SENTINEL HOLDING
INSTITUT

SHI-PRODUKTPASS

Produkte finden - Gebäude zertifizieren

SHI-Produktpass-Nr.:

14635-10-1010

Hvac Section AluCoat T TRZ

Warengruppe: Dämmstoffe - Rohre / Rohrverkleidung

PAROC

PAROC GmbH
Heidenkampsweg 51
20097 Hamburg

Produktqualitäten:

- SHI-Produkt bewertung 2024 ✓
- QNG Qualitätssiegel Nachhaltiges Gebäude ✓
- DGNB NEUBAU 2023.2 ✓
- DGNB NEUBAU 2023 ✓
- DGNB NEUBAU 2018 ✓
- BNB-BN NEUBAU V2015 ✓
- EU-TAXONOMIE ✓
- BREEAM DE NEUBAU 2018 ✓
- LEED v4.1 (outside US) ✓

GEPRÜFT NACHHALTIGES PRODUKT
SHI PRODUKT PASS
SENTINEL HOLDING INSTITUT
www.sentinel-holding.eu/pruefkriterien

Köttner

Helmut Köttner
Wissenschaftlicher Leiter
Freiburg, den 07.09.2026

SENTINEL HOLDING
INSTITUT

Produkt:
Hvac Section AluCoat T TRZ

SHI Produktpass-Nr.:
14635-10-1010

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Wir sind stolz darauf, dass die SHI-Datenbank, die erste und einzige Datenbank für Bauprodukte ist, die ihre umfassenden Prozesse sowie die Aktualität regelmäßig von dem unabhängigen Prüfunternehmen SGS-TÜV Saar überprüfen lässt.

SGS TÜV SAAR

SENTINEL HOLDING
INSTITUT

Produkt:
Hvac Section AluCoat T TRZ

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SHI-Produktbewertung 2024

Seit 2008 etabliert die Sentinel Holding Institut GmbH (SHI) einen einzigartigen Standard für schadstoffgeprüfte Produkte. Experten führen unabhängige Produktprüfungen nach klaren und transparenten Kriterien durch. Zusätzlich überprüft das unabhängige Prüfunternehmen SGS-TÜV Saar regelmäßig die Prozesse und Aktualität.

Kriterium	Produktkategorie	Schadstoffgrenzwert	Bewertung
SHI-Produktbewertung	Dämmstoffe	TVOC ≤ 300 µg/m³ Formaldehyd ≤ 24 µg/m³	Schadstoffgeprüft
Gültig bis: 26.08.2028			

SENTINEL HOLDING
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Produkt:
Hvac Section AluCoat T TRZ

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QNG - Qualitätssiegel Nachhaltiges Gebäude

Das Qualitätssiegel Nachhaltiges Gebäude, entwickelt durch das Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen (BMWSB), legt Anforderungen an die ökologische, soziokulturelle und ökonomische Qualität von Gebäuden fest. Das Sentinel Holding Institut prüft Bauprodukte gemäß den QNG-Anforderungen für eine Zertifizierung und vergibt das QNG-ready Siegel. Das Einhalten des QNG-Standards ist Voraussetzung für den KfW-Förderkredit. Für bestimmte Produktgruppen hat das QNG derzeit keine spezifischen Anforderungen definiert. Diese Produkte sind als nicht bewertungsrelevant eingestuft, können jedoch in QNG-Projekten genutzt werden.

Kriterium	Pos. / Bauproduktgruppe	Betrachtete Stoffe	QNG Freigabe
3.1.3 Schadstoffvermeidung in Baumaterialien	12.3 Dämmstoffe aus Künstlichen Mineralfasern (KMF)	Gefährliche Stoffe / Emissionen	QNG-ready
Nachweis: Blauer Engel (DE-UZ 132) Zertifikat Nr. 37256 vom 07.12.2021			

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DGNB Neubau 2023.2

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt			nicht bewertungsrelevant

SENTINEL HOLDING
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Hvac Section AluCoat T TRZ

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14635-10-1010

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DGNB Neubau 2023

Das DGNB-System (Deutsche Gesellschaft für Nachhaltiges Bauen) bewertet die Nachhaltigkeit von Gebäuden verschiedener Art. Das System ist sowohl anwendbar für private und gewerbliche Großprojekte als auch für kleinere Wohngebäude. Die Version 2023 setzt hohe Standards für ökologische, ökonomische, soziokulturelle und funktionale Aspekte während des gesamten Lebenszyklus eines Gebäudes.

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt, 03.05.2024 (3. Auflage)	nicht zutreffend		nicht bewertungsrelevant

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt, 29.05.2025 (4. Auflage)	nicht zutreffend		nicht bewertungsrelevant

SENTINEL HOLDING
INSTITUT

Produkt:
Hvac Section AluCoat T TRZ

SHI Produktpass-Nr.:
14635-10-1010

PAROC

DGNB Neubau 2018

Das DGNB-System (Deutsche Gesellschaft für Nachhaltiges Bauen) bewertet die Nachhaltigkeit von Gebäuden verschiedener Art. Das System ist sowohl anwendbar für private und gewerbliche Großprojekte als auch für kleinere Wohngebäude.

Kriterium	Pos. / Relevante Bauteile / Bau-Materialien / Flächen	Betrachtete Stoffe / Aspekte	Qualitätsstufe
ENV 1.2 Risiken für die lokale Umwelt			nicht bewertungsrelevant

SENTINEL HOLDING
INSTITUT

Produkt:
Hvac Section AluCoat T TRZ

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14635-10-1010

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BNB-BN Neubau V2015

Das Bewertungssystem Nachhaltiges Bauen ist ein Instrument zur Bewertung von Büro- und Verwaltungsgebäuden, Unterrichtsgebäuden, Laborgebäuden sowie Außenanlagen in Deutschland. Das BNB wurde vom damaligen Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB) entwickelt und unterliegt heute dem Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen.

Kriterium	Pos. / Bauprodukttyp	Betrachtete Schadstoffgruppe	Qualitätsniveau
1.1.6 Risiken für die lokale Umwelt			nicht bewertungsrelevant

SENTINEL HOLDING
INSTITUT

Produkt:
Hvac Section AluCoat T TRZ

SHI Produktpass-Nr.:
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EU-Taxonomie

Die EU-Taxonomie klassifiziert wirtschaftliche Aktivitäten und Produkte nach ihren Umweltauswirkungen. Auf der Produktebene gibt es gemäß der EU-Verordnung klare Anforderungen zu Formaldehyd und flüchtigen organischen Verbindungen (VOC). Die Sentinel Holding Institut GmbH kennzeichnet qualifizierte Produkte, die diesen Standard erfüllen.

Kriterium	Produkttyp	Betrachtete Stoffe	Bewertung
DNSH - Vermeidung und Verminderung der Umweltverschmutzung	Sonstige	Stoffe nach Anlage C	Erfüllt
Nachweis: Blauer Engel (DE-UZ 132) Zertifikat Nr. 37256 vom 07.12.2021			

SENTINEL HOLDING
INSTITUT

Produkt:
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BREEAM DE Neubau 2018

BREEAM (Building Research Establishment Environmental Assessment Methodology) ist ein britisches Gebäudebewertungssystem, welches die Nachhaltigkeit von Neubauten, Sanierungsprojekten und Umbauten einstuft. Das Bewertungssystem wurde vom Building Research Establishment (BRE) entwickelt und zielt darauf ab, ökologische, ökonomische und soziale Auswirkungen von Gebäuden zu bewerten und zu verbessern.

Kriterium	Produktkategorie	Betrachtete Stoffe	Qualitätsstufe
Hea 02 Qualität der Innenraumluft			nicht bewertungsrelevant

SENTINEL HOLDING
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LEED v4.1

LEED (Leadership in Energy and Environmental Design) ist ein international anerkanntes Gebäudezertifizierungssystem des U.S. Green Building Council. Es zählt zu den weltweit am weitesten verbreiteten Nachhaltigkeitsstandards für Gebäude und wird insbesondere bei international ausgerichteten Projekten eingesetzt. LEED bewertet Gebäude ganzheitlich in Kategorien wie Energieeffizienz, Ressourcenschonung, Materialauswahl, Innenraumqualität und Standortqualität. Je nach erreichter Punktzahl werden die Zertifizierungsstufen LEED Certified, Silver, Gold oder Platinum vergeben.

Kriterium	Produktkategorie	Betrachtete Stoffe	Bewertung
EQ Credit: Low-Emitting Materials			nicht bewertungsrelevant

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Produktsiegel

In der Baubranche spielt die Auswahl qualitativ hochwertiger Materialien eine zentrale Rolle für die Gesundheit in Gebäuden und deren Nachhaltigkeit. Produktlabels und Zertifikate bieten Orientierung, um diesen Anforderungen gerecht zu werden. Allerdings besitzt jedes Zertifikat und Label eigene Prüfkriterien, die genau betrachtet werden sollten, um sicherzustellen, dass sie den spezifischen Bedürfnissen eines Bauvorhabens entsprechen.

Der vom Umweltbundesamt als Zeichengeber und vom RAL e.V. als verantwortliche Prüforganisation verliehene „Blaue Engel" ist eines der ältesten und in Deutschland das am häufigsten vorkommende Umweltzeichen. Den „Blauen Engel" gibt es in zahlreichen Ausprägungen für die unterschiedlichsten Produktgruppen. Die zugrunde liegenden Prüfkriterien der jeweiligen Umweltzeichen (UZ) sollten in gesundheitlicher Hinsicht individuell betrachtet werden, da es durchaus Unterschiede in der Relevanz und Strenge gibt.

Dieses Produkt ist schadstoffgeprüft und wird vom Sentinel Holding Institut empfohlen. Gesundes Bauen, Modernisieren und Betreiben von Immobilien erfolgt dank des Sentinel Holding Konzepts nach transparenten und nachvollziehbaren Kriterien.

Produkte mit dem QNG-ready Siegel des Sentinel Holding Instituts eignen sich für Projekte, für welche das Qualitätssiegel Nachhaltiges Gebäude (QNG) angestrebt wird. QNG-ready Produkte erfüllen die Anforderungen des QNG Anhangdokument 3.1.3 "Schadstoffvermeidung in Baumaterialien". Das KfW-Kreditprogramm Klimafreundlicher Neubau mit QNG kann eine höhere Fördersumme ermöglichen.

EPD-Norge ist der norwegische Programmbetreiber für Environmental Product Declarations (EPDs). Das Programm richtet sich nach ISO 14025 und EN 15804 und stellt sicher, dass EPDs für Bau- und Industrieprodukte einheitlich, geprüft und vergleichbar veröffentlicht werden. Vor der Veröffentlichung wird jede EPD unabhängig verifiziert; EPD-Norge führt dafür klare Verfahren, Product Category Rules (PCR/NPCR) und ein öffentliches Register.

Produkt:
Hvac Section AluCoat T TRZ

SHI Produktpass-Nr.:
14635-10-1010

Rechtliche Hinweise

(*) Die Kriterien dieses Steckbriefs beziehen sich auf das gesamte Bauobjekt. Die Bewertung erfolgt auf der Ebene des Gebäudes. Im Rahmen einer sachgemäßen Planung und fachgerechten Installation können einzelne Produkte einen positiven Beitrag zum Gesamtergebnis der Bewertung leisten. Das Sentinel Holding Institut stützt sich einzig auf die Angaben des Herstellers.

Alle Kriterien finden Sie unter:
https://www.sentinel-holding.eu/de/Themenwelten/Pr%C3%BCfkriterien%20f%C3%BCr%20Produkte

Wir sind stolz darauf, dass die SHI-Datenbank, die erste und einzige Datenbank für Bauprodukte ist, die ihre umfassenden Prozesse sowie die Aktualität regelmäßig von dem unabhängigen Prüfunternehmen SGS-TÜV Saar überprüfen lässt.

Herausgeber

Sentinel Holding Institut GmbH
Bötzinger Str. 38
79111 Freiburg im Breisgau
Tel.: +49 761 590 481-70
info@sentinel-holding.eu
www.sentinel-holding.eu

URKUNDE

PAROC GmbH
20097 Hamburg, Deutschland

wird aufgrund des Zeichenbenutzungsvertrages Nr. 37256 zur DE-UZ 132 Ausgabe 2020 das Recht verliehen, für das Produkt

Paroc Hvac Section AluCoat T
Paroc Hvac Combi AluCoat T
Paroc Hvac Bend AluCoat T
Paroc Hvac Lamella Mat AluCoat

das nachstehend abgebildete Umweltzeichen als Ausweis für die besondere Umweltfreundlichkeit zu führen.

Bonn, den 07. Dezember 2021

Geschäftsführer
RAL gGmbH

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit

Umwelt Bundesamt

Jury Umweltzeichen

RAL gGmbH

CERTIFICATE

PAROC GmbH
20097 Hamburg, Germany

is granted the right, on the basis of the contract on the use of the environmental label no. 37256 based on DE-UZ 132 Edition 2020, for the product

Paroc Hvac Section AluCoat T
Paroc Hvac Combi AluCoat T
Paroc Hvac Bend AluCoat T
Paroc Hvac Lamella Mat AluCoat

to use the Blue Angel Ecolabel shown below as a sign of special environmental friendliness.

Bonn, 07 December 2021

Managing Director
RAL gGmbH

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit

Umwelt Bundesamt

Jury Umweltzeichen

RAL gGmbH

DATENBLATT



PAROC Hvac Section AluCoat T (TRZ)

Konzentrische, maßgenaue Steinwolle-Rohrschale mit einer gitternetzverstärkten Aluminiumfolie kaschiert, selbstklebende Überlappung, einseitig geschlitzt.

Rohrleitungen für Heizungs- und Brauchwasseranlagen, Solarleitungen, Rohrleitungen in betriebstechnischen Anlagen, Rohrabschottungen der Feuerwiderstandsklasse R-30 bis R-120

Die Oberflächentemperatur der Kaschierung ist auf +80°C zu begrenzen.

PAROC Steinwolle sind für besonders hohe Temperaturen geeignet. Ab einer Temperatur von ca. 200 °C erfolgt eine Bindemittelverflüchtigung. Die Dämmeigenschaften bleiben bei gleichzeitigem Abschwächen der Druckspannung aber unverändert. Der Schmelzpunkt von Steinwolle liegt bei 1000 °C.

Zulassungsnummer 0809-CPR-1016 Eurofins Expert Services Ltd, Kivimiehentie 4, FI-02150 Espoo. Finland

Bezeichnungsschlüssel MW-EN 14303-T8/T9-ST(+)250-WS1-MV2-CL10

Verpackungen Karton, Folienverpackung, Palette

Einzelpacketgröße Karton 300 x 400 x 1200 mm

Palettengröße 1200 x 1200 mm

ABMESSUNGEN		
DÄMMDICKE	**INNENDURCHMESSER**	**LÄNGE**
20 - 120 mm	12 - 612 mm	1200 mm
Gemäss EN 13467	Gemäss EN 13467	Gemäss EN 13467

EIGENSCHAFT	WERT	GEMÄSS
FORMSTABILITÄT		
Obere Anwendungsgrenztemperatur - Dimensionsstabilität	250 °C	EN 14303:2009+A1:2013 (EN 14707)

Eigenschaften

EIGENSCHAFT	WERT	GEMÄSS
BRANDKLASSE		
Brandverhalten, Euroklasse	$A2_L$ - s1 , d0	EN 14303:2009+A1:2013 (EN 13501-1)
Glimmverhalten	NPD	EN 14303:2009+A1:2013
Nichtbrennbarkeit	Nichtbrennbar	EN ISO 1182
Brandschutzklassifikation/Anwendung	Rohrabschottungen für nichtbrennbare Rohrleitungen der Feuerwiderstandsklassen R-30 bis R 120 (AbP Nr. P-3124/165/14-MPA BS). Rohrabschottungen für brennbare Rohrleitungen der Feuerwiderstandsklassen R-30 bis R 120 (AbP Nr. P-3126/167/14-MPA BS). Rohrabschottung „Viega Rohrleitungssystem-Abschottung“ der Feuerwiderstandsklassen R-30 bis R-90 (AbP Nr. P-2400/003/15-MPA BS)	DIN 4102-11
WÄRMELEITFÄHIGKEIT		
Wärmeleitfähigkeit bei 10 °C, λ_{10}	0,033 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 40 °C, λ_{40}	0,035 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 50 °C, λ_{50}	0,037 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 100 °C, λ_{100}	0,044 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 150 °C, λ_{150}	0,052 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 200 °C, λ_{200}	0,062 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Wärmeleitfähigkeit bei 250 °C, λ_{250}	0,073 W/mK	EN 14303:2009+A1:2013 (EN ISO 8497)
Abmessungen und Toleranzen	T8 für Außendurchmesser < 150 mm, T9 für Außendurchmesser ≥ 150 mm	EN 14303:2009+A1:2013 (EN 823)
Wärmeleitfähigkeit bei 40 °C, λ_{40}	0,035 W/mK	GEG
FEUCHTIGKEIT		
Kurzzeitige Wasseraufnahme WS, (W_p)	≤ 1 kg/m²	EN 14303:2009+A1:2013 (EN 13472)
Wasserdampf-Diffusionswiderstandszahl MU, µ	NPD	EN 14303:2009+A1:2013
Wasserdampf-Diffusionswiderstand	MV2	EN 14303:2009+A1:2013 (EN 13469)
Chlorid-Ionen, Cl-	< 10 ppm	EN 14303:2009+A1:2013 (EN 13468)
SCHALLDÄMMEIGENSCHAFTEN		
Schallabsorption	NPD	EN 14303:2009+A1:2013 (EN ISO 354)
EMISSION		
Freisetzung gefährlicher Stoffe	NPD	EN 14303:2009+A1:2013
BESTÄNDIGKEIT DER THERMISCHEN UND BRANDEIGENSCHAFTEN		
Dauerhaftigkeit des Brandverhaltens unter Einfluss von Alterung/Abbau	Bei Produkten aus Mineralwolle verändern sich die Brandverhaltenseigenschaften nicht. Das Brandverhalten von Produkten aus Mineralwolle verschlechtert sich nicht im Laufe der Zeit. Die Einstufung des Produkts in eine bestimmte Euroklasse bezieht sich auf den Gehalt an organischen Bestandteilen, der sich im Laufe der Zeit nicht erhöhen kann.	
Dauerhaftigkeit des Brandverhaltens unter Einfluss von hohen Temperaturen	Bei hohen Temperaturen erfolgt keine Verschlechterung des Brandverhaltens von Mineralwolle. Die Einstufung des Produkts in eine bestimmte Euroklasse bezieht sich auf den Gehalt an organischen Bestandteilen, der bei hohen Temperaturen gleich bleibt oder sich verringert.	

Dauerhaftigkeit des Wärmedurchlasswiderstandes unter Einfluss von Alterung/Abbau	Die Wärmeleitfähigkeit von Produkten aus Mineralwolle verändert sich nicht im Laufe der Zeit. Die Erfahrung hat gezeigt, dass die Faserstruktur stabil ist und die Porosität ausschließlich atmosphärische Luft enthält.	

PAROC GmbH, Heidenkampsweg 51, 20097 Hamburg, Telefon 0 40 88 30760,Telefax 0 40 88 307 6199, www.paroc.de

Die Angaben in dieser Broschüre stellen eine abschließende Beschreibung der Beschaffenheit des Produktes und seiner technischen Eigenschaften dar und sind ab Datum der Veröffentlichung gültig bis die Broschüre durch eine aktuellere digitale oder Druckversion ersetzt wird. Die Übernahme einer Garantie ist damit jedoch nicht verbunden. Sofern das Produkt in einem Anwendungsgebiet, das in dieser Broschüre nicht vorgesehen ist, zum Einsatz kommt, können wir für seine Eignung für diesen Einsatzbereich keine Gewähr übernehmen, es sei denn, die Eignung wurde von uns auf Nachfrage ausdrücklich bestätigt. Änderungen und Anpassungen aufgrund ständiger Weiterentwicklung unserer Produkte bleiben vorbehalten. PAROC

ist eine eingetragene Schutzmarke der Paroc Group. Dieses Datenblatt ist in folgendem Land anwendbar: Deutschland.

epd-norway
Global Program Operator

ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Paroc Group Oy
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-4098-3121-EN
Registration number:	NEPD-4098-3121-EN
ECO Platform reference number:	-
Issue date:	29.12.2022
Valid to:	29.12.2027

PAROC Stone Wool Thermal Insulation (Hvac Pipe Sections & Bends)

PAROC Technical Insulation

Paroc Group Oy
Owner of the declaration



Product

Product:
1 m2 of PAROC Stone Wool Thermal Insulation

Program operator:
The Norwegian EPD Foundation
P.O. Box 5250 Majorstuen, N – 0303 Oslo, Norway
Phone: +47 23 08 80 00
E-mail: post@epd-norge.no

Declaration number:
NEPD-4098-3121-EN

ECO Platform reference number:

This declaration is based on Product Category Rules:
CEN Standard EN 15804 / version A1 / serves as core PCR
NPCR 012:2018 version 2. Part B for Thermal insulation products

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

Declared unit:
1 m² of stone wool with a thermal resistance (R) of 1 Km²/W. 1 m² PAROC Stone Wool Thermal Insulation at R=1 is at a weight of 1 kg with thickness of 33 mm.

Declared unit with option:
-

Functional unit:
1 m² of stone wool with thermal resistance (R) of 1 m²K/W with a reference service life of minimum 60 years. Impact excludes any lamination. See Annex, accompanying this EPD, for LCA results of facings.

The EPD has been worked out by:
Emelia Samuelsson, Paroc AB

Verification:

The CEN Norm EN 15804 serves as the core PCR. 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:
Paroc Group Oy
Contact person: Emelia Samuelsson
Phone +46 (0) 500 46 90 05
E-mail: emelia.samuelsson@owenscorning.com

Manufacturer:
Paroc Group Oy
FI-00181, Helsinki
Finland

Place of production:
Trzemeszno, Poland
Hällekis, Sweden

Management system:
ISO 14001 and ISO 9001

Organisation no:
23025016

Issue date:
29.12.2022

Valid to:
29.12.2027

Year of study:
2018

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

Approved

Håkon Hauan
(Managing Director EPD Norway)

Product

Product description:
Stone wool is made from volcanic rock, typically basalt or dolomite, and an increasing proportion of recycled material.

PAROC stone wool insulation is naturally non-combustible and durable. It is made of natural stone (~2%) and air (~98%). As stone wools thermal performance is based on static air, insulation products keep their energy saving abilities and dimensions in different temperature and moisture conditions during the life cycle of a building.

The HVAC systems in buildings perform many roles. PAROC solutions for HVAC include non-combustible and energy efficient insulation solutions for all parts of the HVAC system.

Market:
Mainly Sweden, Finland, Norway, Denmark, Poland, Germany, Austria, Czech Republic, Slovakia, Belarus

Reference service life:
The reference service lifetime of PAROC products is equal to the reference service life of the building. For the purpose of this EPD the reference service life is considered to be minimum 60 years, which is usually the assumption about the lifetime of the building where this is installed.

Product content:

Materials	%
Mineral Wool	96-99%
Binder (phenol-formaldehyde-urea-copolymer)	0-6%
Dustbinding (mineral oil)	0,1-0,5%

Technical data:

Name	Value	Unit
Thermal conductivity EN 12939, EN 12667 and EN ISO 8497 for pipe sections	0,033	W/(mK)
Thickness Class EN 823 EN 14303	T8, T9	
Fire Class EN 13501-1	A1	
Length and width EN 822 and EN 14303	L ± 5	mm
Water vapour diffusion resistance factor /EN12086/	1	

LCA: Calculation Rules

Functional unit:
1 m² stone wool with a thermal resistance (R) of 1 Km^2W^{-1}.

The calculation of the weight per square meter is done as follows:

m^2-weight = density [kg/m^3] x insulation thickness [m] (in order to meet a specific thermal resistance) = m^2-weight insulation = density [kg/m^3[x R [m^2K/W] x λ [W/m K] = [kg/m^2].

The specific product, referred to in the declared unit, is 1 m^2 of PAROC Stone Wool Thermal Insulation (30,3 kg/m3).

Data quality:

The stone wool production data is line specific from plants in Hällekis, Sweden and Trzemeszno, Poland. Foreground data refer to the year 2018 and is weighted according to produced volumes 2018.

For life cycle modeling the GaBi 9 Software System for Life Cycle Assessment, developed by Sphera Solutions, Inc. (formerly known as thinkstep AG), is used (/GaBi 9 2020/). All relevant background datasets are taken from the GaBi 9 software database. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation, auxiliary materials and facing 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 until 2021 (/GaBi 9 2020/) with a country specific scope as far as available, e.g., for raw material extraction and production, transportation, 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.

Incoming energy, water and waste production in-house is allocated equally among all products through mass allocation. 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:
Table below identifies the modules included in this study.

According to EN 15804 any declared benefits and loads from net flows leaching the product system not allocated as co-products and have passed the end-of-waste state shall be included in the module D. Module D includes reuse, recovery and/or recycling potentials.

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

- Raw materials production (e.g., dolomite, diabase, pre-production of facing material e.g., glass fleece etc.)
- Production of the stone wool itself and the facings application
- Component's production (e.g., resin)
- Transports of raw materials and pre-products to manufacturing plants
- 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 scenarios were considered in this study:

- Modules A4: The average distance to building site is 273 km.
- Modules A5: Packaging waste processing, waste generated at the installation is assumed to be 0 %.
- Modules C2-C4: Similar to installation scenario with similar kind of waste. In C2 a transport to waste treatment distance 50 km is assumed.
- Module D: Credits from waste treatment (recycling and incineration with energy recovery) of product parts after use and from installation losses.

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.

The declared unit is 1 m^2 stone wool without any lamination. The impact from the additional facings shall be added to the result, see the Annex accompanying this EPD for the LCA results.

LCA: System Boundaries

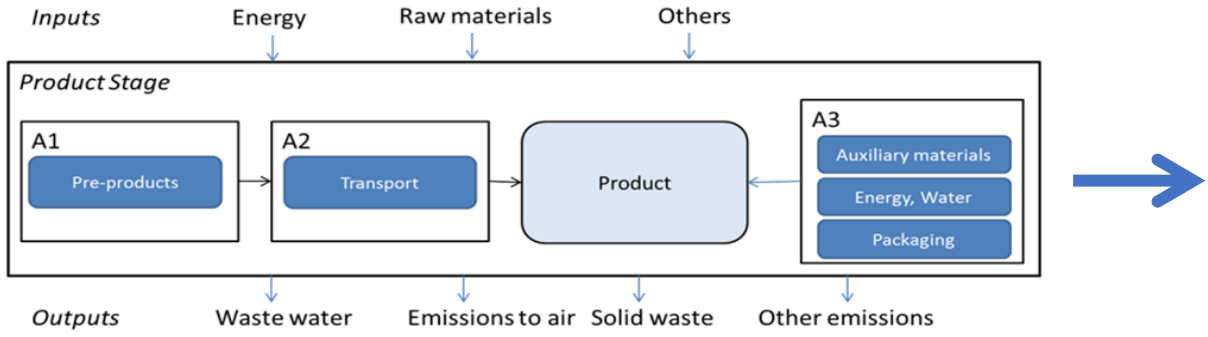


Figure 1. Schematic representation of the LCA system boundaries for the production module (A1-A3)

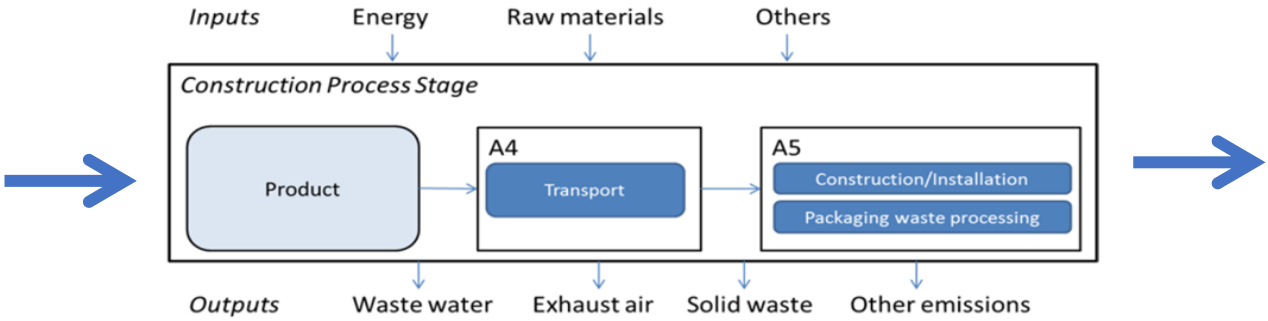


Figure 2. Schematic representation of the LCA system boundaries for the construction process stage (A4-A5)

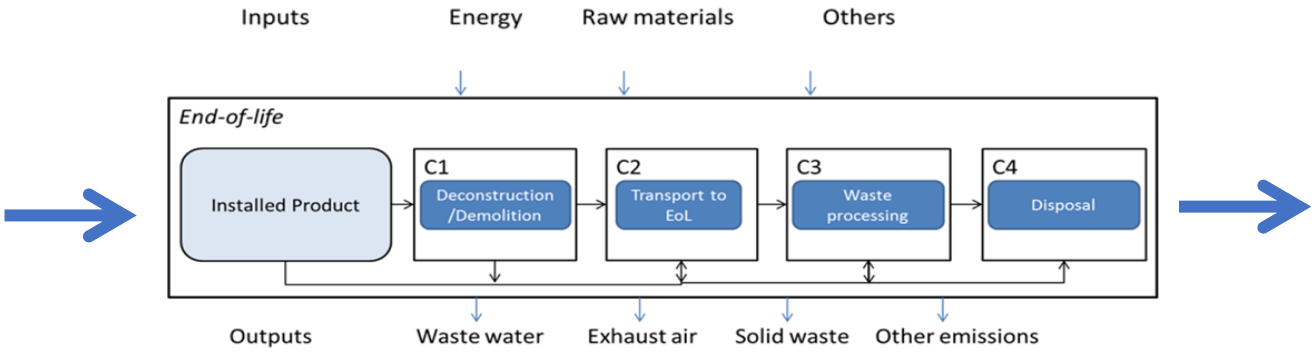


Figure 3. Schematic representation of the LCA system boundaries for the End-of-life stage (C1-C4)

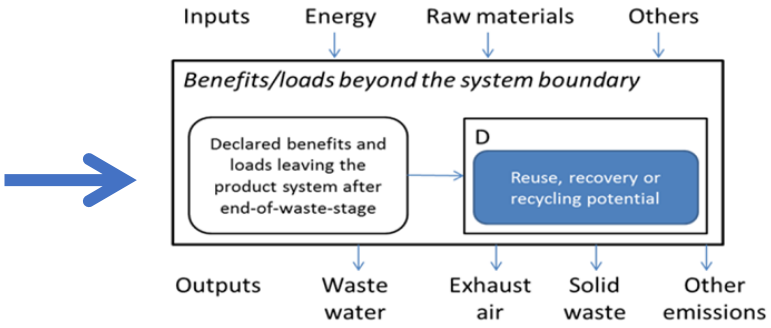


Figure 4. Schematic representation of the LCA system boundaries for the benefits and loads beyond the product system boundary in module D

LCA: Scenarios and Additional Technical Information

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

Transports to the customer are calculated on the basis of a scenario with an average truck trailer with a 27 t payload. For the final stone wool product, a loading ratio of 30 % of weight capacity has been set. The average transport distance to the customer is assumed to be 273 km as a basis for this study. The assumption is based on a 270 km distance for the Polish plant and a 277 km distance for the Swedish plant. Since the Polish plant contribute with a share of 53% and the Swedish plant with a share of 47% the weighted average distance is set to 273 km.

Transport to the Building Site (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Energy use per km	Total energy use
Truck	100% (30% weight capacity)	Truck fleet	273	0,9 liter	245,7 liters

Installation in the Building (A5)

Parameter	Parameter expressed by functional unit
Auxiliary materials for the installation	Not applicable
Consumption of other resources	Not applicable
Quantitative description of the type of energy and consumption rate during the installation process	Not applicable
Wastes at the construction site generated from the installation of the product	Installation waste is assumed to be 0% since all material can be used within the building
Material outputs as a result from waste management processes at the installation site. For example, compilation for recycling, for energy recovery and final disposal	Waste management process for packaging materials
Emissions to air, soil and water	Not applicable

End of Life (C1, C2, C3, C4)

Parameter	Parameter expressed by functional unit
Compilation processes district	Not applicable
Recycling systems	Not applicable
Final disposal	1 kg Landfilling

Benefits/loads Beyond the System Boundary (D)

Materials that create a benefit in Module D are packaging materials. Benefits from the packaging waste treatment are considered in module D. Energy products of incineration (e.g. steam, electricity, metals) are credited using the European production averages (e.g. European grid mix for power). Credits are reported in module D.

LCA: Results

Life Cycle Impact Assessment results represent the environmental impacts for the life cycle of stone wool from cradle to grave.

The goal is to address all necessary parameters according to EN 15804 for creating EPDs. In a first step the results are calculated based on 1 kg stone wool representing the PAROC average. After that the data is scaled according to the provided density and lambda and fixed to the mass required for one square meter product with the respective R value = 1.

The PAROC Technical Insulation products are clustered according to their application into different product groups. Scaling factors are included in the EPD indicating the factor which to multiply with the indicators in order to get the environmental burden on product level described. The scaling factors solely refer to the stone wool used in these products, and thus do not include the different facings. Due to this fact, the variation is less than 10% by reason of the density, lambda and binder. The additional impact from the facings shall be added to the final result, see the Annex accompanying this EPD for the LCA results. The scaling calculation shall be done as follows to get results per 1 linear meter of pipe section and/or bend:

Reference product environmental impact per m2 (1,34) x scaling factor of specific product + environmental impact of specific facing

Product groups
Hvac Sections
Hvac Bends

Scaling Factors for 1 m of Hvac Pipe Sections & Bends										
Hvac Insulation Inner Diameter (mm)	Hvac Insulation Nominal Thickness (mm)									
	mm	20	30	40	50	60	80	100	120	140	160
	12-18	0,4	0,5	0,7	0,9	1,3	2,2				
	22-28	0,5	0,6	0,8	1,1	1,3	2,1				
	35	0,4	0,7	1	1,3	1,5	2,4	3,5			
	42	0,5	0,8	1,2	1,2	1,8	2,7	3,9			
	48	0,6	1	1,1	1,4	1,7	2,7	3,9			
	54	0,6	0,9	1,1	1,4	2	3	4,3			
	60	0,7	0,9	1,3	1,4	1,9	3	4,2	5,6		
	64	0,6	1,1	1,2	1,6	1,9	2,9	4,2	6,1		
	70	0,8	1	1,5	1,5	2,2	3,3	4,6	6,1		
	76	0,7	1,3	1,4	1,8	2,1	3,2	4,5	6		
	84		1,2	1,6	1,7	2,4	3,5	4,9	6,5		
	89	0,8	1,4	1,6	2	2,3	3,5	4,9	6,4		
	102	0,9	1,6	1,7	2,1	2,5	3,8	5,2	6,8		
	108		1,5	2	2,1	2,8	4,1	5,6	7,4		
	114		1,8	1,9	2,3	2,7	4	5,6	7,3		
	121		1,6	2,2	2,2	3	4,4	6	7,8		
	127		1,9	2,1	2,5	2,9	4,3	5,9	7,7		
	133		1,8	2,4	2,4	3,3	4,7	6,4	8,2		
	140		2,1	2,2	2,7	3,1	4,6	6,2	8,1		
	156		2,1	2,3	2,8	3,3	4,8	7,1	9,1		
	159		2,1	2,7	2,8	3,7	5,3	7,1	9		
	168		2,3	2,5	3	3,5	5,1	6,9	9,6		
	178		2	2,7	3,3	3,8	5,4	7,3	9,3		
	194		2,6	2,8	3,4	3,9	5,6	7,5			
	208		2,7	2,9	3,5	4,1	5,9	8,6			
	219		3	3,2	3,8	4,3	6,2	8,3	10,5	13,8	16,6
	230		2,5	3,4	4	4,6	6,5	8,7	11	13,5	16,2
	240		2,8	3,7	3,7	4,9	6,9	9,1	11,5	14,1	16,9
	245		3,3	3,5	4,1	4,8	6,7	8,9	11,3	14,8	17,7
	259		3,4	3,6	4,3	4,9	7	9,2	12,5	15,3	18,2
	273		3,5	3,7	4,4	5,1	7,2	10,4	12,9	15,7	18,7

LCA: Results

System Boundaries (X = declared module; MND = module not declared)																
Production			Installation		Use Stage							End-of-Life				Next Product System
Raw Material Supply (extraction, processing, recycled material)	Transport to Manufacturer	Manufacturing	Transport to Building Site	Installation into Building	Use / Application	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-Construction / Demolition	Transport to EoL	Waste Processing for Reuse, Recovery or Recycling	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	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X

Environmental Impact: 1m² PAROC Stone Wool Thermal Insulation (per 1 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,34*	0,028	0,08639	0,00337	0,0136	-0,0255
ODP	[kg CFC11-eq.]	5,84E-009	4,55E-018	1,1E-017	5,48E-019	7,5E-017	-3,44E-016
AP	[kg SO_2-eq.]	0,00323	7,47E-005	6,29E-006	8,23E-006	8,74E-005	-3,13E-005
EP	[kg PO_4^{3-}eq.]	0,000547	1,86E-005	1,37E-006	2,03E-006	9,84E-005	-3,94E-006
POCP	[kg ethene-eq.]	0,000189	-2,78E-005	4,96E-007	-2,95E-006	6,57E-006	-2,91E-006
ADPM	[kg Sb-eq.]	2,11E-007	2,3E-009	5,75E-010	2,77E-010	5,25E-009	-4,61E-009
ADPE	[MJ]	10,9	0,377	0,0114	0,0454	0,193	-0,363

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,03139 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0,03139 kgCO_2-eq.).

Resource Use: 1 m² PAROC Stone Wool Thermal Insulation (per 1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	1,38	-	0,00234	-	-	-
RPEM	[MJ]	0,347	-	-0,347	-	-	-
TPE	[MJ]	1,72	0,0212	-0,34466	0,00256	0,0261	-0,0916
NRPE	[MJ]	9,67	-	-	-	1,929	-
NRPM	[MJ]	1,73	-	-	-	-1,73	-
TRPE	[MJ]	11,4	0,378	0,013	0,0456	0,199	-0,442
SM	[kg]	0,0572	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00383	2,46E-005	0,000155	2,96E-006	5,02E-005	-0,000106

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² PAROC Stone Wool Thermal Insulation (per 1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,89E-008	1,76E-008	9,33E-012	2,12E-009	3,03E-009	-1,76E-010
NHW	[kg]	0,181	5,79E-005	0,000405	6,98E-006	1	-0,000199
RW	[kg]	9,71E-005	4,68E-007	6,37E-007	5,64E-008	2,27E-006	-3,13E-005

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² PAROC Stone Wool Thermal Insulation (per 1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0,0314	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Key environmental indicators	Unit	Cradle to gate A1-A3	Transport ****
GWP-TOT	kg $C0_2$-eqv	1,34	0,028
Energy Use (=TPE+TRPE)	MJ	13,12	0,3992
Dangerous substances	*	-	-

*The product contains no substances from the REACH Candidate list of the Norwegian priority list.

****Average transport from production site to customer.

Additional Norwegian Requirements

Greenhouse gas emissions from the use of hydroelectricity in the manufacturing phase

The selection of the background data for the hydroelectricity generation in Sweden and power grid mix in Poland is in line with EN 15804 and contribute to GWP as given below.

Greenhouse gas emissions		
Country	**Amount**	**Unit**
Poland Sweden	0,931 0,0143	kg CO_2-eqv/kWh kg CO_2-eqv/kWh

Dangerous substances

☒ The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

☐ 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 contains 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 (Avfallsforskiften, Annex III), see table.

Dangerous substances

None of the following substances have been added to the product: Substances on the REACH Candidate list of substances of very high concern or substances on the Norwegian Priority list as of 2022-06-10 or substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.

Transport

Average transport distance from production site to customer is: 273 km

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 14040:2006	*Environmental management – Life cycle assessment – Principles and framework.*
ISO 14044:2006	*Environmental management – Life cycle assessment – Requirements and guidelines.*
EN 15804:2012+A1:2013	*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.*
Goymann M, Kanekar H, Bernard Y	*Background report for EPD of Paroc Stone Wool Insulation. September 2020, revised October 2022.*
PCR	*NPCR 012:2018 version 2. Part B for Thermal insulation products*

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Global Program Operator

Annex to the ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Paroc Group Oy
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
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ECO Platform reference number:	-
Issue date:	29.12.2022
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For the following facing options for PAROC Stone Wool Thermal Technical Insulation Products

AL1, AL6, AL8, AluCoat Fix, AluCoat/AirCoat, BlackCoat, Clad, Comfort/N4, G1, G2, G3, G4, G5/G6/G9, G7, Galvanized Steel Wire Mesh, LF1, N1/N9, N3/N5/N7, N6, N8, Tape, W1, W2

Paroc Group Oy
Owner of the declaration

LCA: Results

This Annex is a supplementary document to the verified EPDs for PAROC Stone Wool Thermal Technical Insulation.

Life Cycle Impact Assessment results represent the environmental impacts for the life cycle of facings from cradle to grave. The goal is to address all necessary parameters according to EN 15804 for creating EPDs and follows the same calculation rules as for the PAROC Stone Wool Thermal Insulation.

The results below shall be added to the final results for those PAROC technical insulation products that has a facing(s). Some facings are covered by the same results due to similar weight and composition, however the results always represent impact per each facing. The calculation shall be done as follows.

(Reference product's environmental impact per m2 x scaling factor of specific product) + environmental impact of specific facing(s)

System Boundaries (X = declared module; MND = module not declared)																
Production			Installation		Use Stage							End-of-Life				Next Product System
Raw Material Supply (extraction, processing, recycled material)	Transport to Manufacturer	Manufacturing	Transport to Building Site	Installation into Building	Use / Application	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-Construction / Demolition	Transport to EoL	Waste Processing for Reuse, Recovery or Recycling	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	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X

Environmental Impact: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,01	0,0036623	0	0,000446	0,00181	0
ODP	[kg CFC11-eq.]	6,35E-15	5,9505E-19	0	7,27E-20	9,94E-18	0
AP	[kg SO_2-eq.]	0,00418	9,8075E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000262	2,4429E-06	0	2,69E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,000274	-3,6523E-06	0	-3,91E-07	8,71E-07	0
ADPM	[kg Sb-eq.]	4,78E-07	3,0076E-10	0	3,68E-11	6,97E-10	0
ADPE	[MJ]	12,2	0,049311	0	0,00603	0,0256	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	5,52	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	5,42	0,0027829	0	0,00034	0,00346	0
NRPE	[MJ]	14,2	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	14,2	0,049511	0	0,00605	0,0264	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,0133	3,2176E-06	0	3,93E-07	6,66E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	7,79E-09	2,3035E-09	0	2,81E-10	4,02E-10	0
NHW	[kg]	0,257	0,000007574	0	9,25E-07	0,133	0
RW	[kg]	0,000784	6,1252E-08	0	7,48E-09	3,00E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,676	0,003672	0	0,000448	0,00181	0
ODP	[kg CFC11-eq.]	4,53E-15	5,97E-19	0	7,29E-20	9,97E-18	0
AP	[kg SO_2-eq.]	0,00234	9,84E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000167	2,45E-06	0	2,70E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,00018	-3,7E-06	0	-3,92E-07	8,74E-07	0
ADPM	[kg Sb-eq.]	1,55E-06	3,02E-10	0	3,69E-11	6,99E-10	0
ADPE	[MJ]	10,2	0,049511	0	0,00605	0,0257	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,89	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,89	0,002788	0	0,000341	0,00347	0
NRPE	[MJ]	11,4	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	11,4	0,049611	0	0,00606	0,0265	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00715	3,23E-06	0	3,94E-07	6,68E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,78E-09	2,31E-09	0	2,82E-10	4,04E-10	0
NHW	[kg]	0,125	7,59E-06	0	9,28E-07	0,133	0
RW	[kg]	0,00047	6,15E-08	0	7,51E-09	3,01E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,61	0,002843	0	0,000347	0,0014	0
ODP	[kg CFC11-eq.]	3,93E-15	4,62E-19	0	5,65E-20	7,72E-18	0
AP	[kg SO_2-eq.]	0,00234	7,62E-06	0	8,48E-07	9,00E-06	0
EP	[kg PO_4^{3-}eq.]	0,000155	1,9E-06	0	2,09E-07	1,01E-06	0
POCP	[kg ethene-eq.]	0,000163	-2,8E-06	0	-3,03E-07	6,77E-07	0
ADPM	[kg Sb-eq.]	1,46E-06	2,34E-10	0	2,86E-11	5,41E-10	0
ADPE	[MJ]	8,3	0,038323	0	0,00468	0,0199	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,87	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,87	0,002158	0	0,000264	0,00269	0
NRPE	[MJ]	9,42	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,42	0,03847	0	0,0047	0,0205	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00706	2,5E-06	0	3,05E-07	5,17E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,01E-09	1,79E-09	0	2,19E-10	3,13E-10	0
NHW	[kg]	0,132	5,88E-06	0	7,19E-07	0,103	0
RW	[kg]	0,000444	4,76E-08	0	5,81E-09	2,33E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,11	0,003672	0	0,000448	0,00181	0
ODP	[kg CFC11-eq.]	9,86E-15	5,97E-19	0	7,29E-20	9,97E-18	0
AP	[kg SO_2-eq.]	0,00307	9,84E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000291	2,45E-06	0	2,70E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,000271	-3,7E-06	0	-3,92E-07	8,74E-07	0
ADPM	[kg Sb-eq.]	5,20E-06	3,02E-10	0	3,69E-11	6,99E-10	0
ADPE	[MJ]	16	0,049511	0	0,00605	0,0257	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	4,64	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	4,64	0,002788	0	0,000341	0,00347	0
NRPE	[MJ]	17,6	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	17,6	0,049611	0	0,00606	0,0265	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00935	3,23E-06	0	3,94E-07	6,68E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	2,95E-08	2,31E-09	0	2,82E-10	4,04E-10	0
NHW	[kg]	0,2	7,59E-06	0	9,28E-07	0,133	0
RW	[kg]	0,00064	6,15E-08	0	7,51E-09	3,01E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,576	0,002288	0	0,000279	0,00113	0
ODP	[kg CFC11-eq.]	3,68E-15	3,72E-19	0	4,55E-20	6,22E-18	0
AP	[kg SO_2-eq.]	0,00222	6,14E-06	0	6,83E-07	7,25E-06	0
EP	[kg PO_4^{3-}eq.]	0,000142	1,53E-06	0	1,69E-07	8,17E-07	0
POCP	[kg ethene-eq.]	0,000158	-2,3E-06	0	-2,45E-07	5,45E-07	0
ADPM	[kg Sb-eq.]	1,32E-06	1,88E-10	0	2,30E-11	4,36E-10	0
ADPE	[MJ]	7,7	0,030876	0	0,00377	0,0161	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,74	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,74	0,001739	0	0,000213	0,00216	0
NRPE	[MJ]	8,83	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	8,83	0,030976	0	0,00378	0,0165	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00666	2,01E-06	0	2,46E-07	4,17E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,22E-09	1,44E-09	0	1,76E-10	2,52E-10	0
NHW	[kg]	0,124	4,74E-06	0	5,79E-07	0,0831	0
RW	[kg]	0,000444	3,84E-08	0	4,68E-09	1,88E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,616	0,002483	0	0,000303	0,00123	0
ODP	[kg CFC11-eq.]	4,08E-15	4,04E-19	0	4,93E-20	6,75E-18	0
AP	[kg SO_2-eq.]	0,00226	6,66E-06	0	7,41E-07	7,87E-06	0
EP	[kg PO_4^{3-}eq.]	0,000151	1,66E-06	0	1,83E-07	8,86E-07	0
POCP	[kg ethene-eq.]	0,000165	-2,5E-06	0	-2,65E-07	5,91E-07	0
ADPM	[kg Sb-eq.]	1,45E-06	2,04E-10	0	2,50E-11	4,73E-10	0
ADPE	[MJ]	8,49	0,033476	0	0,00409	0,0174	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,81	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,81	0,001884	0	0,00023	0,00235	0
NRPE	[MJ]	9,64	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,64	0,033576	0	0,0041	0,0179	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00678	2,18E-06	0	2,67E-07	4,52E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	-2,37E-09	1,56E-09	0	1,91E-10	2,73E-10	0
NHW	[kg]	0,125	5,14E-06	0	6,28E-07	0,0901	0
RW	[kg]	0,000456	4,16E-08	0	5,08E-09	2,04E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² Clad (per 0,35 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,26	0,0096628	0	0,00118	0,00477	0
ODP	[kg CFC11-eq.]	9,02E-15	1,5688E-18	0	1,92E-19	2,62E-17	0
AP	[kg SO_2-eq.]	0,00606	0,000025882	0	2,88E-06	3,06E-05	0
EP	[kg PO_4^{3-}eq.]	0,000382	6,4499E-06	0	7,11E-07	3,45E-06	0
POCP	[kg ethene-eq.]	0,000423	-9,6375E-06	0	-1,03E-06	2,30E-06	0
ADPM	[kg Sb-eq.]	1,70E-05	7,944E-10	0	9,70E-11	1,84E-09	0
ADPE	[MJ]	19,4	0,13041	0	0,0159	0,0677	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	5,3	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	5,3	0,0073346	0	0,000896	0,00912	0
NRPE	[MJ]	22,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	22,1	0,13041	0	0,016	0,0697	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,0128	8,4934E-06	0	1,04E-06	1,76E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,19E-08	6,0805E-09	0	7,43E-10	1,06E-09	0
NHW	[kg]	0,239	0,000019982	0	2,44E-06	0,35	0
RW	[kg]	0,00105	1,6188E-07	0	1,98E-08	7,93E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,0939	0,00041417	0	5,05E-05	0,000204	0
ODP	[kg CFC11-eq.]	1,28E-15	6,7299E-20	0	8,22E-21	1,12E-18	0
AP	[kg SO_2-eq.]	0,000103	1,1094E-06	0	1,23E-07	1,31E-06	0
EP	[kg PO_4^{3-}eq.]	1,70E-05	2,7629E-07	0	3,05E-08	1,48E-07	0
POCP	[kg ethene-eq.]	1,88E-05	-4,1317E-07	0	-4,42E-08	9,86E-08	0
ADPM	[kg Sb-eq.]	2,17E-08	3,4023E-11	0	4,16E-12	7,88E-11	0
ADPE	[MJ]	1,79	0,0055805	0	0,000682	0,0029	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,0001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,0001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,253	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,253	0,00031476	0	3,84E-05	0,000391	0
NRPE	[MJ]	1,92	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	1,92	0,0055958	0	0,000684	0,00299	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,000385	3,6423E-07	0	4,45E-08	7,53E-07	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	8,47E-10	2,6029E-10	0	3,18E-11	4,55E-11	0
NHW	[kg]	0,00151	8,5634E-07	0	1,05E-07	0,015	0
RW	[kg]	5,25E-05	6,9299E-09	0	8,47E-10	3,40E-08	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² G1 (per 0,24 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,485	0,0066299	0	8,08E-04	0,00327	0
ODP	[kg CFC11-eq.]	4,55E-15	1,0741E-18	0	1,32E-19	1,80E-17	0
AP	[kg SO_2-eq.]	0,00273	0,000017735	0	1,98E-06	2,10E-05	0
EP	[kg PO_4^{3-}eq.]	1,79E-04	4,4217E-06	0	4,88E-07	2,36E-06	0
POCP	[kg ethene-eq.]	1,88E-04	-6,6099E-06	0	-7,07E-07	1,58E-06	0
ADPM	[kg Sb-eq.]	1,72E-05	5,4458E-10	0	6,65E-11	1,26E-09	0
ADPE	[MJ]	8,86	0,089281	0	0,0109	0,0464	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	1,1	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	1,1	0,0050311	0	6,15E-04	0,00626	0
NRPE	[MJ]	9,86	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,86	0,089581	0	0,0109	0,0478	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00254	5,8205E-06	0	7,12E-07	1,20E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,61E-09	4,167E-09	0	5,09E-10	7,28E-10	0
NHW	[kg]	0,0406	0,000013688	0	1,67E-06	0,24	0
RW	[kg]	3,96E-04	1,1094E-07	0	1,35E-08	5,44E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² G2 (per 0,23 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,466	0,0063499	0	7,74E-04	0,00313	0
ODP	[kg CFC11-eq.]	4,35E-15	1,0341E-18	0	1,26E-19	1,72E-17	0
AP	[kg SO_2-eq.]	0,00261	0,000016988	0	1,89E-06	2,01E-05	0
EP	[kg PO_4^{3-}eq.]	1,72E-04	4,2417E-06	0	4,67E-07	2,26E-06	0
POCP	[kg ethene-eq.]	1,80E-04	-6,3352E-06	0	-6,78E-07	1,51E-06	0
ADPM	[kg Sb-eq.]	1,64E-05	5,2211E-10	0	6,38E-11	1,21E-09	0
ADPE	[MJ]	8,56	0,085534	0	0,0105	0,0445	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	1,05	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	1,05	0,0048211	0	5,89E-04	0,006	0
NRPE	[MJ]	9,51	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,51	0,085834	0	0,0105	0,0458	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00244	5,5805E-06	0	6,82E-07	1,15E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,38E-09	3,997E-09	0	4,88E-10	6,98E-10	0
NHW	[kg]	0,0387	0,000013141	0	1,61E-06	0,23	0
RW	[kg]	3,78E-04	1,0641E-07	0	1,30E-08	5,21E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² G3 (per 0,46 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,897	0,012688	0	1,55E-03	0,00627	0
ODP	[kg CFC11-eq.]	8,93E-15	2,0635E-18	0	2,52E-19	3,45E-17	0
AP	[kg SO_2-eq.]	0,00546	0,000034023	0	3,79E-06	4,02E-05	0
EP	[kg PO_4^{3-}eq.]	3,50E-04	8,4734E-06	0	9,35E-07	4,53E-06	0
POCP	[kg ethene-eq.]	-3,66E-04	-0,000012641	0	-1,36E-06	3,02E-06	0
ADPM	[kg Sb-eq.]	3,52E-05	1,0441E-09	0	1,28E-10	2,42E-09	0
ADPE	[MJ]	15,5	0,17088	0	0,0209	0,089	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,013 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,013 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,19	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,19	0,0096375	0	1,18E-03	0,012	0
NRPE	[MJ]	17,5	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	17,5	0,17188	0	0,021	0,0916	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00468	0,000011141	0	1,36E-06	2,31E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,08E-08	7,9887E-09	0	9,76E-10	1,40E-09	0
NHW	[kg]	0,0823	0,000026282	0	3,21E-06	0,46	0
RW	[kg]	7,98E-04	2,1235E-07	0	2,60E-08	1,04E-06	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² G4 (per 0,266 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,741	0,0073393	0	8,95E-04	0,00363	0
ODP	[kg CFC11-eq.]	6,07E-15	1,1941E-18	0	1,46E-19	1,99E-17	0
AP	[kg SO_2-eq.]	0,00396	0,000019635	0	2,19E-06	2,32E-05	0
EP	[kg PO_4^{3-}eq.]	2,50E-04	4,9011E-06	0	5,41E-07	2,62E-06	0
POCP	[kg ethene-eq.]	2,71E-04	-7,3293E-06	0	-7,84E-07	1,75E-06	0
ADPM	[kg Sb-eq.]	1,68E-05	6,0352E-10	0	7,38E-11	1,40E-09	0
ADPE	[MJ]	11,8	0,098834	0	0,0121	0,0514	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,73	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,73	0,0055758	0	6,81E-04	0,00693	0
NRPE	[MJ]	13,4	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	13,4	0,099463	0	0,0121	0,053	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00637	6,4552E-06	0	7,89E-07	1,34E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	7,75E-09	4,6164E-09	0	5,64E-10	8,07E-10	0
NHW	[kg]	0,119	0,000015188	0	1,86E-06	0,266	0
RW	[kg]	6,46E-04	1,2288E-07	0	1,50E-08	6,03E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,391	0,0052458	0	6,39E-04	0,00259	0
ODP	[kg CFC11-eq.]	3,56E-15	8,5234E-19	0	1,04E-19	1,42E-17	0
AP	[kg SO_2-eq.]	0,00211	0,000014041	0	1,56E-06	1,66E-05	0
EP	[kg PO_4^{3-}eq.]	1,41E-04	3,5023E-06	0	3,86E-07	1,87E-06	0
POCP	[kg ethene-eq.]	1,48E-04	-5,2311E-06	0	-5,60E-07	1,25E-06	0
ADPM	[kg Sb-eq.]	1,31E-05	4,3117E-10	0	5,27E-11	9,98E-10	0
ADPE	[MJ]	7,34	0,070646	0	0,00864	0,0367	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,002 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,002 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,855	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,855	0,0039817	0	4,87E-04	0,00495	0
NRPE	[MJ]	8,11	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	8,11	0,070946	0	0,00866	0,0378	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00205	4,6117E-06	0	5,63E-07	9,54E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,43E-09	3,2976E-09	0	4,03E-10	5,77E-10	0
NHW	[kg]	0,0311	0,000010841	0	1,33E-06	0,19	0
RW	[kg]	3,05E-04	8,7781E-08	0	1,07E-08	4,31E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² G7 (per 0,27 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,92	0,0074493	0	9,09E-04	0,00368	0
ODP	[kg CFC11-eq.]	7,48E-15	1,2141E-18	0	1,48E-19	2,02E-17	0
AP	[kg SO_2-eq.]	0,00459	0,000019935	0	2,22E-06	2,36E-05	0
EP	[kg PO_4^{3-}eq.]	2,90E-04	4,9764E-06	0	5,49E-07	2,66E-06	0
POCP	[kg ethene-eq.]	3,12E-04	-7,4393E-06	0	-7,95E-07	1,77E-06	0
ADPM	[kg Sb-eq.]	1,65E-05	6,1252E-10	0	7,49E-11	1,42E-09	0
ADPE	[MJ]	13,1	0,100516	0	0,0123	0,0522	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	3,76	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	3,76	0,0056605	0	6,91E-04	0,00704	0
NRPE	[MJ]	15,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	15,1	0,100728	0	0,0123	0,0538	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00871	6,5499E-06	0	8,01E-07	1,36E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	8,61E-09	4,6864E-09	0	5,73E-10	8,19E-10	0
NHW	[kg]	0,164	0,000015388	0	1,88E-06	0,27	0
RW	[kg]	7,99E-04	1,2441E-07	0	1,52E-08	6,12E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,609	0,0068999	0	8,41E-04	0,00341	0
ODP	[kg CFC11-eq.]	1,29E-15	1,1241E-18	0	1,37E-19	1,87E-17	0
AP	[kg SO_2-eq.]	0,00133	0,000018488	0	2,06E-06	2,18E-05	0
EP	[kg PO_4^{3-}eq.]	1,28E-04	4,6064E-06	0	5,08E-07	2,46E-06	0
POCP	[kg ethene-eq.]	1,68E-04	-6,8846E-06	0	-7,37E-07	1,64E-06	0
ADPM	[kg Sb-eq.]	4,42E-05	5,6758E-10	0	6,93E-11	1,31E-09	0
ADPE	[MJ]	5,62	0,093028	0	0,0114	0,0483	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,446	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,446	0,0052411	0	6,40E-04	0,00652	0
NRPE	[MJ]	5,85	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	5,85	0,093328	0	0,0114	0,0498	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00066	6,0652E-06	0	7,41E-07	1,25E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,17E-09	4,3417E-09	0	5,30E-10	7,59E-10	0
NHW	[kg]	0,00756	0,000014288	0	1,74E-06	0,25	0
RW	[kg]	8,89E-05	1,1541E-07	0	1,41E-08	5,66E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,598	0,0026782	0	3,26E-04	0,00132	0
ODP	[kg CFC11-eq.]	5,23E-15	4,3517E-19	0	5,32E-20	7,27E-18	0
AP	[kg SO_2-eq.]	0,00176	7,1746E-06	0	7,98E-07	8,48E-06	0
EP	[kg PO_4^{3-}eq.]	1,36E-04	1,7888E-06	0	1,97E-07	9,55E-07	0
POCP	[kg ethene-eq.]	1,51E-04	-2,6729E-06	0	-2,86E-07	6,37E-07	0
ADPM	[kg Sb-eq.]	1,04E-06	2,1982E-10	0	2,69E-11	5,10E-10	0
ADPE	[MJ]	9,62	0,036123	0	0,00441	0,0188	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,36	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,36	0,0020335	0	2,48E-04	0,00253	0
NRPE	[MJ]	10,6	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	10,6	0,036223	0	0,00442	0,0193	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00528	2,3582E-06	0	2,88E-07	4,87E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,03E-09	1,6835E-09	0	2,06E-10	2,94E-10	0
NHW	[kg]	0,0861	5,5405E-06	0	6,77E-07	0,0971	0
RW	[kg]	4,03E-04	4,4817E-08	0	5,47E-09	2,20E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,0936	0,0013788	0	1,68E-04	0,000681	0
ODP	[kg CFC11-eq.]	9,94E-16	2,2435E-19	0	2,74E-20	3,75E-18	0
AP	[kg SO_2-eq.]	0,000619	0,000003697	0	4,11E-07	4,37E-06	0
EP	[kg PO_4^{3-}eq.]	3,88E-05	9,2128E-07	0	1,02E-07	4,92E-07	0
POCP	[kg ethene-eq.]	4,04E-05	-1,3788E-06	0	-1,47E-07	3,29E-07	0
ADPM	[kg Sb-eq.]	4,09E-06	1,1341E-10	0	1,39E-11	2,63E-10	0
ADPE	[MJ]	1,52	0,018635	0	0,00227	0,00967	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,0004 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,0004 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,247	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,247	0,0010494	0	1,28E-04	0,0013	0
NRPE	[MJ]	1,75	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	1,75	0,018635	0	0,00228	0,00996	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000488	1,2141E-06	0	1,48E-07	2,51E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,18E-09	8,6834E-10	0	1,06E-10	1,52E-10	0
NHW	[kg]	0,00949	2,8529E-06	0	3,49E-07	0,05	0
RW	[kg]	9,14E-05	2,3082E-08	0	2,82E-09	1,13E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,112	0,0016588	0	2,02E-04	0,000818	0
ODP	[kg CFC11-eq.]	1,19E-15	2,6929E-19	0	3,29E-20	4,50E-18	0
AP	[kg SO_2-eq.]	0,000743	4,4417E-06	0	4,94E-07	5,24E-06	0
EP	[kg PO_4^{3-}eq.]	4,66E-05	1,1041E-06	0	1,22E-07	5,91E-07	0
POCP	[kg ethene-eq.]	4,84E-05	-1,6535E-06	0	-1,77E-07	3,94E-07	0
ADPM	[kg Sb-eq.]	4,90E-06	1,3641E-10	0	1,66E-11	3,15E-10	0
ADPE	[MJ]	1,82	0,022335	0	0,00273	0,0116	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,296	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,296	0,0012541	0	1,54E-04	0,00156	0
NRPE	[MJ]	2,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	2,1	0,022382	0	0,00274	0,0119	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000586	1,4588E-06	0	1,78E-07	3,01E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,42E-09	1,0441E-09	0	1,27E-10	1,82E-10	0
NHW	[kg]	0,0114	3,4276E-06	0	4,19E-07	0,0601	0
RW	[kg]	1,10E-04	2,7729E-08	0	3,39E-09	1,36E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² N6 (per 0,1 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,187	2,76E-03	0	3,37E-04	0,00136	0
ODP	[kg CFC11-eq.]	1,99E-15	4,49E-19	0	5,48E-20	7,50E-18	0
AP	[kg SO_2-eq.]	0,00124	7,40E-06	0	8,23E-07	8,74E-06	0
EP	[kg PO_4^{3-}eq.]	7,76E-05	1,84E-06	0	2,03E-07	9,84E-07	0
POCP	[kg ethene-eq.]	8,07E-05	-2,75E-06	0	-2,95E-07	6,57E-07	0
ADPM	[kg Sb-eq.]	8,17E-06	2,27E-10	0	2,77E-11	5,25E-10	0
ADPE	[MJ]	3,03	3,72E-02	0	0,00455	0,0193	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,494	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,494	2,09E-03	0	2,56E-04	0,00261	0
NRPE	[MJ]	3,49	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	3,49	3,73E-02	0	0,00456	0,0199	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000976	2,43E-06	0	2,96E-07	5,02E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	2,37E-09	1,74E-09	0	2,12E-10	3,03E-10	0
NHW	[kg]	0,019	5,71E-06	0	6,98E-07	0,1	0
RW	[kg]	1,83E-04	4,62E-08	0	5,64E-09	2,27E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² N8 (per 0,125 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,337	0,0034523	0	4,21E-04	0,0017	0
ODP	[kg CFC11-eq.]	2,41E-15	5,6058E-19	0	6,85E-20	9,37E-18	0
AP	[kg SO_2-eq.]	0,00154	9,2481E-06	0	1,03E-06	1,09E-05	0
EP	[kg PO_4^{3-}eq.]	9,99E-05	2,3035E-06	0	2,54E-07	1,23E-06	0
POCP	[kg ethene-eq.]	1,03E-04	-3,4423E-06	0	-3,68E-07	8,21E-07	0
ADPM	[kg Sb-eq.]	9,80E-06	2,8376E-10	0	3,47E-11	6,57E-10	0
ADPE	[MJ]	5,81	0,046464	0	0,00568	0,0242	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,601	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,601	0,0026229	0	3,20E-04	0,00326	0
NRPE	[MJ]	6,36	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	6,36	0,046664	0	0,0057	0,0249	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00127	3,0329E-06	0	3,71E-07	6,27E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,57E-09	2,1682E-09	0	2,65E-10	3,79E-10	0
NHW	[kg]	0,0244	7,1393E-06	0	8,72E-07	0,125	0
RW	[kg]	2,21E-04	5,7705E-08	0	7,05E-09	2,83E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² Tape (per 0,087 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,11	0,0023982	0	2,93E-04	0,00119	0
ODP	[kg CFC11-eq.]	1,47E-14	3,907E-19	0	4,77E-20	6,52E-18	0
AP	[kg SO_2-eq.]	0,00187	6,4352E-06	0	7,16E-07	7,60E-06	0
EP	[kg PO_4^{3-}eq.]	2,98E-04	1,6035E-06	0	1,77E-07	8,56E-07	0
POCP	[kg ethene-eq.]	2,46E-04	-2,3982E-06	0	-2,56E-07	5,72E-07	0
ADPM	[kg Sb-eq.]	1,04E-05	1,9735E-10	0	2,41E-11	4,57E-10	0
ADPE	[MJ]	17	0,032376	0	0,00395	0,0168	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	4,82	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	4,82	0,0018235	0	2,23E-04	0,00227	0
NRPE	[MJ]	18,2	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	18,2	0,032476	0	0,00397	0,0173	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00626	2,1135E-06	0	2,58E-07	4,37E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	6,64E-08	1,5088E-09	0	1,85E-10	2,64E-10	0
NHW	[kg]	0,202	4,9711E-06	0	6,07E-07	0,0871	0
RW	[kg]	4,84E-04	4,017E-08	0	4,91E-09	1,97E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

LCA: Results

Environmental Impact: 1m² W1 (per 0,254 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,597	0,0070146	0	8,55E-04	0,00346	0
ODP	[kg CFC11-eq.]	9,60E-16	1,1441E-18	0	1,39E-19	1,90E-17	0
AP	[kg SO_2-eq.]	0,00134	0,000018788	0	2,09E-06	2,22E-05	0
EP	[kg PO_4^{3-}eq.]	1,33E-04	4,6764E-06	0	5,16E-07	2,50E-06	0
POCP	[kg ethene-eq.]	1,80E-04	-6,9946E-06	0	-7,48E-07	1,67E-06	0
ADPM	[kg Sb-eq.]	7,25E-09	5,7658E-10	0	7,04E-11	1,33E-09	0
ADPE	[MJ]	5,33	0,094528	0	0,0115	0,0491	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,002 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,002 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,27	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,27	0,0053258	0	6,50E-04	0,00662	0
NRPE	[MJ]	5,45	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	5,45	0,094828	0	0,0116	0,0506	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000425	6,1652E-06	0	7,53E-07	1,27E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

LCA: Results

End of Life – Waste: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,52E-09	4,4117E-09	0	5,39E-10	7,71E-10	0
NHW	[kg]	0,00757	0,000014488	0	1,77E-06	0,254	0
RW	[kg]	5,01E-05	1,1741E-07	0	1,43E-08	5,76E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

Environmental Impact: 1m² W2 (per 0,25 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,809	0,0068999	0	8,41E-04	0,00341	0
ODP	[kg CFC11-eq.]	5,42E-15	1,1241E-18	0	1,37E-19	1,87E-17	0
AP	[kg SO_2-eq.]	0,00472	0,000018488	0	2,06E-06	2,18E-05	0
EP	[kg PO_4^{3-}eq.]	2,25E-04	4,6064E-06	0	5,08E-07	2,46E-06	0
POCP	[kg ethene-eq.]	2,45E-04	-6,8846E-06	0	-7,37E-07	1,64E-06	0
ADPM	[kg Sb-eq.]	2,74E-05	5,6758E-10	0	6,93E-11	1,31E-09	0
ADPE	[MJ]	9,92	0,093028	0	0,0114	0,0483	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,11	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,11	0,0052411	0	6,40E-04	0,00652	0
NRPE	[MJ]	11	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	11	0,093328	0	0,0114	0,0498	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00734	6,07E-06	0	7,41E-07	1,25E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; 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.

End of Life – Waste: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,12E-08	4,3417E-09	0	5,30E-10	7,59E-10	0
NHW	[kg]	0,0907	0,000014288	0	1,74E-06	0,25	0
RW	[kg]	4,09E-04	1,1541E-07	0	1,41E-08	5,66E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

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

STATEMENT

REACH and SVHC Registration

PAROC Stone Wool Products

PAROC Stone Wool Products

PAROC has energy-efficient and fire resilient insulation solutions of stone wool for new and renovated buildings, HVAC and industrial applications. Throughout our nearly 90-year history, we have earned a reputation for innovation, high product performance, and technical expertise among builders of single-family homes, architects, contractors, dealers and industrial builders.

According to the REACH Regulation EC 1907/2006 (Registration, Evaluation, Authorisation and restrictions of Chemicals), in effect as of the 1st of June 2007, manufacturers and importers need to register substances that are already on the EU market (i.e. phasin-in substances) before December 2020 if their annual production exceeds 1000 tonnes.

REACH coverage:
This statement confirms that PAROC has fulfilled the REACH obligations for all legal entities (production units) below;
Paroc Oy Ab, Finland
Paroc AB, Sweden
Paroc Polska Sp. z.o.o, Poland
UAB Paroc, Lithuania

Substance registered:

Substance Identification:	EC number 926-099-9
Reference Substance Name:	”Man-made vitreous (silicate) fibres with random orientation with alkaline and alkali earth oxides (Na2O+K2O+CaO+MgO+BaO) content greater than 18% by weight and fulfilling one of the Nota Q conditions.”
Public Name:	MMVT Note Q Fibres
Classification:	Not Classified Man-made vitreous (silicate) fibres with an index number of 650-016-00-2 fulfilling one of the Note Q conditions in the CLP Regulation (EC) No 1272/2008, as amended in Regulation (EC) No 790/2009 and thus exempted from classification.

The registration covers the fibres as substance in all PAROC products (loose wool, slabs, mats, rolls, bats etc). Products as such are not covered by REACH and PAROC (and neither customers) do not have obligations with regards to those.
Following the registration, PAROC states that Paroc Stone Wool products do not contain (nor are they added in production) the substances mentioned in the “Candidate List of substances of very high concern (SVHC) for Authorisation” of REACH (updated 2026-02-04), REACH Restricted Substance List 2020 (REACH Annex XVII) or REACH Authorisation List (REACH Annex XIV) in a concentration above 0.1% weight by weight.

2026-05-12
Parainen, Finland
Riikka Suovanen

Paroc Group
Riikka Suovanen, Standardization and Compliance Lead

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