380	9.33E-06	3.89E-05	8.18E-04	5.53E-05	-0.00448
EP	kg PO ₄ ³⁻ -eq.	0.00375	2.17E-06	8.47E-06	7.38E-05	5.90E-06	-1.14E-04
POCP	kg ethene-eq.	0.00596	9.20E-07	-1.03E-05	4.38E-05	5.16E-06	-0.00216
ADPE	kg Sb-eq.	4.06E-04	3.45E-11	3.86E-10	1.67E-08	1.55E-09	-2.46E-07
ADPF	MJ	134	0.0375	0.284	2.14	0.299	-46.9

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.47E-10	4.28E-15	5.90E-14	7.13E-12	9.53E-13	8.89E-11
HTnc - GS	CTUh	1.06E-10	2.05E-15	1.33E-14	2.27E-13	2.22E-14	2.48E-12
LU - GS	kg C deficit-eq.	2.06	7.11E-06	5.50E-05	0.0224	0.00210	0.258
RDW - GS	m³-eq.	0.0130	2.03E-07	1.72E-06	7.27E-04	2.19E-05	-0.0120
IR - GS	kBq U235-eq.	0.0925	7.11E-08	7.22E-06	3.76E-05	5.51E-04	0.119
PM - GS	kg PM2.5-eq.	0.00327	6.70E-07	1.82E-06	5.37E-05	3.90E-06	-3.50E-04

47. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

48. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

49. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 1.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 11.20 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	31.2	0.00699	0.0531	0.493	0.0542	-12.9
GWP-fossil	kg CO ₂ -eq.	31.2	0.00699	0.0531	0.493	0.0541	-12.9
GWP-biogenic	kg CO ₂ -eq.	4.04E-04	6.92E-07	1.77E-05	5.50E-04	1.07E-04	0.00746
GWP-luluc	kg CO ₂ -eq.	7.83E-04	5.07E-08	5.71E-07	1.89E-05	3.25E-05	-2.66E-04
ODP	kg CFC-11-eq.	1.48E-11	5.55E-16	5.32E-15	2.19E-12	7.11E-14	1.94E-13
AP	mol H ⁺ -eq.	0.104	3.32E-05	1.37E-04	0.00248	1.71E-04	-0.0130
EP-freshwater	kg P-eq.	7.30E-06	1.23E-09	8.73E-09	2.69E-07	4.15E-08	-2.31E-06
EP-marine	kg N-eq.	0.0231	1.61E-05	6.19E-05	5.31E-04	4.16E-05	-0.00101
EP-terrestrial	mol N-eq.	0.261	1.76E-04	6.81E-04	0.00579	4.56E-04	2.77E-06
POCP	kg NMVOC-eq.	0.0786	4.50E-05	1.32E-04	0.00147	1.32E-04	-0.00922
ADP-minerals & metals ⁵⁰	kg Sb-eq.	4.06E-04	8.53E-11	9.56E-10	4.13E-08	3.77E-09	-6.51E-07
ADP-fossil ⁵⁰	MJ	303	0.0928	0.704	5.32	0.767	-117
WDP ⁵⁰	m³ world-eq. deprived	1.87	5.19E-05	3.36E-04	0.193	0.00367	-2.48

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁵¹	kg CO ₂ -eq.	30.4	0.00692	0.0526	0.489	0.0525	-12.4
PM	Disease incidence	1.40E-06	3.76E-10	8.97E-10	2.41E-08	1.83E-09	-1.46E-07
IRP ⁵²	kBq U-235-eq.	0.118	1.76E-07	1.79E-05	9.31E-05	0.00136	0.303
ETP-fw ⁵⁰	CTUe	45.1	0.0233	0.282	1.02	0.228	-3.85
HTP-c ⁵⁰	CTUh	2.65E-09	3.91E-13	4.77E-12	4.56E-11	2.70E-11	-5.42E-09
HTP-nc ⁵⁰	CTUh	6.30E-07	2.44E-11	1.89E-10	1.52E-09	2.72E-09	-1.78E-07
SQP ⁵⁰	dimensionless	8.10	2.13E-04	0.00198	0.681	0.0596	1.57

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	11.9	3.03E-04	0.00344	1.15	0.0626	7.91
PERM	MJ	0	0	0	0	0	0
PERT	MJ	11.9	3.03E-04	0.00344	1.15	0.0626	7.91
PENRE	MJ	303	0.0928	0.704	5.32	0.767	-117
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	303	0.0928	0.704	5.32	0.767	-117
SM	kg	2.17	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0350	7.81E-07	6.70E-06	0.00271	1.08E-04	-0.0561

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	7.29E-09	1.01E-13	1.14E-12	1.78E-10	1.16E-10	-9.01E-10
NHWD	kg	0.135	1.33E-06	1.71E-05	0.00166	1.12	2.03
RWD	kg	9.25E-04	1.36E-09	1.37E-07	7.26E-07	9.24E-06	2.23E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	4.62	0	0	10.1	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	10.1
Steel collected with mixed construction waste	kg	1.12
Recovery for re-use	kg	0
Recovery for recycling	kg	10.1
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.12
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00331
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z200 in 1.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	30.2	0.00689	0.0524	0.486	0.0513	-12.3
ODP	kg CFC11-eq.	1.74E-11	6.54E-16	6.27E-15	2.58E-12	8.37E-14	2.24E-13
AP	kg SO ₂ -eq.	0.0840	2.31E-05	9.63E-05	0.00203	1.37E-04	-0.0119
EP	kg PO ₄ ³⁻ -eq.	0.00834	5.38E-06	2.10E-05	1.83E-04	1.46E-05	-3.38E-04
POCP	kg ethene-eq.	0.0139	2.28E-06	-2.56E-05	1.09E-04	1.28E-05	-0.00554
ADPE	kg Sb-eq.	4.07E-04	8.54E-11	9.57E-10	4.13E-08	3.83E-09	-6.30E-07
ADPF	MJ	299	0.0928	0.702	5.30	0.740	-120

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.64E-10	1.06E-14	1.46E-13	1.76E-11	2.36E-12	2.27E-10
HTnc - GS	CTUh	1.76E-10	5.07E-15	3.29E-14	5.62E-13	5.49E-14	6.31E-12
LU - GS	kg C deficit-eq.	3.94	1.76E-05	1.36E-04	0.0554	0.00520	0.659
RDW - GS	m³-eq.	0.0213	5.03E-07	4.26E-06	0.00180	5.43E-05	-0.0306
IR - GS	kBq U235-eq.	0.118	1.76E-07	1.79E-05	9.31E-05	0.00136	0.303
PM - GS	kg PM2.5-eq.	0.00721	1.66E-06	4.51E-06	1.33E-04	9.65E-06	-9.37E-04

50. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

51. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

52. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 3.42 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	11.4	0.00214	0.0162	0.151	0.0166	-3.72
GWP-fossil	kg CO ₂ -eq.	11.4	0.00214	0.0162	0.151	0.0165	-3.72
GWP-biogenic	kg CO ₂ -eq.	-0.00765	2.12E-07	5.41E-06	1.68E-04	3.26E-05	0.00228
GWP-luluc	kg CO ₂ -eq.	6.37E-04	1.55E-08	1.75E-07	5.78E-06	9.94E-06	-7.23E-05
ODP	kg CFC-11-eq.	9.71E-12	1.70E-16	1.63E-15	6.70E-13	2.17E-14	7.09E-14
AP	mol H ⁺ -eq.	0.0404	1.02E-05	4.18E-05	7.57E-04	5.22E-05	-0.00341
EP-freshwater	kg P-eq.	5.61E-06	3.75E-10	2.67E-09	8.23E-08	1.27E-08	-6.59E-07
EP-marine	kg N-eq.	0.00883	4.91E-06	1.89E-05	1.62E-04	1.27E-05	-2.02E-04
EP-terrestrial	mol N-eq.	0.0987	5.37E-05	2.08E-04	0.00177	1.39E-04	9.81E-04
POCP	kg NMVOC-eq.	0.0293	1.37E-05	4.04E-05	4.50E-04	4.02E-05	-0.00242
ADP-minerals & metals ⁵³	kg Sb-eq.	7.11E-04	2.61E-11	2.92E-10	1.26E-08	1.15E-09	-1.88E-07
ADP-fossil ⁵³	MJ	116	0.0284	0.215	1.63	0.234	-33.6
WDP ⁵³	m³ world-eq. deprived	1.01	1.59E-05	1.03E-04	0.0589	0.00112	-0.717

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁵⁴	kg CO ₂ -eq.	11.1	0.00211	0.0161	0.149	0.0160	-3.58
PM	Disease incidence	5.39E-07	1.15E-10	2.74E-10	7.38E-09	5.58E-10	-3.67E-08
IRP ⁵⁵	kBq U-235-eq.	0.119	5.38E-08	5.46E-06	2.85E-05	4.17E-04	0.0881
ETP-fw ⁵³	CTUe	24.3	0.00713	0.0862	0.311	0.0695	-1.00
HTP-c ⁵³	CTUh	1.19E-09	1.20E-13	1.46E-12	1.39E-11	8.24E-12	-1.56E-09
HTP-nc ⁵³	CTUh	2.32E-07	7.47E-12	5.78E-11	4.64E-10	8.30E-10	-5.10E-08
SQP ⁵³	dimensionless	3.51	6.51E-05	6.07E-04	0.208	0.0182	0.465

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	8.00	9.26E-05	0.00105	0.350	0.0191	2.30
PERM	MJ	0	0	0	0	0	0
PERT	MJ	8.00	9.26E-05	0.00105	0.350	0.0191	2.30
PENRE	MJ	116	0.0284	0.215	1.63	0.234	-33.6
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	116	0.0284	0.215	1.63	0.234	-33.6
SM	kg	0.631	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0204	2.39E-07	2.05E-06	8.28E-04	3.30E-05	-0.0162

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.10E-09	3.08E-14	3.49E-13	5.44E-11	3.54E-11	-2.44E-10
NHWD	kg	0.139	4.05E-07	5.22E-06	5.08E-04	0.343	0.747
RWD	kg	0.00102	4.16E-10	4.20E-08	2.22E-07	2.82E-06	7.90E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.34	0	0	3.08	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.08
Steel collected with mixed construction waste	kg	0.342
Recovery for re-use	kg	0
Recovery for recycling	kg	3.08
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.342
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	11.1	0.00211	0.0160	0.148	0.0157	-3.54
ODP	kg CFC11-eq.	1.14E-11	2.00E-16	1.92E-15	7.88E-13	2.56E-14	8.21E-14
AP	kg SO ₂ -eq.	0.0326	7.06E-06	2.94E-05	6.19E-04	4.19E-05	-0.00316
EP	kg PO ₄ ³⁻ -eq.	0.00319	1.64E-06	6.40E-06	5.58E-05	4.47E-06	-6.78E-05
POCP	kg ethene-eq.	0.00490	6.96E-07	-7.82E-06	3.32E-05	3.91E-06	-0.00159
ADPE	kg Sb-eq.	7.11E-04	2.61E-11	2.92E-10	1.26E-08	1.17E-09	-1.81E-07
ADPF	MJ	112	0.0284	0.215	1.62	0.226	-34.6

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	2.88E-10	3.24E-15	4.46E-14	5.39E-12	7.21E-13	6.61E-11
HTnc - GS	CTUh	1.11E-10	1.55E-15	1.00E-14	1.72E-13	1.68E-14	1.84E-12
LU - GS	kg C deficit-eq.	1.84	5.38E-06	4.16E-05	0.0169	0.00159	0.192
RDW - GS	m³-eq.	0.0127	1.54E-07	1.30E-06	5.50E-04	1.66E-05	-0.00885
IR - GS	kBq U235-eq.	0.119	5.38E-08	5.46E-06	2.85E-05	4.17E-04	0.0881
PM - GS	kg PM2.5-eq.	0.00278	5.07E-07	1.38E-06	4.06E-05	2.95E-06	-2.44E-04

53. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

54. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

55. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.21 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	13.5	0.00263	0.0199	0.185	0.0204	-4.64
GWP-fossil	kg CO ₂ -eq.	13.5	0.00263	0.0199	0.185	0.0203	-4.65
GWP-biogenic	kg CO ₂ -eq.	-0.00702	2.60E-07	6.65E-06	2.07E-04	4.01E-05	0.00281
GWP-luluc	kg CO ₂ -eq.	6.67E-04	1.91E-08	2.15E-07	710E-06	1.22E-05	-9.17E-05
ODP	kg CFC-11-eq.	1.04E-11	2.09E-16	2.00E-15	8.23E-13	2.67E-14	8.38E-14
AP	mol H ⁺ -eq.	0.0471	1.25E-05	5.14E-05	9.31E-04	6.41E-05	-0.00437
EP-freshwater	kg P-eq.	5.91E-06	4.62E-10	3.28E-09	1.01E-07	1.56E-08	-8.25E-07
EP-marine	kg N-eq.	0.0103	6.03E-06	2.32E-05	1.99E-04	1.56E-05	-2.80E-04
EP-terrestrial	mol N-eq.	0.116	6.61E-05	2.56E-04	0.00218	1.71E-04	9.13E-04
POCP	kg NMVOC-eq.	0.0345	1.69E-05	4.97E-05	5.53E-04	4.94E-05	-0.00310
ADP-minerals & metals ⁵⁶	kg Sb-eq.	711E-04	3.21E-11	3.59E-10	1.55E-08	1.42E-09	-2.34E-07
ADP-fossil ⁵⁶	MJ	136	0.0349	0.264	2.00	0.288	-42.1
WDP ⁵⁶	m³ world-eq. deprived	1.10	1.95E-05	1.26E-04	0.0724	0.00138	-0.894

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁵⁷	kg CO ₂ -eq.	13.1	0.00260	0.0197	0.184	0.0197	-4.47
PM	Disease incidence	6.29E-07	1.41E-10	3.37E-10	9.07E-09	6.86E-10	-4.76E-08
IRP ⁵⁸	kBq U-235-eq.	0.123	6.62E-08	6.71E-06	3.50E-05	5.13E-04	0.110
ETP-fw ⁵⁶	CTUe	26.8	0.00876	0.106	0.382	0.0855	-1.28
HTP-c ⁵⁶	CTUh	1.35E-09	1.47E-13	1.79E-12	1.71E-11	1.01E-11	-1.95E-09
HTP-nc ⁵⁶	CTUh	2.74E-07	9.18E-12	710E-11	5.70E-10	1.02E-09	-6.37E-08
SQP ⁵⁶	dimensionless	4.00	8.01E-05	7.46E-04	0.256	0.0224	0.577

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	8.52	1.14E-04	0.00129	0.430	0.0235	2.87
PERM	MJ	0	0	0	0	0	0
PERT	MJ	8.52	1.14E-04	0.00129	0.430	0.0235	2.87
PENRE	MJ	136	0.0349	0.264	2.00	0.288	-42.1
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	136	0.0349	0.264	2.00	0.288	-42.1
SM	kg	0.783	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0220	2.94E-07	2.52E-06	0.00102	4.06E-05	-0.0202

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.45E-09	3.78E-14	4.29E-13	6.69E-11	4.35E-11	-3.09E-10
NHWD	kg	0.146	4.98E-07	6.41E-06	6.24E-04	0.421	0.881
RWD	kg	0.00104	5.11E-10	5.16E-08	2.73E-07	3.47E-06	9.39E-06
CRU	kg	0	0	0	0	0	0
MFR	kg	1.67	0	0	3.79	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	3.79
Steel collected with mixed construction waste	kg	0.421
Recovery for re-use	kg	0
Recovery for recycling	kg	3.79
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.421
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	13.0	0.00259	0.0197	0.182	0.0193	-4.42
ODP	kg CFC11-eq.	1.23E-11	2.46E-16	2.36E-15	9.69E-13	3.15E-14	9.70E-14
AP	kg SO ₂ -eq.	0.0380	8.68E-06	3.62E-05	7.61E-04	5.15E-05	-0.00403
EP	kg PO ₄ ³⁻ -eq.	0.00373	2.02E-06	7.87E-06	6.86E-05	5.49E-06	-9.41E-05
POCP	kg ethene-eq.	0.00583	8.56E-07	-9.61E-06	4.08E-05	4.80E-06	-0.00199
ADPE	kg Sb-eq.	711E-04	3.21E-11	3.59E-10	1.55E-08	1.44E-09	-2.27E-07
ADPF	MJ	132	0.0349	0.264	1.99	0.278	-43.2

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.02E-10	3.98E-15	5.49E-14	6.63E-12	8.86E-13	8.23E-11
HTnc - GS	CTUh	1.19E-10	1.90E-15	1.24E-14	2.11E-13	2.06E-14	2.29E-12
LU - GS	kg C deficit-eq.	2.06	6.61E-06	5.11E-05	0.0208	0.00195	0.239
RDW - GS	m³-eq.	0.0136	1.89E-07	1.60E-06	6.76E-04	2.04E-05	-0.0110
IR - GS	kBq U235-eq.	0.123	6.62E-08	6.71E-06	3.50E-05	5.13E-04	0.110
PM - GS	kg PM2.5-eq.	0.00325	6.23E-07	1.70E-06	4.99E-05	3.62E-06	-3.13E-04

56. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

57. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

58. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.60 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	14.5	0.00287	0.0218	0.203	0.0223	-5.11
GWP-fossil	kg CO ₂ -eq.	14.5	0.00287	0.0218	0.202	0.0222	-5.11
GWP-biogenic	kg CO ₂ -eq.	-0.00671	2.84E-07	7.27E-06	2.26E-04	4.38E-05	0.00307
GWP-luluc	kg CO ₂ -eq.	6.81E-04	2.08E-08	2.35E-07	7.77E-06	1.34E-05	-1.01E-04
ODP	kg CFC-11-eq.	1.08E-11	2.28E-16	2.19E-15	9.00E-13	2.92E-14	9.02E-14
AP	mol H ⁺ -eq.	0.0505	1.36E-05	5.62E-05	0.00102	7.01E-05	-0.00484
EP-freshwater	kg P-eq.	6.06E-06	5.05E-10	3.59E-09	1.11E-07	1.70E-08	-9.08E-07
EP-marine	kg N-eq.	0.0111	6.59E-06	2.54E-05	2.18E-04	1.71E-05	-3.20E-04
EP-terrestrial	mol N-eq.	0.124	7.22E-05	2.80E-04	0.00238	1.87E-04	8.79E-04
POCP	kg NMVOC-eq.	0.0370	1.85E-05	5.43E-05	6.05E-04	5.40E-05	-0.00343
ADP-minerals & metals ⁵⁹	kg Sb-eq.	7.11E-04	3.51E-11	3.93E-10	1.70E-08	1.55E-09	-2.58E-07
ADP-fossil ⁵⁹	MJ	146	0.0381	0.289	2.19	0.315	-46.3
WDP ⁵⁹	m³ world-eq. deprived	1.14	2.13E-05	1.38E-04	0.0791	0.00151	-0.983

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁶⁰	kg CO ₂ -eq.	14.1	0.00284	0.0216	0.201	0.0216	-4.92
PM	Disease incidence	6.74E-07	1.54E-10	3.69E-10	9.91E-09	7.50E-10	-5.30E-08
IRP ⁶¹	kBq U-235-eq.	0.124	7.23E-08	7.34E-06	3.83E-05	5.60E-04	0.121
ETP-fw ⁵⁹	CTUe	28.0	0.00958	0.116	0.418	0.0935	-1.43
HTP-c ⁵⁹	CTUh	1.43E-09	1.61E-13	1.96E-12	1.87E-11	1.11E-11	-2.15E-09
HTP-nc ⁵⁹	CTUh	2.95E-07	1.00E-11	7.77E-11	6.23E-10	1.12E-09	-7.01E-08
SQP ⁵⁹	dimensionless	4.24	8.75E-05	8.15E-04	0.280	0.0245	0.633

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	8.78	1.25E-04	0.00141	0.471	0.0257	3.15
PERM	MJ	0	0	0	0	0	0
PERT	MJ	8.78	1.25E-04	0.00141	0.471	0.0257	3.15
PENRE	MJ	146	0.0381	0.289	2.19	0.315	-46.3
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	146	0.0381	0.289	2.19	0.315	-46.3
SM	kg	0.859	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0228	3.21E-07	2.75E-06	0.00111	4.44E-05	-0.0223

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.62E-09	4.14E-14	4.69E-13	7.31E-11	4.76E-11	-3.42E-10
NHWD	kg	0.150	5.45E-07	7.01E-06	6.83E-04	0.461	0.948
RWD	kg	0.00105	5.59E-10	5.65E-08	2.98E-07	3.80E-06	1.01E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	1.83	0	0	4.14	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	4.14
Steel collected with mixed construction waste	kg	0.460
Recovery for re-use	kg	0
Recovery for recycling	kg	4.14
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.460
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	14.0	0.00283	0.0215	0.199	0.0211	-4.86
ODP	kg CFC11-eq.	1.27E-11	2.69E-16	2.58E-15	1.06E-12	3.44E-14	1.04E-13
AP	kg SO ₂ -eq.	0.0408	9.49E-06	3.96E-05	8.32E-04	5.63E-05	-0.00447
EP	kg PO ₄ ³⁻ -eq.	0.00400	2.21E-06	8.61E-06	7.50E-05	6.00E-06	-1.07E-04
POCP	kg ethene-eq.	0.00629	9.36E-07	-1.05E-05	4.46E-05	5.25E-06	-0.00219
ADPE	kg Sb-eq.	7.11E-04	3.51E-11	3.93E-10	1.70E-08	1.57E-09	-2.49E-07
ADPF	MJ	141	0.0381	0.288	2.18	0.304	-47.5

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.09E-10	4.35E-15	6.00E-14	7.25E-12	9.69E-13	9.04E-11
HTnc - GS	CTUh	1.23E-10	2.08E-15	1.35E-14	2.31E-13	2.25E-14	2.52E-12
LU - GS	kg C deficit-eq.	2.17	7.23E-06	5.59E-05	0.0227	0.00213	0.262
RDW - GS	m³-eq.	0.0141	2.07E-07	1.75E-06	7.39E-04	2.23E-05	-0.0121
IR - GS	kBq U235-eq.	0.124	7.23E-08	7.34E-06	3.83E-05	5.60E-04	0.121
PM - GS	kg PM2.5-eq.	0.00348	6.81E-07	1.85E-06	5.46E-05	3.96E-06	-3.48E-04

59. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

60. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

61. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.60mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 4.99 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	15.5	0.00312	0.0237	0.220	0.0242	-5.57
GWP-fossil	kg CO ₂ -eq.	15.5	0.00312	0.0237	0.220	0.0241	-5.57
GWP-biogenic	kg CO ₂ -eq.	-0.00640	3.09E-07	7.89E-06	2.45E-04	4.76E-05	0.00333
GWP-luluc	kg CO ₂ -eq.	6.96E-04	2.26E-08	2.55E-07	8.43E-06	1.45E-05	-1.11E-04
ODP	kg CFC-11-eq.	1.11E-11	2.48E-16	2.37E-15	9.77E-13	3.17E-14	9.67E-14
AP	mol H ⁺ -eq.	0.0539	1.48E-05	6.10E-05	0.00110	7.61E-05	-0.00532
EP-freshwater	kg P-eq.	6.21E-06	5.48E-10	3.89E-09	1.20E-07	1.85E-08	-9.91E-07
EP-marine	kg N-eq.	0.0118	716E-06	2.76E-05	2.37E-04	1.85E-05	-3.59E-04
EP-terrestrial	mol N-eq.	0.133	7.84E-05	3.03E-04	0.00258	2.03E-04	8.45E-04
POCP	kg NMVOC-eq.	0.0396	2.00E-05	5.89E-05	6.56E-04	5.87E-05	-0.00377
ADP-minerals & metals ⁶²	kg Sb-eq.	711E-04	3.81E-11	4.26E-10	1.84E-08	1.68E-09	-2.81E-07
ADP-fossil ⁶²	MJ	156	0.0414	0.314	2.37	0.342	-50.5
WDP ⁶²	m³ world-eq. deprived	1.19	2.31E-05	1.50E-04	0.0859	0.00164	-1.07

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁶³	kg CO ₂ -eq.	15.1	0.00308	0.0234	0.218	0.0234	-5.36
PM	Disease incidence	719E-07	1.68E-10	4.00E-10	1.08E-08	8.14E-10	-5.85E-08
IRP ⁶⁴	kBq U-235-eq.	0.126	7.85E-08	7.97E-06	4.15E-05	6.08E-04	0.132
ETP-fw ⁶²	CTUe	29.3	0.0104	0.126	0.453	0.101	-1.57
HTP-c ⁶²	CTUh	1.51E-09	1.74E-13	2.13E-12	2.03E-11	1.20E-11	-2.34E-09
HTP-nc ⁶²	CTUh	3.15E-07	1.09E-11	8.43E-11	6.76E-10	1.21E-09	-7.65E-08
SQP ⁶²	dimensionless	4.49	9.50E-05	8.85E-04	0.304	0.0266	0.689

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9.03	1.35E-04	0.00153	0.511	0.0279	3.43
PERM	MJ	0	0	0	0	0	0
PERT	MJ	9.03	1.35E-04	0.00153	0.511	0.0279	3.43
PENRE	MJ	156	0.0414	0.314	2.37	0.342	-50.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	156	0.0414	0.314	2.37	0.342	-50.5
SM	kg	0.935	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0237	3.48E-07	2.99E-06	0.00121	4.82E-05	-0.0243

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4.80E-09	4.49E-14	5.09E-13	7.93E-11	5.17E-11	-3.75E-10
NHWD	kg	0.154	5.91E-07	7.61E-06	7.41E-04	0.500	1.01
RWD	kg	0.00106	6.06E-10	6.13E-08	3.24E-07	4.12E-06	1.09E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	1.99	0	0	4.49	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	4.49
Steel collected with mixed construction waste	kg	0.499
Recovery for re-use	kg	0
Recovery for recycling	kg	4.49
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.499
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.60mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	15.0	0.00307	0.0233	0.217	0.0229	-5.30
ODP	kg CFC11-eq.	1.31E-11	2.91E-16	2.80E-15	1.15E-12	3.73E-14	1.12E-13
AP	kg SO ₂ -eq.	0.0435	1.03E-05	4.30E-05	9.03E-04	6.11E-05	-0.00490
EP	kg PO ₄ ³⁻ -eq.	0.00427	2.40E-06	9.34E-06	8.14E-05	6.51E-06	-1.20E-04
POCP	kg ethene-eq.	0.00676	1.02E-06	-1.14E-05	4.84E-05	5.70E-06	-0.00239
ADPE	kg Sb-eq.	711E-04	3.81E-11	4.27E-10	1.84E-08	1.71E-09	-2.72E-07
ADPF	MJ	151	0.0414	0.313	2.36	0.330	-51.8

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.15E-10	4.73E-15	6.51E-14	7.87E-12	1.05E-12	9.85E-11
HTnc - GS	CTUh	1.27E-10	2.26E-15	1.47E-14	2.51E-13	2.45E-14	2.74E-12
LU - GS	kg C deficit-eq.	2.29	7.84E-06	6.07E-05	0.0247	0.00232	0.286
RDW - GS	m³-eq.	0.0146	2.24E-07	1.90E-06	8.02E-04	2.42E-05	-0.0132
IR - GS	kBq U235-eq.	0.126	7.85E-08	7.96E-06	4.15E-05	6.08E-04	0.131
PM - GS	kg PM2.5-eq.	0.00371	7.39E-07	2.01E-06	5.92E-05	4.30E-06	-3.82E-04

62. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

63. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

64. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.70mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 5.78 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	17.6	0.00361	0.0274	0.254	0.0280	-6.50
GWP-fossil	kg CO ₂ -eq.	17.6	0.00361	0.0274	0.254	0.0279	-6.50
GWP-biogenic	kg CO ₂ -eq.	-0.00577	3.57E-07	9.13E-06	2.84E-04	5.51E-05	0.00386
GWP-luluc	kg CO ₂ -eq.	7.26E-04	2.62E-08	2.95E-07	9.75E-06	1.68E-05	-1.30E-04
ODP	kg CFC-11-eq.	1.18E-11	2.86E-16	2.75E-15	1.13E-12	3.67E-14	1.10E-13
AP	mol H ⁺ -eq.	0.0606	1.71E-05	7.06E-05	0.00128	8.81E-05	-0.00627
EP-freshwater	kg P-eq.	6.51E-06	6.34E-10	4.50E-09	1.39E-07	2.14E-08	-1.16E-06
EP-marine	kg N-eq.	0.0133	8.28E-06	3.19E-05	2.74E-04	2.15E-05	-4.37E-04
EP-terrestrial	mol N-eq.	0.149	9.07E-05	3.51E-04	0.00299	2.35E-04	7.76E-04
POCP	kg NMVOC-eq.	0.0447	2.32E-05	6.82E-05	7.60E-04	6.79E-05	-0.00445
ADP-minerals & metals ⁶⁵	kg Sb-eq.	7.11E-04	4.40E-11	4.93E-10	2.13E-08	1.95E-09	-3.28E-07
ADP-fossil ⁶⁵	MJ	175	0.0479	0.363	2.75	0.396	-58.9
WDP ⁶⁵	m³ world-eq. deprived	1.28	2.68E-05	1.73E-04	0.0994	0.00189	-1.25

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁶⁶	kg CO ₂ -eq.	17.1	0.00357	0.0271	0.252	0.0271	-6.26
PM	Disease incidence	8.08E-07	1.94E-10	4.63E-10	1.25E-08	9.42E-10	-6.93E-08
IRP ⁶⁷	kBq U-235-eq.	0.129	9.09E-08	9.22E-06	4.80E-05	7.04E-04	0.153
ETP-fw ⁶⁵	CTUe	31.7	0.0120	0.146	0.525	0.117	-1.85
HTP-c ⁶⁵	CTUh	1.66E-09	2.02E-13	2.46E-12	2.35E-11	1.39E-11	-2.73E-09
HTP-nc ⁶⁵	CTUh	3.57E-07	1.26E-11	9.76E-11	7.83E-10	1.40E-09	-8.92E-08
SQP ⁶⁵	dimensionless	4.98	1.10E-04	0.00102	0.351	0.0308	0.801

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9.55	1.56E-04	0.00177	0.591	0.0323	4.00
PERM	MJ	0	0	0	0	0	0
PERT	MJ	9.55	1.56E-04	0.00177	0.591	0.0323	4.00
PENRE	MJ	175	0.0479	0.363	2.75	0.396	-58.9
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	175	0.0479	0.363	2.75	0.396	-58.9
SM	kg	1.09	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0253	4.03E-07	3.46E-06	0.00140	5.58E-05	-0.0283

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.15E-09	5.19E-14	5.89E-13	9.18E-11	5.98E-11	-4.41E-10
NHWD	kg	0.161	6.84E-07	8.81E-06	8.57E-04	0.578	1.15
RWD	kg	0.00108	7.02E-10	7.09E-08	3.75E-07	4.77E-06	1.24E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.32	0	0	5.20	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	5.20
Steel collected with mixed construction waste	kg	0.578
Recovery for re-use	kg	0
Recovery for recycling	kg	5.20
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.578
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.70mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	17.0	0.00355	0.0270	0.251	0.0265	-6.18
ODP	kg CFC11-eq.	1.39E-11	3.37E-16	3.23E-15	1.33E-12	4.32E-14	1.27E-13
AP	kg SO ₂ -eq.	0.0489	1.19E-05	4.97E-05	0.00105	7.07E-05	-0.00577
EP	kg PO ₄ ³⁻ -eq.	0.00481	2.77E-06	1.08E-05	9.42E-05	7.54E-06	-1.47E-04
POCP	kg ethene-eq.	0.00769	1.18E-06	-1.32E-05	5.60E-05	6.59E-06	-0.00279
ADPE	kg Sb-eq.	7.11E-04	4.41E-11	4.94E-10	2.13E-08	1.98E-09	-3.17E-07
ADPF	MJ	170	0.0479	0.362	2.73	0.382	-60.4

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.29E-10	5.47E-15	7.54E-14	9.10E-12	1.22E-12	1.15E-10
HTnc - GS	CTUh	1.36E-10	2.62E-15	1.70E-14	2.90E-13	2.83E-14	3.20E-12
LU - GS	kg C deficit-eq.	2.51	9.08E-06	7.02E-05	0.0286	0.00268	0.333
RDW - GS	m³-eq.	0.0156	2.60E-07	2.20E-06	9.28E-04	2.80E-05	-0.0154
IR - GS	kBq U235-eq.	0.129	9.09E-08	9.22E-06	4.80E-05	7.04E-04	0.153
PM - GS	kg PM2.5-eq.	0.00417	8.55E-07	2.33E-06	6.85E-05	4.98E-06	-4.51E-04

65. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

66. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

67. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.75mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 6.17 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	18.6	0.00385	0.0293	0.272	0.0299	-6.96
GWP-fossil	kg CO ₂ -eq.	18.6	0.00385	0.0292	0.271	0.0298	-6.96
GWP-biogenic	kg CO ₂ -eq.	-0.00546	3.81E-07	9.75E-06	3.03E-04	5.88E-05	0.00412
GWP-luluc	kg CO ₂ -eq.	7.41E-04	2.80E-08	3.15E-07	1.04E-05	1.79E-05	-1.40E-04
ODP	kg CFC-11-eq.	1.21E-11	3.06E-16	2.93E-15	1.21E-12	3.92E-14	1.16E-13
AP	mol H ⁺ -eq.	0.0640	1.83E-05	7.54E-05	0.00136	9.40E-05	-0.00675
EP-freshwater	kg P-eq.	6.65E-06	6.77E-10	4.81E-09	1.48E-07	2.29E-08	-1.24E-06
EP-marine	kg N-eq.	0.0141	8.85E-06	3.41E-05	2.92E-04	2.29E-05	-4.76E-04
EP-terrestrial	mol N-eq.	0.158	9.69E-05	3.75E-04	0.00319	2.51E-04	7.42E-04
POCP	kg NMVOC-eq.	0.0473	2.48E-05	7.28E-05	8.11E-04	7.25E-05	-0.00479
ADP-minerals & metals ⁶⁸	kg Sb-eq.	7.11E-04	4.70E-11	5.27E-10	2.28E-08	2.08E-09	-3.51E-07
ADP-fossil ⁶⁸	MJ	185	0.0511	0.388	2.93	0.423	-63.1
WDP ⁶⁸	m³ world-eq. deprived	1.32	2.86E-05	1.85E-04	0.106	0.00202	-1.34

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁶⁹	kg CO ₂ -eq.	18.1	0.00381	0.0290	0.269	0.0289	-6.70
PM	Disease incidence	8.53E-07	2.07E-10	4.94E-10	1.33E-08	1.01E-09	-7.47E-08
IRP ⁷⁰	kBq U-235-eq.	0.130	9.70E-08	9.85E-06	5.13E-05	7.52E-04	0.164
ETP-fw ⁶⁸	CTUe	33.0	0.0128	0.155	0.560	0.125	-1.99
HTP-c ⁶⁸	CTUh	1.74E-09	2.16E-13	2.63E-12	2.51E-11	1.49E-11	-2.92E-09
HTP-nc ⁶⁸	CTUh	3.78E-07	1.35E-11	1.04E-10	8.36E-10	1.50E-09	-9.56E-08
SQP ⁶⁸	dimensionless	5.22	1.17E-04	0.00109	0.375	0.0328	0.857

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9.81	1.67E-04	0.00189	0.631	0.0345	4.28
PERM	MJ	0	0	0	0	0	0
PERT	MJ	9.81	1.67E-04	0.00189	0.631	0.0345	4.28
PENRE	MJ	185	0.0511	0.388	2.93	0.423	-63.1
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	185	0.0511	0.388	2.93	0.423	-63.1
SM	kg	1.16	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0261	4.30E-07	3.69E-06	0.00149	5.95E-05	-0.0303

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.32E-09	5.55E-14	6.29E-13	9.80E-11	6.38E-11	-4.74E-10
NHWD	kg	0.165	7.30E-07	9.41E-06	9.16E-04	0.618	1.22
RWD	kg	0.00109	7.49E-10	7.57E-08	4.00E-07	5.09E-06	1.31E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.49	0	0	5.55	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	5.55
Steel collected with mixed construction waste	kg	0.617
Recovery for re-use	kg	0
Recovery for recycling	kg	5.55
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.617
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.75mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	18.0	0.00380	0.0288	0.268	0.0283	-6.62
ODP	kg CFC11-eq.	1.43E-11	3.60E-16	3.45E-15	1.42E-12	4.61E-14	1.34E-13
AP	kg SO ₂ -eq.	0.0516	1.27E-05	5.31E-05	0.00112	7.55E-05	-0.00621
EP	kg PO ₄ ³⁻ -eq.	0.00507	2.96E-06	1.15E-05	1.01E-04	8.05E-06	-1.60E-04
POCP	kg ethene-eq.	0.00816	1.26E-06	-1.41E-05	5.98E-05	7.04E-06	-0.00298
ADPE	kg Sb-eq.	7.11E-04	4.70E-11	5.27E-10	2.28E-08	2.11E-09	-3.40E-07
ADPF	MJ	180	0.0511	0.387	2.92	0.408	-64.8

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.36E-10	5.84E-15	8.05E-14	9.72E-12	1.30E-12	1.23E-10
HTnc - GS	CTUh	1.40E-10	2.79E-15	1.81E-14	3.10E-13	3.02E-14	3.42E-12
LU - GS	kg C deficit-eq.	2.62	9.69E-06	7.50E-05	0.0305	0.00286	0.357
RDW - GS	m³-eq.	0.0160	2.77E-07	2.35E-06	9.91E-04	2.99E-05	-0.0165
IR - GS	kBq U235-eq.	0.130	9.70E-08	9.84E-06	5.13E-05	7.52E-04	0.164
PM - GS	kg PM2.5-eq.	0.00440	9.14E-07	2.49E-06	7.32E-05	5.32E-06	-4.86E-04

68. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

69. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

70. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.80mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 6.56 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	19.6	0.00410	0.0311	0.289	0.0318	-7.42
GWP-fossil	kg CO ₂ -eq.	19.6	0.00410	0.0311	0.289	0.0317	-7.43
GWP-biogenic	kg CO ₂ -eq.	-0.00515	4.06E-07	1.04E-05	3.23E-04	6.26E-05	0.00438
GWP-luluc	kg CO ₂ -eq.	7.56E-04	2.97E-08	3.35E-07	1.11E-05	1.91E-05	-1.50E-04
ODP	kg CFC-11-eq.	1.25E-11	3.25E-16	3.12E-15	1.28E-12	4.17E-14	1.22E-13
AP	mol H ⁺ -eq.	0.0673	1.95E-05	8.02E-05	0.00145	1.00E-04	-0.00723
EP-freshwater	kg P-eq.	6.80E-06	7.20E-10	5.11E-09	1.58E-07	2.43E-08	-1.32E-06
EP-marine	kg N-eq.	0.0148	9.41E-06	3.63E-05	3.11E-04	2.44E-05	-5.16E-04
EP-terrestrial	mol N-eq.	0.166	1.03E-04	3.99E-04	0.00340	2.67E-04	7.08E-04
POCP	kg NMVOC-eq.	0.0499	2.64E-05	7.75E-05	8.63E-04	7.71E-05	-0.00513
ADP-minerals & metals ⁷¹	kg Sb-eq.	7.11E-04	5.00E-11	5.60E-10	2.42E-08	2.21E-09	-3.75E-07
ADP-fossil ⁷¹	MJ	195	0.0544	0.412	3.12	0.449	-67.3
WDP ⁷¹	m³ world-eq. deprived	1.36	3.04E-05	1.97E-04	0.113	0.00215	-1.43

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁷²	kg CO ₂ -eq.	19.1	0.00405	0.0308	0.286	0.0308	-7.15
PM	Disease incidence	8.98E-07	2.20E-10	5.26E-10	1.41E-08	1.07E-09	-8.02E-08
IRP ⁷³	kBq U-235-eq.	0.132	1.03E-07	1.05E-05	5.46E-05	8.00E-04	0.175
ETP-fw ⁷¹	CTUe	34.2	0.0137	0.165	0.596	0.133	-2.13
HTP-c ⁷¹	CTUh	1.82E-09	2.29E-13	2.79E-12	2.67E-11	1.58E-11	-3.12E-09
HTP-nc ⁷¹	CTUh	3.99E-07	1.43E-11	1.11E-10	8.89E-10	1.59E-09	-1.02E-07
SQP ⁷¹	dimensionless	5.47	1.25E-04	0.00116	0.399	0.0349	0.913

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	10.1	1.78E-04	0.00202	0.671	0.0367	4.56
PERM	MJ	0	0	0	0	0	0
PERT	MJ	10.1	1.78E-04	0.00202	0.671	0.0367	4.56
PENRE	MJ	195	0.0544	0.412	3.12	0.450	-67.3
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	195	0.0544	0.412	3.12	0.450	-67.3
SM	kg	1.24	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0269	4.58E-07	3.93E-06	0.00159	6.33E-05	-0.0323

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.50E-09	5.90E-14	6.69E-13	1.04E-10	6.79E-11	-5.07E-10
NHWD	kg	0.168	7.77E-07	1.00E-05	9.74E-04	0.657	1.28
RWD	kg	0.00110	7.97E-10	8.05E-08	4.26E-07	5.42E-06	1.39E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.65	0	0	5.91	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	5.91
Steel collected with mixed construction waste	kg	0.656
Recovery for re-use	kg	0
Recovery for recycling	kg	5.91
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.656
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.80mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	19.0	0.00404	0.0307	0.285	0.0301	-7.06
ODP	kg CFC11-eq.	1.47E-11	3.83E-16	3.67E-15	1.51E-12	4.91E-14	1.42E-13
AP	kg SO ₂ -eq.	0.0543	1.35E-05	5.65E-05	0.00119	8.03E-05	-0.00664
EP	kg PO ₄ ³⁻ -eq.	0.00534	3.15E-06	1.23E-05	1.07E-04	8.56E-06	-1.73E-04
POCP	kg ethene-eq.	0.00862	1.34E-06	-1.50E-05	6.36E-05	7.49E-06	-0.00318
ADPE	kg Sb-eq.	7.11E-04	5.00E-11	5.61E-10	2.42E-08	2.24E-09	-3.62E-07
ADPF	MJ	190	0.0544	0.411	3.11	0.434	-69.1

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.43E-10	6.21E-15	8.56E-14	1.03E-11	1.38E-12	1.31E-10
HTnc - GS	CTUh	1.44E-10	2.97E-15	1.93E-14	3.29E-13	3.22E-14	3.65E-12
LU - GS	kg C deficit-eq.	2.73	1.03E-05	7.97E-05	0.0324	0.00305	0.380
RDW - GS	m³-eq.	0.0165	2.95E-07	2.50E-06	0.00105	3.18E-05	-0.0176
IR - GS	kBq U235-eq.	0.132	1.03E-07	1.05E-05	5.46E-05	8.00E-04	0.175
PM - GS	kg PM2.5-eq.	0.00464	9.72E-07	2.64E-06	7.78E-05	5.65E-06	-5.20E-04

71. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

72. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

73. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.85mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 6.95 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	20.6	0.00434	0.0330	0.306	0.0337	-7.89
GWP-fossil	kg CO ₂ -eq.	20.6	0.00434	0.0330	0.306	0.0336	-7.89
GWP-biogenic	kg CO ₂ -eq.	-0.00483	4.30E-07	1.10E-05	3.42E-04	6.63E-05	0.00465
GWP-luluc	kg CO ₂ -eq.	7.71E-04	3.15E-08	3.55E-07	1.17E-05	2.02E-05	-1.60E-04
ODP	kg CFC-11-eq.	1.28E-11	3.45E-16	3.31E-15	1.36E-12	4.42E-14	1.29E-13
AP	mol H ⁺ -eq.	0.0707	2.06E-05	8.50E-05	0.00154	1.06E-04	-0.00771
EP-freshwater	kg P-eq.	6.95E-06	7.63E-10	5.42E-09	1.67E-07	2.58E-08	-1.41E-06
EP-marine	kg N-eq.	0.0155	9.97E-06	3.84E-05	3.30E-04	2.58E-05	-5.55E-04
EP-terrestrial	mol N-eq.	0.175	1.09E-04	4.23E-04	0.00360	2.83E-04	6.74E-04
POCP	kg NMVOC-eq.	0.0524	2.79E-05	8.21E-05	9.14E-04	8.17E-05	-0.00547
ADP-minerals & metals ⁷⁴	kg Sb-eq.	7.11E-04	5.30E-11	5.94E-10	2.57E-08	2.34E-09	-3.98E-07
ADP-fossil ⁷⁴	MJ	204	0.0576	0.437	3.31	0.476	-71.5
WDP ⁷⁴	m³ world-eq. deprived	1.41	3.22E-05	2.08E-04	0.120	0.00228	-1.52

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁷⁵	kg CO ₂ -eq.	20.1	0.00430	0.0326	0.303	0.0326	-7.59
PM	Disease incidence	9.43E-07	2.34E-10	5.57E-10	1.50E-08	1.13E-09	-8.56E-08
IRP ⁷⁶	kBq U-235-eq.	0.133	1.09E-07	1.11E-05	5.78E-05	8.47E-04	0.186
ETP-fw ⁷⁴	CTUe	35.4	0.0145	0.175	0.632	0.141	-2.28
HTP-c ⁷⁴	CTUh	1.90E-09	2.43E-13	2.96E-12	2.83E-11	1.67E-11	-3.31E-09
HTP-nc ⁷⁴	CTUh	4.19E-07	1.52E-11	1.17E-10	9.42E-10	1.69E-09	-1.08E-07
SQP ⁷⁴	dimensionless	5.71	1.32E-04	0.00123	0.423	0.0370	0.968

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	10.3	1.88E-04	0.00214	0.712	0.0389	4.85
PERM	MJ	0	0	0	0	0	0
PERT	MJ	10.3	1.88E-04	0.00214	0.712	0.0389	4.85
PENRE	MJ	205	0.0576	0.437	3.31	0.477	-71.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	205	0.0576	0.437	3.31	0.477	-71.5
SM	kg	1.31	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0277	4.85E-07	4.16E-06	0.00168	6.71E-05	-0.0343

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.67E-09	6.25E-14	7.09E-13	1.11E-10	7.20E-11	-5.39E-10
NHWD	kg	0.172	8.23E-07	1.06E-05	0.00103	0.696	1.35
RWD	kg	0.00111	8.45E-10	8.54E-08	4.51E-07	5.74E-06	1.46E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.82	0	0	6.26	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	6.26
Steel collected with mixed construction waste	kg	0.695
Recovery for re-use	kg	0
Recovery for recycling	kg	6.26
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.695
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.85mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	20.0	0.00428	0.0325	0.302	0.0319	-7.50
ODP	kg CFC11-eq.	1.51E-11	4.06E-16	3.89E-15	1.60E-12	5.20E-14	1.49E-13
AP	kg SO ₂ -eq.	0.0570	1.43E-05	5.98E-05	0.00126	8.51E-05	-0.00708
EP	kg PO ₄ ³⁻ -eq.	0.00561	3.34E-06	1.30E-05	1.13E-04	9.08E-06	-1.86E-04
POCP	kg ethene-eq.	0.00909	1.42E-06	-1.59E-05	6.74E-05	7.94E-06	-0.00338
ADPE	kg Sb-eq.	7.11E-04	5.30E-11	5.94E-10	2.57E-08	2.38E-09	-3.85E-07
ADPF	MJ	200	0.0576	0.436	3.29	0.460	-73.4

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.50E-10	6.58E-15	9.07E-14	1.10E-11	1.46E-12	1.39E-10
HTnc - GS	CTUh	1.48E-10	3.15E-15	2.04E-14	3.49E-13	3.41E-14	3.87E-12
LU - GS	kg C deficit-eq.	2.84	1.09E-05	8.45E-05	0.0344	0.00323	0.404
RDW - GS	m³-eq.	0.0170	3.12E-07	2.65E-06	0.00112	3.37E-05	-0.0187
IR - GS	kBq U235-eq.	0.133	1.09E-07	1.11E-05	5.78E-05	8.47E-04	0.186
PM - GS	kg PM2.5-eq.	0.00487	1.03E-06	2.80E-06	8.25E-05	5.99E-06	-5.55E-04

74. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

75. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

76. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 7.35 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	21.7	0.00459	0.0348	0.324	0.0356	-8.35
GWP-fossil	kg CO ₂ -eq.	21.7	0.00459	0.0348	0.323	0.0355	-8.35
GWP-biogenic	kg CO ₂ -eq.	-0.00452	4.54E-07	1.16E-05	3.61E-04	7.00E-05	0.00491
GWP-luluc	kg CO ₂ -eq.	7.86E-04	3.33E-08	3.75E-07	1.24E-05	2.13E-05	-1.69E-04
ODP	kg CFC-11-eq.	1.32E-11	3.64E-16	3.49E-15	1.44E-12	4.67E-14	1.35E-13
AP	mol H ⁺ -eq.	0.0741	2.18E-05	8.98E-05	0.00163	1.12E-04	-0.00818
EP-freshwater	kg P-eq.	7.10E-06	8.06E-10	5.73E-09	1.77E-07	2.72E-08	-1.49E-06
EP-marine	kg N-eq.	0.0163	1.05E-05	4.06E-05	3.48E-04	2.73E-05	-5.94E-04
EP-terrestrial	mol N-eq.	0.183	1.15E-04	4.47E-04	0.00380	2.99E-04	6.40E-04
POCP	kg NMVOC-eq.	0.0550	2.95E-05	8.67E-05	9.66E-04	8.63E-05	-0.00581
ADP-minerals & metals ⁷⁷	kg Sb-eq.	7.11E-04	5.60E-11	6.27E-10	2.71E-08	2.47E-09	-4.21E-07
ADP-fossil ⁷⁷	MJ	214	0.0609	0.462	3.49	0.503	-75.7
WDP ^{74,7}	m³ world-eq. deprived	1.45	3.41E-05	2.20E-04	0.126	0.00241	-1.60

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁷⁸	kg CO ₂ -eq.	21.1	0.00454	0.0345	0.321	0.0344	-8.04
PM	Disease incidence	9.88E-07	2.47E-10	5.89E-10	1.58E-08	1.20E-09	-9.10E-08
IRP ⁷⁹	kBq U-235-eq.	0.135	1.16E-07	1.17E-05	6.11E-05	8.95E-04	0.197
ETP-fw ⁷⁷	CTUe	36.7	0.0153	0.185	0.667	0.149	-2.42
HTP-c ⁷⁷	CTUh	1.98E-09	2.57E-13	3.13E-12	2.99E-11	1.77E-11	-3.50E-09
HTP-nc ⁷⁷	CTUh	4.40E-07	1.60E-11	1.24E-10	9.96E-10	1.78E-09	-1.15E-07
SQP ⁷⁷	dimensionless	5.96	1.40E-04	0.00130	0.447	0.0391	1.02

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	10.6	1.99E-04	0.00226	0.752	0.0411	5.13
PERM	MJ	0	0	0	0	0	0
PERT	MJ	10.6	1.99E-04	0.00226	0.752	0.0411	5.13
PENRE	MJ	214	0.0609	0.462	3.49	0.503	-75.7
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	214	0.0609	0.462	3.49	0.503	-75.7
SM	kg	1.39	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0286	5.13E-07	4.40E-06	0.00178	7.09E-05	-0.0363

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	5.85E-09	6.61E-14	7.49E-13	1.17E-10	7.60E-11	-5.72E-10
NHWD	kg	0.176	8.70E-07	1.12E-05	0.00109	0.736	1.42
RWD	kg	0.00111	8.92E-10	9.02E-08	4.76E-07	6.07E-06	1.54E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	2.98	0	0	6.61	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	6.61
Steel collected with mixed construction waste	kg	0.735
Recovery for re-use	kg	0
Recovery for recycling	kg	6.61
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.735
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	21.0	0.00452	0.0344	0.319	0.0337	-7.94
ODP	kg CFC11-eq.	1.56E-11	4.29E-16	4.11E-15	1.69E-12	5.50E-14	1.56E-13
AP	kg SO ₂ -eq.	0.0597	1.52E-05	6.32E-05	0.00133	8.99E-05	-0.00751
EP	kg PO ₄ ³⁻ -eq.	0.00588	3.53E-06	1.37E-05	1.20E-04	9.59E-06	-1.99E-04
POCP	kg ethene-eq.	0.00956	1.49E-06	-1.68E-05	7.12E-05	8.39E-06	-0.00358
ADPE	kg Sb-eq.	7.11E-04	5.60E-11	6.28E-10	2.71E-08	2.51E-09	-4.07E-07
ADPF	MJ	209	0.0609	0.461	3.48	0.486	-77.7

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.57E-10	6.96E-15	9.58E-14	1.16E-11	1.55E-12	1.47E-10
HTnc - GS	CTUh	1.52E-10	3.33E-15	2.16E-14	3.69E-13	3.60E-14	4.10E-12
LU - GS	kg C deficit-eq.	2.95	1.15E-05	8.93E-05	0.0363	0.00341	0.427
RDW - GS	m³-eq.	0.0175	3.30E-07	2.80E-06	0.00118	3.56E-05	-0.0198
IR - GS	kBq U235-eq.	0.135	1.16E-07	1.17E-05	6.11E-05	8.95E-04	0.197
PM - GS	kg PM2.5-eq.	0.00510	1.09E-06	2.96E-06	8.71E-05	6.33E-06	-5.89E-04

77. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

78. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

79. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.95mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 7.74 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	22.7	0.00483	0.0367	0.341	0.0375	-8.81
GWP-fossil	kg CO ₂ -eq.	22.7	0.00483	0.0367	0.341	0.0374	-8.82
GWP-biogenic	kg CO ₂ -eq.	-0.00421	4.78E-07	1.22E-05	3.80E-04	7.38E-05	0.00517
GWP-luluc	kg CO ₂ -eq.	8.01E-04	3.51E-08	3.95E-07	1.31E-05	2.25E-05	-1.79E-04
ODP	kg CFC-11-eq.	1.35E-11	3.84E-16	3.68E-15	1.51E-12	4.92E-14	1.42E-13
AP	mol H ⁺ -eq.	0.0775	2.30E-05	9.46E-05	0.00171	1.18E-04	-0.00866
EP-freshwater	kg P-eq.	7.25E-06	8.49E-10	6.03E-09	1.86E-07	2.87E-08	-1.57E-06
EP-marine	kg N-eq.	0.0170	1.11E-05	4.28E-05	3.67E-04	2.87E-05	-6.33E-04
EP-terrestrial	mol N-eq.	0.192	1.22E-04	4.70E-04	0.00400	3.15E-04	6.06E-04
POCP	kg NMVOC-eq.	0.0576	3.11E-05	9.14E-05	0.00102	9.09E-05	-0.00614
ADP-minerals & metals ⁸⁰	kg Sb-eq.	7.11E-04	5.90E-11	6.61E-10	2.86E-08	2.61E-09	-4.45E-07
ADP-fossil ⁸⁰	MJ	224	0.0642	0.486	3.68	0.530	-79.9
WDP ⁸⁰	m³ world-eq. deprived	1.50	3.59E-05	2.32E-04	0.133	0.00254	-1.69

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁸¹	kg CO ₂ -eq.	22.1	0.00478	0.0363	0.338	0.0363	-8.49
PM	Disease incidence	1.03E-06	2.60E-10	6.20E-10	1.67E-08	1.26E-09	-9.64E-08
IRP ⁸²	kBq U-235-eq.	0.136	1.22E-07	1.24E-05	6.44E-05	9.43E-04	0.208
ETP-fw ⁸⁰	CTUe	379	0.0161	0.195	0.703	0.157	-2.56
HTP-c ⁸⁰	CTUh	2.06E-09	2.70E-13	3.29E-12	3.15E-11	1.86E-11	-3.70E-09
HTP-nc ⁸⁰	CTUh	4.61E-07	1.69E-11	1.31E-10	1.05E-09	1.88E-09	-1.21E-07
SQP ⁸⁰	dimensionless	6.21	1.47E-04	0.00137	0.471	0.0412	1.08

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	10.8	2.10E-04	0.00238	0.792	0.0433	5.41
PERM	MJ	0	0	0	0	0	0
PERT	MJ	10.8	2.10E-04	0.00238	0.792	0.0433	5.41
PENRE	MJ	224	0.0642	0.486	3.68	0.530	-79.9
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	224	0.0642	0.486	3.68	0.530	-79.9
SM	kg	1.47	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0294	5.40E-07	4.63E-06	0.00187	7.47E-05	-0.0383

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	6.02E-09	6.96E-14	7.89E-13	1.23E-10	8.01E-11	-6.05E-10
NHWD	kg	0.179	9.16E-07	1.18E-05	0.00115	0.775	1.48
RWD	kg	0.00112	9.40E-10	9.50E-08	5.02E-07	6.39E-06	1.61E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.15	0	0	6.97	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	6.97
Steel collected with mixed construction waste	kg	0.774
Recovery for re-use	kg	0
Recovery for recycling	kg	6.97
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.774
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 0.95mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	22.0	0.00476	0.0362	0.336	0.0355	-8.38
ODP	kg CFC11-eq.	1.60E-11	4.52E-16	4.33E-15	1.78E-12	5.79E-14	1.64E-13
AP	kg SO ₂ -eq.	0.0624	1.60E-05	6.66E-05	0.00140	9.47E-05	-0.00795
EP	kg PO ₄ ³⁻ -eq.	0.00615	3.72E-06	1.45E-05	1.26E-04	1.01E-05	-2.13E-04
POCP	kg ethene-eq.	0.0100	1.57E-06	-1.77E-05	7.50E-05	8.84E-06	-0.00378
ADPE	kg Sb-eq.	7.11E-04	5.90E-11	6.61E-10	2.86E-08	2.65E-09	-4.30E-07
ADPF	MJ	219	0.0641	0.485	3.66	0.512	-82.0

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.64E-10	7.33E-15	1.01E-13	1.22E-11	1.63E-12	1.55E-10
HTnc - GS	CTUh	1.56E-10	3.50E-15	2.27E-14	3.89E-13	3.79E-14	4.32E-12
LU - GS	kg C deficit-eq.	3.06	1.22E-05	9.41E-05	0.0383	0.00359	0.451
RDW - GS	m³-eq.	0.0180	3.48E-07	2.95E-06	0.00124	3.75E-05	-0.0209
IR - GS	kBq U235-eq.	0.136	1.22E-07	1.23E-05	6.44E-05	9.43E-04	0.207
PM - GS	kg PM2.5-eq.	0.00533	1.15E-06	3.12E-06	9.18E-05	6.67E-06	-6.24E-04

80. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

81. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

82. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.00mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 8.13 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	23.7	0.00508	0.0386	0.358	0.0394	-9.27
GWP-fossil	kg CO ₂ -eq.	23.7	0.00508	0.0385	0.358	0.0393	-9.28
GWP-biogenic	kg CO ₂ -eq.	-0.00389	5.03E-07	1.28E-05	4.00E-04	7.75E-05	0.00544
GWP-luluc	kg CO ₂ -eq.	8.16E-04	3.69E-08	4.15E-07	1.37E-05	2.36E-05	-1.89E-04
ODP	kg CFC-11-eq.	1.39E-11	4.03E-16	3.87E-15	1.59E-12	5.17E-14	1.48E-13
AP	mol H ⁺ -eq.	0.0808	2.41E-05	9.94E-05	0.00180	1.24E-04	-0.00914
EP-freshwater	kg P-eq.	7.40E-06	8.92E-10	6.34E-09	1.96E-07	3.01E-08	-1.65E-06
EP-marine	kg N-eq.	0.0178	1.17E-05	4.49E-05	3.86E-04	3.02E-05	-6.72E-04
EP-terrestrial	mol N-eq.	0.200	1.28E-04	4.94E-04	0.00421	3.31E-04	5.72E-04
POCP	kg NMVOC-eq.	0.0601	3.27E-05	9.60E-05	0.00107	9.56E-05	-0.00648
ADP-minerals & metals ⁸³	kg Sb-eq.	7.11E-04	6.20E-11	6.94E-10	3.00E-08	2.74E-09	-4.68E-07
ADP-fossil ⁸³	MJ	234	0.0674	0.511	3.87	0.557	-84.1
WDP ⁸³	m³ world-eq. deprived	1.54	3.77E-05	2.44E-04	0.140	0.00266	-1.78

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁸⁴	kg CO ₂ -eq.	23.1	0.00502	0.0382	0.355	0.0381	-8.93
PM	Disease incidence	1.08E-06	2.73E-10	6.52E-10	1.75E-08	1.33E-09	-1.02E-07
IRP ⁸⁵	kBq U-235-eq.	0.138	1.28E-07	1.30E-05	6.76E-05	9.91E-04	0.218
ETP-fw ⁸³	CTUe	39.1	0.0169	0.205	0.739	0.165	-2.70
HTP-c ⁸³	CTUh	2.14E-09	2.84E-13	3.46E-12	3.31E-11	1.96E-11	-3.89E-09
HTP-nc ⁸³	CTUh	4.82E-07	1.77E-11	1.37E-10	1.10E-09	1.97E-09	-1.28E-07
SQP ⁸³	dimensionless	6.45	1.55E-04	0.00144	0.495	0.0433	1.14

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	11.1	2.20E-04	0.00250	0.832	0.0455	5.69
PERM	MJ	0	0	0	0	0	0
PERT	MJ	11.1	2.20E-04	0.00250	0.832	0.0455	5.69
PENRE	MJ	234	0.0674	0.511	3.87	0.557	-84.1
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	234	0.0674	0.511	3.87	0.557	-84.1
SM	kg	1.54	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0302	5.67E-07	4.87E-06	0.00197	7.85E-05	-0.0403

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	6.19E-09	7.31E-14	8.29E-13	1.29E-10	8.41E-11	-6.38E-10
NHWD	kg	0.183	9.63E-07	1.24E-05	0.00121	0.814	1.55
RWD	kg	0.00113	9.88E-10	9.98E-08	5.27E-07	6.71E-06	1.69E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.31	0	0	7.32	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	7.32
Steel collected with mixed construction waste	kg	0.813
Recovery for re-use	kg	0
Recovery for recycling	kg	7.32
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.813
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.00mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	23.0	0.00500	0.0380	0.353	0.0373	-8.82
ODP	kg CFC11-eq.	1.64E-11	4.75E-16	4.55E-15	1.87E-12	6.08E-14	1.71E-13
AP	kg SO ₂ -eq.	0.0651	1.68E-05	7.00E-05	0.00147	9.95E-05	-0.00838
EP	kg PO ₄ ³⁻ -eq.	0.00642	3.91E-06	1.52E-05	1.33E-04	1.06E-05	-2.26E-04
POCP	kg ethene-eq.	0.0105	1.65E-06	-1.86E-05	7.88E-05	9.28E-06	-0.00398
ADPE	kg Sb-eq.	7.11E-04	6.20E-11	6.95E-10	3.00E-08	2.78E-09	-4.52E-07
ADPF	MJ	229	0.0674	0.510	3.85	0.538	-86.3

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.71E-10	7.70E-15	1.06E-13	1.28E-11	1.71E-12	1.63E-10
HTnc - GS	CTUh	1.60E-10	3.68E-15	2.39E-14	4.08E-13	3.99E-14	4.55E-12
LU - GS	kg C deficit-eq.	3.17	1.28E-05	9.88E-05	0.0402	0.00377	0.474
RDW - GS	m³-eq.	0.0185	3.65E-07	3.10E-06	0.00131	3.94E-05	-0.0220
IR - GS	kBq U235-eq.	0.138	1.28E-07	1.30E-05	6.76E-05	9.91E-04	0.218
PM - GS	kg PM2.5-eq.	0.00556	1.20E-06	3.28E-06	9.65E-05	7.01E-06	-6.58E-04

83. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

84. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

85. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.10mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 8.92 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	25.8	0.00557	0.0423	0.393	0.0432	-10.2
GWP-fossil	kg CO ₂ -eq.	25.8	0.00557	0.0423	0.392	0.0431	-10.2
GWP-biogenic	kg CO ₂ -eq.	-0.00327	5.51E-07	1.41E-05	4.38E-04	8.50E-05	0.00596
GWP-luluc	kg CO ₂ -eq.	8.46E-04	4.04E-08	4.55E-07	1.51E-05	2.59E-05	-2.08E-04
ODP	kg CFC-11-eq.	1.46E-11	4.42E-16	4.24E-15	1.75E-12	5.66E-14	1.61E-13
AP	mol H ⁺ -eq.	0.0876	2.65E-05	1.09E-04	0.00197	1.36E-04	-0.0101
EP-freshwater	kg P-eq.	7.69E-06	9.78E-10	6.95E-09	2.14E-07	3.30E-08	-1.82E-06
EP-marine	kg N-eq.	0.0193	1.28E-05	4.93E-05	4.23E-04	3.31E-05	-7.51E-04
EP-terrestrial	mol N-eq.	0.217	1.40E-04	5.42E-04	0.00461	3.63E-04	5.04E-04
POCP	kg NMVOC-eq.	0.0653	3.58E-05	1.05E-04	0.00117	1.05E-04	-0.00716
ADP-minerals & metals ⁸⁶	kg Sb-eq.	7.11E-04	6.80E-11	7.61E-10	3.29E-08	3.00E-09	-5.15E-07
ADP-fossil ⁸⁶	MJ	253	0.0739	0.560	4.24	0.611	-92.5
WDP ⁸⁶	m³ world-eq. deprived	1.63	4.13E-05	2.67E-04	0.153	0.00292	-1.96

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁸⁷	kg CO ₂ -eq.	25.1	0.00551	0.0419	0.389	0.0418	-9.82
PM	Disease incidence	1.17E-06	2.99E-10	7.14E-10	1.92E-08	1.45E-09	-1.13E-07
IRP ⁸⁸	kBq U-235-eq.	0.141	1.40E-07	1.42E-05	7.42E-05	0.00109	0.240
ETP-fw ⁸⁶	CTUe	41.6	0.0186	0.225	0.810	0.181	-2.99
HTP-c ⁸⁶	CTUh	2.29E-09	3.12E-13	3.80E-12	3.63E-11	2.15E-11	-4.28E-09
HTP-nc ⁸⁶	CTUh	5.23E-07	1.95E-11	1.51E-10	1.21E-09	2.16E-09	-1.40E-07
SQP ⁸⁶	dimensionless	6.94	1.70E-04	0.00158	0.542	0.0475	1.25

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	11.6	2.41E-04	0.00274	0.912	0.0499	6.26
PERM	MJ	0	0	0	0	0	0
PERT	MJ	11.6	2.41E-04	0.00274	0.912	0.0499	6.26
PENRE	MJ	253	0.0739	0.560	4.24	0.611	-92.5
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	253	0.0739	0.560	4.24	0.611	-92.5
SM	kg	1.69	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0318	6.22E-07	5.34E-06	0.00216	8.61E-05	-0.0444

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	6.54E-09	8.02E-14	9.09E-13	1.42E-10	9.23E-11	-7.04E-10
NHWD	kg	0.190	1.06E-06	1.36E-05	0.00132	0.893	1.69
RWD	kg	0.00115	1.08E-09	1.09E-07	5.78E-07	7.36E-06	1.84E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.64	0	0	8.02	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	8.02
Steel collected with mixed construction waste	kg	0.892
Recovery for re-use	kg	0
Recovery for recycling	kg	8.02
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.892
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.10mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	25.0	0.00549	0.0417	0.387	0.0409	-9.70
ODP	kg CFC11-eq.	1.72E-11	5.21E-16	4.99E-15	2.05E-12	6.67E-14	1.86E-13
AP	kg SO ₂ -eq.	0.0705	1.84E-05	7.67E-05	0.00161	1.09E-04	-0.00925
EP	kg PO ₄ ³⁻ -eq.	0.00696	4.28E-06	1.67E-05	1.45E-04	1.16E-05	-2.52E-04
POCP	kg ethene-eq.	0.0114	1.81E-06	-2.04E-05	8.64E-05	1.02E-05	-0.00438
ADPE	kg Sb-eq.	7.11E-04	6.80E-11	7.62E-10	3.29E-08	3.05E-09	-4.98E-07
ADPF	MJ	248	0.0739	0.559	4.22	0.590	-95.0

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.84E-10	8.44E-15	1.16E-13	1.40E-11	1.88E-12	1.80E-10
HTnc - GS	CTUh	1.69E-10	4.04E-15	2.62E-14	4.48E-13	4.37E-14	5.00E-12
LU - GS	kg C deficit-eq.	3.39	1.40E-05	1.08E-04	0.0441	0.00414	0.522
RDW - GS	m³-eq.	0.0194	4.01E-07	3.39E-06	0.00143	4.33E-05	-0.0242
IR - GS	kBq U235-eq.	0.141	1.40E-07	1.42E-05	7.42E-05	0.00109	0.240
PM - GS	kg PM2.5-eq.	0.00603	1.32E-06	3.59E-06	1.06E-04	7.68E-06	-7.27E-04

86. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

87. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

88. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.15mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 9.31 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	26.8	0.00581	0.0441	0.410	0.0451	-10.7
GWP-fossil	kg CO ₂ -eq.	26.8	0.00581	0.0441	0.410	0.0450	-10.7
GWP-biogenic	kg CO ₂ -eq.	-0.00296	5.75E-07	1.47E-05	4.58E-04	8.88E-05	0.00623
GWP-luluc	kg CO ₂ -eq.	8.61E-04	4.22E-08	4.75E-07	1.57E-05	2.70E-05	-2.18E-04
ODP	kg CFC-11-eq.	1.49E-11	4.62E-16	4.43E-15	1.82E-12	5.91E-14	1.68E-13
AP	mol H ⁺ -eq.	0.0909	2.76E-05	1.14E-04	0.00206	1.42E-04	-0.0106
EP-freshwater	kg P-eq.	7.84E-06	1.02E-09	7.26E-09	2.24E-07	3.45E-08	-1.90E-06
EP-marine	kg N-eq.	0.0200	1.33E-05	5.14E-05	4.41E-04	3.46E-05	-7.90E-04
EP-terrestrial	mol N-eq.	0.226	1.46E-04	5.66E-04	0.00482	3.79E-04	4.70E-04
POCP	kg NMVOC-eq.	0.0678	3.74E-05	1.10E-04	0.00122	1.09E-04	-0.00750
ADP-minerals & metals ⁸⁹	kg Sb-eq.	7.11E-04	7.10E-11	7.95E-10	3.44E-08	3.13E-09	-5.38E-07
ADP-fossil ⁸⁹	MJ	263	0.0772	0.585	4.43	0.638	-96.7
WDP ⁸⁹	m³ world-eq. deprived	1.68	4.32E-05	2.79E-04	0.160	0.00305	-2.05

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁹⁰	kg CO ₂ -eq.	26.1	0.00575	0.0437	0.406	0.0436	-10.3
PM	Disease incidence	1.21E-06	3.13E-10	7.46E-10	2.01E-08	1.52E-09	-1.18E-07
IRP ⁹¹	kBq U-235-eq.	0.142	1.46E-07	1.49E-05	7.74E-05	0.00113	0.251
ETP-fw ⁸⁹	CTUe	42.9	0.0194	0.235	0.845	0.189	-3.13
HTP-c ⁸⁹	CTUh	2.37E-09	3.25E-13	3.96E-12	3.79E-11	2.24E-11	-4.48E-09
HTP-nc ⁸⁹	CTUh	5.44E-07	2.03E-11	1.57E-10	1.26E-09	2.26E-09	-1.47E-07
SQP ⁸⁹	dimensionless	7.19	1.77E-04	0.00165	0.566	0.0496	1.30

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	11.9	2.52E-04	0.00286	0.953	0.0521	6.54
PERM	MJ	0	0	0	0	0	0
PERT	MJ	11.9	2.52E-04	0.00286	0.953	0.0521	6.54
PENRE	MJ	263	0.0772	0.585	4.43	0.638	-96.7
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	263	0.0772	0.585	4.43	0.638	-96.7
SM	kg	1.77	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0326	6.50E-07	5.57E-06	0.00225	8.99E-05	-0.0464

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	6.72E-09	8.37E-14	9.49E-13	1.48E-10	9.63E-11	-7.37E-10
NHWD	kg	0.194	1.10E-06	1.42E-05	0.00138	0.932	1.75
RWD	kg	0.00116	1.13E-09	1.14E-07	6.04E-07	7.69E-06	1.91E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.80	0	0	8.38	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	8.38
Steel collected with mixed construction waste	kg	0.931
Recovery for re-use	kg	0
Recovery for recycling	kg	8.38
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.931
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.15mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	26.0	0.00573	0.0435	0.404	0.0427	-10.1
ODP	kg CFC11-eq.	1.76E-11	5.44E-16	5.21E-15	2.15E-12	6.96E-14	1.94E-13
AP	kg SO ₂ -eq.	0.0733	1.92E-05	8.01E-05	0.00168	1.14E-04	-0.00968
EP	kg PO ₄ ³⁻ -eq.	0.00723	4.47E-06	1.74E-05	1.52E-04	1.21E-05	-2.65E-04
POCP	kg ethene-eq.	0.0119	1.89E-06	-2.13E-05	9.02E-05	1.06E-05	-0.00458
ADPE	kg Sb-eq.	7.11E-04	7.10E-11	7.95E-10	3.44E-08	3.18E-09	-5.20E-07
ADPF	MJ	258	0.0771	0.584	4.41	0.616	-99.3

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.91E-10	8.81E-15	1.21E-13	1.47E-11	1.96E-12	1.88E-10
HTnc - GS	CTUh	1.73E-10	4.21E-15	2.73E-14	4.67E-13	4.56E-14	5.22E-12
LU - GS	kg C deficit-eq.	3.50	1.46E-05	1.13E-04	0.0460	0.00432	0.545
RDW - GS	m³-eq.	0.0199	4.18E-07	3.54E-06	0.00150	4.52E-05	-0.0253
IR - GS	kBq U235-eq.	0.142	1.46E-07	1.49E-05	7.74E-05	0.00113	0.251
PM - GS	kg PM2.5-eq.	0.00626	1.38E-06	3.75E-06	1.10E-04	8.02E-06	-7.62E-04

89. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

90. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

91. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.20mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 9.70 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	27.8	0.00606	0.0460	0.427	0.0470	-11.1
GWP-fossil	kg CO ₂ -eq.	27.8	0.00606	0.0460	0.427	0.0469	-11.1
GWP-biogenic	kg CO ₂ -eq.	-0.00264	6.00E-07	1.53E-05	4.77E-04	9.25E-05	0.00649
GWP-luluc	kg CO ₂ -eq.	8.76E-04	4.40E-08	4.95E-07	1.64E-05	2.82E-05	-2.27E-04
ODP	kg CFC-11-eq.	1.53E-11	4.81E-16	4.61E-15	1.90E-12	6.16E-14	1.74E-13
AP	mol H ⁺ -eq.	0.0943	2.88E-05	1.19E-04	0.00215	1.48E-04	-0.0110
EP-freshwater	kg P-eq.	7.99E-06	1.06E-09	7.56E-09	2.33E-07	3.59E-08	-1.99E-06
EP-marine	kg N-eq.	0.0208	1.39E-05	5.36E-05	4.60E-04	3.60E-05	-8.29E-04
EP-terrestrial	mol N-eq.	0.234	1.52E-04	5.90E-04	0.00502	3.95E-04	4.36E-04
POCP	kg NMVOC-eq.	0.0704	3.90E-05	1.15E-04	0.00128	1.14E-04	-0.00784
ADP-minerals & metals ⁹²	kg Sb-eq.	7.11E-04	7.40E-11	8.28E-10	3.58E-08	3.27E-09	-5.62E-07
ADP-fossil ⁹²	MJ	273	0.0804	0.610	4.61	0.665	-101
WDP ⁹²	m³ world-eq. deprived	1.72	4.50E-05	2.91E-04	0.167	0.00318	-2.14

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁹³	kg CO ₂ -eq.	27.1	0.00599	0.0455	0.423	0.0455	-10.7
PM	Disease incidence	1.26E-06	3.26E-10	7.77E-10	2.09E-08	1.58E-09	-1.24E-07
IRP ⁹⁴	kBq U-235-eq.	0.144	1.53E-07	1.55E-05	8.07E-05	0.00118	0.262
ETP-fw ⁹²	CTUe	44.1	0.0202	0.245	0.881	0.197	-3.27
HTP-c ⁹²	CTUh	2.45E-09	3.39E-13	4.13E-12	3.95E-11	2.34E-11	-4.67E-09
HTP-nc ⁹²	CTUh	5.65E-07	2.12E-11	1.64E-10	1.31E-09	2.35E-09	-1.53E-07
SQP ⁹²	dimensionless	7.43	1.85E-04	0.00172	0.590	0.0516	1.36

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	12.1	2.63E-04	0.00298	0.993	0.0543	6.82
PERM	MJ	0	0	0	0	0	0
PERT	MJ	12.1	2.63E-04	0.00298	0.993	0.0543	6.82
PENRE	MJ	273	0.0804	0.610	4.61	0.665	-101
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	273	0.0804	0.610	4.61	0.665	-101
SM	kg	1.84	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0335	6.77E-07	5.81E-06	0.00235	9.36E-05	-0.0484

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	6.89E-09	8.72E-14	9.89E-13	1.54E-10	1.00E-10	-7.70E-10
NHWD	kg	0.197	1.15E-06	1.48E-05	0.00144	0.971	1.82
RWD	kg	0.00117	1.18E-09	1.19E-07	6.29E-07	8.01E-06	1.99E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	3.97	0	0	8.73	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	8.73
Steel collected with mixed construction waste	kg	0.970
Recovery for re-use	kg	0
Recovery for recycling	kg	8.73
Recovery for energy recovery	kg	0
Disposal to landfill	kg	0.970
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.20mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	27.0	0.00597	0.0454	0.421	0.0445	-10.6
ODP	kg CFC11-eq.	1.80E-11	5.66E-16	5.43E-15	2.24E-12	7.26E-14	2.01E-13
AP	kg SO ₂ -eq.	0.0760	2.00E-05	8.35E-05	0.00176	1.19E-04	-0.0101
EP	kg PO ₄ ³⁻ -eq.	0.00750	4.66E-06	1.82E-05	1.58E-04	1.27E-05	-2.78E-04
POCP	kg ethene-eq.	0.0124	1.97E-06	-2.22E-05	9.40E-05	1.11E-05	-0.00478
ADPE	kg Sb-eq.	7.12E-04	7.40E-11	8.29E-10	3.58E-08	3.32E-09	-5.43E-07
ADPF	MJ	268	0.0804	0.608	4.59	0.642	-104

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	3.98E-10	9.19E-15	1.27E-13	1.53E-11	2.04E-12	1.96E-10
HTnc - GS	CTUh	1.77E-10	4.39E-15	2.85E-14	4.87E-13	4.76E-14	5.45E-12
LU - GS	kg C deficit-eq.	3.61	1.52E-05	1.18E-04	0.0480	0.00450	0.569
RDW - GS	m³-eq.	0.0204	4.36E-07	3.69E-06	0.00156	4.71E-05	-0.0264
IR - GS	kBq U235-eq.	0.144	1.53E-07	1.55E-05	8.07E-05	0.00118	0.262
PM - GS	kg PM2.5-eq.	0.00649	1.44E-06	3.91E-06	1.15E-04	8.36E-06	-7.96E-04

92. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

93. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

94. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 12.06 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	34.0	0.00753	0.0572	0.531	0.0584	-13.9
GWP-fossil	kg CO ₂ -eq.	34.0	0.00753	0.0571	0.531	0.0583	-13.9
GWP-biogenic	kg CO ₂ -eq.	-7.69E-04	7.45E-07	1.90E-05	5.93E-04	1.15E-04	0.00807
GWP-luluc	kg CO ₂ -eq.	9.66E-04	5.47E-08	6.15E-07	2.04E-05	3.50E-05	-2.86E-04
ODP	kg CFC-11-eq.	1.74E-11	5.98E-16	5.73E-15	2.36E-12	7.66E-14	2.13E-13
AP	mol H ⁺ -eq.	0.115	3.58E-05	1.47E-04	0.00267	1.84E-04	-0.0139
EP-freshwater	kg P-eq.	8.88E-06	1.32E-09	9.40E-09	2.90E-07	4.47E-08	-2.48E-06
EP-marine	kg N-eq.	0.0252	1.73E-05	6.66E-05	5.72E-04	4.48E-05	-0.00106
EP-terrestrial	mol N-eq.	0.285	1.89E-04	7.33E-04	0.00624	4.91E-04	2.32E-04
POCP	kg NMVOC-eq.	0.0858	4.84E-05	1.42E-04	0.00159	1.42E-04	-0.00987
ADP-minerals & metals ⁹⁵	kg Sb-eq.	712E-04	919E-11	1.03E-09	4.45E-08	4.06E-09	-7.02E-07
ADP-fossil ⁹⁵	MJ	332	0.0999	0.758	5.73	0.826	-126
WDP ⁹⁵	m³ world-eq. deprived	1.99	5.59E-05	3.61E-04	0.207	0.00395	-2.67

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁹⁶	kg CO ₂ -eq.	33.1	0.00745	0.0566	0.526	0.0565	-13.4
PM	Disease incidence	1.53E-06	4.05E-10	9.66E-10	2.60E-08	1.97E-09	-1.56E-07
IRP ⁹⁷	kBq U-235-eq.	0.153	1.90E-07	1.92E-05	1.00E-04	0.00147	0.327
ETP-fw ⁹⁵	CTUe	51.5	0.0251	0.304	1.09	0.245	-4.12
HTP-c ⁹⁵	CTUh	2.92E-09	4.21E-13	5.13E-12	4.91E-11	2.90E-11	-5.83E-09
HTP-nc ⁹⁵	CTUh	6.90E-07	2.63E-11	2.04E-10	1.63E-09	2.92E-09	-1.91E-07
SQP ⁹⁵	dimensionless	8.90	2.29E-04	0.00214	0.733	0.0642	1.70

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	13.7	3.26E-04	0.00370	1.23	0.0674	8.52
PERM	MJ	0	0	0	0	0	0
PERT	MJ	13.7	3.26E-04	0.00370	1.23	0.0674	8.52
PENRE	MJ	332	0.0999	0.758	5.73	0.826	-126
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	332	0.0999	0.758	5.73	0.826	-126
SM	kg	2.30	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0384	8.41E-07	7.22E-06	0.00292	1.16E-04	-0.0604

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	7.94E-09	1.08E-13	1.23E-12	1.92E-10	1.25E-10	-9.67E-10
NHWD	kg	0.219	1.43E-06	1.84E-05	0.00179	1.21	2.22
RWD	kg	0.00122	1.46E-09	1.48E-07	7.82E-07	9.95E-06	2.44E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	4.96	0	0	10.9	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	10.9
Steel collected with mixed construction waste	kg	1.21
Recovery for re-use	kg	0
Recovery for recycling	kg	10.9
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.21
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.50mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	33.0	0.00742	0.0564	0.523	0.0553	-13.2
ODP	kg CFC11-eq.	2.05E-11	7.04E-16	6.75E-15	2.78E-12	9.02E-14	2.46E-13
AP	kg SO ₂ -eq.	0.0922	2.49E-05	1.04E-04	0.00218	1.48E-04	-0.0127
EP	kg PO ₄ ³⁻ -eq.	0.00912	5.79E-06	2.26E-05	1.97E-04	1.57E-05	-3.57E-04
POCP	kg ethene-eq.	0.0151	2.45E-06	-2.76E-05	1.17E-04	1.38E-05	-0.00597
ADPE	kg Sb-eq.	712E-04	919E-11	1.03E-09	4.45E-08	4.12E-09	-6.78E-07
ADPF	MJ	326	0.0999	0.756	5.71	0.797	-129

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	4.39E-10	1.14E-14	1.57E-13	1.90E-11	2.54E-12	2.44E-10
HTnc - GS	CTUh	2.02E-10	5.46E-15	3.54E-14	6.05E-13	5.91E-14	6.80E-12
LU - GS	kg C deficit-eq.	4.27	1.89E-05	1.47E-04	0.0596	0.00560	0.710
RDW - GS	m³-eq.	0.0233	5.42E-07	4.59E-06	0.00194	5.85E-05	-0.0330
IR - GS	kBq U235-eq.	0.153	1.90E-07	1.92E-05	1.00E-04	0.00147	0.327
PM - GS	kg PM2.5-eq.	0.00788	1.79E-06	4.86E-06	1.43E-04	1.04E-05	-0.00100

95. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

96. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

97. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 12.45 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	35.0	0.00778	0.0590	0.548	0.0603	-14.4
GWP-fossil	kg CO ₂ -eq.	35.0	0.00777	0.0590	0.548	0.0602	-14.4
GWP-biogenic	kg CO ₂ -eq.	-4.57E-04	7.70E-07	1.97E-05	6.12E-04	1.19E-04	0.00833
GWP-luluc	kg CO ₂ -eq.	9.81E-04	5.64E-08	6.35E-07	2.10E-05	3.62E-05	-2.95E-04
ODP	kg CFC-11-eq.	1.77E-11	6.17E-16	5.92E-15	2.44E-12	7.91E-14	2.19E-13
AP	mol H ⁺ -eq.	0.118	3.69E-05	1.52E-04	0.00275	1.90E-04	-0.0144
EP-freshwater	kg P-eq.	9.03E-06	1.37E-09	9.70E-09	2.99E-07	4.61E-08	-2.57E-06
EP-marine	kg N-eq.	0.0260	1.79E-05	6.88E-05	5.90E-04	4.62E-05	-0.00110
EP-terrestrial	mol N-eq.	0.293	1.96E-04	7.57E-04	0.00644	5.07E-04	1.98E-04
POCP	kg NMVOC-eq.	0.0884	5.00E-05	1.47E-04	0.00164	1.46E-04	-0.0102
ADP-minerals & metals ⁹⁸	kg Sb-eq.	712E-04	9.49E-11	1.06E-09	4.59E-08	4.19E-09	-7.25E-07
ADP-fossil ⁹⁸	MJ	341	0.103	0.782	5.92	0.853	-130
WDP ⁹⁸	m³ world-eq. deprived	2.03	5.77E-05	3.73E-04	0.214	0.00408	-2.76

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ⁹⁹	kg CO ₂ -eq.	34.2	0.00769	0.0584	0.543	0.0584	-13.8
PM	Disease incidence	1.57E-06	4.18E-10	9.98E-10	2.68E-08	2.03E-09	-1.62E-07
IRP ¹⁰⁰	kBq U-235-eq.	0.155	1.96E-07	1.99E-05	1.04E-04	0.00152	0.338
ETP-fw ⁹⁸	CTUe	52.7	0.0259	0.314	1.13	0.253	-4.26
HTP-c ⁹⁸	CTUh	3.00E-09	4.35E-13	5.30E-12	5.07E-11	3.00E-11	-6.03E-09
HTP-nc ⁹⁸	CTUh	710E-07	2.72E-11	2.10E-10	1.69E-09	3.02E-09	-1.98E-07
SQP ⁹⁸	dimensionless	9.15	2.37E-04	0.00221	0.757	0.0663	1.75

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	13.9	3.37E-04	0.00382	1.27	0.0696	8.80
PERM	MJ	0	0	0	0	0	0
PERT	MJ	13.9	3.37E-04	0.00382	1.27	0.0696	8.80
PENRE	MJ	341	0.103	0.782	5.92	0.853	-130
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	341	0.103	0.782	5.92	0.853	-130
SM	kg	2.37	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0392	8.69E-07	7.45E-06	0.00301	1.20E-04	-0.0625

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	8.11E-09	1.12E-13	1.27E-12	1.98E-10	1.29E-10	-1.00E-09
NHWD	kg	0.223	1.47E-06	1.90E-05	0.00185	1.25	2.29
RWD	kg	0.00123	1.51E-09	1.53E-07	8.07E-07	1.03E-05	2.51E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	5.12	0	0	11.2	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	11.2
Steel collected with mixed construction waste	kg	1.24
Recovery for re-use	kg	0
Recovery for recycling	kg	11.2
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.24
Assumptions for scenario	-	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.55mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	34.0	0.00766	0.0582	0.540	0.0571	-13.7
ODP	kg CFC11-eq.	2.09E-11	7.27E-16	6.97E-15	2.87E-12	9.31E-14	2.53E-13
AP	kg SO ₂ -eq.	0.0949	2.57E-05	1.07E-04	0.00225	1.52E-04	-0.0132
EP	kg PO ₄ ³⁻ -eq.	0.00939	5.98E-06	2.33E-05	2.03E-04	1.62E-05	-3.70E-04
POCP	kg ethene-eq.	0.0156	2.53E-06	-2.85E-05	1.21E-04	1.42E-05	-0.00617
ADPE	kg Sb-eq.	712E-04	9.49E-11	1.06E-09	4.60E-08	4.26E-09	-7.01E-07
ADPF	MJ	335	0.103	0.781	5.89	0.823	-134

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	4.46E-10	1.18E-14	1.62E-13	1.96E-11	2.62E-12	2.53E-10
HTnc - GS	CTUh	2.06E-10	5.64E-15	3.66E-14	6.25E-13	6.10E-14	7.03E-12
LU - GS	kg C deficit-eq.	4.39	1.96E-05	1.51E-04	0.0615	0.00578	0.734
RDW - GS	m³-eq.	0.0238	5.59E-07	4.74E-06	0.00200	6.04E-05	-0.0341
IR - GS	kBq U235-eq.	0.155	1.96E-07	1.99E-05	1.04E-04	0.00152	0.338
PM - GS	kg PM2.5-eq.	0.00811	1.84E-06	5.02E-06	1.48E-04	1.07E-05	-0.00104

98. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

99. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

100. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.60mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 12.84 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	36.0	0.00802	0.0609	0.566	0.0622	-14.8
GWP-fossil	kg CO ₂ -eq.	36.0	0.00802	0.0609	0.565	0.0621	-14.8
GWP-biogenic	kg CO ₂ -eq.	-1.44E-04	7.94E-07	2.03E-05	6.31E-04	1.22E-04	0.00859
GWP-luluc	kg CO ₂ -eq.	9.95E-04	5.82E-08	6.55E-07	2.17E-05	3.73E-05	-3.05E-04
ODP	kg CFC-11-eq.	1.81E-11	6.37E-16	6.11E-15	2.51E-12	8.16E-14	2.26E-13
AP	mol H ⁺ -eq.	0.121	3.81E-05	1.57E-04	0.00284	1.96E-04	-0.0149
EP-freshwater	kg P-eq.	9.18E-06	1.41E-09	1.00E-08	3.09E-07	4.76E-08	-2.65E-06
EP-marine	kg N-eq.	0.0267	1.84E-05	7.10E-05	6.09E-04	4.77E-05	-0.00114
EP-terrestrial	mol N-eq.	0.302	2.02E-04	7.81E-04	0.00665	5.23E-04	1.64E-04
POCP	kg NMVOC-eq.	0.0909	5.16E-05	1.52E-04	0.00169	1.51E-04	-0.0105
ADP-minerals & metals ¹⁰¹	kg Sb-eq.	7.12E-04	9.79E-11	1.10E-09	4.74E-08	4.32E-09	-7.48E-07
ADP-fossil ¹⁰¹	MJ	351	0.106	0.807	6.11	0.880	-134
WDP ¹⁰¹	m³ world-eq. deprived	2.08	5.95E-05	3.85E-04	0.221	0.00421	-2.85

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹⁰²	kg CO ₂ -eq.	35.2	0.00793	0.0603	0.560	0.0602	-14.3
PM	Disease incidence	1.62E-06	4.31E-10	1.03E-09	2.77E-08	2.09E-09	-1.67E-07
IRP ¹⁰³	kBq U-235-eq.	0.156	2.02E-07	2.05E-05	1.07E-04	0.00156	0.349
ETP-fw ¹⁰¹	CTUe	54.0	0.0267	0.324	1.17	0.261	-4.40
HTP-c ¹⁰¹	CTUh	3.08E-09	4.49E-13	5.47E-12	5.23E-11	3.09E-11	-6.22E-09
HTP-nc ¹⁰¹	CTUh	7.31E-07	2.80E-11	2.17E-10	1.74E-09	3.12E-09	-2.04E-07
SQP ¹⁰¹	dimensionless	9.39	2.44E-04	0.00228	0.781	0.0684	1.81

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	14.2	3.48E-04	0.00394	1.31	0.0718	9.09
PERM	MJ	0	0	0	0	0	0
PERT	MJ	14.2	3.48E-04	0.00394	1.31	0.0718	9.09
PENRE	MJ	351	0.106	0.807	6.11	0.880	-134
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	351	0.106	0.807	6.11	0.880	-134
SM	kg	2.45	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0400	8.96E-07	7.69E-06	0.00311	1.24E-04	-0.0645

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	8.29E-09	1.15E-13	1.31E-12	2.04E-10	1.33E-10	-1.03E-09
NHWD	kg	0.227	1.52E-06	1.96E-05	0.00191	1.29	2.36
RWD	kg	0.00124	1.56E-09	1.58E-07	8.33E-07	1.06E-05	2.59E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	5.29	0	0	11.6	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	11.6
Steel collected with mixed construction waste	kg	1.28
Recovery for re-use	kg	0
Recovery for recycling	kg	11.6
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.28
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.60mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	34.9	0.00790	0.0600	0.557	0.0589	-14.1
ODP	kg CFC11-eq.	2.13E-11	7.50E-16	7.19E-15	2.96E-12	9.61E-14	2.60E-13
AP	kg SO ₂ -eq.	0.0976	2.65E-05	1.11E-04	0.00232	1.57E-04	-0.0136
EP	kg PO ₄ ³⁻ -eq.	0.00966	6.17E-06	2.40E-05	2.09E-04	1.68E-05	-3.83E-04
POCP	kg ethene-eq.	0.0161	2.61E-06	-2.93E-05	1.24E-04	1.47E-05	-0.00637
ADPE	kg Sb-eq.	7.12E-04	9.79E-11	1.10E-09	4.74E-08	4.39E-09	-7.24E-07
ADPF	MJ	345	0.106	0.805	6.08	0.849	-138

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	4.53E-10	1.22E-14	1.68E-13	2.02E-11	2.70E-12	2.61E-10
HTnc - GS	CTUh	2.10E-10	5.81E-15	3.77E-14	6.45E-13	6.30E-14	7.25E-12
LU - GS	kg C deficit-eq.	4.50	2.02E-05	1.56E-04	0.0635	0.00596	0.757
RDW - GS	m³-eq.	0.0243	5.77E-07	4.89E-06	0.00206	6.23E-05	-0.0352
IR - GS	kBq U235-eq.	0.156	2.02E-07	2.05E-05	1.07E-04	0.00156	0.349
PM - GS	kg PM2.5-eq.	0.00834	1.90E-06	5.17E-06	1.52E-04	1.11E-05	-0.00107

101. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

102. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

103. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 15.20 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	42.2	0.00949	0.0721	0.669	0.0736	-17.6
GWP-fossil	kg CO ₂ -eq.	42.2	0.00949	0.0720	0.669	0.0734	-17.6
GWP-biogenic	kg CO ₂ -eq.	0.00173	9.39E-07	2.40E-05	7.47E-04	1.45E-04	0.0102
GWP-luluc	kg CO ₂ -eq.	0.00109	6.89E-08	7.75E-07	2.57E-05	4.42E-05	-3.63E-04
ODP	kg CFC-11-eq.	2.01E-11	7.54E-16	7.23E-15	2.97E-12	9.65E-14	2.64E-13
AP	mol H ⁺ -eq.	0.141	4.51E-05	1.86E-04	0.00336	2.32E-04	-0.0177
EP-freshwater	kg P-eq.	1.01E-05	1.67E-09	1.18E-08	3.65E-07	5.63E-08	-3.15E-06
EP-marine	kg N-eq.	0.0312	2.18E-05	8.40E-05	7.20E-04	5.64E-05	-0.00138
EP-terrestrial	mol N-eq.	0.353	2.39E-04	9.24E-04	0.00786	6.19E-04	-4.07E-05
POCP	kg NMVOC-eq.	0.106	6.10E-05	1.79E-04	0.00200	1.79E-04	-0.0126
ADP-minerals & metals ¹⁰⁴	kg Sb-eq.	712E-04	1.16E-10	1.30E-09	5.61E-08	5.12E-09	-8.89E-07
ADP-fossil ¹⁰⁴	MJ	410	0.126	0.955	7.23	1.04	-160
WDP ¹⁰⁴	m³ world-eq. deprived	2.35	7.04E-05	4.56E-04	0.261	0.00498	-3.38

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹⁰⁵	kg CO ₂ -eq.	41.2	0.00939	0.0713	0.663	0.0712	-17.0
PM	Disease incidence	1.89E-06	5.10E-10	1.22E-09	3.28E-08	2.48E-09	-2.00E-07
IRP ¹⁰⁶	kBq U-235-eq.	0.165	2.39E-07	2.43E-05	1.26E-04	0.00185	0.414
ETP-fw ¹⁰⁴	CTUe	61.4	0.0316	0.383	1.38	0.309	-5.26
HTP-c ¹⁰⁴	CTUh	3.55E-09	5.31E-13	6.47E-12	6.19E-11	3.66E-11	-7.39E-09
HTP-nc ¹⁰⁴	CTUh	8.56E-07	3.32E-11	2.57E-10	2.06E-09	3.69E-09	-2.42E-07
SQP ¹⁰⁴	dimensionless	10.9	2.89E-04	0.00269	0.925	0.0809	2.14

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	15.8	4.11E-04	0.00467	1.56	0.0850	10.8
PERM	MJ	0	0	0	0	0	0
PERT	MJ	15.8	4.11E-04	0.00467	1.56	0.0850	10.8
PENRE	MJ	410	0.126	0.955	7.23	1.04	-160
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	410	0.126	0.955	7.23	1.04	-160
SM	kg	2.91	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0449	1.06E-06	9.10E-06	0.00368	1.47E-04	-0.0765

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	9.33E-09	1.37E-13	1.55E-12	2.42E-10	1.57E-10	-1.23E-09
NHWD	kg	0.248	1.80E-06	2.32E-05	0.00226	1.52	2.76
RWD	kg	0.00130	1.85E-09	1.87E-07	9.86E-07	1.25E-05	3.04E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	6.27	0	0	13.7	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	13.7
Steel collected with mixed construction waste	kg	1.52
Recovery for re-use	kg	0
Recovery for recycling	kg	13.7
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.52
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	40.9	0.00935	0.0711	0.659	0.0697	-16.8
ODP	kg CFC11-eq.	2.38E-11	8.87E-16	8.51E-15	3.50E-12	1.14E-13	3.05E-13
AP	kg SO ₂ -eq.	0.114	3.13E-05	1.31E-04	0.00275	1.86E-04	-0.0162
EP	kg PO ₄ ³⁻ -eq.	0.0113	7.30E-06	2.84E-05	2.48E-04	1.98E-05	-4.62E-04
POCP	kg ethene-eq.	0.0189	3.09E-06	-3.47E-05	1.47E-04	1.73E-05	-0.00756
ADPE	kg Sb-eq.	712E-04	1.16E-10	1.30E-09	5.61E-08	5.20E-09	-8.59E-07
ADPF	MJ	403	0.126	0.953	7.19	1.01	-164

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	4.94E-10	1.44E-14	1.98E-13	2.39E-11	3.20E-12	3.09E-10
HTnc - GS	CTUh	2.35E-10	6.88E-15	4.46E-14	7.63E-13	7.45E-14	8.60E-12
LU - GS	kg C deficit-eq.	5.16	2.39E-05	1.85E-04	0.0751	0.00705	0.899
RDW - GS	m³-eq.	0.0272	6.83E-07	5.79E-06	0.00244	7.37E-05	-0.0417
IR - GS	kBq U235-eq.	0.165	2.39E-07	2.42E-05	1.26E-04	0.00185	0.414
PM - GS	kg PM2.5-eq.	0.00973	2.25E-06	6.12E-06	1.80E-04	1.31E-05	-0.00128

104. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

105. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

106. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.95mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 15.59 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	43.2	0.00974	0.0739	0.687	0.0755	-18.1
GWP-fossil	kg CO ₂ -eq.	43.2	0.00974	0.0739	0.686	0.0753	-18.1
GWP-biogenic	kg CO ₂ -eq.	0.00204	9.64E-07	2.46E-05	7.66E-04	1.49E-04	0.0104
GWP-luluc	kg CO ₂ -eq.	0.00110	7.07E-08	7.95E-07	2.63E-05	4.53E-05	-3.73E-04
ODP	kg CFC-11-eq.	2.05E-11	7.73E-16	7.41E-15	3.05E-12	9.90E-14	2.71E-13
AP	mol H ⁺ -eq.	0.145	4.63E-05	1.91E-04	0.00345	2.38E-04	-0.0182
EP-freshwater	kg P-eq.	1.02E-05	1.71E-09	1.22E-08	3.75E-07	5.78E-08	-3.23E-06
EP-marine	kg N-eq.	0.0319	2.24E-05	8.61E-05	7.39E-04	5.79E-05	-0.00142
EP-terrestrial	mol N-eq.	0.361	2.45E-04	9.48E-04	0.00807	6.35E-04	-7.47E-05
POCP	kg NMVOC-eq.	0.109	6.26E-05	1.84E-04	0.00205	1.83E-04	-0.0129
ADP-minerals & metals ¹⁰⁷	kg Sb-eq.	712E-04	1.19E-10	1.33E-09	5.75E-08	5.25E-09	-9.12E-07
ADP-fossil ¹⁰⁷	MJ	420	0.129	0.980	7.41	1.07	-164
WDP ¹⁰⁷	m³ world-eq. deprived	2.39	7.23E-05	4.67E-04	0.268	0.00511	-3.47

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹⁰⁸	kg CO ₂ -eq.	42.2	0.00963	0.0732	0.680	0.0731	-17.4
PM	Disease incidence	1.93E-06	5.23E-10	1.25E-09	3.36E-08	2.54E-09	-2.05E-07
IRP ¹⁰⁹	kBq U-235-eq.	0.167	2.45E-07	2.49E-05	1.30E-04	0.00190	0.425
ETP-fw ¹⁰⁷	CTUe	62.6	0.0325	0.393	1.42	0.317	-5.40
HTP-c ¹⁰⁷	CTUh	3.63E-09	5.45E-13	6.64E-12	6.35E-11	3.75E-11	-7.58E-09
HTP-nc ¹⁰⁷	CTUh	8.77E-07	3.40E-11	2.63E-10	2.11E-09	3.78E-09	-2.49E-07
SQP ¹⁰⁷	dimensionless	11.1	2.97E-04	0.00276	0.948	0.0830	2.20

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	16.0	4.22E-04	0.00479	1.60	0.0872	11.1
PERM	MJ	0	0	0	0	0	0
PERT	MJ	16.0	4.22E-04	0.00479	1.60	0.0872	11.1
PENRE	MJ	420	0.129	0.980	7.41	1.07	-164
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	420	0.129	0.980	7.41	1.07	-164
SM	kg	2.98	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0457	1.09E-06	9.33E-06	0.00377	1.50E-04	-0.0785

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	9.51E-09	1.40E-13	1.59E-12	2.48E-10	1.61E-10	-1.26E-09
NHWD	kg	0.252	1.85E-06	2.38E-05	0.00231	1.56	2.82
RWD	kg	0.00131	1.89E-09	1.91E-07	1.01E-06	1.29E-05	3.11E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	6.44	0	0	14.0	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	14.0
Steel collected with mixed construction waste	kg	1.56
Recovery for re-use	kg	0
Recovery for recycling	kg	14.0
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.56
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 1.95mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	41.9	0.00959	0.0729	0.676	0.0715	-17.2
ODP	kg CFC11-eq.	2.42E-11	9.10E-16	8.73E-15	3.59E-12	1.17E-13	3.12E-13
AP	kg SO ₂ -eq.	0.117	3.22E-05	1.34E-04	0.00282	1.91E-04	-0.0166
EP	kg PO ₄ ³⁻ -eq.	0.0115	7.49E-06	2.92E-05	2.54E-04	2.03E-05	-4.76E-04
POCP	kg ethene-eq.	0.0193	3.17E-06	-3.56E-05	1.51E-04	1.78E-05	-0.00776
ADPE	kg Sb-eq.	712E-04	1.19E-10	1.33E-09	5.75E-08	5.33E-09	-8.82E-07
ADPF	MJ	413	0.129	0.977	7.38	1.03	-168

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	5.01E-10	1.48E-14	2.03E-13	2.46E-11	3.28E-12	3.17E-10
HTnc - GS	CTUh	2.39E-10	7.06E-15	4.58E-14	7.83E-13	7.64E-14	8.83E-12
LU - GS	kg C deficit-eq.	5.27	2.45E-05	1.89E-04	0.0771	0.00724	0.922
RDW - GS	m³-eq.	0.0276	7.00E-07	5.93E-06	0.00251	7.56E-05	-0.0428
IR - GS	kBq U235-eq.	0.167	2.45E-07	2.49E-05	1.30E-04	0.00190	0.425
PM - GS	kg PM2.5-eq.	0.00997	2.31E-06	6.28E-06	1.85E-04	1.34E-05	-0.00131

107. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

108. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

109. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 2.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 19.12 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	52.5	0.0119	0.0907	0.842	0.0926	-22.2
GWP-fossil	kg CO ₂ -eq.	52.5	0.0119	0.0906	0.841	0.0924	-22.2
GWP-biogenic	kg CO ₂ -eq.	0.00486	1.18E-06	3.02E-05	9.40E-04	1.82E-04	0.0128
GWP-luluc	kg CO ₂ -eq.	0.00123	8.67E-08	9.75E-07	3.23E-05	5.56E-05	-4.60E-04
ODP	kg CFC-11-eq.	2.36E-11	9.48E-16	9.09E-15	3.74E-12	1.21E-13	3.29E-13
AP	mol H ⁺ -eq.	0.175	5.67E-05	2.34E-04	0.00423	2.91E-04	-0.0225
EP-freshwater	kg P-eq.	1.16E-05	2.10E-09	1.49E-08	4.60E-07	7.09E-08	-3.98E-06
EP-marine	kg N-eq.	0.0386	2.74E-05	1.06E-04	9.07E-04	7.10E-05	-0.00177
EP-terrestrial	mol N-eq.	0.437	3.00E-04	0.00116	0.00990	7.79E-04	-3.81E-04
POCP	kg NMVOC-eq.	0.132	7.68E-05	2.26E-04	0.00251	2.25E-04	-0.0160
ADP-minerals & metals ¹¹⁰	kg Sb-eq.	7.12E-04	1.46E-10	1.63E-09	7.06E-08	6.44E-09	-1.12E-06
ADP-fossil ¹¹⁰	MJ	508	0.159	1.20	9.09	1.31	-202
WDP ¹¹⁰	m³ world-eq. deprived	2.79	8.86E-05	5.73E-04	0.329	0.00627	-4.27

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹¹¹	kg CO ₂ -eq.	51.2	0.0118	0.0898	0.834	0.0896	-21.4
PM	Disease incidence	2.34E-06	6.42E-10	1.53E-09	4.12E-08	3.12E-09	-2.54E-07
IRP ¹¹²	kBq U-235-eq.	0.181	3.01E-07	3.05E-05	1.59E-04	0.00233	0.522
ETP-fw ¹¹⁰	CTUe	73.8	0.0398	0.482	1.74	0.389	-6.67
HTP-c ¹¹⁰	CTUh	4.34E-09	6.68E-13	8.14E-12	7.78E-11	4.61E-11	-9.33E-09
HTP-nc ¹¹⁰	CTUh	1.06E-06	4.17E-11	3.23E-10	2.59E-09	4.64E-09	-3.06E-07
SQP ¹¹⁰	dimensionless	13.3	3.64E-04	0.00339	1.16	0.102	2.70

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	18.3	5.18E-04	0.00587	1.96	0.107	13.6
PERM	MJ	0	0	0	0	0	0
PERT	MJ	18.3	5.18E-04	0.00587	1.96	0.107	13.6
PENRE	MJ	508	0.159	1.20	9.09	1.31	-202
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	508	0.159	1.20	9.09	1.31	-202
SM	kg	3.66	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0531	1.33E-06	1.14E-05	0.00462	1.85E-04	-0.0966

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1.11E-08	1.72E-13	1.95E-12	3.04E-10	1.98E-10	-1.56E-09
NHWD	kg	0.285	2.26E-06	2.92E-05	0.00284	1.91	3.43
RWD	kg	0.00139	2.32E-09	2.35E-07	1.24E-06	1.58E-05	3.78E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	7.92	0	0	17.2	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	17.2
Steel collected with mixed construction waste	kg	1.91
Recovery for re-use	kg	0
Recovery for recycling	kg	17.2
Recovery for energy recovery	kg	0
Disposal to landfill	kg	1.91
Assumptions for scenario	–	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421
Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO ₂		

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 2.40mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	50.9	0.0118	0.0894	0.829	0.0877	-21.2
ODP	kg CFC11-eq.	2.79E-11	1.12E-15	1.07E-14	4.41E-12	1.43E-13	3.79E-13
AP	kg SO ₂ -eq.	0.141	3.94E-05	1.65E-04	0.00346	2.34E-04	-0.0206
EP	kg PO ₄ ³⁻ -eq.	0.0140	9.18E-06	3.58E-05	3.12E-04	2.50E-05	-5.94E-04
POCP	kg ethene-eq.	0.0235	3.89E-06	-4.37E-05	1.85E-04	2.18E-05	-0.00955
ADPE	kg Sb-eq.	7.13E-04	1.46E-10	1.63E-09	7.06E-08	6.54E-09	-1.08E-06
ADPF	MJ	500	0.158	1.20	9.05	1.26	-207

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	5.63E-10	1.81E-14	2.49E-13	3.01E-11	4.03E-12	3.90E-10
HTnc - GS	CTUh	2.76E-10	8.66E-15	5.61E-14	9.60E-13	9.37E-14	1.09E-11
LU - GS	kg C deficit-eq.	6.26	3.00E-05	2.32E-04	0.0945	0.00887	1.13
RDW - GS	m³-eq.	0.0320	8.59E-07	7.28E-06	0.00307	9.28E-05	-0.0527
IR - GS	kBq U235-eq.	0.181	3.01E-07	3.05E-05	1.59E-04	0.00233	0.522
PM - GS	kg PM2.5-eq.	0.0121	2.83E-06	7.71E-06	2.27E-04	1.65E-05	-0.00162

110. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

111. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

112. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Environmental Product Declaration

GALVABOND® steel

Results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 2.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A2:2019

Product mass: 23.05 kg/m² flat

Note: The design and size of the final formed product will affect how many flat square metres are required for that formed product.

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	62.7	0.0144	0.109	1.02	0.112	-26.9
GWP-fossil	kg CO ₂ -eq.	62.7	0.0144	0.109	1.01	0.111	-26.9
GWP-biogenic	kg CO ₂ -eq.	0.00798	1.42E-06	3.64E-05	0.00113	2.20E-04	0.0154
GWP-luluc	kg CO ₂ -eq.	0.00138	1.04E-07	1.18E-06	3.89E-05	6.70E-05	-5.57E-04
ODP	kg CFC-11-eq.	2.71E-11	1.14E-15	1.10E-14	4.51E-12	1.46E-13	3.93E-13
AP	mol H ⁺ -eq.	0.209	6.84E-05	2.82E-04	0.00510	3.51E-04	-0.0273
EP-freshwater	kg P-eq.	1.30E-05	2.53E-09	1.80E-08	5.54E-07	8.54E-08	-4.81E-06
EP-marine	kg N-eq.	0.0461	3.30E-05	1.27E-04	0.00109	8.56E-05	-0.00216
EP-terrestrial	mol N-eq.	0.522	3.62E-04	0.00140	0.0119	9.39E-04	-7.22E-04
POCP	kg NMVOC-eq.	0.158	9.26E-05	2.72E-04	0.00303	2.71E-04	-0.0194
ADP-minerals & metals ¹¹³	kg Sb-eq.	713E-04	1.76E-10	1.97E-09	8.51E-08	7.76E-09	-1.36E-06
ADP-fossil ¹¹³	MJ	605	0.191	1.45	11.0	1.58	-244
WDP ¹¹³	m³ world-eq. deprived	3.24	1.07E-04	6.91E-04	0.397	0.00755	-5.16

Additional Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹¹⁴	kg CO ₂ -eq.	61.2	0.0142	0.108	1.01	0.108	-25.9
PM	Disease incidence	2.79E-06	7.74E-10	1.85E-09	4.97E-08	3.76E-09	-3.08E-07
IRP ¹¹⁵	kBq U-235-eq.	0.196	3.63E-07	3.68E-05	1.92E-04	0.00281	0.631
ETP-fw ¹¹³	CTUe	86.1	0.0480	0.581	2.09	0.468	-8.09
HTP-c ¹¹³	CTUh	5.12E-09	8.05E-13	9.81E-12	9.38E-11	5.55E-11	-1.13E-08
HTP-nc ¹¹³	CTUh	1.27E-06	5.03E-11	3.89E-10	3.12E-09	5.59E-09	-3.70E-07
SQP ¹¹³	dimensionless	15.8	4.39E-04	0.00409	1.40	0.123	3.26

Resource use

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	20.9	6.24E-04	0.00708	2.36	0.129	16.4
PERM	MJ	0	0	0	0	0	0
PERT	MJ	20.9	6.24E-04	0.00708	2.36	0.129	16.4
PENRE	MJ	605	0.191	1.45	11.0	1.58	-244
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	605	0.191	1.45	11.0	1.58	-244
SM	kg	4.42	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	0.0612	1.61E-06	1.38E-05	0.00557	2.22E-04	-0.117

Waste Categories and Output Flows

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1.28E-08	2.07E-13	2.35E-12	3.66E-10	2.38E-10	-1.89E-09
NHWD	kg	0.321	2.73E-06	3.51E-05	0.00342	2.31	4.10
RWD	kg	0.00148	2.80E-09	2.83E-07	1.49E-06	1.90E-05	4.53E-05
CRU	kg	0	0	0	0	0	0
MFR	kg	9.57	0	0	20.7	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0

End of Life

Parameter	Unit	Total
Steel collected separately	kg	20.7
Steel collected with mixed construction waste	kg	2.30
Recovery for re-use	kg	0
Recovery for recycling	kg	20.7
Recovery for energy recovery	kg	0
Disposal to landfill	kg	2.30
Assumptions for scenario	-	n/a

Biogenic Carbon Content

	Unit	A1-A3
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.00421

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional results for 1 m² of GALVABOND® steel with a zinc coating class of Z275 in 2.90mm base metal thickness (BMT)

In accordance to EN 15804:2012+A1:2013

Environmental Impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq.	60.8	0.0142	0.108	1.00	0.106	-25.6
ODP	kg CFC11-eq.	3.20E-11	1.35E-15	1.29E-14	5.31E-12	1.72E-13	4.54E-13
AP	kg SO ₂ -eq.	0.168	4.75E-05	1.98E-04	0.00417	2.82E-04	-0.0249
EP	kg PO ₄ ³⁻ -eq.	0.0167	1.11E-05	4.31E-05	3.76E-04	3.01E-05	-7.25E-04
POCP	kg ethene-eq.	0.0282	4.69E-06	-5.27E-05	2.23E-04	2.63E-05	-0.0115
ADPE	kg Sb-eq.	713E-04	1.76E-10	1.97E-09	8.51E-08	7.88E-09	-1.31E-06
ADPF	MJ	598	0.191	1.44	10.9	1.52	-250

Additional Green Star v1.3 Indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HTc - GS	CTUh	6.32E-10	2.18E-14	3.01E-13	3.63E-11	4.85E-12	4.72E-10
HTnc - GS	CTUh	3.17E-10	1.04E-14	6.77E-14	1.16E-12	1.13E-13	1.31E-11
LU - GS	kg C deficit-eq.	7.37	3.62E-05	2.80E-04	0.114	0.0107	1.37
RDW - GS	m³-eq.	0.0368	1.04E-06	8.77E-06	0.00370	1.12E-04	-0.0637
IR - GS	kBq U235-eq.	0.196	3.62E-07	3.68E-05	1.92E-04	0.00281	0.631
PM - GS	kg PM2.5-eq.	0.0144	3.41E-06	9.29E-06	2.73E-04	1.99E-05	-0.00197

113. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

114. This indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product as defined by the IPCC AR5 report (IPCC 2013). As this indicator uses the same characterisation factors as the GWP indicator required in v3.01 of the General Programme Instructions (GPI) of the International EPD® System, its inclusion creates comparability with EPDs based on other Product Category Rules (PCRs) aligned with v3.01 of the GPI, as well as comparability with other GHG reporting according ISO 14067.

115. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Interpretation of Results

Impact Category Results

The majority of production (A1-A3) impacts arise from the combustion of fossil fuels, either directly or in the upstream production of electricity and materials. The upstream production of Hot Rolled Coil steel substrate was the most significant contributor to most environmental impact indicators, and the base metal thickness (BMT) has significant influence on the results due to the dominance of the manufacturing of the steel substrate. This emphasises the importance of selecting the appropriate BMT for the intended application; where a thicker steel sheet is not required, a lower BMT version of GALVABOND® steel should be considered.

The upstream production of the metal coating – a zinc coating applied to the steel substrate for corrosion protection – was the most significant contributor to ADP-minerals & metals, IRP, and SQP, and also contributed significantly to most indicators.

Assumption of average product – Sensitivity of results

When similar products are manufactured on different production lines, there is sometimes variation in results. Should production scheduling change significantly, this may be reflected in changes in the calculated impacts. The reason for these differences is the different mix of production routes that contribute to each product. Where products are preferentially made at different locations, the differences are most evident. While unlikely, should production scheduling change significantly, this may be reflected in changes in the calculated impacts. The variation in impact across production lines for GALVABOND® steel with a zinc coating class of Z100, Z200 and Z275 (flat product) is well under 10%.

References

AS/NZS 1365:1996 (R2016), Tolerances for flat-rolled steel products

AS 1397:2021, Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

EN 15804:2012+A1:2013, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

General Programme Instructions for the International EPD® System, Version 3.01.

Instructions of the EPD Australasia Programme, Version 3.0.

ISO 14001:2015, Environmental management systems – Requirements with guidance for use

ISO 14021:2016, Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)

ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures

National Waste Report 2020, Pickin J et al., A report prepared for the Department of Agriculture, Water and the Environment by Blue Environment Pty Ltd, 4 November 2020, <https://www.dcceew.gov.au/environment/protection/waste/national-waste-reports/2020>

PCR 2019:14, Construction Products, Version 1.11, 2021-02-05

Sphera, GaBi LCA Database Documentation, 2020, <https://www.gabi-software.com/support/gabi/gabi-database-2022-lci-documentation>

For further reference

EPD Owner	BlueScope Steel Limited steeldirect@bluescopesteel.com
LCA Author	BlueScope Steel Limited steeldirect@bluescopesteel.com thinkstep-anz.com info@thinkstep-anz.com
Programme Operator	EPD Australasia Limited info@epd-australasia.com
Product Website	steel.com.au
BlueScope Awards and Certificates (ISO 14001, Worldsteel Climate Action Programme)	bluescope.com/sustainable-steel/awards-and-certificates/
ResponsibleSteel™ certification for Port Kembla Steelworks	bluescope.com/sustainable-steel/responsiblesteel/
BlueScope Sustainability Reporting	bluescope.com/sustainability/reports



For further information,
contact BlueScope Steel Direct

1800 800 789
steel.com.au

BlueScope Steel Limited

Level 24, 181 William St, Melbourne VIC 3000, Australia

ABN 16 000 011 058