

Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Dextra GFRP Rebar & Rockbolt

from

Dextra Group



Programme:

The International EPD® System, www.environdec.com

Programme operator:

EPD International AB

EPD registration number:

S-P-09434

Publication date:

2023-06-21

Valid until:

2028-06-20

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



1. GENERAL INFORMATION

Programme:	The International EPD® System
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>PCR 2019:2014 Construction products (version 1.11); UNCPC Code: 36</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD® System. The review panel could be contacted via info@environdec.com.</i>
Life Cycle Assessment (LCA)
LCA accountability: <i>Si HUANG, Juanjuan YAO, and Sijia YANG from IVL Swedish Environmental Research Institute and SIWALIYA Environmental Technologies (Beijing) Co. Ltd</i>
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <i>EPD verification by individual verifier</i>
Third-party verifier: <i><name, organisation, and signature of the third-party verifier></i> Daniel Böckin, Miljögiraff AB (daniel@miljogiraff.se)
Approved by: The International EPD® System

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

2. ABOUT Dextra Group

Company background:

Established in 1983 by French expatriate entrepreneurs, Dextra Group is now a world leading manufacturer of engineered steel and fiber-reinforced polymer construction products. The main activities are manufacturing and trading of engineered products for the construction and industrial sectors. Dextra Group currently employs over 900 people worldwide, manufactures in three locations (Thailand, China and India) and operates in all continents through a network of direct subsidiaries and long-term partners.

Dextra's factory in China, based in Guangzhou, was opened in 2012. This factory specializes in the manufacturing of innovative fiber composite solutions for the construction industry. This LCA study is conducted for the GFRP products from Dextra Guangzhou factory.

Name and location of production site(s):

Dextra Building Products (Guangdong) Co., Ltd

No. 54 Xinyao bei Road, Xintang Town, Zengcheng, Guangzhou, Guangzhou 511340, China PRC

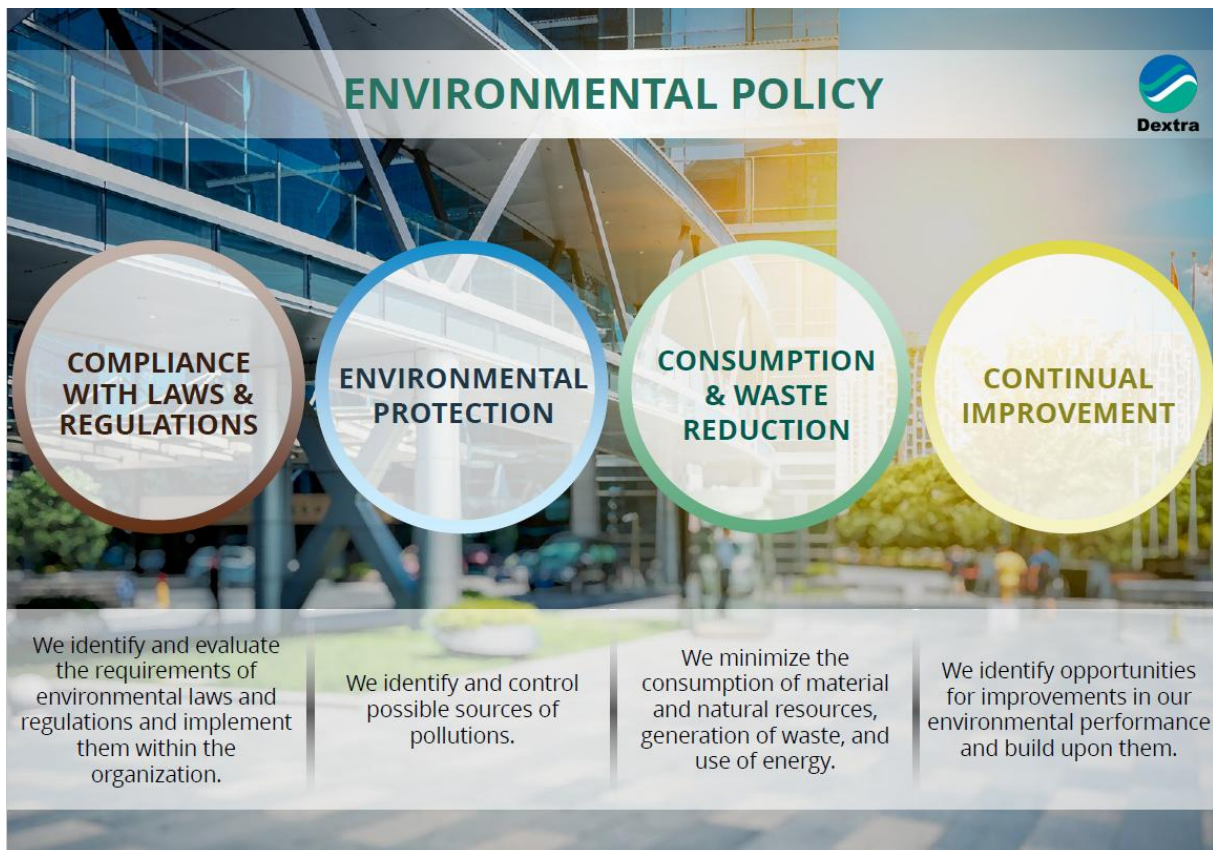
Product-related or management system-related certifications:

ISO9001

ISO14001

ISO/IEC17025

Vision of environmental protection:



3. PRODUCT DESCRIPTION

Product name:

Dextra GFRP Rebar & Rockbolt

Product description:

The products analysed in this EPD cover 3 different series of GFRP products in 30 diameters in total, including **ASTEC & GEOTEC GFRP bars for temporary applications** (herein after referred to as **Dextra Polyester**) in 12 diameters, **ASTEC & GEOTEC GFRP bars for permanent applications** in 13 diameters (herein after referred to as **Dextra Vinylester**), **DURABAR GFRP bars for flatwork applications** in 5 diameters (herein after referred to as **Durabar**).

Dextra Polyester :

6mm, 8mm, 10mm, 13mm, 16mm, 19mm, 22mm, 25mm, 29mm, 32mm, **41mm**, 51mm

Dextra Vinylester:

6mm, 8mm, 10mm, 12mm, 13mm, 14mm, **16mm**, 19mm, 22mm, 25mm, 29mm, 32mm, 41mm

Durabar:

6mm, 8mm, **10mm**, 13mm, 16mm

They are the main products produced in Dextra Guangzhou factory, which are mainly made of glass fibre, resin, polyester thread, silica sand, and sometimes kaolin, and/or polystyrene low-shrinkage additive. The main differences among the 3 series bars lie in the type and ratio of resin, and the main difference among the products of different diameters under the same series bar is the raw material ratio. **Practical production data** was collected for 3 representative products of the 3 series respectively, which are the best selling ones of each series. For Dextra Polyester, diameter 41mm was chosen as the representative, for Dextra Vinylester, diameter 16mm was chosen as the representative, and for Durabar, diameter 10mm was the representative. And the specific raw material composition of other diameters are from BOM provided by the producer.

GFRP rebar allow contractors to substitute steel rebar with composite non-corrosive and non-metallic reinforcement. GFRP rebar solutions offer very high tensile performances for a light weight: up to 8 times the performance/weight ratio of steel. GFRP rebars are available in various grades and sizes. Splicing systems are also available. Taylor-made shaped can also manufactured.

Product characteristics:

- Greater tensile strength than steel
- 4 times lighter than steel
- Corrosion free
- Light weight
- Low Thermal conductivity
- Electrically non Conductive
- Transparent to magnetic fields and radio frequencies
- Long service life
- Superior durability, thanks to the usage of ECR-Glass and Vinylester resin

Typical applications

- Corrosive & marine environments, such as bridge pylons.
- Thermal insulation between exterior and interior.

- Places which should remain free of electromagnetic disturbances: MRI units, control towers, etc.
- Can be used in precast or cast-in-place concrete.
- D-Walls to ease Tunnel Boring Machines break-through.

UN CPC code:

36

Geographical scope:

Global

4. LCA INFORMATION

Declared unit:

According to the PCR 2019:14 and the EN15804, the declared unit of this LCA study is defined as:

1 kg of GFRP product.

Reference service life:

The RSL is understood as the period of time until GFRP rebars are replaced or restored. If properly installed as reinforcing in concrete construction works, the service lifetime of GFRP is equal to the lifetime of the construction works it is installed in. Even though the RSL of GFRP products can be more than 100 years, however, from the conservative perspective, a 50-year RSL was adopted in this study.

Time representativeness:

Concerning the relevance of the data in the study, most data used in A1-A3 modules which have been collected from Dextra Guangdong and its suppliers. Data relevant to the production are average values for the production situation in year 2022. The secondary data is cited from the Ecoinvent and/or Sphera databases, no older than 5 years.

Data Quality Assessment:

Instances where specific data has been used in this study are:

- The weight of raw materials, packages' raw material, and auxiliary materials;
- Transportation data of raw material and packages to Dextra Guangzhou factory;
- Manufacturing process for Dextra Guangdong producing products, e.g., energy use, material use and environmental emissions, waste disposed;
- Transportation data for the GFRP rebar products sent to retailers/distribution platforms.

Where specific data has not been readily available from Dextra Guangdong or their suppliers, generic data has been used to fill these gaps. Generic data has also been used for background processes that are upstream in the supply chain. Most of the generic data (sometimes referred to as "secondary data") was extracted from Ecoinvent and Sphera databases and no data used in the model are older than 5 years. In principle, datasets from Sphera were prioritised all the time to keep the consistency for 2 reasons. Firstly, we use Gabi to perform the modelling. Secondly, the datasets from Sphere are well documented, which is very convenient to check the data quality. When checking datasets from Ecoinvent in Gabi, it's hard to find related documentation. Secondly, for the same data, e.g., electricity, we compared the emission factor of climate change from Ecoinvent dataset, sphera dataset and data issued by Chinese government. Result showed that the emission factor from sphere is much closer to the data issued by Chinese government. However, when no datasets available from shpera, datasets from other sources (e.g., Ecoinvent) were considered and evaluated before using. When no qualified datasets available, proxy data was used.

Instances where generic data have been used in this study are:

- Database data used for calculating the environmental impacts of upstream raw materials, packages' raw material, and auxiliary materials, from Gabi (Sphera) and Ecoinvent database;
- Power grid mix information and diesel production data;
- Transport processes for raw materials and package's raw materials;
- Transportation processes for the GFRP rebar products to the retailers/distribution platforms;
- End-of-life processes for packaging materials.

As for the reliability of the data, it can always present some uncertainties but as the data for the core module has been collected from the production sites, the data has been measured and verified internally. The data is assumed to be the most relevant according to current conditions and production practices. Finally, the study is sufficiently transparent, accessible, and reproducible since all the data used, assumptions made, and datasets applied can be found in this report and in the Gabi LCA models for the third-party verifier to review.

Database(s) and LCA software used:

The Ecoinvent 3.8 and Sphera 2022-2025 databases are used in the study. Gabi 10.7 is the LCA software.

Description of system boundaries:

The system boundary is cradle to grave and module D (A, B, C and D). In the LCA study, assessing the production of raw materials, the production process of the GFRP products, transportation to the retailer, as well as treatment of products and treatment of package at end-of-life. The production, maintenance, and after-use treatment of capital goods, such as machines, factories, etc., "overhead" activities, such as heating of buildings and lighting, and the activities of the employees are not included in the life cycle.

The EPD is a type b) EPD as per PCR, i.e., Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). However, all life cycle stages are analysed in the LCA study, including A1-A3 product stage, A4-A5 construction stage, B use stage, C1-C4 end-of-life stage, and D benefits and loads beyond the system boundary.

Depending on the GFRP producer, the product does not consume energy or material during B use stage. Meanwhile, there is no environmental emissions during the use phase of this product. In this case, the data for the B use stage is assumed as 0. For C1 deconstruction, since no energy and materials are consumed in this stage as well as no wastes or emissions generated due to the product from this stage, the environmental impact of this stage is assumed to be zero. For D, because the GFRP product will be landfilled as inert construction waste without waste processing at the end of life, it is assumed that no benefits will be generated during the waste disposal, and the environmental impact of module D is assumed to be zero.

System diagram:

Modules	Life cycle stage	Key points	Included in the study (Yes/No)
A1-A3 Product Stage	A1 Raw material supply	A1 – raw material supply, including processing of secondary material input	Yes
	A2 Transport	A2 – transport of raw material and secondary material to the manufacturer	Yes
	A3 Manufacturing	A3 – manufacture of the construction products, and all upstream processes from cradle to gate	Yes
A4-A5 Construction Process Stage	A4 Transport	A4 – transport of construction products to the building site	Yes
	A5 Construction/Installation	A5 – the building installation/construction and associated waste	Yes
B Use Stage	B1 Use	B1 – use of the installed product, service or appliance	Yes
	B2 Maintenance	B2 – maintenance of the product	
	B3 Repair	B3 – repair of the product	
	B4 Replacement	B4 – replacement of the product	
	B5 Refurbishment	B5 – refurbishment of the construction product	
	B6 Operational energy use	B6 – operational energy	
	B7 Operational water use	B7 – operational water use	
C End of Life Stage	C1 Deconstruction, demolition	C1 – demolition of the building/building product	Yes
	C2 Transport	C2 – transport of the demolition waste comprising the end-of-life construction product to waste processing facility or to final disposal	Yes
	C3 Waste processing	C3 – waste processing operations for reuse, recovery, or recycling	Yes
	C4 Disposal	C4 – final disposal of end-of-life construction product	Yes
D Benefits and Loads Beyond the System Boundary	D Reuse, recovery, recycling,	D – reuse/recovery/recycling potential evaluated as net impacts and benefits	Yes

Allocation:

Allocation rules for multifunctional products and multiproduct processes are mentioned in PCR. To be noted that the studied products do not have co-product in the production process, therefore no co-product allocation rules was applied in this study. However, Dextra Guangdong produces GFRP products and hardware accessories in the same factory in different production lines and production data were collected at a factory level. Mass allocation was applied to assign the correct production burdens. Energy consumption including electricity and LPG is allocated by mass between GFRP products and hardware accessories. For emissions from the factory and ancillary materials used, data is collected exactly for GFRP products, which does not need to be allocated to hardware accessories.

Specifically, the Dextra Guangzhou factory produced a total of 4, 043, 448kg of all products in 2022, among which the GFRP product is 2, 526, 891kg in 2022, which was 62.5% of total production. Therefore, for the purposes of energy allocation, the GFRP product is considered to occupy 62.5% of the total energy consumption. When calculating the energy consumption by Dextra Polyester/Dextra Vinylester/Durabar respectively, it is calculated by Dextra Guangdong according to the power consumption and production speed of GFRP production line equipment, Dextra Vinylester representative product (16mm) consumes 0.17kwh/kg, Dextra Polyester representative product (41mm) consumes 0.13kwh/kg; Durabar representative product (10mm) consumes 0.34kwh/kg.

Cut-off rules:

The cut-off criteria established by the PCR is that data for elementary flows to and from the product system contributing to a minimum of 95% of the declared environmental impacts shall be included (not including processes that are explicitly outside the system boundary).

This study strictly follows the cut-off rule. Raw materials with high environmental impacts were reserved in calculation even though their mass is smaller than 5% of the whole product. Cut-off rules were applied when it comes to some additives (including Dicarboxylate (4-tert-butylcyclohexyl) peroxide, dibenzoyl peroxide, and tert-Butyl peroxybenzoate) because of no data source available and with a mass percentage of around 0.4% in total for different diameter products. Some product package materials (including steel belt, iron nail, and label paste) with a mass percentage of up to 0.34% in total for different diameter products, and some ancillary materials mainly for cleaning production

machines (including resin cleaner, detergent, diluent, cloth, filter cotton) with a mass percentage of up to 0.2% in total for different diameter products were cut-off, too. The total climate change of these cut-off materials is smaller than 5% of the climate change total of the whole product.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage	
	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	Reuse-Recovery-Recycling-potential	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	CN	CN	CN	CN to SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(X: module declared; SA: Saudi Arabia)

A1: The raw materials are supplied from the supplier to the Dextra Guangzhou factory.

A2: The transportation of the raw material and package material to the Dextra Guangzhou factory.

A3: The manufacturing of the GFRP products in the Dextra Guangzhou factory.

A4: The transportation of the GFRP products to the construction site. This stage contains the overseas shipping from Dextra Guangzhou factory to overseas.

A5: The construction of the GFRP products. The package will be wasted in the stage. During the construction, no product loss happens because the product is tailored to produce, and no auxiliary materials are used, no waste or emissions generated here.

B1-B7: Depending on the GFRP producer, the product does not consume energy or material during the use stage. Meanwhile, there is no environmental emissions during the use phase of this product.

C1: No energy and materials are consumed in the deconstruction stage. No wastes and emissions generated due to the product from the stage.

C2: The transportation of the waste product to the waste processing plant.

C3: The waste processing stage. No product waste is processed before the EOL disposal.

C4: Waste GFRP products are sent to landfill as inert construction waste without waste processing.

D: As mentioned above, the GFRP product will be landfilled as inert construction waste. It is assumed that no benefits will be generated during the waste disposal, and the environmental impact of module D is assumed to be zero.

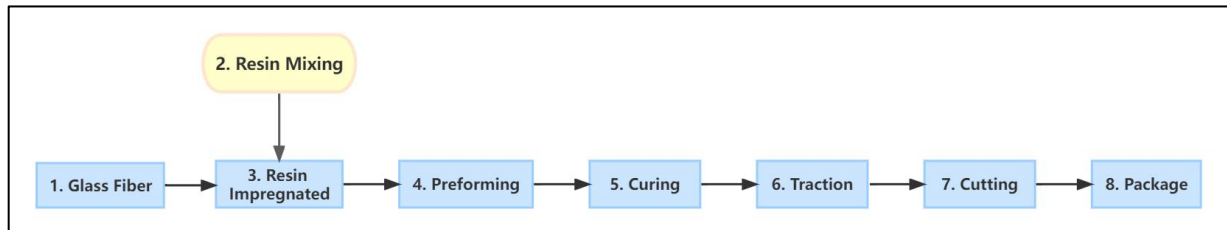


Figure 1. The GFRP manufacturing processes in the Dextra Guangzhou factory (A3)

5. CONTENT INFORMATION

Product components	Weight, kg			Biogenic material, weight-% and kg C/kg
	Dextra Polyester 41mm	Dextra Vinylester 16mm	Durabar 10mm	
Glass fibre	0.799	0.714	0.666	0%
Polyester thread	-	0.006	0.005	0%
Orthophthalic acid based unsaturated polyester resin	0.112	-	-	0%
Bisphenol A epoxy based vinyl ester resin	-	0.189	-	0%
Dicyclopentadiene type unsaturated polyester resin	-	-	0.176	0%
Polystyrene low shrinkage additive	0.054	-	-	0%
Kaolin	0.008	-	-	0%
Silica sand	0.027	0.091	0.153	0%
Total (kg)	1	1	1	0%

Packaging materials	Dextra Polyester 41mm			Dextra Vinylester 16mm			Durabar 10mm		
	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wooden angle	0.034	3.4%	0.494	0.0213	2.13%	0.494	0	0%	0
PE film	0.0027	0.27%	0	0.0027	0.27%	0	0.0027	0.27%	0
TOTAL	0.0367	3.67%	0.0168	0.024	2.4%	0.0105	0.0027	0.27%	0

The raw materials of GFRP product are mainly chemicals, so no biocarbon is contained in raw materials. For the package of the product, wooden angles contains 0.0168 kg and 0.0105 kg biocarbon per 1 kg Dextra Polyester 41mm and Dextra Vinylester 16mm product respectively. For Durabar, no wooden package is used so no biocarbon in its package.

To be noted that the total amount of raw materials is higher than the product design weight when considering mass loss during the production.

This product does not contain any substances in the Candidate List of SVHC which exceeds the limits for registration with the European Chemicals Agency.

6. ENVIROMENTAL INFORMATION

No.	Product Name	Page No. of results
1.	ASTEC & GEOTEC GFRP bars for temporary applications 41mm	12
2.	ASTEC & GEOTEC GFRP bars for permanent applications 16mm	16
3.	DURABAR GFRP bars for flatwork applications 10mm	19
4.	ASTEC & GEOTEC GFRP bars for temporary applications 6mm	22
5.	ASTEC & GEOTEC GFRP bars for temporary applications 8mm	25
6.	ASTEC & GEOTEC GFRP bars for temporary applications 10mm	28
7.	ASTEC & GEOTEC GFRP bars for temporary applications 13mm	31
8.	ASTEC & GEOTEC GFRP bars for temporary applications 16mm	34
9.	ASTEC & GEOTEC GFRP bars for temporary applications 19mm	37
10.	ASTEC & GEOTEC GFRP bars for temporary applications 22mm	40
11.	ASTEC & GEOTEC GFRP bars for temporary applications 25mm	43
12.	ASTEC & GEOTEC GFRP bars for temporary applications 29mm	46
13.	ASTEC & GEOTEC GFRP bars for temporary applications 32mm	49
14.	ASTEC & GEOTEC GFRP bars for temporary applications 51mm	52
15.	ASTEC & GEOTEC GFRP bars for permanent applications 6mm	55
16.	ASTEC & GEOTEC GFRP bars for permanent applications 8mm	58
17.	ASTEC & GEOTEC GFRP bars for permanent applications 10mm	61
18.	ASTEC & GEOTEC GFRP bars for permanent applications 12mm	64
19.	ASTEC & GEOTEC GFRP bars for permanent applications 13mm	67
20.	ASTEC & GEOTEC GFRP bars for permanent applications 14mm	70
21.	ASTEC & GEOTEC GFRP bars for permanent applications 19mm	73
22.	ASTEC & GEOTEC GFRP bars for permanent applications 22mm	76
23.	ASTEC & GEOTEC GFRP bars for permanent applications 25mm	79
24.	ASTEC & GEOTEC GFRP bars for permanent applications 29mm	82
25.	ASTEC & GEOTEC GFRP bars for permanent applications 32mm	85
26.	ASTEC & GEOTEC GFRP bars for permanent applications 41mm	88
27.	DURABAR GFRP bars for flatwork applications 6mm	91
28.	DURABAR GFRP bars for flatwork applications 8mm	94
29.	DURABAR GFRP bars for flatwork applications 13mm	97
30.	DURABAR GFRP bars for flatwork applications 16mm	100

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.21 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.78 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.19 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.38 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.87 E-02	9.50 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.98 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.23 E-04	2.76 E-06	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.57 E-07	0.00 E+00	3.14 E-06	0.00 E+00

ODP	kg CFC 11 eq.	7.55 E-08	4.30 E-15	- 2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.62 E-16	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.54 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.26 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.39 E-04	1.31 E-08	- 4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.20 E-09	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.15 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.33 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.30 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.90 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.37 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	5.51 E-06	7.26 E-10	- 1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-11	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.97 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.51 E-01	3.31 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	4.19 E-05	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.16 E+00	1.22 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.26 E-03	0.00 E+00	4.60 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
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¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

PERE	MJ	8.37 E+00	4.09 E-03	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	8.37 E+00	4.09 E-03	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.97 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.97 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.38 E-02	9.38 E-06	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-06	0.00 E+00	4.60 E-05	0.00 E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.68 E-09	6.09 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.33 E-14	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.56 E-01	5.88 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.08 E-06	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	7.24 E-04	4.47 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.83 E-08	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.63 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.78 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.60 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.38 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.97 E-02	9.36 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.98 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.13 E-03	2.58 E-06	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.57 E-07	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.04 E-07	4.05 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.62 E-16	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.71 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.26 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.74 E-04	1.23 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.20 E-09	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.54 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.33 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.69 E-02	8.85 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.90 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	8.73 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.50 E-05	6.78 E-10	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-11	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.68 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.98 E-01	3.11 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	4.19 E-05	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.55 E+00	1.13 E-01	1.25 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.26 E-03	0.00 E+00	4.60 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	8.31 E+00	3.88 E-03	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	8.31 E+00	3.88 E-03	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.68 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.68 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.95 E-02	8.80 E-06	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-06	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.57 E-09	5.65 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.33 E-14	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.47 E-01	5.48 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.08 E-06	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.89 E-04	4.18 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.83 E-08	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00 E-03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of DURABAR GFRP bars for flatwork applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.06 E+00	9.34 E-02	4.02 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.78 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.04 E+00	9.24 E-02	4.05 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.38 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.62 E-02	9.09 E-04	-2.48 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.98 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.90 E-04	2.10 E-06	1.26 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.57 E-07	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.29 E-07	3.37 E-15	-3.18 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.62 E-16	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.34 E-02	2.50 E-03	-1.63 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.26 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.14 E-04	9.96 E-09	-6.80 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.20 E-09	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.91 E-03	6.24 E-04	-7.73 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.33 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.06 E-02	6.84 E-03	-5.57 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.90 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.43 E-03	1.75 E-03	-1.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	5.23 E-06	5.48 E-10	-2.23 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-11	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.76 E+01	1.21 E+00	-3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	4.45 E-01	2.58 E-04	6.00 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	4.19 E-05	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.01 E+00	9.12 E-02	4.03 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.26 E-03	0.00 E+00	4.60 E-02	0.00 E+00

Resource use indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.55 E+00	3.32 E-03	1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.55 E+00	3.32 E-03	1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	7.37 E-04	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.76 E+01	1.22 E+00	3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.76 E+01	1.22 E+00	3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.34 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.12 E-02	7.28 E-06	9.38 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-06	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.34 E-09	4.48 E-13	- 2.73 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.33 E-14	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.28 E-01	4.44 E-05	6.62 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.08 E-06	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.35 E-04	3.44 E-07	- 1.60 E-06	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.83 E-08	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 16rep

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1.95 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	1.94 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.55 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.65 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	3.24 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.30 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.80 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.89 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.02 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.59 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	7.57 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.55 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.83 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.90 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	6.90 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	6.90 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.55 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.55 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.43 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.27 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.11 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	5.55 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.02 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.01 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.61 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.57 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.80 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.35 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.82 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.96 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.09 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.80 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	7.71 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.67 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.98 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.97 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.17 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.17 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.67 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.67 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.47 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 8mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.34 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.19 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	5.83 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 8mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.06 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.10 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.67 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	- 3.98 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
ODP	kg CFC 11 eq.	8.79 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
AP	mol H ⁺ eq.	3.01 E-07	4.98 E-15	- 2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
EP-freshwater	kg P eq.	1.41 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-marine	kg N eq.	1.92 E-04	4.70 E-08	- 4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-terrestrial	mol N eq.	2.05 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
POCP	kg NMVOC eq.	2.19 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	7.13 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-fossil*	MJ	8.12 E-06	1.29 E-09	- 1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
WDP*	m ³	3.85 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.06 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.47 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.47 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.85 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.85 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.54 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.40 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.27 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.11 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.16 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.14 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.72 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.63 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.40 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.44 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.91 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.08 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.22 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.24 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	8.12 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.92 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.33 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.10 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.63 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.63 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.92 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.92 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.56 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.45 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.32 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.29 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.11 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.10 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.71 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.30 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.05 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.42 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.83 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.04 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.18 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.07 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	7.77 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.83 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.14 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.06 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.56 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.56 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.83 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.83 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.51 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.44 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.30 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.25 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.17 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.15 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.73 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.66 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.12 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.45 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.94 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.09 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.23 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.28 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	8.27 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.96 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.42 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.11 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.63 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.63 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.96 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.96 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.58 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.45 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.31 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.29 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.18 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.17 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.46 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.70 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.29 E-07	4.98 E-15	2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.46 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.97 E-04	4.70 E-08	4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.11 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.25 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.33 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	8.36 E-06	1.29 E-09	1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.99 E+01	1.61 E+00	1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.48 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.13 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.68 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.68 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.99 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.99 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.59 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 22mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.46 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	1.71 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.32 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 22mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.12 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.10 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.74 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	7.65 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.06 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.40 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.61 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.02 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.16 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.94 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	6.87 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.93 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.71 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.07 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.66 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.66 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.93 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.93 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.44 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.69 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.34 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.45 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.11 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.09 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.74 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	7.44 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.87 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.38 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.56 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.99 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.13 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.84 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	6.64 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.95 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.59 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.06 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.57 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.57 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.95 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.95 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.42 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.75 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.32 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.39 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.14 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.12 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.80 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	7.11 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.83 E-07	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.42 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.49 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.04 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.18 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.95 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	6.35 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.97 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.51 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.09 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.88 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.88 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.97 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.97 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.40 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 32mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.82 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.41 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.73 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 32mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 51mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.06 E+00	1.24 E-01	6.08 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.05 E+00	1.23 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.78 E-02	4.10 E-04	4.31 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.46 E-04	9.13 E-05	3.20 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	8.27 E-08	4.98 E-15	-2.94 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.38 E-02	3.53 E-03	2.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.35 E-04	4.70 E-08	-4.31 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.96 E-03	8.77 E-04	1.31 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.10 E-02	9.61 E-03	1.61 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.65 E-03	2.46 E-03	3.35 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	5.78 E-06	1.29 E-09	-1.67 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.80 E+01	1.61 E+00	-1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	5.19 E-01	4.04 E-04	6.79 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 51mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.02 E+00	1.24 E-01	1.76 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 51mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.73 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.73 E+00	1.28 E-02	- 1.15 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.80 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.80 E+01	1.61 E+00	- 1.89 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.32 E-02	1.87 E-05	1.58 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 51mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.78 E-09	9.81 E-13	- 2.04 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.38 E-01	7.36 E-05	1.07 E-03	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.63 E-04	6.43 E-07	- 4.76 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for temporary applications 51mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.42 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.40 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.81 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.07 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	3.04 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.57 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.52 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.35 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.49 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	8.07 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.36 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.30 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.36 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.38 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.75 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.75 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.30 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.30 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.80 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.44 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.32 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.35 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.28 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.26 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.73 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.33 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.68 E-07	4.71 E-15	-3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.48 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.37 E-04	4.57 E-08	-5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.22 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.35 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.60 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.28 E-05	1.24 E-09	-1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.05 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.93 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.24 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.40 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.40 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.05 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.05 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.69 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.35 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.22 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	5.98 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.37 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.36 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.77 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.07 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	3.04 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.54 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.52 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.31 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.44 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.93 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.36 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.23 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.30 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.33 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.53 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.53 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.23 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.23 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.78 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.38 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.26 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.13 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 10mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 12mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.37 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.35 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.77 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.06 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.88 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.54 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.51 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.30 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.43 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.90 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.35 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.22 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.27 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 12mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ²	kg CO ₂ eq.	2.33 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 12mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.53 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.53 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.22 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.22 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.77 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

² This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 12mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.38 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.26 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.13 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 12mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00 E-03	0.00 E+00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.33 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.31 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.74 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.04 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.71 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.50 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.47 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.26 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.39 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.75 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.33 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.15 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.15 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.28 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.38 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.38 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.15 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.15 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.75 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.35 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.23 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	5.99 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 14mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.33 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.31 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.74 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.04 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.71 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.50 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.47 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.26 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.39 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.75 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.33 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.15 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.15 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 14mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.28 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 14mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.38 E+00	1.25 E-02	-1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.38 E+00	1.25 E-02	-1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.15 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.15 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.75 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 14mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.35 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.23 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	5.99 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 14mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.34 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.32 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.78 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.01 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.91 E-07	4.71 E-15	-3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.52 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.42 E-04	4.57 E-08	-5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.27 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.40 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.77 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.32 E-05	1.24 E-09	-1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.17 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.10 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.30 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.52 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.52 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.17 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.17 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.74 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.39 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.27 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.16 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 19mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.39 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.37 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.81 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.34 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.09 E-07	4.71 E-15	-3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.55 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.48 E-04	4.57 E-08	-5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.32 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.45 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.95 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.35 E-05	1.24 E-09	-1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.26 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	7.26 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.35 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.71 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.71 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.26 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.26 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.78 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.42 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.30 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.28 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 22mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.30 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.28 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.82 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	1.21 E-03	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.78 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.50 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.04 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.21 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.35 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.49 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.11 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.13 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.41 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.26 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.75 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.75 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.13 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.13 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.60 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.63 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.34 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.48 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 25mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.29 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.27 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.82 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.84 E-04	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.61 E-07	4.71 E-15	- 3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.49 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	2.01 E-04	4.57 E-08	- 5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.20 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.33 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.43 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.09 E-05	1.24 E-09	- 1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.14 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.34 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.25 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 29mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.67 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.67 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.14 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.14 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.58 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 29mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.66 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.34 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.47 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 29mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.32 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.30 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.86 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.53 E-04	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.44 E-07	4.71 E-15	-3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.51 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.96 E-04	4.57 E-08	-5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.22 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.36 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.50 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.07 E-05	1.24 E-09	-1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.16 E+01	1.50 E+00	-2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.29 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.28 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.88 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.88 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.17 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.17 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.58 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.72 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.40 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.70 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 32mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00 E-03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.27 E+00	1.16 E-01	3.96 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	2.25 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.85 E-02	4.03 E-04	2.70 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.14 E-04	9.00 E-05	2.05 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.25 E-07	4.71 E-15	3.03 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.49 E-02	3.25 E-03	1.75 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.85 E-04	4.57 E-08	5.24 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	2.18 E-03	8.08 E-04	7.90 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	2.32 E-02	8.86 E-03	9.89 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	7.34 E-03	2.27 E-03	2.03 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	1.01 E-05	1.24 E-09	1.88 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	4.06 E+01	1.50 E+00	2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	6.06 E-01	3.83 E-04	4.48 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.23 E+00	1.15 E-01	1.26 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.63 E-03	0.00 E+00	1.51 E-02	0.00 E+00

Resource use indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 41mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.85 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.85 E+00	1.25 E-02	- 1.29 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	4.06 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	4.06 E+01	1.50 E+00	- 2.67 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.52 E-02	1.80 E-05	1.02 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 41mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.71 E-09	9.33 E-13	- 2.30 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.40 E-01	6.95 E-05	9.19 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	6.71 E-04	6.12 E-07	- 8.96 E-07	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of ASTEC & GEOTEC GFRP bars for permanent applications 41mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of DURABAR GFRP bars for flatwork applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1.95 E+00	9.31 E-02	4.02 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	1.93 E+00	9.26 E-02	4.05 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.55 E-02	3.87 E-04	- 2.48 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	- 1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.60 E-04	8.77 E-05	1.26 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.63 E-07	4.02 E-15	- 3.18 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.29 E-02	2.50 E-03	- 1.63 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.04 E-04	4.27 E-08	- 6.80 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.84 E-03	6.24 E-04	- 7.73 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	1.99 E-02	6.84 E-03	- 5.57 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.14 E-03	1.75 E-03	- 1.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	4.69 E-06	1.10 E-09	- 2.23 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.46 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	4.24 E-01	3.29 E-04	6.00 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.94 E+00	9.14 E-02	4.03 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.44 E-03	0.00 E+00	1.48 E-02	0.00 E+00

Resource use indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 6mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.43 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.43 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.46 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.46 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.07 E-02	1.62 E-05	9.38 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.31 E-09	8.08 E-13	- 2.73 E-12	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	4.31 E-12	0.00 E+00
Non-hazardous waste disposed	kg	2.25 E-01	5.87 E-05	6.62 E-04	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	1.00 E+00	0.00 E+00
Radioactive waste disposed	kg	6.22 E-04	5.33 E-07	- 1.60 E-06	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	2.25 E-06	0.00 E+00

Output flow indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 6mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

Mandatory impact category indicators according to EN 15804

Results per declared unit of DURABAR GFRP bars for flatwork applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1.94 E+00	9.31 E-02	4.02 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	1.93 E+00	9.26 E-02	4.05 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.55 E-02	3.87 E-04	-2.48 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.44 E-04	8.77 E-05	1.26 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	2.31 E-07	4.02 E-15	-3.18 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.28 E-02	2.50 E-03	-1.63 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.02 E-04	4.27 E-08	-6.80 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.83 E-03	6.24 E-04	-7.73 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	1.98 E-02	6.84 E-03	-5.57 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.11 E-03	1.75 E-03	-1.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	4.60 E-06	1.10 E-09	-2.23 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.45 E+01	1.21 E+00	-3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	4.19 E-01	3.29 E-04	6.00 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.93 E+00	9.14 E-02	4.03 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.44 E-03	0.00 E+00	1.48 E-02	0.00 E+00

Resource use indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 8mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.42 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.42 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.45 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.45 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.06 E-02	1.62 E-05	9.38 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 8mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.31E-09	8.08E-13	-2.73E-12	0.00E+00	1.87E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-13	0.00E+00	4.83E-12	0.00E+00
Non-hazardous waste disposed	kg	2.25E-01	5.87E-05	6.62E-04	0.00E+00	1.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-05	0.00E+00	9.92E-01	0.00E+00
Radioactive waste disposed	kg	6.23E-04	5.33E-07	-1.60E-06	0.00E+00	7.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-07	0.00E+00	2.01E-06	0.00E+00

Output flow indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 8mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of DURABAR GFRP bars for flatwork applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1.94 E+00	9.31 E-02	4.02 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	1.93 E+00	9.26 E-02	4.05 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.55 E-02	3.87 E-04	-2.48 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.28 E-04	8.77 E-05	1.26 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.85 E-07	4.02 E-15	-3.18 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.28 E-02	2.50 E-03	-1.63 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	1.02 E-04	4.27 E-08	-6.80 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.82 E-03	6.24 E-04	-7.73 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	1.96 E-02	6.84 E-03	-5.57 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.08 E-03	1.75 E-03	-1.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	4.66 E-06	1.10 E-09	-2.23 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.48 E+01	1.21 E+00	-3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	4.18 E-01	3.29 E-04	6.00 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.93 E+00	9.14 E-02	4.03 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.44 E-03	0.00 E+00	1.48 E-02	0.00 E+00

Resource use indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 13mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.35 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.35 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.48 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.48 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.06 E-02	1.62 E-05	9.38 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 13mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.29E-09	8.08E-13	-2.73E-12	0.00E+00	1.87E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-13	0.00E+00	4.83E-12	0.00E+00
Non-hazardous waste disposed	kg	2.23E-01	5.87E-05	6.62E-04	0.00E+00	1.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-05	0.00E+00	9.92E-01	0.00E+00
Radioactive waste disposed	kg	6.16E-04	5.33E-07	-1.60E-06	0.00E+00	7.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-07	0.00E+00	2.01E-06	0.00E+00

Output flow indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 13mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Mandatory impact category indicators according to EN 15804

Results per declared unit of DURABAR GFRP bars for flatwork applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1.92 E+00	9.31 E-02	4.02 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.50 E-03	0.00 E+00	6.06 E-02	0.00 E+00
GWP-fossil	kg CO ₂ eq.	1.91 E+00	9.26 E-02	4.05 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.54 E-03	0.00 E+00	1.55 E-02	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	1.56 E-02	3.87 E-04	-2.48 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	-1.32 E-04	0.00 E+00	4.51 E-02	0.00 E+00
GWP-luluc	kg CO ₂ eq.	6.05 E-04	8.77 E-05	1.26 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	8.72 E-05	0.00 E+00	3.14 E-06	0.00 E+00
ODP	kg CFC 11 eq.	1.67 E-07	4.02 E-15	-3.18 E-14	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.23 E-15	0.00 E+00	3.89 E-14	0.00 E+00
AP	mol H ⁺ eq.	1.27 E-02	2.50 E-03	-1.63 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-05	0.00 E+00	1.15 E-04	0.00 E+00
EP-freshwater	kg P eq.	9.55 E-05	4.27 E-08	-6.80 E-09	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.44 E-08	0.00 E+00	7.59 E-08	0.00 E+00
EP-marine	kg N eq.	1.81 E-03	6.24 E-04	-7.73 E-07	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	4.51 E-06	0.00 E+00	3.18 E-05	0.00 E+00
EP-terrestrial	mol N eq.	1.95 E-02	6.84 E-03	-5.57 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	5.39 E-05	0.00 E+00	3.48 E-04	0.00 E+00
POCP	kg NMVOC eq.	6.01 E-03	1.75 E-03	-1.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.12 E-05	0.00 E+00	1.07 E-04	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	4.37 E-06	1.10 E-09	-2.23 E-10	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	6.20 E-10	0.00 E+00	4.23 E-10	0.00 E+00
ADP-fossil*	MJ	3.41 E+01	1.21 E+00	-3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.28 E-01	0.00 E+00	2.01 E-01	0.00 E+00
WDP*	m ³	4.08 E-01	3.29 E-04	6.00 E-04	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.15 E+00	1.14 E-04	0.00 E+00	1.62 E-03	0.00 E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

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

Additional mandatory and voluntary impact category indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.91 E+00	9.14 E-02	4.03 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.44 E-03	0.00 E+00	1.48 E-02	0.00 E+00

Resource use indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 16mm

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7.40 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	7.40 E+00	1.18 E-02	- 1.54 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	9.34 E-03	0.00 E+00	2.85 E-02	0.00 E+00
PENRE	MJ	3.41 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	3.41 E+01	1.21 E+00	- 3.97 E-02	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.29 E-01	0.00 E+00	2.01 E-01	0.00 E+00
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	1.03 E-02	1.62 E-05	9.38 E-06	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.02 E-05	0.00 E+00	4.60 E-05	0.00 E+00

Acronyms PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

Waste indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 16mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.03 E-02	1.62 E-05	9.38 E-06	0.00 E+00	1.87 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	3.99 E-13	0.00 E+00	4.83 E-12	0.00 E+00
Non-hazardous waste disposed	kg	1.31 E-09	8.08 E-13	- 2.73 E-12	0.00 E+00	1.55 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	1.96 E-05	0.00 E+00	9.92 E-01	0.00 E+00
Radioactive waste disposed	kg	2.25 E-01	5.87 E-05	6.62 E-04	0.00 E+00	7.77 E-05	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.41 E-07	0.00 E+00	2.01 E-06	0.00 E+00

Output flow indicators

Results per declared unit of DURABAR GFRP bars for flatwork applications 16mm																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Material for recycling	kg	1.00E -03	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Materials for energy recovery	kg	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, electricity	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00
Exported energy, thermal	MJ	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00	0.00E +00

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Gabi database. GaBi LCA Databases 2023 Edition.

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Dextra Guangdong GFRP products promotional documents (2022).

Dextra Guangdong GFRP technical files (2022).

Dextra Guangdong 2022 energy uses data.

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