



**Environmental
Product
Declaration**

According to ISO14025 and EN15804+A2
(+indicators A1)



This declaration is for:
Concrix ES

Provided by:
Contec Fiber AG



program operator
Stichting MRPI®
publisher
Stichting MRPI®
www.mrpi.nl

MRPI® registration
1.1.00438.2023
date of first issue
22-12-2017
date of this issue
30-10-2024
expiry date
13-04-2028



COMPANY INFORMATION



Contec Fiber AG
Industriepark Vial 2
7013 Domat/Ems
Switzerland
+41 81 632 8010
Mr. Bundi
<https://www.contecfiber.com/en/>

PRODUCT

Concix ES

DECLARED UNIT/FUNCTIONAL UNIT

1 kg

DESCRIPTION OF PRODUCT

Concix ES is a bi-component Macrofiber serving as a structural concrete reinforcement. The rough fiber surface ensures superior bonding within the concrete, and the fiber bundles guarantee fast three-dimensional distribution throughout the matrix during the mixing process. The enhanced technical parameters of the concrete can be used for structural design purposes conditions.

MRPI® REGISTRATION

1.1.00438.2023

DATE OF ISSUE

30-10-2024

EXPIRY DATE

13-4-2028

VISUAL PRODUCT



SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Anne Kees Jeeninga, Advieslab VOF. The LCA study has been done by Ruben van Gaalen, EcoReview B.V. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

MORE INFORMATION

<https://contecfiber.com/en/products/concix-es>

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

Ing. L. L. Oosterveen MSc. MBA
Managing Director MRPI

DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR(a)

Independent verification of the declaration an data according to

ISO14025 EN15804+A2 (+indicators A1)

internal:

external: x

Third party verifier: Anne Kees Jeeninga, Advieslab VOF

[a] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

Concix is used in tunnelling (shotcrete), prefabrication applications, slabs and concrete walls, industrial floors, outside standings, for concrete repair works, concrete piles, special foundation works and different special applications. On the basis of Eurocode 2 and the Fibre Concrete Guidelines it is possible to prove the adequate structural strength of slabs, concrete fields, foundations, walls and other structures and eliminate the steel reinforcement partially or completely. The recommended approximate dosage for Concix as a structural reinforcement is 2.0 to 7.5 kg/m³ of concrete. The product is available in the standard length of 50mm.

In this EPD the production and packaging are considered. Packaging material is included.

This EPD is valid for the following 7 similar products;

- Concix ES
- Concix HS35
- Concix SA
- Concix DM
- Concix M507
- Concix SuperFloor
- Concix HPC-A

Component (> 1%)	(%)
Plastic Fibres	100%
Packaging	2%

SCOPE AND TYPE

The type of this EPD is Cradle-to-Gate. All major steps from the extraction of natural resources to the factory gate are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product.

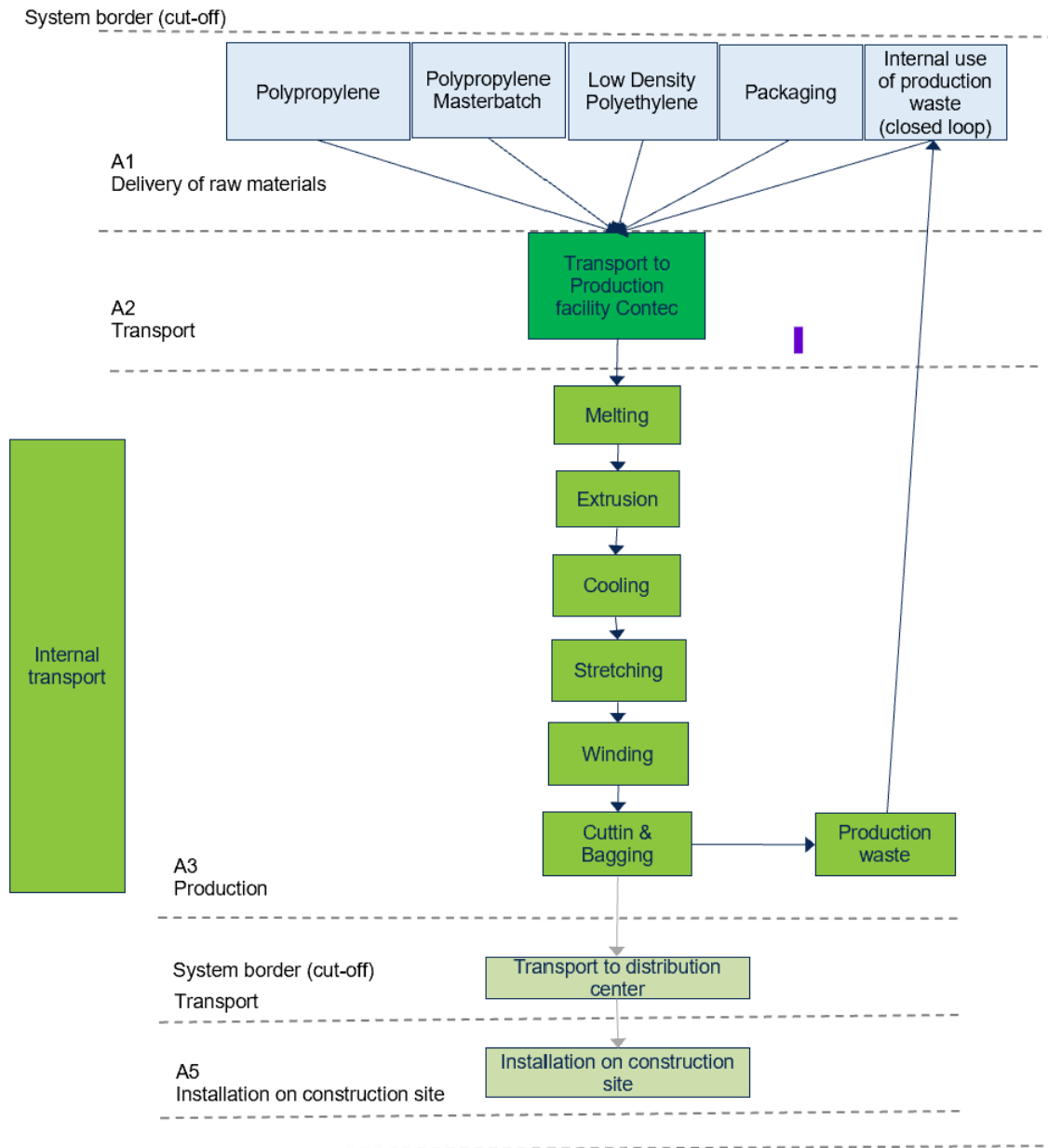
The software SimaPro is used to perform the LCA. The background databases used are:

- Ecoinvent (v3.6)

It is not determined as to how the Concix ES are to be processed at the end of life (after 50 years). Therefore, this module is not considered in this LCA study. As new and improved systems for the recycling of building products are developed over time, these can be determined and then applied to a future LCA study. Concrete produced with Concix ES can however be broken into aggregates which in turn can be used to produce new concrete. It is economically unfeasible to retrieve the Concix ES from the cement structure.



PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USER STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery – Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
X= Modules Assessed ND= Not Declared																



REPRESENTATIVENESS

This EPD is representative for products produced and sold in the EU. The Concris ES is produced and cut to demand at the production site of Contec Fiber AG.

ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	1,81 E-05	1,42 E-06	7,73 E-06	2,73 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ADPF	MJ	7,15 E+01	1,30 E+00	9,83 E-01	7,38 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
GWP	kg CO2 eq.	1,94 E+00	8,38 E-02	6,80 E-02	2,09 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ODP	Kg CFC11 eq.	3,81 E-08	1,53 E-08	6,29 E-09	5,97 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
POCP	Kg ethene eq.	1,63 E-03	5,18 E-05	5,08 E-05	1,73 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
AP	kg SO2 eq.	6,02 E-03	2,79 E-04	4,44 E-04	6,74 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EP	kg (PO4) 3- eq.	5,66 E-04	5,08 E-05	4,89 E-05	6,66 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

Toxicity indicators for Dutch market

HTP	kg DCB-Eq	2,83 E-01	3,91 E-02	5,90 E-02	3,81 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FAETP	kg DCB-Eq	1,07 E-02	1,07 E-03	1,18 E-03	1,30 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MAETP	kg DCB-Eq	1,82 E+01	4,18 E+00	5,58 E+00	2,80 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
TETP	kg DCB-Eq	2,09 E-03	1,25 E-04	2,19 E-04	2,43 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ECI	euro	1,60 E-01	1,00 E-02	1,00 E-02	1,80 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ADPF	kg Sb eq.	3,44 E-02	6,23 E-04	4,73 E-04	3,55 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources expressed in [kg Sb-eq.]

ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2,00 E+00	8,46 E-02	6,98 E-02	2,15 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
GWP-fossil	kg CO2 eq.	2,02 E+00	8,46 E-02	6,92 E-02	2,17 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
GWP-biogenic	kg CO2 eq.	-2,12 E-02	4,73 E-05	4,66 E-04	-2,07 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
GWP-luluc	kg CO2 eq.	1,15 E-03	2,53 E-05	1,20 E-04	1,30 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ODP	kg CFC11 eq.	3,54 E-08	1,92 E-08	6,12 E-09	6,07 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
AP	mol H+ eq.	7,23 E-03	3,60 E-04	5,28 E-04	8,12 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EP-freshwater	kg PO4 eq.	3,49 E-05	7,55 E-07	5,34 E-06	4,10 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EP-marine	kg N eq.	1,23 E-03	1,07 E-04	7,67 E-05	1,41 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EP-terrestrial	mol N eq.	1,35 E-02	1,18 E-03	8,49 E-04	1,55 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
POCP	kg NMVOC eq.	6,25 E-03	3,77 E-04	2,75 E-04	6,90 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ADP-minerals & metals	kg Sb eq.	1,81 E-05	1,42 E-06	7,73 E-06	2,73 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ADP-fossil	MJ, net calorific value	7,23 E+01	1,29 E+00	8,53 E-01	7,44 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
WDP	m3 world eq. Deprived	1,45 E+00	4,71 E-03	9,95 E-02	1,55 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

GWP-total = Global Warming Potential total
 GWP-fossil = Global Warming Potential fossil fuels
 GWP-biogenic = Global Warming Potential biogenic
 GWP-luluc = Global Warming Potential land use and land use change
 ODP = Depletion potential of the stratospheric ozone layer
 AP = Acidification Potential, Accumulated Exceedence
 EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
 EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
 EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
 POCP = Formation potential of tropospheric ozone photochemical oxidants
 ADP-minerals&metals = Abiotic Depletion Potential for non-fossil resources [2]
 ADP-fossil = Abiotic Depletion for fossil resources potential [2]
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

Disclaimer [2]

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

ENVIRONMENT IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	6,25 E-08	7,50 E-09	4,20 E-09	7,42 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
IRP	kBq U235 eq.	3,78 E-02	5,45 E-03	2,77 E-03	4,60 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ETP-fw	CTUe	1,07 E+01	1,11 E+00	3,52 E+00	1,53 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
HTP-c	CTUh	4,18 E-10	2,56 E-11	8,03 E-11	5,24 E-10	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
HTP-nc	CTUh	1,25 E-08	1,18 E-09	3,73 E-09	1,74 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
SQP	----	3,85 E+00	1,46 E+00	2,34 E-01	5,54 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

PM = Potential incidence of disease due to PM emissions
 IRP = Potential Human exposure efficiency relative to U235 [1]
 ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
 HTP-c = Potential Comparative Toxic Unit for humans [2]
 HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
 SQP = Potential soil quality index [2]

Disclaimer [1]

- This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste.

Disclaimer [2]

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

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	7,43 E-06	3,16 E-06	3,08 E-05	4,14 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NHWD	kg	6,55 E-02	1,11 E-01	1,48 E-02	1,91 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RWD	kg	3,28 E-05	8,59 E-06	2,32 E-06	4,37 E-05	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
CRU	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MFR	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MER	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EEE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
ETE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

HWD = Hazardous Waste Disposed
 NHWD = Non Hazardous Waste Disposed
 RWD = Radioactive Waste Disposed
 CRU = Components for reuse
 MFR = Materials for recycling
 MER = Materials for energy recovery
 EEE = Exported Electrical Energy
 ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,45 E+00	1,39 E-02	3,87 E+00	5,33 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	1,45 E+00	1,39 E-02	3,87 E+00	5,33 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRE	MJ	7,76 E+01	1,37 E+00	9,09 E-01	7,99 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	7,76 E+01	1,37 E+00	9,09 E-01	7,99 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m3	2,24 E-02	1,57 E-04	1,24 E-02	3,50 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

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

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	Kg C	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
BCCpa	kg C	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

BBCpr = Biogenic carbon content in product
 BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

Data quality

Data flows have been modeled as realistically as possible. Data quality assessment is based on the principle that the primary data used for processes occurring at the production site is selected in the first instance. Where this is not available, other reference data is selected from appropriate sources.

Data collection period

The dataset is representative for the production processes used in 2023.

Methodology and reproducibility

The process descriptions and quantities in this study are reproducible in accordance to the reference standards that have been used. The references of all sources, both primary and public sources and literature, have been documented. In addition, to facilitate the reproducibility of this LCA, a full set of data records has been generated.

Cut off

In this study, all inputs and outputs - such as emissions, energy and material inputs - are included in the calculation according to the Determination Method (5). The contribution to each impact category by the capital goods is calculated to be no more than 5%.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1. Raw materials supply

All materials needed for production as well as packaging is taken into account.

A2. Transport of raw materials to manufacturer

The transportation of the suppliers to Contec Fiber AG is done by truck.

A3. Manufacturing

The production starts with the melting of the raw material. It is then extruded by an extrusion machine. After extrusion the material is cooled through water and span on spindles in order to stretch it into the required thickness. A winding machine assembles a bundle of strings onto a bobbin. Afterwards the cutting to the correct size and bagging in paper packaging takes place. Use of electricity is taken into account. For the majority the electricity supply stems from solar panels on the roof of Contec Fiber (selected reference: Electricity, low voltage {CH} electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted | Cut-off, U). Furthermore, energy mix is purchased where Hydro energy is the dominant form for energy supply (Hydro Electricity, low voltage {CH} electricity voltage transformation from medium to low voltage | Cut-off, U).

DECLARATION OF SVHC

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorisation", or they do not exceed the threshold with the European Chemicals Agency.

REFERENCES

- CEN/TC 51 PCR for cement and building lime, 2015
- CML - Department of Industrial Ecology, CML-IA Characterisation Factors, Dated August 2016, Leiden University, Leiden, Netherlands Available at: <https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors>
- Simapro 9.1.1.1
- EN 15804: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products', I.S. EN 15804:2012+A1:2013 and EN 15804:2019+A2.
- ISO 14040: Environmental management - Life cycle assessment - Principles and Framework', International Organization for Standardization, ISO14040:2006.
- ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.
- ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO14025:2006.
- NMD Bepalingsmethode Milieuprestatie Bouwwerken version 1.1 (maart 2022)

REMARKS

EPD of construction products may not be comparable if they do not comply with EN15804