

Environmental Product Declaration

In accordance with 14025 and EN15804 +A2

Modular Ceiling – Parafon Buller, Parafon Bass, Parafon OEM,
Parafon Slugger



Owner of the declaration:
Parafon

Product name:
Parafon - Buller, Bass, OEM, Slugger, Slugger
wall panel

Declared unit:
1 m² of installed ceiling tile

Product category /PCR:
Building Boards

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-5778-5065-EN

Registration number:
NEPD-5778-5065-EN

Issue date: 11.01.2024

Valid to: 11.01.2029

General information

Product:

Parafon - Buller, Bass, OEM, Slugger, Slugger wall panel

Program Operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
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Declaration Number:

NEPD-5778-5065-EN

This declaration is based on Product

Category Rules:

EN 15804+A2

NPCR 010 Building Boards (version 2.0)

Statements:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit:

1 m² of installed ceiling tile

Declared unit with option:

1 m² of installed ceiling tile

Functional unit:


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Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Internal

External



Martin Erlandsson, IVL

Independent verifier approved by EPD Norway

Owner of the declaration:

Parafon
Contact person:
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Manufacturer:

Parafon production
Lillebovägen 2, 541 91 Skövde, Sweden

Place of production:

Skövde, Sweden

Management system:

ISO 9001, ISO 14001

Organisation no:

42391719

Issue date:

11.01.2024

Valid to:

11.01.2029

Year of study:

2022

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

The EPD has been worked out by:

Camille Bugnet at Sphera

Approved



Manager of EPD Norway

Product

Product description:

Parafon products are sound absorbing tiles and panels for suspended modular ceilings. The products core material are non combustible stone wool and facing material are pre painted glass fibre tissue. Parafon products are intended for use indoor and are certified according to EN 13964:2014 for Suspended Ceilings.

Product specification:

The Parafon products in this EPD are produced from stone wool with a front glass fibre facing. Parafon products are available with different edge variants and in different thicknesses. The LCA results for all variants are presented in this EPD. The technical information in the EPD refer to the variation Buller White edge A 50mm representative product .

Materials	kg/m ²	%
Stone wool	2	90%
Facings front+back side	0,185	8%
Glue	0,035	2%
Total product	2,22	100%
Packaging (wooden pallets and PE film)	0,146	
Total: Product + packaging	2,366	

Technical data:

Weight: 2,22 kg/m²

Size: 1m²

Market:

Main market areas are Scandinavia and Finland. The scenarios beyond cradle-to-gate are based on Norwegian market.

Reference service life, product:

The reference service lifetime of Parafon Acoustic Ceiling Tiles is 50 years.

Reference service life, building:

The reference service lifetime of 50 years has been assumed for the building in all calculations.

LCA: Calculation rules

Declared unit:

1 m² of installed ceiling tile.

Data quality:

The stone wool production data is site specific from Paroc plants Hässleholm and Hällekis in Sweden. The acoustics ceiling tiles are made of refined stone wool at Rockwool AB, Parafon plant in Skövde, Sweden. Foreground data refer to the year 2021-2022.

For life cycle modeling the GaBi ts Software System for Life Cycle Assessment, developed by Sphera AG, is used (GaBi ts 2022). All relevant background datasets are taken from the GaBi ts software database. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs. Background data refer to the years 2018 to 2021 with a country specific scope as far as available, e.g. for raw material extraction and production, transportation, fuels and energy supply. All relevant processes (foreground and background) have been considered when modelling stone wool production. The process data and the used background data are consistent. The data quality can be qualified as good.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. For mineral wool production, incoming energy and water and waste production in house is allocated equally among all products through mass allocation. For the final acoustic panel, the energy consumption is allocated by functional unit (m² produced).

Effects of primary production of recycled materials allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

System boundary:

The table below identifies the modules included in this study:

The production stage (module A1-A3) covers the following steps:

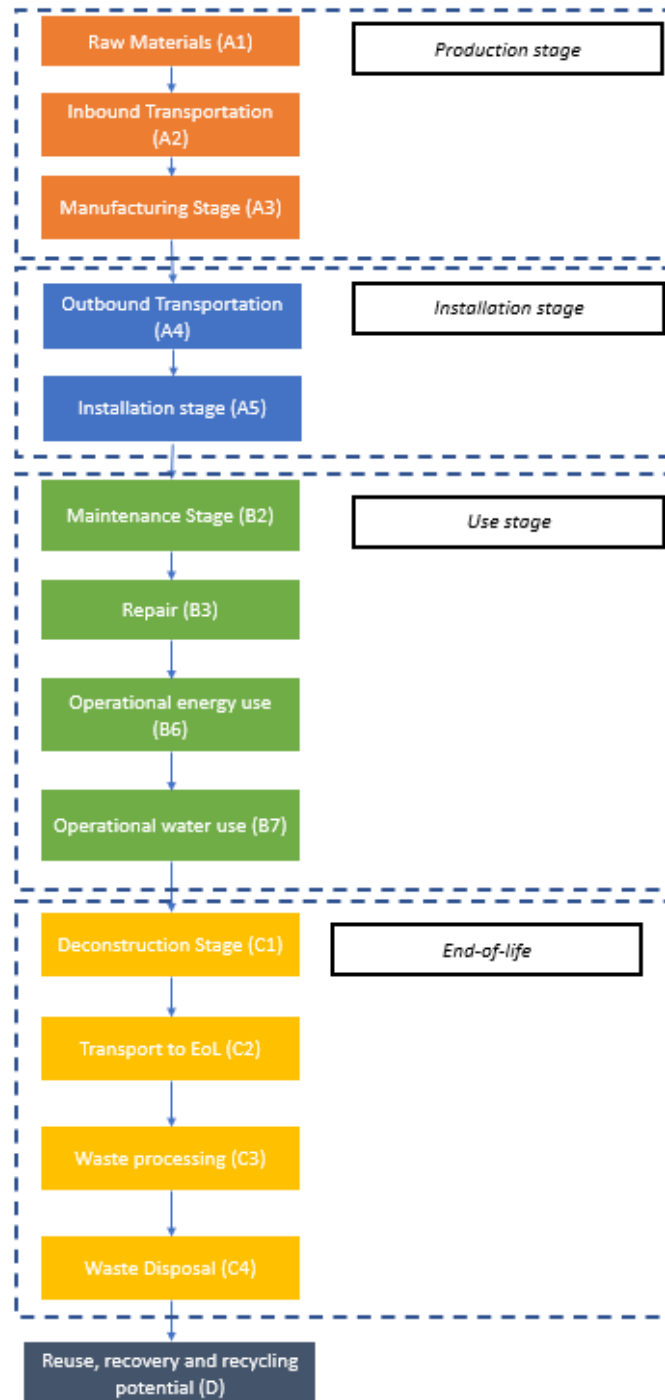
- Raw materials production (e.g. diabase, dolomite etc., including secondary materials entering the system burden-free)
- Binder components production (e.g. resin)
- Transports of raw materials and pre-products to manufacturing plant
- Product manufacturing (power, thermal energy, auxiliaries, emissions)
- Production of packaging materials
- Waste management, water treatment, end-of-life of residues

With the exception of Modules A1 to A3 (describing the manufacturing of stone wool) all other modules are calculated on the basis of assumptions or scenarios.

The following modules were considered in this study: Installation stage (module A4 and A5), use stage (B2, B3, B6 and B7) and the end of life stage (module C1, C2, C3 and C4).

The credits outside the system boundary are taken into account in module D.

The following figure represents the LCA system boundaries for the EPD.



Cut-off criteria:

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to assembly/user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/kg/100 km)
Truck	30%	Euro 6	500	diesel	0,0045

The transportation scenario is based on an estimated figure, and representative for the Parafon market. The capacity utilisation is set to 30% as stone wool is a voluminous but light product.

Assembly (A5)

The following information belongs to the selected product variation Buller White edge A 50mm. The amounts of packaging needed for other thickness is scalable via the mass of final product.

	Unit	Value
Output materials from packaging waste	Kg	0,146

The installation scenario considers a manual installation of the product. Losses and installation auxiliaries are not considered in the study as they can vary significantly depending on the product application.

The treatment of packaging material is included in the study.

Use stage (B1 to B7)

Module B1, B4 and B5 are considered as non-relevant for the acoustic panels and therefore not declared.

Module B2, B3, B6 and B7 are declared with zero environmental impacts.

End of Life (C1, C3, C4)

The following information belongs to the Buller White edge A 50mm . Amount of waste disposed refers to the weight of the acoustic panel.

	Unit	Value
Collected as mixed construction waste	kg	2,22
To landfill	kg	2,22

The end-of-life scenarios are as follows:

- Module C1: The deconstruction of the acoustic panel is assumed to be done manually.
- Module C2: Transport to treatment/disposal site: Average transport distance from the demolition site to waste treatment is assumed as 50 km to landfill. Product is transported and disposed of as mixed construction waste.
- Module C4: The panels are disposed in a landfill.

Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance (km)	Fuel/Energy consumption	value (l/kg/100km)
Truck	61	Euro 6	50	diesel	0,0025

Benefits and loads beyond the system boundaries (D)

For the thermal and electrical energy generated in Module A5 due to thermal treatment of packaging, avoided burdens have been calculated by the inversion of electricity grid mix and thermal.

Additional technical information

Below is a the list of products covered by this EPD with their respective edges, thickness and weight.

Product Name	Edge	Thickness (mm)	Weight (kg/m ²)	Front facing (g/m ²)
Buller, Bass, OEM	A	50	2,22	135
Buller, OEM	A	80	3,42	135
Buller	A	100	4,22	135
Buller	A	30	1,72	135
Slugger	A	25	2,99	367
Slugger, Slugger Wall panel	A	40	4,49	367

LCA: Results

Life Cycle Impact Assessment results represent the environmental impacts for the life cycle of Parafon Acoustic Board from cradle to gate - with options. The results refer to all variants of Parafon Buller and Parafon Slugger .

System boundaries (X=included, MND= module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	X	X	MND	MND	X	X	X	X	X	X	X

Core environmental impact indicators

Parafon product		Buller				Slugger	
		Buller, Bass, OEM	Buller, OEM	Buller		Slugger	Slugger Wall Panel
Product edge/thickness		A 50	A 80	A 100	A 30	A 25	A 40
Indicator	Modules						
GWP-total (kg CO2 eq.)	A1- A3	3,20E+00	4,76E+00	5,81E+00	2,55E+00	4,39E+00	6,35E+00
	A4	1,59E-01	2,45E-01	3,02E-01	1,23E-01	2,14E-01	3,21E-01
	A5	2,71E-01	4,26E-01	5,16E-01	2,10E-01	3,63E-01	5,47E-01
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,44E-03	1,30E-02	1,60E-02	6,54E-03	1,14E-02	1,71E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,32E-02	5,11E-02	6,31E-02	2,57E-02	4,47E-02	6,71E-02
	D	-1,04E-01	-1,61E-01	-1,98E-01	-8,09E-02	-1,40E-01	-2,11E-01
GWP-fossil (kg CO2 eq.)	A1- A3	3,36E+00	5,02E+00	6,12E+00	2,67E+00	4,61E+00	6,68E+00
	A4	1,58E-01	2,43E-01	3,00E-01	1,22E-01	2,13E-01	3,19E-01
	A5	1,07E-01	1,65E-01	2,04E-01	8,31E-02	1,44E-01	2,17E-01
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,38E-03	1,29E-02	1,59E-02	6,49E-03	1,13E-02	1,69E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,31E-02	5,10E-02	6,30E-02	2,57E-02	4,46E-02	6,70E-02
	D	-1,04E-01	-1,61E-01	-1,98E-01	-8,08E-02	-1,40E-01	-2,11E-01
GWP-biogenic (kg CO2 eq.)	A1- A3	-1,63E-01	-2,61E-01	-3,12E-01	-1,26E-01	-2,19E-01	-3,30E-01
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	1,63E-01	2,61E-01	3,12E-01	1,26E-01	2,19E-01	3,30E-01
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parafon product		Buller				Slugger	
		Buller, Bass, OEM	Buller, OEM	Buller		Slugger	Slugger Wall Panel
Product edge/thickness		A 50	A 80	A 100	A 30	A 25	A 40
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-LULUC (kg CO2 eq.)	A1- A3	5,48E-04	7,52E-04	8,88E-04	4,63E-04	8,69E-04	1,12E-03
	A4	1,08E-03	1,67E-03	2,05E-03	8,38E-04	1,45E-03	2,18E-03
	A5	4,23E-06	6,51E-06	8,03E-06	3,27E-06	5,69E-06	8,54E-06
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	5,74E-05	8,85E-05	1,09E-04	4,45E-05	7,73E-05	1,16E-04
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	6,12E-05	9,42E-05	1,16E-04	4,74E-05	8,23E-05	1,24E-04
	D	-1,15E-05	-1,77E-05	-2,19E-05	-8,91E-06	-1,55E-05	-2,32E-05
ODP (kg CFC11 eq.)	A1- A3	4,97E-12	5,52E-12	5,89E-12	4,74E-12	7,63E-12	8,32E-12
	A4	1,58E-14	2,43E-14	2,99E-14	1,22E-14	2,12E-14	3,18E-14
	A5	1,74E-14	2,68E-14	3,31E-14	1,35E-14	2,34E-14	3,52E-14
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,37E-16	1,29E-15	1,59E-15	6,48E-16	1,13E-15	1,69E-15
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	7,79E-14	1,20E-13	1,48E-13	6,03E-14	1,05E-13	1,57E-13
	D	-7,08E-13	-1,09E-12	-1,35E-12	-5,48E-13	-9,52E-13	-1,43E-12
AP (mol H ⁺ eq.)	A1- A3	1,62E-02	2,42E-02	2,95E-02	1,28E-02	2,28E-02	3,28E-02
	A4	1,91E-04	2,95E-04	3,64E-04	1,48E-04	2,58E-04	3,87E-04
	A5	3,53E-05	5,43E-05	6,70E-05	2,73E-05	4,74E-05	7,13E-05
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parafon product		Buller				Slugger	
		Buller, Bass, OEM	Buller, OEM	Buller		Slugger	Slugger Wall Panel
Product edge/thickness		A 50	A 80	A 100	A 30	A 25	A 40
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	9,52E-06	1,47E-05	1,81E-05	7,38E-06	1,28E-05	1,92E-05
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	2,35E-04	3,62E-04	4,46E-04	1,82E-04	3,16E-04	4,75E-04
	D	-1,38E-04	-2,12E-04	-2,61E-04	-1,07E-04	-1,85E-04	-2,78E-04
EP-freshwater (kg P eq.)	A1- A3	1,55E-06	1,91E-06	2,16E-06	1,39E-06	2,76E-06	3,22E-06
	A4	5,73E-07	8,83E-07	1,09E-06	4,44E-07	7,71E-07	1,16E-06
	A5	6,13E-09	9,44E-09	1,16E-08	4,75E-09	8,24E-09	1,24E-08
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	3,04E-08	4,69E-08	5,79E-08	2,36E-08	4,10E-08	6,15E-08
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	5,62E-08	8,65E-08	1,07E-07	4,35E-08	7,56E-08	1,14E-07
D	-1,44E-07	-2,22E-07	-2,74E-07	-1,12E-07	-1,94E-07	-2,91E-07	
EP-marine (kg N eq.)	A1- A3	2,00E-03	2,92E-03	3,54E-03	1,61E-03	2,86E-03	4,02E-03
	A4	6,40E-05	9,86E-05	1,22E-04	4,96E-05	8,61E-05	1,29E-04
	A5	1,03E-05	1,59E-05	1,96E-05	7,99E-06	1,39E-05	2,08E-05
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	3,06E-06	4,72E-06	5,83E-06	2,37E-06	4,12E-06	6,19E-06
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	6,01E-05	9,25E-05	1,14E-04	4,65E-05	8,08E-05	1,21E-04
D	-3,73E-05	-5,74E-05	-7,09E-05	-2,89E-05	-5,02E-05	-7,53E-05	
EP-terrestrial (mol N eq.)	A1- A3	5,94E-02	9,19E-02	1,14E-01	4,59E-02	7,85E-02	1,19E-01
	A4	7,61E-04	1,17E-03	1,45E-03	5,90E-04	1,02E-03	1,54E-03
	A5	1,67E-04	2,57E-04	3,17E-04	1,29E-04	2,24E-04	3,37E-04
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parafon product		Buller				Slugger	
		Buller, Bass, OEM	Buller, OEM	Buller		Slugger	Slugger Wall Panel
Product edge/thickness		A 50	A 80	A 100	A 30	A 25	A 40
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	3,67E-05	5,65E-05	6,98E-05	2,84E-05	4,94E-05	7,42E-05
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	6,60E-04	1,02E-03	1,25E-03	5,11E-04	8,88E-04	1,33E-03
	D	-3,99E-04	-6,15E-04	-7,59E-04	-3,09E-04	-5,37E-04	-8,07E-04
POCP (kg NMVOC eq.)	A1- A3	5,26E-03	7,52E-03	9,03E-03	4,31E-03	7,79E-03	1,06E-02
	A4	1,67E-04	2,57E-04	3,17E-04	1,29E-04	2,24E-04	3,37E-04
	A5	2,85E-05	4,40E-05	5,43E-05	2,21E-05	3,84E-05	5,77E-05
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,20E-06	1,26E-05	1,56E-05	6,35E-06	1,10E-05	1,66E-05
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	1,83E-04	2,81E-04	3,47E-04	1,41E-04	2,46E-04	3,69E-04
D	-1,04E-04	-1,61E-04	-1,98E-04	-8,08E-05	-1,40E-04	-2,11E-04	
ADP-M&M (kg Sb eq.)	A1- A3	1,99E-07	2,52E-07	2,88E-07	1,77E-07	3,39E-07	4,05E-07
	A4	1,62E-08	2,49E-08	3,07E-08	1,25E-08	2,18E-08	3,27E-08
	A5	4,79E-10	7,38E-10	9,10E-10	3,71E-10	6,44E-10	9,68E-10
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,59E-10	1,32E-09	1,63E-09	6,65E-10	1,16E-09	1,74E-09
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,40E-09	5,23E-09	6,45E-09	2,63E-09	4,57E-09	6,86E-09
D	-1,58E-08	-2,43E-08	-3,00E-08	-1,22E-08	-2,12E-08	-3,19E-08	
ADP-fossil (MJ)	A1- A3	3,61E+01	4,99E+01	5,91E+01	3,03E+01	5,29E+01	7,01E+01
	A4	2,11E+00	3,24E+00	4,00E+00	1,63E+00	2,83E+00	4,26E+00
	A5	5,51E-02	8,49E-02	1,05E-01	4,27E-02	7,41E-02	1,11E-01

Parafon product		Buller				Slugger	
		Buller, Bass, OEM	Buller, OEM	Buller		Slugger	Slugger Wall Panel
Product edge/thickness		A 50	A 80	A 100	A 30	A 25	A 40
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	1,12E-01	1,72E-01	2,13E-01	8,67E-02	1,51E-01	2,26E-01
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	4,34E-01	6,69E-01	8,25E-01	3,36E-01	5,84E-01	8,77E-01
	D	-1,78E+00	-2,73E+00	-3,37E+00	-1,38E+00	-2,39E+00	-3,59E+00
WDP (m ³)	A1- A3	2,22E-01	2,64E-01	2,93E-01	2,04E-01	3,30E-01	3,83E-01
	A4	1,79E-03	2,77E-03	3,41E-03	1,39E-03	2,42E-03	3,63E-03
	A5	2,74E-02	4,22E-02	5,21E-02	2,12E-02	3,69E-02	5,54E-02
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	9,53E-05	1,47E-04	1,81E-04	7,39E-05	1,28E-04	1,93E-04
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,63E-03	5,60E-03	6,91E-03	2,81E-03	4,89E-03	7,34E-03
D	-1,11E-02	-1,72E-02	-2,12E-02	-8,64E-03	-1,50E-02	-2,25E-02	

GWP-total: Global Warming Potential; **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; See "additional requirements" for indicator given as PO4 eq. **EP-marine:** Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-terrestrial:** Eutrophication potential, Accumulated Exceedance; **POCP:** Formation potential of tropospheric ozone; **ADP-M&M:** Abiotic depletion potential for non-fossil resources (minerals and metals); **ADP-fossil:** Abiotic depletion potential for fossil resources; **WDP:** Water deprivation potential, deprivation weighted water consumption

Additional environmental impact indicators

Parafon Product		Buller				Slugger	
Edge / Thickness		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
Indicator		A 50	A 80	A 100	A 30	A 25	A 40
PM (Disease incidence)	Modules						
	A1- A3	6,39E-07	1,01E-06	1,26E-06	4,85E-07	8,18E-07	1,28E-06
	A4	1,27E-09	1,95E-09	2,41E-09	9,82E-10	1,71E-09	2,56E-09
	A5	1,84E-10	2,84E-10	3,50E-10	1,43E-10	2,48E-10	3,72E-10
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	6,54E-11	1,01E-10	1,24E-10	5,07E-11	8,80E-11	1,32E-10
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	2,89E-09	4,45E-09	5,49E-09	2,24E-09	3,89E-09	5,84E-09
D	-1,14E-09	-1,75E-09	-2,17E-09	-8,82E-10	-1,53E-09	-2,30E-09	
IRP (kBq U235 eq.)	A1- A3	2,52E-01	2,64E-01	2,73E-01	2,46E-01	3,29E-01	3,45E-01
	A4	5,93E-04	9,13E-04	1,13E-03	4,59E-04	7,97E-04	1,20E-03
	A5	4,68E-04	7,20E-04	8,89E-04	3,62E-04	6,29E-04	9,45E-04
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	3,15E-05	4,85E-05	5,98E-05	2,44E-05	4,24E-05	6,36E-05
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	5,37E-04	8,28E-04	1,02E-03	4,16E-04	7,23E-04	1,09E-03
	D	-2,37E-02	-3,66E-02	-4,51E-02	-1,84E-02	-3,19E-02	-4,80E-02
ETP-fw (CTUe)	A1- A3	9,96E+00	1,29E+01	1,49E+01	8,72E+00	1,46E+01	1,83E+01
	A4	1,49E+00	2,30E+00	2,84E+00	1,16E+00	2,01E+00	3,02E+00
	A5	2,66E-02	4,09E-02	5,05E-02	2,06E-02	3,57E-02	5,37E-02
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	7,93E-02	1,22E-01	1,51E-01	6,14E-02	1,07E-01	1,60E-01
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	2,43E-01	3,75E-01	4,62E-01	1,88E-01	3,27E-01	4,91E-01
	D	-3,91E-01	-6,02E-01	-7,43E-01	-3,03E-01	-5,26E-01	-7,90E-01
HTP-c (CTUh)	A1- A3	6,82E-09	1,04E-08	1,28E-08	5,34E-09	9,32E-09	1,38E-08

Parafon Product Edge / Thickness		Buller				Slugger	
		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
				A 50	A 80		
	A4	3,08E-11	4,74E-11	5,85E-11	2,38E-11	4,14E-11	6,22E-11
	A5	1,84E-12	2,84E-12	3,50E-12	1,43E-12	2,48E-12	3,72E-12
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	1,63E-12	2,52E-12	3,11E-12	1,27E-12	2,20E-12	3,30E-12
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,71E-11	5,72E-11	7,05E-11	2,87E-11	4,99E-11	7,50E-11
	D	-1,79E-11	-2,76E-11	-3,41E-11	-1,39E-11	-2,41E-11	-3,62E-11
	A1- A3	2,88E-07	4,56E-07	5,68E-07	2,18E-07	3,65E-07	5,75E-07
	A4	1,67E-09	2,58E-09	3,18E-09	1,30E-09	2,25E-09	3,38E-09
	A5	6,39E-11	9,84E-11	1,21E-10	4,95E-11	8,59E-11	1,29E-10
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,87E-11	1,37E-10	1,69E-10	6,87E-11	1,19E-10	1,79E-10
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	4,11E-09	6,33E-09	7,81E-09	3,18E-09	5,53E-09	8,30E-09
	D	-6,88E-10	-1,06E-09	-1,31E-09	-5,33E-10	-9,26E-10	-1,39E-09
	A1- A3	2,71E+01	4,12E+01	5,06E+01	2,13E+01	3,74E+01	5,50E+01
	A4	8,91E-01	1,37E+00	1,69E+00	6,91E-01	1,20E+00	1,80E+00
	A5	1,73E-02	2,67E-02	3,30E-02	1,34E-02	2,33E-02	3,50E-02
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	4,74E-02	7,30E-02	9,00E-02	3,67E-02	6,37E-02	9,57E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	9,03E-02	1,39E-01	1,72E-01	7,00E-02	1,21E-01	1,82E-01
	D	-3,18E-01	-4,89E-01	-6,04E-01	-2,46E-01	-4,27E-01	-6,42E-01

PM: Particulate matter emissions; **IRP:** Ionising radiation, human health; **ETP-fw:** Ecotoxicity (freshwater); **ETP-c:** Human toxicity, cancer effects; **HTP-nc:** Human toxicity, non-cancer effects; **SQL:** Land use related impacts / soil quality

Classification of disclaimers to the declaration of core and additional environmental impact indicators

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2
<p>Disclaimer 1 – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.</p> <p>Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator</p>		

Resource use

Parafon Product		Buller				Slugger	
Edge / Thickness		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
Indicator		A 50	A 80	A 100	A 30	A 25	A 40
RPEE (MJ)	A1- A3	1,13E+01	1,38E+01	1,55E+01	1,02E+01	1,40E+01	1,72E+01
	A4	1,46E-01	2,25E-01	2,77E-01	1,13E-01	1,96E-01	2,95E-01
	A5	1,68E+00	2,59E+00	3,20E+00	1,30E+00	2,26E+00	3,40E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	7,75E-03	1,19E-02	1,47E-02	6,01E-03	1,04E-02	1,57E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	6,51E-02	1,00E-01	1,24E-01	5,05E-02	8,76E-02	1,32E-01
	D	-4,89E-01	-7,53E-01	-9,29E-01	-3,79E-01	-6,58E-01	-9,88E-01
RPEM (MJ)	A1- A3	1,71E+00	2,64E+00	3,26E+00	1,33E+00	2,30E+00	3,46E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	-1,67E+00	-2,57E+00	-3,18E+00	-1,29E+00	-2,25E+00	-3,38E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TPE (MJ)	A1- A3	1,30E+01	1,65E+01	1,88E+01	1,15E+01	1,63E+01	2,07E+01
	A4	1,46E-01	2,25E-01	2,77E-01	1,13E-01	1,96E-01	2,95E-01
	A5	1,16E-02	1,79E-02	2,21E-02	9,00E-03	1,56E-02	2,35E-02
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parafon Product		Buller				Slugger	
		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
Edge / Thickness		A 50	A 80	A 100	A 30	A 25	A 40
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	7,75E-03	1,19E-02	1,47E-02	6,01E-03	1,04E-02	1,57E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	6,51E-02	1,00E-01	1,24E-01	5,05E-02	8,76E-02	1,32E-01
	D	-4,89E-01	-7,53E-01	-9,29E-01	-3,79E-01	-6,58E-01	-9,88E-01
NRPE (MJ)	A1- A3	3,21E+01	4,41E+01	5,21E+01	2,71E+01	4,71E+01	6,21E+01
	A4	2,11E+00	3,26E+00	4,02E+00	1,64E+00	2,84E+00	4,27E+00
	A5	1,59E+00	2,44E+00	3,02E+00	1,23E+00	2,14E+00	3,21E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	1,12E-01	1,73E-01	2,14E-01	8,70E-02	1,51E-01	2,27E-01
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	4,35E-01	6,69E-01	8,26E-01	3,37E-01	5,85E-01	8,78E-01
	D	-1,78E+00	-2,73E+00	-3,37E+00	-1,38E+00	-2,39E+00	-3,59E+00
NRPM (MJ)	A1- A3	4,03E+00	5,83E+00	7,03E+00	3,28E+00	5,84E+00	8,09E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	-1,53E+00	-2,36E+00	-2,91E+00	-1,19E+00	-2,06E+00	-3,10E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TRPE (MJ)	A1- A3	3,61E+01	4,99E+01	5,91E+01	3,04E+01	5,29E+01	7,02E+01
	A4	2,11E+00	3,26E+00	4,02E+00	1,64E+00	2,84E+00	4,27E+00
	A5	5,52E-02	8,50E-02	1,05E-01	4,27E-02	7,42E-02	1,11E-01

Parafon Product		Buller				Slugger	
		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
Edge / Thickness		A 50	A 80	A 100	A 30	A 25	A 40
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	1,12E-01	1,73E-01	2,14E-01	8,70E-02	1,51E-01	2,27E-01
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	4,35E-01	6,69E-01	8,26E-01	3,37E-01	5,85E-01	8,78E-01
	D	-1,78E+00	-2,73E+00	-3,37E+00	-1,38E+00	-2,39E+00	-3,59E+00
SM(kg)	A1- A3	6,82E-01	1,09E+00	1,36E+00	5,12E-01	8,53E-01	1,36E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF (MJ)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parafon Product		Buller				Slugger	
		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
Edge / Thickness		A 50	A 80	A 100	A 30	A 25	A 40
NRSF (MJ)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
W (m ³)	A1- A3	2,00E-02	2,60E-02	3,00E-02	1,75E-02	2,55E-02	3,30E-02
	A4	1,69E-04	2,60E-04	3,21E-04	1,31E-04	2,27E-04	3,41E-04
	A5	6,44E-04	9,92E-04	1,22E-03	4,99E-04	8,67E-04	1,30E-03
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,96E-06	1,38E-05	1,70E-05	6,94E-06	1,21E-05	1,81E-05
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	1,10E-04	1,70E-04	2,10E-04	8,54E-05	1,48E-04	2,23E-04
	D	-4,70E-04	-7,24E-04	-8,93E-04	-3,64E-04	-6,32E-04	-9,50E-04

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials¹; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

¹ For this study both the product and its packaging are reported in the indicators "Use of renewable primary energy resources used as raw materials" (PERM) and "Use of non-renewable primary energy resources used as raw materials" (PENRM). PERM and PENRM are reported as negative values were materials are recycled or recovered, but not when landfilled.

End of life – Waste

Parafon Product		Buller				Slugger	
		Buller,Bass OEM A 50	Buller OEM A 80	A 100	Buller A 30	Slugger A 25	Slugger Wall Panel A 40
Edge / Thickness	Indicator						
HW (kg)	A1- A3	3,69E-07	5,90E-07	7,38E-07	2,77E-07	4,63E-07	7,39E-07
	A4	1,12E-11	1,72E-11	2,13E-11	8,67E-12	1,51E-11	2,26E-11
	A5	4,62E-12	7,11E-12	8,78E-12	3,58E-12	6,21E-12	9,33E-12
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	5,94E-13	9,16E-13	1,13E-12	4,60E-13	8,00E-13	1,20E-12
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	2,23E-11	3,44E-11	4,24E-11	1,73E-11	3,00E-11	4,51E-11
	D	-2,40E-10	-3,70E-10	-4,56E-10	-1,86E-10	-3,23E-10	-4,85E-10
	NHW (kg)	A1- A3	3,77E-01	5,70E-01	6,99E-01	2,97E-01	5,04E-01
A4		3,44E-04	5,31E-04	6,55E-04	2,67E-04	4,63E-04	6,96E-04
A5		1,65E-03	2,54E-03	3,13E-03	1,28E-03	2,22E-03	3,33E-03
B2		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B6		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B7		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2		1,83E-05	2,82E-05	3,48E-05	1,42E-05	2,46E-05	3,70E-05
C3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4		2,22E+00	3,42E+00	4,22E+00	1,72E+00	2,99E+00	4,49E+00
D		-8,98E-04	-1,38E-03	-1,71E-03	-6,96E-04	-1,21E-03	-1,82E-03
RW(kg)		A1- A3	1,99E-03	2,08E-03	2,14E-03	1,95E-03	2,46E-03
	A4	3,92E-06	6,05E-06	7,46E-06	3,04E-06	5,28E-06	7,93E-06
	A5	2,85E-06	4,40E-06	5,42E-06	2,21E-06	3,84E-06	5,77E-06
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	2,08E-07	3,21E-07	3,96E-07	1,62E-07	2,81E-07	4,21E-07
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	4,84E-06	7,45E-06	9,19E-06	3,75E-06	6,51E-06	9,77E-06
	D	-1,40E-04	-2,16E-04	-2,67E-04	-1,09E-04	-1,89E-04	-2,83E-04

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life – output flow

Parafon Product		Buller				Slugger	
Edge / Thickness		Buller,Bass OEM A 50	Buller OEM A 80	A 100	Buller A 30	Slugger A 25	Slugger Wall Panel A 40
Indicator	Modules						
	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR (kg)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER (kg)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A5		1,47E-01	2,26E-01	2,79E-01	1,14E-01	1,97E-01	2,96E-01
B2		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B6		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B7		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE (MJ)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A5	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	D	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ETE (MJ)	A1- A3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A5		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B2		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B6		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
B7		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C3		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
D		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3}$ = 0,009

Information describing the biogenic carbon content at the factory gate

The following information belongs to the Buller White edge A 50 mm. Information on the biogenic content of the other variations is scalable via the mass of the final product.

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0
Biogenic carbon content in the accompanying packaging	kg C	0,046

Additional requirements

Approach Power Mix: Reporting done as required in prEN 15941.

Guarantees of origin from the use of electricity in the manufacturing phase

Where guarantees of origin are applied instead of national production mix – the electricity for the manufacturing process (A3) shall be stated clearly in the EPD per functional unit.

Electricity source	Foreground [kWh]	GWPTotal [kg CO ₂ -eq/kWh]	SUM [kg CO ₂ -eq]
Amount of guarantee of origin used in the foreground	0,89	0,01	0,0089

The guarantee of origin utilized in this EPD is provided by Vattenfall and is valid until further notice.

Information on the residual mix calculation methodology used in the EPD is documented in : <https://sphera.com/2023/xml-data/processes/3126f8cc-544f-4614-8e73-ecd2297833f8.xml>

Additional environmental impact indicators required in NPCR Part A for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation and legislation for climate declarations of new building.

Parafon Product		Buller				Slugger	
Edge / Thickness		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
		A 50	A 80	A 100	A 30	A 25	Panel A 40
Indicator	Modules						
GWP-IOBC	A1- A3	3,33E+00	4,97E+00	6,06E+00	2,65E+00	4,58E+00	6,62E+00
	A4	1,60E-01	2,46E-01	3,03E-01	1,24E-01	2,15E-01	3,23E-01
	A5	1,07E-01	1,65E-01	2,04E-01	8,31E-02	1,44E-01	2,17E-01
	B2	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B6	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	B7	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C2	8,46E-03	1,30E-02	1,61E-02	6,56E-03	1,14E-02	1,71E-02
	C3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	C4	3,33E-02	5,13E-02	6,33E-02	2,58E-02	4,48E-02	6,73E-02
	D	-1,05E-01	-1,62E-01	-1,99E-01	-8,13E-02	-1,41E-01	-2,12E-01

GWP-IOBC Global warming potential calculated according to the principle of instantaneous oxidation.

Additionally, because electricity in the manufacturing stage (A3) is based on guarantees of origin or similar instruments, then the results with the physical national grid mix shall be calculated and reported in the EPD in parallel for reasons of transparency. This additional reporting is presented in the table below and limited to GWP.

Parafon Product		Buller				Slugger	
Edge / Thickness		Buller,Bass OEM	Buller OEM	Buller		Slugger	Slugger Wall Panel
		A 50	A 80	A 50	A 80	A 25	Panel A 40
Indicator	Modules						
GWP-IOBC	A1- A3	3,36E+00	5,00E+00	6,09E+00	2,68E+00	4,61E+00	6,65E+00
GWP-total	A1- A3	3,23E+00	4,79E+00	5,84E+00	2,58E+00	4,42E+00	6,38E+00

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiten, Annex III), see table.

Indoor environment





Parafon products covered in this EPD are certified in Danish Indoor Climate Labelling system - Emission class: 2 and Particle class: LOW. A-edge products are also M1 certified by finnish Building Information Foundation RTS sr.

Carbon footprint

Carbon footprint has not been worked out for the product.

Bibliography

ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
EN 13964:2014	Suspended Ceilings - Requirements And Test Methods
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2007	Sustainability in building construction - Environmental declaration of building products
PARAFON 2023	Background report for EPD Update for acoustic panels (PARAFON products), version 2, Sphera Solution GmbH, November 2023
PCR	NPCR 010 rev2, Building Boards, The Norwegian EPD Foundation, 03/2022

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