ENVIRONMENTAL PRODUCT DECLARATION

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

EPD of multiple products, based on a representative product. Products included: Sisalwool 50 and Sisalwool 100.

SISALWOOL

Programme	The International EPD ® System , www.environdec.com
Programme operator	EPD International AB
EPD registration number	EPD-IES-0003025
Version date	2025-11-06
Validity date	2030-11-06

PROGRAMME INFORMATION

Programme	The International EPD® System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden
Website	www.environdec.com
E-mail	support@environdec.com

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): PCR 2019:14 Construction products, version 2.0.1, published on 2025-06-05, valid until 2030-04-07
PCR review was conducted by: The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Chairs of the PCR Review: Rob Rouwette (chair) and Noa Meron (co-chair).
Life Cycle Assessment (LCA)
LCA accountability: Cristina Babío and Sandra Yáñez from Valora Consultores de Gestión S.L.
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Agnieszka Pikus Greenwise Approved by: The International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

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.

COMPANY INFORMATION

Owner of the EPD: Sisaltech Ltd.

Contact: info@sisalwool.com , https://www.sisalwool.com/

Description of the organization: Sisalwool is an innovative natural fibre insulation brand developed by Sisaltech Ltd, based in Roslin, Scotland. Rooted in a commitment to sustainability and circular economies, Sisalwool uniquely combines sisal fibres (largely sourced from recycled coffee sacks) with sheep wool, including waste wool noils and off-cuts from textiles and carpets.

The company's mission is to create technical, natural-fibre insulation products that facilitate a smooth transition to low-carbon building materials, while offering enhanced safety, comfort, and ease of installation. Sisalwool is crafted to be breathable, thermally efficient, acoustically effective, and user-friendly, earning praise from installers for its low irritation, simple handling, and friction-fit properties that prevent sagging or settling.

Address: Midlothian Innovation Centre, Roslin, UK. EH25 9RE

Location of production site: Spain

PRODUCT INFORMATION

Sisalwool 100 is a natural fibre insulation batt, offering thermal and acoustic performance in wall, roof, and floor applications. It is composed of 40% sisal fibre, 40% sheep wool, and 20% bi-component binder, providing breathability, low embodied carbon, and safe handling during installation.

UN CPC code: 37990 — Thermal insulation materials for construction purposes

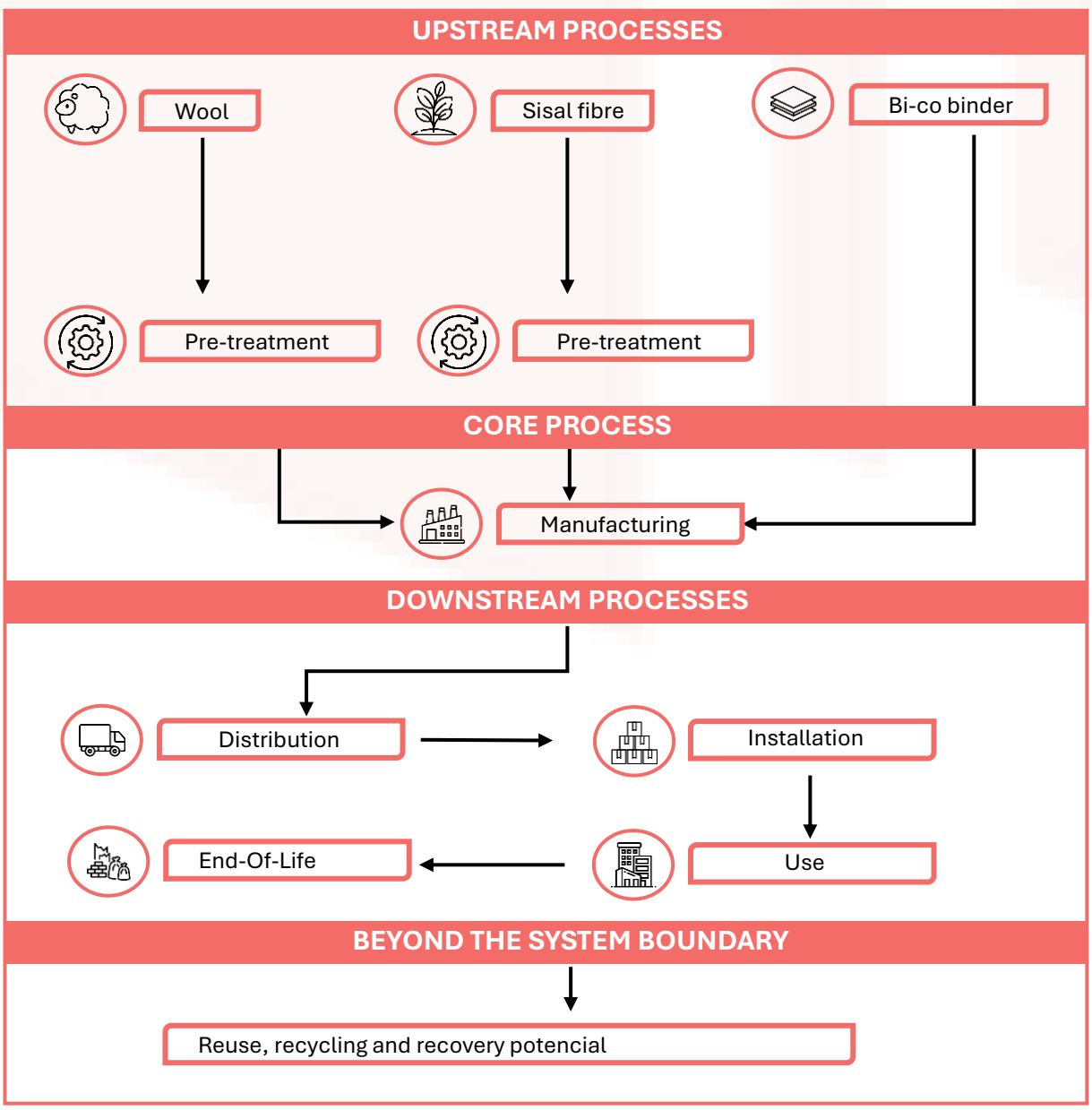
Technical properties	
Density	40 kg/m^3
Weight per unit area	4,00 kg/m^2
Thickness	100 mm
Length	1.200 mm
Width	570 mm or 370 mm
Thermal conductivity	0,039 W/mK
MU value	2,4
Sound Absorption	1,00 (Class A)
Reaction to fire	Euro class E
Moth proofing	Ecolan

This EPD covers Sisalwool 100 as the reference product. The results are also valid for Sisalwool 50 by applying a conversion factor of 0,60. Accordingly, the environmental impacts of Sisalwool 50 can be obtained by multiplying the results reported for Sisalwool 100 by 0,60.

LCA INFORMATION

Declared unit	The declared unit is 1m^2 of product, including its packaging.
Time representativeness	Primary data was collected internally. The production data refers to the average of the year 2024.
Geographical scope	Spain (manufacturing)
Database(s) and LCA software used	The Ecoinvent database provides the life cycle inventory data for the raw and processed materials obtained from the background system. The used database is Ecoinvent 3.11. The LCA software used is SimaPro 10.2.0.2 and EIME v11.0
Methodology	The methodology used for the the core environmental impact indicators follows EN15804 + A2(aligned with the EF 3.1 method)
Data quality	Internally collected data are based on annual production quantities in 2024. The quality of the data can be qualified as good. The primary data collection has been carried out comprehensively.
Cut-off criteria	A cut-off rule of 1% has been applied. Also, at least 99% of the mass of the product content and 99% of the life cycle energy use of the product has been accounted for.
Description of system boundaries	The scope for this study is cradle to grave and module D. The system boundaries are illustrated in the figure below.

System diagram



LCA INFORMATION

Description of the system boundaries

A comprehensive list and detailed explanations of each stage within the EPD are available as follows.

The product stage (A1 – A3) includes:

- A1 - raw material extraction and processing, processing of secondary material input (e.g. recycling processes)
- A2 – transport of the manufacturer
- A3 – manufacturing

This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of-waste state or disposal of final residues during the product stage.

The LCA results are presented in an aggregated format for the product stage, where modules A1, A2, and A3 are consolidated into a single module, denoted as A1-A3.

The construction process stage includes:

- **A4 – transport to the construction site**
- **A5 – installation into the building**

The transport stage (A4) accounts for the environmental impacts associated with the transportation of the product to the installation site. The calculation is based on the actual transport distances recorded in 2024, applied to the declared functional unit. The installation stage (A5) includes the impacts associated with the management of packaging waste.

The use stage (B1 – B7) includes:

- B1 – use
- B2 – maintenance
- B3 – repair
- B4 – replacement
- B5 – refurbishment
- B6 – operational energy use
- B7 – operational water use

Once installation is complete, no actions or technical operations are required during the use stage until the end of life. In accordance with EN 15804, the use stage does not account for potential energy savings, although the insulation contributes to improved building energy efficiency through reduced heating and cooling demand

The end-of-life stage (C1 – C4) includes:

- C1 – deconstruction, demolition
- C2 – transport to waste processing
- C3 - waste processing for reuse, recovery and/or recycling
- C4 –disposal

This includes provision of all transport, materials, products and related energy and water use. The common manual dismantling impact of insulation is considered as very small and can be neglected in C1.

Although Sisalwool products are designed for full recyclability, the end-of-life modelling is based on UK construction product data, assuming 94 % recycling and 6 % landfill.

Benefits and loads beyond the system boundary (Module D) includes:

Module D accounts for potential environmental benefits and burdens beyond the system boundary. In this study, the 94% of insulation sent for recycling is excluded following the cut-off approach. The remaining 6% sent to landfill contributes to energy recovery, and the resulting avoided primary energy production is included as an environmental benefit in accordance with EN 15804 (formula D.9).

LCA INFORMATION

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

	Product stage		Construction process stage			Use stage							End-of-life 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-Recyclingpotential
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
Geography	RER		ES	RER	UK												
Share specific data	>90%																

Content declaration

Product components	Weight (kg)	Weight (%)	Post-consumer recycled material %	Variation with Sisalwool 50 (%)
Sheep wool	1,89	40	0	60
Sisal fibres	1,47	40	0	60
Bi-co binder	0,84	20	50	60

Packaging materials	Weight, kg/DU or FU
Packaging - Plastic bags	0,095
Packaging - Wood pallets	0,45
Packaging - film	0,011
TOTAL	0,556

** No substances from the ECHA Candidate List of SVHCs are present above 0.1% (w/w) in the product.*

Allocation

In sheep farming, meat and wool are co-products. Following EN 15804, greenhouse gas emissions are allocated using economic value. In the UK, wool represents only about 1 % of the total economic value, while meat accounts for approximately 99 %. Therefore, 1 % of the emissions is attributed to wool and 99 % to meat.

This approach, ensures that the LCA of wool reflects impacts from processing and transport, while excluding emissions mainly linked to meat production, such as enteric fermentation and manure management.

LCA INFORMATION

Share of primary data

PROCESS		SOURCE TYPE	SOURCE	REFERENCE YEAR	DATA CATEGORY	SHARE OF PRIMARY DATA, OF GWP GHG RESULTS FOR A1 A3
Raw materials (A1)	Sheep wool	Inventory	Sisaltech	2024	Primary data	11,7%
	Sisal fibres	Inventory	Sisaltech	2024	Primary data	13,2%
	Bi-co binder	Inventory	Sisaltech	2024	Primary data	-32,6%
Electricity (A1)		Inventory	Sisaltech	2024	Primary data	8,1%
Raw materials transport (A2)		Database	Ecoinvent v3.11	2024	Secondary data	4,4%
Packaging (A3)		Inventory	Sisaltech	2024	Primary data	3,0%
Packaging transport (A3)		Database	Ecoinvent v3.11	2024	Secondary data	1,0%
Waste (A3)		Inventory	Sisaltech	2024	Primary data	9,9%
Waste transport (A3)		Database	Ecoinvent v3.11	2024	Secondary data	1,2%
Resource consumption (A3)		Database	Ecoinvent v3.11	2024	Secondary data	2,0%
Emissions (A3)		Inventory	Sisaltech	2024	Primary data	2,4%

ENVIRONMENT PERFORMANCE

Impact category indicators for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	3,29E-02	1,52E-03	2,20E-03	0,00E+00	0,00E+00	3,54E-05	0,00E+00	2,71E-05	-1,50E-05
Climate change	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	3,44E+00	-6,28E-03
Climate change - Biogenic	kg CO2 eq	-2,80E+00	2,26E-05	7,23E-04	0,00E+00	0,00E+00	1,04E-06	0,00E+00	3,44E+00	-2,77E-06
Climate change - Fossil	kg CO2 eq	4,27E+00	6,67E-01	5,57E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	8,23E-03	-6,27E-03
Climate change - Land use and LU change	kg CO2 eq	3,31E-02	1,64E-05	9,30E-04	0,00E+00	0,00E+00	7,46E-07	0,00E+00	2,02E-06	-7,54E-06
Climate change - GHG	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	3,44E+00	-6,28E-03
Eutrophication, marine	kg N eq	1,11E-02	5,58E-04	2,47E-03	0,00E+00	0,00E+00	7,85E-06	0,00E+00	1,53E-04	-4,23E-06
Eutrophication, freshwater	kg P eq	7,55E-04	4,82E-06	1,67E-04	0,00E+00	0,00E+00	2,55E-08	0,00E+00	2,22E-06	-6,88E-08
Eutrophication, terrestrial	mol N eq	1,24E-01	6,11E-03	5,53E-03	0,00E+00	0,00E+00	8,59E-05	0,00E+00	8,52E-05	-5,22E-05
Ozone depletion	kg CFC11 eq	1,24E-07	1,35E-08	2,11E-08	0,00E+00	0,00E+00	6,19E-10	0,00E+00	5,30E-11	-3,06E-10
Photochemical ozone formation	kg NMVOC eq	1,24E-02	2,68E-03	2,60E-03	0,00E+00	0,00E+00	7,67E-05	0,00E+00	5,49E-05	-1,41E-05
Resource use, fossils	MJ	1,00E+02	8,77E+00	1,16E+01	0,00E+00	0,00E+00	4,01E-01	0,00E+00	5,02E-02	-1,80E-01
Resource use, minerals and metals	kg Sb eq	1,07E-06	2,20E-08	8,20E-07	0,00E+00	0,00E+00	1,00E-09	0,00E+00	7,06E-10	-3,24E-10
Water use	m3 depriv.	1,26E+01	3,67E-03	1,93E-01	0,00E+00	0,00E+00	1,70E-04	0,00E+00	-2,75E-02	-2,16E-04

Use of resources for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-1,39E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	2,49E-04	0,00E+00	4,87E-03	-7,71E-02
Use of renewable primary energy resources used as raw materials	MJ	4,37E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2,98E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	2,49E-04	0,00E+00	4,87E-03	-7,71E-02
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	9,28E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	8,70E-03	0,00E+00	1,70E-01	-1,75E-01
Use of non-renewable primary energy resources used as raw materials	MJ	2,68E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9,55E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	8,70E-03	0,00E+00	1,70E-01	-1,75E-01
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	3,70E+00	3,78E-04	2,29E-05	0,00E+00	0,00E+00	2,32E-06	0,00E+00	4,53E-05	-1,09E-05

ENVIRONMENT PERFORMANCE

Waste production for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7,44E-02	5,81E-05	3,25E-04	0,00E+00	0,00E+00	2,66E-06	0,00E+00	2,91E-07	-4,04E-07
Non-hazardous waste disposed	kg	1,03E-01	2,58E-04	1,10E-01	0,00E+00	0,00E+00	1,19E-05	0,00E+00	1,69E-01	-1,71E-05
Radioactive waste disposed	kg	6,14E-04	8,28E-07	1,96E-05	0,00E+00	0,00E+00	3,77E-08	0,00E+00	2,91E-08	-1,43E-06

Output flows for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E-01	0,00E+00	3,65E+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
Exported energy, electricity	MJ	2,16E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,59E-03	0,00E+00	8,97E-02	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

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.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL SCENARIO – 100% RECYCLING

Impact category indicators for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	3,29E-02	1,52E-03	2,20E-03	0,00E+00	0,00E+00	3,54E-05	0,00E+00	0,00E+00	0,00E+00
Climate change	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	3,35E+00	0,00E+00
Climate change - Biogenic	kg CO2 eq	-2,80E+00	2,26E-05	7,23E-04	0,00E+00	0,00E+00	1,04E-06	0,00E+00	3,35E+00	0,00E+00
Climate change - Fossil	kg CO2 eq	4,27E+00	6,67E-01	5,57E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	0,00E+00	0,00E+00
Climate change - Land use and LU change	kg CO2 eq	3,31E-02	1,64E-05	9,30E-04	0,00E+00	0,00E+00	7,46E-07	0,00E+00	0,00E+00	0,00E+00
Climate change - GHG	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	0,00E+00	0,00E+00
Eutrophication, marine	kg N eq	1,11E-02	5,58E-04	2,47E-03	0,00E+00	0,00E+00	7,85E-06	0,00E+00	0,00E+00	0,00E+00
Eutrophication, freshwater	kg P eq	7,55E-04	4,82E-06	1,67E-04	0,00E+00	0,00E+00	2,55E-08	0,00E+00	0,00E+00	0,00E+00
Eutrophication, terrestrial	mol N eq	1,24E-01	6,11E-03	5,53E-03	0,00E+00	0,00E+00	8,59E-05	0,00E+00	0,00E+00	0,00E+00
Ozone depletion	kg CFC11 eq	1,24E-07	1,35E-08	2,11E-08	0,00E+00	0,00E+00	6,19E-10	0,00E+00	0,00E+00	0,00E+00
Photochemical ozone formation	kg NMVOC eq	1,24E-02	2,68E-03	2,60E-03	0,00E+00	0,00E+00	7,67E-05	0,00E+00	0,00E+00	0,00E+00
Resource use, fossils	MJ	1,00E+02	8,77E+00	1,16E+01	0,00E+00	0,00E+00	4,01E-01	0,00E+00	0,00E+00	0,00E+00
Resource use, minerals and metals	kg Sb eq	1,07E-06	2,20E-08	8,20E-07	0,00E+00	0,00E+00	1,00E-09	0,00E+00	0,00E+00	0,00E+00
Water use	m3 depriv.	1,26E+01	3,67E-03	1,93E-01	0,00E+00	0,00E+00	1,70E-04	0,00E+00	0,00E+00	0,00E+00

Use of resources for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-1,39E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	1,39E-03	0,00E+00	0,00E+00	0,00E+00
Use of renewable primary energy resources used as raw materials	MJ	4,37E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2,98E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	1,39E-03	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	9,28E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	3,67E-01	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy resources used as raw materials	MJ	2,68E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9,55E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	3,67E-01	0,00E+00	0,00E+00	0,00E+00
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	3,70E+00	3,78E-04	2,29E-05	0,00E+00	0,00E+00	1,95E-05	0,00E+00	0,00E+00	0,00E+00

ADDITIONAL SCENARIO – 100% RECYCLING

Waste production for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7,44E-02	5,81E-05	3,25E-04	0,00E+00	0,00E+00	2,66E-06	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	1,03E-01	2,58E-04	1,10E-01	0,00E+00	0,00E+00	1,19E-05	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	6,14E-04	8,28E-07	1,96E-05	0,00E+00	0,00E+00	3,77E-08	0,00E+00	0,00E+00	0,00E+00

Output flows for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	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
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
Exported energy, electricity	MJ	2,16E-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
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

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.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL SCENARIO – 100% LANDFILL

Impact category indicators for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	3,29E-02	1,52E-03	2,20E-03	0,00E+00	0,00E+00	3,54E-05	0,00E+00	6,77E-04	-3,77E-04
Climate change	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	5,64E+00	-1,57E-01
Climate change - Biogenic	kg CO2 eq	-2,80E+00	2,26E-05	7,23E-04	0,00E+00	0,00E+00	1,04E-06	0,00E+00	5,44E+00	-6,94E-05
Climate change - Fossil	kg CO2 eq	4,27E+00	6,67E-01	5,57E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	2,06E-01	-1,57E-01
Climate change - Land use and LU change	kg CO2 eq	3,31E-02	1,64E-05	9,30E-04	0,00E+00	0,00E+00	7,46E-07	0,00E+00	5,05E-05	-1,89E-04
Climate change - GHG	kg CO2 eq	1,51E+00	6,67E-01	5,59E-01	0,00E+00	0,00E+00	3,04E-02	0,00E+00	5,64E+00	-1,57E-01
Eutrophication, marine	kg N eq	1,11E-02	5,58E-04	2,47E-03	0,00E+00	0,00E+00	7,85E-06	0,00E+00	3,84E-03	-1,06E-04
Eutrophication, freshwater	kg P eq	7,55E-04	4,82E-06	1,67E-04	0,00E+00	0,00E+00	2,55E-08	0,00E+00	5,55E-05	-1,72E-06
Eutrophication, terrestrial	mol N eq	1,24E-01	6,11E-03	5,53E-03	0,00E+00	0,00E+00	8,59E-05	0,00E+00	2,13E-03	-1,31E-03
Ozone depletion	kg CFC11 eq	1,24E-07	1,35E-08	2,11E-08	0,00E+00	0,00E+00	6,19E-10	0,00E+00	1,33E-09	-7,65E-09
Photochemical ozone formation	kg NMVOC eq	1,24E-02	2,68E-03	2,60E-03	0,00E+00	0,00E+00	7,67E-05	0,00E+00	1,37E-03	-3,52E-04
Resource use, fossils	MJ	1,00E+02	8,77E+00	1,16E+01	0,00E+00	0,00E+00	4,01E-01	0,00E+00	1,25E+00	-4,51E+00
Resource use, minerals and metals	kg Sb eq	1,07E-06	2,20E-08	8,20E-07	0,00E+00	0,00E+00	1,00E-09	0,00E+00	1,77E-08	-8,10E-09
Water use	m3 depriv.	1,26E+01	3,67E-03	1,93E-01	0,00E+00	0,00E+00	1,70E-04	0,00E+00	-6,86E-01	-5,40E-03

Use of resources for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-1,39E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	2,49E-04	0,00E+00	1,28E-01	-1,93E+00
Use of renewable primary energy resources used as raw materials	MJ	4,37E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2,98E+01	2,68E-02	2,62E-03	0,00E+00	0,00E+00	2,49E-04	0,00E+00	1,28E-01	-1,93E+00
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	9,28E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	8,70E-03	0,00E+00	4,46E+00	-4,38E+00
Use of non-renewable primary energy resources used as raw materials	MJ	2,68E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9,55E+02	7,14E+00	9,73E-02	0,00E+00	0,00E+00	8,70E-03	0,00E+00	4,46E+00	-4,38E+00
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	3,70E+00	3,78E-04	2,29E-05	0,00E+00	0,00E+00	2,32E-06	0,00E+00	8,60E-06	-2,73E-04

ADDITIONAL SCENARIO – 100% LANDFILL

Waste production for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7,44E-02	5,81E-05	3,25E-04	0,00E+00	0,00E+00	2,66E-06	0,00E+00	7,28E-06	-1,01E-05
Non-hazardous waste disposed	kg	1,03E-01	2,58E-04	1,10E-01	0,00E+00	0,00E+00	1,19E-05	0,00E+00	4,22E+00	-4,28E-04
Radioactive waste disposed	kg	6,14E-04	8,28E-07	1,96E-05	0,00E+00	0,00E+00	3,77E-08	0,00E+00	7,27E-07	-3,57E-05

Output flows for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	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
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
Exported energy, electricity	MJ	2,16E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,36E+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

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.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL ENVIRONMENT PERFORMANCE

Impact category indicators for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	1,97E-02	9,11E-04	1,32E-03	0,00E+00	0,00E+00	2,12E-05	0,00E+00	1,62E-05	-9,03E-06
Climate change	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	2,07E+00	-3,77E-03
Climate change - Biogenic	kg CO2 eq	-1,68E+00	1,36E-05	4,35E-04	0,00E+00	0,00E+00	6,22E-07	0,00E+00	2,06E+00	-1,66E-06
Climate change - Fossil	kg CO2 eq	2,56E+00	4,00E-01	3,36E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	4,94E-03	-3,76E-03
Climate change - Land use and LU change	kg CO2 eq	1,98E-02	9,85E-06	5,59E-04	0,00E+00	0,00E+00	4,47E-07	0,00E+00	1,21E-06	-4,52E-06
Climate change - GHG	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	2,07E+00	-3,77E-03
Eutrophication, marine	kg N eq	6,63E-03	3,35E-04	1,48E-03	0,00E+00	0,00E+00	1,30E-06	0,00E+00	1,47E-04	-2,54E-06
Eutrophication, freshwater	kg P eq	4,53E-04	2,89E-06	1,01E-04	0,00E+00	0,00E+00	3,77E-07	0,00E+00	7,37E-06	-4,13E-08
Eutrophication, terrestrial	mol N eq	7,44E-02	3,66E-03	3,33E-03	0,00E+00	0,00E+00	1,16E-06	0,00E+00	1,01E-04	-3,14E-05
Ozone depletion	kg CFC11 eq	7,46E-08	8,12E-09	1,27E-08	0,00E+00	0,00E+00	2,03E-10	0,00E+00	2,01E-10	-1,83E-10
Photochemical ozone formation	kg NMVOC eq	7,44E-03	1,61E-03	1,57E-03	0,00E+00	0,00E+00	7,28E-05	0,00E+00	6,23E-06	-8,45E-06
Resource use, fossils	MJ	6,02E+01	5,26E+00	6,97E+00	0,00E+00	0,00E+00	1,58E-01	0,00E+00	1,13E-01	-1,08E-01
Resource use, minerals and metals	kg Sb eq	6,42E-07	1,32E-08	4,92E-07	0,00E+00	0,00E+00	9,12E-10	0,00E+00	1,14E-10	-1,94E-10
Water use	m3 depriv.	7,53E+00	2,20E-03	1,16E-01	0,00E+00	0,00E+00	-9,60E-03	0,00E+00	-6,76E-03	-1,29E-04

Use of resources for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-8,34E+00	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	2,92E-03	-4,63E-02
Use of renewable primary energy resources used as raw materials	MJ	2,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,79E+01	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	2,92E-03	-4,63E-02
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	5,57E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	1,02E-01	-1,05E-01
Use of non-renewable primary energy resources used as raw materials	MJ	1,61E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5,73E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	1,02E-01	-1,05E-01
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	2,22E+00	2,27E-04	1,38E-05	0,00E+00	0,00E+00	1,39E-06	0,00E+00	2,72E-05	-6,55E-06

ADDITIONAL ENVIRONMENT PERFORMANCE

Waste production for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,46E-02	3,49E-05	1,96E-04	0,00E+00	0,00E+00	1,59E-06	0,00E+00	1,75E-07	-2,43E-07
Non-hazardous waste disposed	kg	6,17E-02	1,55E-04	6,66E-02	0,00E+00	0,00E+00	7,15E-06	0,00E+00	1,01E-01	-1,03E-05
Radioactive waste disposed	kg	3,68E-04	4,96E-07	1,18E-05	0,00E+00	0,00E+00	2,26E-08	0,00E+00	1,75E-08	-8,56E-07

Output flows for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-01	0,00E+00	2,19E+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
Exported energy, electricity	MJ	1,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,75E-03	0,00E+00	5,38E-02	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

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The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL SCENARIO – 100% RECYCLING

Impact category indicators for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	1,97E-02	9,11E-04	1,32E-03	0,00E+00	0,00E+00	2,12E-05	0,00E+00	0,00E+00	0,00E+00
Climate change	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	2,06E+00	0,00E+00
Climate change - Biogenic	kg CO2 eq	-1,68E+00	1,36E-05	4,35E-04	0,00E+00	0,00E+00	6,22E-07	0,00E+00	2,06E+00	0,00E+00
Climate change - Fossil	kg CO2 eq	2,56E+00	4,00E-01	3,36E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	0,00E+00	0,00E+00
Climate change - Land use and LU change	kg CO2 eq	1,98E-02	9,85E-06	5,59E-04	0,00E+00	0,00E+00	4,47E-07	0,00E+00	0,00E+00	0,00E+00
Climate change - GHG	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	2,06E+00	0,00E+00
Eutrophication, marine	kg N eq	6,63E-03	3,35E-04	1,48E-03	0,00E+00	0,00E+00	1,30E-06	0,00E+00	0,00E+00	0,00E+00
Eutrophication, freshwater	kg P eq	4,53E-04	2,89E-06	1,01E-04	0,00E+00	0,00E+00	3,77E-07	0,00E+00	0,00E+00	0,00E+00
Eutrophication, terrestrial	mol N eq	7,44E-02	3,66E-03	3,33E-03	0,00E+00	0,00E+00	1,16E-06	0,00E+00	0,00E+00	0,00E+00
Ozone depletion	kg CFC11 eq	7,46E-08	8,12E-09	1,27E-08	0,00E+00	0,00E+00	2,03E-10	0,00E+00	0,00E+00	0,00E+00
Photochemical ozone formation	kg NMVOC eq	7,44E-03	1,61E-03	1,57E-03	0,00E+00	0,00E+00	7,28E-05	0,00E+00	0,00E+00	0,00E+00
Resource use, fossils	MJ	6,02E+01	5,26E+00	6,97E+00	0,00E+00	0,00E+00	1,58E-01	0,00E+00	0,00E+00	0,00E+00
Resource use, minerals and metals	kg Sb eq	6,42E-07	1,32E-08	4,92E-07	0,00E+00	0,00E+00	9,12E-10	0,00E+00	0,00E+00	0,00E+00
Water use	m3 depriv.	7,53E+00	2,20E-03	1,16E-01	0,00E+00	0,00E+00	-9,60E-03	0,00E+00	0,00E+00	0,00E+00

Use of resources for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-8,34E+00	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	0,00E+00	0,00E+00
Use of renewable primary energy resources used as raw materials	MJ	2,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,79E+01	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	5,57E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1,61E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5,73E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	0,00E+00	0,00E+00
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	2,22E+00	2,27E-04	1,38E-05	0,00E+00	0,00E+00	1,39E-06	0,00E+00	0,00E+00	0,00E+00

ADDITIONAL SCENARIO – 100% RECYCLING

Waste production for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,46E-02	3,49E-05	1,96E-04	0,00E+00	0,00E+00	1,59E-06	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	6,17E-02	1,55E-04	6,66E-02	0,00E+00	0,00E+00	7,15E-06	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	3,68E-04	4,96E-07	1,18E-05	0,00E+00	0,00E+00	2,26E-08	0,00E+00	0,00E+00	0,00E+00

Output flows for 1m² of Sisalwool 100.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-01	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
Exported energy, electricity	MJ	1,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,75E-03	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

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The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL SCENARIO – 100% LANDFILL

Impact category indicators for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Acidification	mol H+ eq	1,97E-02	9,11E-04	1,32E-03	0,00E+00	0,00E+00	2,12E-05	0,00E+00	4,07E-04	-2,26E-04
Climate change	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	3,38E+00	-9,43E-02
Climate change - Biogenic	kg CO2 eq	-1,68E+00	1,36E-05	4,35E-04	0,00E+00	0,00E+00	6,22E-07	0,00E+00	3,26E+00	-4,17E-05
Climate change - Fossil	kg CO2 eq	2,56E+00	4,00E-01	3,36E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	1,24E-01	-9,42E-02
Climate change - Land use and LU change	kg CO2 eq	1,98E-02	9,85E-06	5,59E-04	0,00E+00	0,00E+00	4,47E-07	0,00E+00	3,04E-05	-1,13E-04
Climate change - GHG	kg CO2 eq	9,03E-01	4,00E-01	3,37E-01	0,00E+00	0,00E+00	1,82E-02	0,00E+00	3,38E+00	-9,43E-02
Eutrophication, marine	kg N eq	6,63E-03	3,35E-04	1,48E-03	0,00E+00	0,00E+00	1,30E-06	0,00E+00	2,31E-03	-6,35E-05
Eutrophication, freshwater	kg P eq	4,53E-04	2,89E-06	1,01E-04	0,00E+00	0,00E+00	3,77E-07	0,00E+00	3,29E-05	-1,03E-06
Eutrophication, terrestrial	mol N eq	7,44E-02	3,66E-03	3,33E-03	0,00E+00	0,00E+00	1,16E-06	0,00E+00	1,33E-03	-7,84E-04
Ozone depletion	kg CFC11 eq	7,46E-08	8,12E-09	1,27E-08	0,00E+00	0,00E+00	2,03E-10	0,00E+00	9,67E-10	-4,59E-09
Photochemical ozone formation	kg NMVOC eq	7,44E-03	1,61E-03	1,57E-03	0,00E+00	0,00E+00	7,28E-05	0,00E+00	7,97E-04	-2,11E-04
Resource use, fossils	MJ	6,02E+01	5,26E+00	6,97E+00	0,00E+00	0,00E+00	1,58E-01	0,00E+00	8,35E-01	-2,71E+00
Resource use, minerals and metals	kg Sb eq	6,42E-07	1,32E-08	4,92E-07	0,00E+00	0,00E+00	9,12E-10	0,00E+00	1,03E-08	-4,86E-09
Water use	m3 depriv.	7,53E+00	2,20E-03	1,16E-01	0,00E+00	0,00E+00	-9,60E-03	0,00E+00	-4,02E-01	-3,24E-03

Use of resources for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	-8,34E+00	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	7,66E-02	-1,16E+00
Use of renewable primary energy resources used as raw materials	MJ	2,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1,79E+01	1,61E-02	1,57E-03	0,00E+00	0,00E+00	1,49E-04	0,00E+00	7,66E-02	-1,16E+00
Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	5,57E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	2,67E+00	-2,63E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1,61E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5,73E+02	4,28E+00	5,84E-02	0,00E+00	0,00E+00	5,22E-03	0,00E+00	2,67E+00	-2,63E+00
Use of secondary material	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
Use of renewable secondary fuels	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
Use of non-renewable secondary fuels	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
Net use of fresh water	m3	2,22E+00	2,27E-04	1,38E-05	0,00E+00	0,00E+00	1,39E-06	0,00E+00	5,16E-06	-1,64E-04

ADDITIONAL SCENARIO – 100% LANDFILL

Waste production for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,46E-02	3,49E-05	1,96E-04	0,00E+00	0,00E+00	1,59E-06	0,00E+00	4,37E-06	-6,07E-06
Non-hazardous waste disposed	kg	6,17E-02	1,55E-04	6,66E-02	0,00E+00	0,00E+00	7,15E-06	0,00E+00	2,53E+00	-2,57E-04
Radioactive waste disposed	kg	3,68E-04	4,96E-07	1,18E-05	0,00E+00	0,00E+00	2,26E-08	0,00E+00	4,36E-07	-2,14E-05

Output flows for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-01	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
Exported energy, electricity	MJ	1,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,75E-03	0,00E+00	1,41E+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

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ADDITIONAL SCENARIO – 100% LANDFILL

Waste production for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,46E-02	3,49E-05	1,96E-04	0,00E+00	0,00E+00	1,59E-06	0,00E+00	4,37E-06	-6,07E-06
Non-hazardous waste disposed	kg	6,17E-02	1,55E-04	6,66E-02	0,00E+00	0,00E+00	7,15E-06	0,00E+00	2,53E+00	-2,57E-04
Radioactive waste disposed	kg	3,68E-04	4,96E-07	1,18E-05	0,00E+00	0,00E+00	2,26E-08	0,00E+00	4,36E-07	-2,14E-05

Output flows for 1m² of Sisalwool 50.

Impact category	Unit	A1 – A3	A4	A5	B1 – 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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-01	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
Exported energy, electricity	MJ	1,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,75E-03	0,00E+00	1,41E+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

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.
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

ADDITIONAL INFORMATION

The biogenic carbon content of virgin sheep wool in the product has been calculated in accordance with EN 15804:2012 +A2:2019 and PCR 2019:14 (sub-PCR C-PCR-005). For 1 m^2 of product (1.829 kg dry wool), the stored carbon corresponds to **3,53 kg CO_2 eq.**

In **Module A1**, this value is reported as a negative flow under the GWP-biogenic indicator, reflecting temporary atmospheric carbon storage during the product's use phase.

In **Module C4**, the same amount is released as a positive flow (+3.53 kg CO_2 eq), based on a waste-to-energy incineration scenario.

Thus, the net biogenic carbon balance over the full life cycle is **zero**, consistent with the standard requirements and reference EPD practice.

The binder used in the product system contains 50% recycled PET, corresponding to 10% of the total product mass. In accordance with EN 15804+A2 and PCR 2019:14, the contribution of recycled PET to the GWP of modules A1–A3 has been assessed. The GWP intensity of the recycled PET is **0,726 kg CO_2 eq.**

Allocation follows a **cut-off approach**, meaning that the recycled fraction enters the system without carrying environmental burdens from its previous life cycle. The allocation methodology is conservative and consistent with standard LCA practice.

ABBREVIATIONS

Abbreviation	Definition
EN	European Norm (Standard)
EF	Environmental Footprint
ES	Spain
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CPC	Central Product Classification
GHS	Globally harmonized system of classification and Labelling of chemicals
GRI	Global Reporting Initiative
ND	Not Declared
RER	Europe
UK	United Kingdom

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VERSION HISTORY

Original Version of the EPD, 2025-11-06

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