Environmental Product Declaration

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

SupaSoft Insulation

from

Eden Renewable Innovations Limited

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

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:	info@environdec.com

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction products (version 1.11) and C-PCR-005 Thermal Insulation Products, version: 2019-12-20. Valid until 2024-12-20 UN CPC Code 27922 (Textile articles other than apparel – nonwovens)
PCR review was conducted by: International EPD® System (life Cycle Engineering Committee) info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Dr. Hudai Kara, Metsims Sustainability Consulting [www.metsims.com] Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Eden Renewable Innovations Ltd, Soulands Gate, Dacre, Penrith, Cumbria, CA11 0JF, UK
Contact: Mark Lynn
Description of the organisation: Eden Renewable Innovations Ltd designs and markets thermal and acoustic insulation made using natural and recycled fibres. All insulation is manufactured in the UK. Minimising our impact on the environment is at the very heart of the Eden Renewable Innovations Ltd philosophy and mission. The products we currently sell and those that we are researching have a specific focus to offer the consumer a greener alternative and to make best use of the technical benefits of natural and recycled fibres. Eden Renewable Innovations Ltd is committed not only to minimising the environmental impact of our products but also strives to be environmentally responsible in the day-to-day running of the company's activities. Through our environmental focus we aim to inspire our staff and encourage our customers and all those involved in our supply chain to reduce their own environmental impact.
Product-related or management system-related certifications: Insulation manufactured under ISO 9001 Quality Assurances System.
Name and location of production site(s): Nunbrook Mills, Huddersfield Rd, Mirfield WF14 0EH

Product information

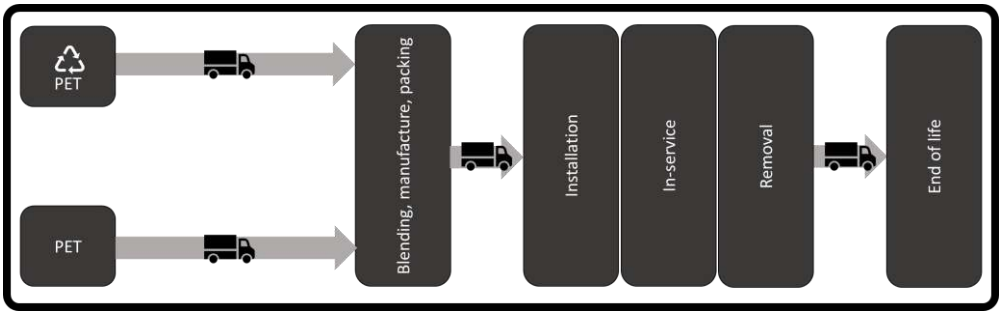
Product name: SupaSoft Insulation
Product identification: SupaSoft
Product description: Thermal and acoustic insulation made using recycled PET microfibre and thermally-bonded using a PET bi-component binder to prevent slumping in service. SupaSoft uses duvet and pillow technology to make safe, sustainable and cost-effective insulation for buildings. SupaSoft contains no chemicals additives or binders and is completely safe to handle. Converting plastic bottles into insulation helps divert many tonnes of waste plastic from landfill helping protect our environment. SupaSoft is long-lasting and easy to install. Operational energy savings mean the insulation pays for itself in just a few years. SupaSoft can be used to insulate between and over joists or simply laid on top of existing insulation to improve overall insulation performance. To find out more about SupaSoft Insulation visit the SupaSoft Website at **www.supasoftinsulation.com**

Product	Width (mm)	Thickness (mm)	Density (kg/m^3)	Thermal conductivity (λ) (W/mK)
SupaSoft	390 and 590	50 and 100	15	0.040

UN CPC code: 27922 (Textile articles other than apparel – nonwovens)
Commodity Code: 5603949090

LCA information

Functional unit / declared unit: 1 m^2 of SupaSoft insulation with R = 1 m^2K/W, plus packaging.
Reference service life: Products are expected to last the lifetime of the building.
Time representativeness: 2019
Database(s) and LCA software used: Ecoinvent 3.7, with Simapro 9.1.1.
Description of system boundaries:
Construction product EPD: Cradle to grave with modules A1-A5, B1-B7, C1-C4 and D. Some modules have nil entries because there is no impact. In order to make the entries in the tables more legible, nil entries may not be reported, even though the module is declared.
System diagram:



More information: **https://www.thermafleece.com/**
This EPD is based upon an underlying LCA of the manufacturing facility, with operational data obtained for 2019, combined with a site visit. The underlying LCA was conducted by Dr Andrew Norton, Renuables Ltd (**http://renuables.co.uk/**).
Cut-off criteria were based upon input flows being less than 1% of the total individually, subject to the sum of all flows being less than 5% of the total, and subject to verification that the impacts associated with such flows were not of a magnitude to affect the reported data significantly (less than 5% in total).
For characterization factors: the characterization factors stated in EN 15804 + A2 (2019) were used.
See: **http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml**
Electricity supply: Average GB grid primary energy mix.
The assumption for module A4 is for transport to construction site of 100 km by logistics company, which is representative. Actual distances should be used as appropriate – GHG impacts associated with transport can be found here if calculations of actual distance to site are required: **https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021**
Assumptions for Module A5 are manual installation with no requirement for utilities. No maintenance is required during the lifetime of the product and the product will have an expected lifetime equal to that of the building. There is no requirement for operational energy or water. Manual removal at end of life is assumed and waste treatment and disposal are included in calculating environmental burdens for module C3. Nil entries are therefore recorded for modules B1-B7, C1 and they are not included in the tables, although they are declared in this EPD. Transport to a waste disposal facility of 10 km is assumed for module C2.
Module D- it is assumed that the insulation is manually removed at end of life and incinerated in a small-scale heating facility, replacing natural gas as the energy source. Other scenarios are possible, including re-use of the product at end of life.

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				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Geographical scope: Europe

Content information – SupaSoft

Product components	**Weight, kg/kg**	**Post-consumer material, weight-%**	**Weight, kg/FU**
Recycled poly(ethylene terephthalate)	0.90	100	0.54
Poly(ethylene terephthalate)	0.10	0	0.06
TOTAL	1.0	90	0.60
Packaging materials	**Weight, kg/kg**	**Weight-% (versus the product)**	**Weight, kg/FU**
LDPE	0.000818	0.082	0.00049
TOTAL	0.000818	0.082	0.00049

Dangerous substances from the candidate list of SVHC for Authorisation	**EC No.**	**CAS No.**	**Weight-% per functional or declared unit**
None	N/A	N/A	N/A

Environmental Information

This EPD contains information about environmental impact, use of resources and waste production in the form of quantitative indicators. The following abbreviations and have been used in the tables which quantify environmental performance:

Indicator	Abbreviation
Global warming potential (Fossil, biogenic, land use and transformation (LUT))	GWP
Depletion potential of the stratospheric ozone layer	ODP
Acidification potential	AP
Eutrophication potential	EP
Formation potential of tropospheric ozone	POCP
Abiotic depletion potential – Elements	ADPE
Abiotic depletion potential – Fossil resources	ADPF
Water scarcity potential	WSP
Primary energy resources – Renewable (use as energy carrier)	PERE
Primary energy resources – Renewable (use raw materials)	PERM
Primary energy resources – Renewable (total)	PERT
Primary energy resources – Non-renewable (use as energy carrier)	PENRE
Primary energy resources – Non-renewable (use raw materials)	PENRM
Primary energy resources – Non-renewable (total)	PENRT
Secondary material	SM
Renewable secondary fuels	RSF
Non-renewable secondary fuels	NRSF
Net use of fresh water	NUFW
Hazardous waste disposed	HWD
Non-hazardous waste disposed	NHWD
Radioactive waste disposed	RWD
Components for re-use	CFR
Material for recycling	MFR
Materials for energy recovery	MFER
Exported energy, electricity	EE-E
Exported energy, thermal	EE-T

Potential environmental impact – mandatory indicators according to EN 15804

Results per m^2 of SupaSoft roll with R = 1 m^2K/W

Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	9.56E-01	2.23E-02	1.55E-01	1.13E+00	5.25E-03	5.25E-04	3.17E-03	0.00E+00	-1.01E+00
GWP-biogenic	kg CO_2 eq.	1.40E-01	1.33E-05	1.98E-04	1.40E-01	3.12E-06	3.12E-07	4.02E-06	0.00E+00	1.03E-04
GWP-luluc	kg CO_2 eq.	1.51E-03	7.54E-06	1.54E-04	1.67E-03	1.77E-06	1.77E-07	9.82E-07	0.00E+00	-1.56E-04
GWP-total	kg CO_2 eq.	1.10E+00	2.24E-02	1.55E-01	1.27E+00	5.25E-03	5.25E-04	3.18E-03	0.00E+00	-1.01E+00
ODP	kg CFC 11 eq.	8.51E-08	5.47E-09	1.88E-08	1.09E-07	1.28E-09	1.28E-10	1.30E-09	0.00E+00	-1.38E-07
AP	mol H^+ eq.	4.46E-03	7.16E-05	3.91E-04	4.92E-03	1.68E-05	1.68E-06	3.00E-05	0.00E+00	-1.05E-03
EP-freshwater	kg PO_4^{3-} eq.	2.44E-03	1.26E-05	1.01E-04	2.56E-03	2.95E-06	2.95E-07	4.94E-06	0.00E+00	-1.92E-04
EP-marine	kg N eq.	1.07E-03	1.61E-05	8.40E-05	1.17E-03	3.77E-06	3.77E-07	1.04E-05	0.00E+00	-2.44E-04
EP-terrestrial	mol N eq.	8.98E-03	1.75E-04	9.02E-04	1.01E-02	4.11E-05	4.11E-06	1.14E-04	0.00E+00	-2.62E-03
POCP	kg NMVOC eq.	2.79E-03	6.84E-05	2.48E-04	3.11E-03	1.61E-05	1.61E-06	3.30E-05	0.00E+00	-9.86E-04
ADPE*	kg Sb eq.	4.08E-05	3.68E-07	3.94E-07	4.15E-05	8.65E-08	8.65E-09	3.02E-08	0.00E+00	-2.11E-06
ADPF*	MJ	1.53E+01	3.61E-01	3.14E+00	1.88E+01	8.48E-02	8.48E-03	8.82E-02	0.00E+00	-1.47E+01
WDP	m^3	7.13E-01	1.25E-03	5.22E-03	7.19E-01	2.93E-04	2.93E-05	3.97E-03	0.00E+00	-1.34E-02

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

Use of resources

Results per m² of SupaSoft roll with R = 1 m²K/W										
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2.33E+00	4.80E-03	3.69E-01	2.70E+00	1.13E-03	1.13E-04	7.57E-04	0.00E+00	-9.58E-02
PERM	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
PERT	MJ	3.04E+00	5.74E-03	5.41E-01	3.58E+00	1.35E-03	1.35E-04	7.57E-04	0.00E+00	-9.58E-02
PENRE	MJ	1.74E+01	3.54E-01	3.35E+00	2.11E+01	8.33E-02	8.33E-03	8.67E-02	0.00E+00	-1.51E+01
PENRM	MJ.	1.74E+01	0.00E+00	0.00E+00	1.74E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.74E+01
PENRT	MJ	1.74E+01	3.54E-01	3.35E+00	3.85E+01	8.33E-02	8.33E-03	8.67E-02	0.00E+00	-3.25E+01
SM	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
RSF	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
NRSF	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
FW	m^3	1.94E-02	3.36E-05	4.22E-04	1.98E-02	7.90E-06	7.90E-07	9.34E-05	0.00E+00	-4.42E-04

Waste production and output flows

Waste production

Results per m² of SupaSoft roll with R = 1 m²K/W										
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**C2**	**C3**	**C4**	**D**
HWD	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
NHWD	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
RWD	kg	6.58E-06	1.25E-08	1.64E-06	8.23E-06	2.93E-09	2.93E-10	1.71E-09	0.00E+00	-1.70E-07

Output flows

Results per m² of SupaSoft roll with R = 1 m²K/W										
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**C2**	**C3**	**C4**	**D**
CFR	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
MFR	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
MFER	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
EE-E	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
EE-T	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	1.27E+01

Information on biogenic carbon content

Results per kg SupaSoft roll		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0.0
Biogenic carbon content in packaging	kg C	0.0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Additional information

Environmental Policy Aims:

- To continually assess, monitor and reduce any effect of Eden Renewable Innovations Ltd activities on the environment by:
- Ensuring that environmental considerations are integrated into business decision-making.
- Complying where applicable with environmental legislation.
- Preventing pollution on site.
- Reducing waste wherever practicable, and re-using and recycling remaining waste where we can.
- Improved energy efficiency wherever possible.
- Make purchasing decisions based on environmental performance of products and suppliers.
- To strive for continual development in environmental performance by setting and reviewing improvement targets.

Specific Objectives:

- As a minimum, operate within all applicable statutory environmentally-related obligations, associated official guidance and appropriate industry standards.
- Minimise the negative environmental impacts of our business.
- Promote our energy efficient products and provide advice, with the objective of ensuring the installation of the best practicable energy efficient installations.
- Actively promote sustainable development and be an exemplar of its principles.
- All of the Eden Renewable Innovations team are responsible for ensuring that this policy is implemented.

Calculation of environmental impact per m^2 of material

The environmental burdens are reported for 1 m^2 of a product with an R=1. In order to convert this data to calculate the burdens per m^2 for each of the different products on the market please refer to the table below:

Product	Thickness (mm)	Density (kg/m^3)	λ (W/mK)	R (m^2K/W)
SupaSoft	50	15	0.040	1.25
SupaSoft	100	15	0.040	2.50

Information related to Sector EPD

N/A

Differences versus previous versions

N/A

References

General Programme Instructions of the International EPD® System, version 3.01, based on ISO 14025:2006, ISO 14040:2006 and ISO 14044:2006
PCR 2019:14 Construction products (version 1.11) and C-PCR-005 Thermal Insulation Products, version: 2019-12-20. Valid until 2024-12-20
EN 15804:2012+A2:2019 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products
EN 16516:2017 Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air
EN 16783:2017 Thermal insulation products. Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations
ISO 9001:2015 Quality management systems — Requirements
ISO 14001:2015 Environmental management systems — Requirements with guidance for use
ISO 16000-3:2011 Indoor air – Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air – active sampling method
ISO 21930:2017 Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services (This standard is used in selected sections, such as allocation, when it provides additional but not contradictory rules to EN 15804)

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