



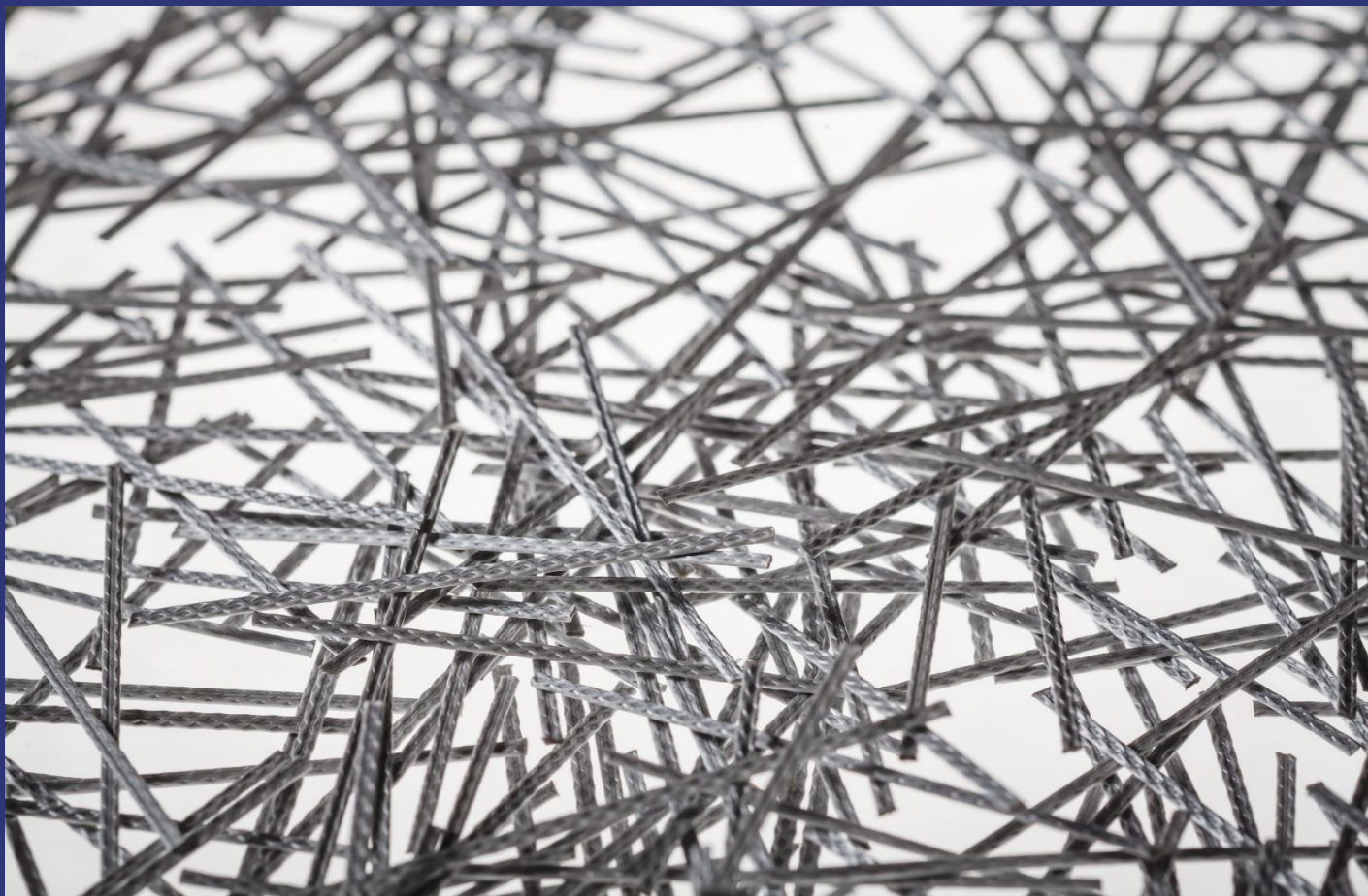
ADFIL
Construction Fibres

**Environmental
Product
Declaration**

According to EN15804+A2 (+indicators A1)

This declaration is for:
Adfil Durus Easyfinish

Provided by:
Adfil N.V.



MRPI® registration
1.1.00732.2024

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

date of first issue
28-1-2025
date of this issue
28-1-2025
expiry date
28-1-2030





ADFIL

Construction Fibres

COMPANY INFORMATION

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MRPI® REGISTRATION

1.1.00732.2024

DATE OF THIS ISSUE

28-1-2025

EXPIRY DATE

28-1-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Anne Kees Jeeninga, Advieslab VOF. The LCA study has been done by Tim Mol, 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'. EPDs 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.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

PRODUCT

Adfil Durus Easyfinish

DECLARED UNIT / FUNCTIONAL UNIT

1 Weight per piece (kg)

DESCRIPTION OF PRODUCT

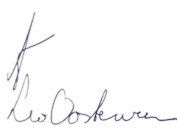

Durus polypropylene macro-synthetic fibres have revolutionised concrete construction, eliminating the need for steel mesh or fibres in many applications. Durus EasyFinish offers superior performance and cost savings as well as health and safety advantages for concrete suppliers, contractors and designers alike.

VISUAL PRODUCT



MORE INFORMATION

<https://adfil.com/synthetic-macro-fibres/durus-easyfinish>

	Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI	DEMONSTRATION OF VERIFICATION
		CEN standard EN15804 serves as the core PCR [1]
		Independent verification of the declaration and data according to EN15804+A2 (+indicators A1) internal: _____ external: X
		Third party verifier: Anne Kees Jeeninga, Advieslab VOF  [1] PCR = Product Category Rules





DETAILED PRODUCT DESCRIPTION (PART 1)

Adfil Durus® EasyFinish is an innovative synthetic macro fibre designed to enhance the performance, durability, and ease of finishing in concrete applications. It provides a high-performance alternative to traditional steel reinforcement by improving crack resistance, impact strength, and overall toughness of concrete while offering superior workability and finishability.

Easyfinish synthetic fibres are engineered with dimensions of 40 mm in length and a 0.7 mm equivalent diameter, featuring a density of 0.922 kg/m³. These fibres are EN 14889-2 certified, ensuring compliance with industry standards for quality and performance.

The fibres are extruded from high-quality polypropylene (PP) polymers, ensuring optimal strength, flexibility, and chemical resistance. These fibres are non-corrosive, lightweight, and easy to integrate into various concrete mixes, leading to significant reductions in labour and transportation costs. The product is certified with CE, ATG, and SECO certificates.

The polypropylene granules and additives are gravimetrically dosed and mixed in the extrusion feed hopper. This composition is melted and blended into a homogeneous polymer mixture. After filtration and dosing, the liquid polymers are extruded through a die plate, forming the fibers. To enhance the mechanical strength of the fibers, they are drawn and hardened in multiple steps. In the next stage, the fiber surface is shaped. Subsequently, the fibers are bundled and cut to length simultaneously. Edge trimming waste is re-ground and fed back into the extruder. In the final process step, the fibers are packed into paper bags. A certain amount of production waste is generated afterward, which is not recycled within the product system boundaries but used in another production process within Adfil. Finally, the bags are stacked on pallets, wrapped with PE stretch film, and covered with a protective hood to prepare the products for shipping.

Component (> 1%)	(kg / %)
Polyolefins	0,955
Calcium Carbonate	0,035

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.

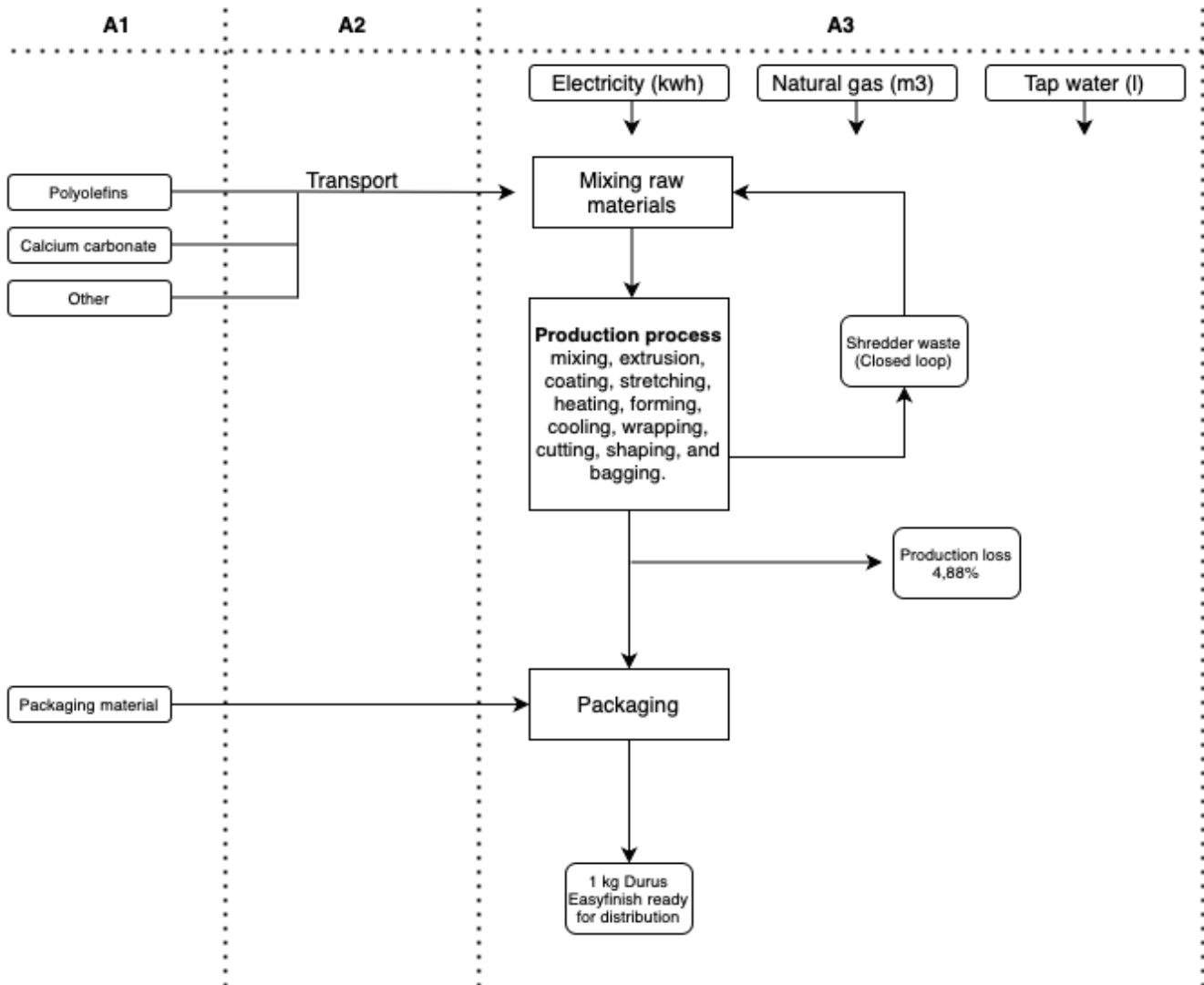
The software SimaPro is used to perform the LCA. The background databases used are:

- Ecoinvent (v3.6) . It is not determined as to how the synthetic fibers 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.

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 synthetic fibres are produced and cut to demand at the production site of Adfil N.V.



ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

Eenheid		A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	1,90E-05	7,40E-07	2,51E-06	2,22E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	MJ	7,36E+01	4,43E-01	1,56E+00	7,57E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP	kg CO2 eq.	2,03E+00	2,90E-02	2,18E-01	2,28E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	4,22E-08	5,14E-09	8,16E-08	1,29E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg ethene eq.	1,69E-03	1,75E-05	1,05E-05	1,72E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	kg SO2 eq.	6,20E-03	1,27E-04	3,55E-04	6,69E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP	kg (PO4) 3- eq.	5,70E-04	2,50E-05	6,84E-05	6,63E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	3,26E-01	1,22E-02	4,81E-02	3,86E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FAETP	kg DCB eq.	8,85E-03	3,56E-04	1,67E-03	1,09E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAETP	kg DCB eq.	1,92E+01	1,28E+00	5,40E+00	2,59E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETP	kg DCB eq.	1,62E-03	4,31E-05	3,21E-03	4,87E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ECI	euro	1,72E-01	3,00E-03	1,80E-02	1,94E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	kg Sn eq.	3,54E-02	2,13E-04	7,51E-04	3,64E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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



ENVIRONMENTAL 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	2,01E+00	2,92E-02	2,23E-01	2,26E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-fossil	kg CO2 eq	2,12E+00	2,92E-02	2,19E-01	2,37E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-biogenic	kg CO2 eq	-1,09E-01	1,35E-05	3,60E-03	-1,05E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-luluc	kg CO2 eq	8,61E-04	1,07E-05	6,11E-04	1,48E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq	3,99E-08	6,45E-09	5,74E-08	1,04E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	mol H+ eq	7,44E-03	1,69E-04	4,60E-04	8,07E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-fresh water	kg PO4 eq	3,41E-05	2,95E-07	6,14E-06	4,05E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg N eq	1,26E-03	5,97E-05	1,03E-04	1,43E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol N eq	1,39E-02	6,58E-04	1,30E-03	1,59E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg NMVOC eq	6,50E-03	1,88E-04	2,51E-04	6,94E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals	kg Sb eq	1,90E-05	7,40E-07	2,51E-06	2,22E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil	MJ, net calorific value	7,44E+01	4,40E-01	8,48E+00	8,33E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WDP	m3 world eq. Deprived	1,46E+00	1,58E-03	5,84E-02	1,52E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GWP-total	=	Global Warming Potential total
GWP-fossil	=	Global Warming Potential fossil fuels
GWP-biogenic	=	Global Warming Potential biogenictotal
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 [1]
ADP-fossil	=	Abiotic Depletion for fossil resources potential [1]
WDP	=	Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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



the indicator.

ENVIRONMENTAL 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	6,51E-08	2,62E-09	1,40E-09	6,92E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	4,06E-02	1,85E-03	1,17E-01	1,60E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	1,14E+01	3,93E-01	4,33E+00	1,61E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	4,76E-10	1,27E-11	9,70E-11	5,86E-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	1,37E-08	4,30E-10	2,64E-09	1,67E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	-	1,17E+01	3,82E-01	2,71E+00	1,48E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- 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 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	8,13E-06	1,12E-06	8,33E-06	1,76E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NHWD	kg	7,13E-02	2,79E-02	1,67E-02	1,16E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWD	kg	3,55E-05	2,89E-06	1,00E-04	1,38E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,55E+00	5,51E-03	1,13E+00	3,69E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERT	MJ	2,55E+00	5,51E-03	1,13E+00	3,69E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRE	MJ	7,98E+01	4,68E-01	8,63E+00	8,89E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRT	MJ	7,98E+01	4,68E-01	8,63E+00	8,89E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SM	kg	0,00E+00	0,00E+00	1,39E-05	1,39E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FW	m3	2,24E-02	5,36E-05	2,52E-03	2,50E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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
NSRF	=	Use of non-renewable secondary fuels
FW	=	Use of net fresh water

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

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

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



CALCULATION RULES (PART 1)

"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 2021.

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%. To substantiate this, the relative contribution of capital goods to the most comparable NMD process was examined: "0223-fab&Polypropylene, PP, fibers, application in concrete (based on Polypropylene, granulate {GLO}) market for | Cut-off, U + Extrusion, plastic film {GLO}) market for | Cut-off, U)." It was found that the capital goods from the extrusion process

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

"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 Adfil N.V. is done by truck.

A3. Manufacturing

All relevant production processes in phase A3, such as internal transport and potential production losses, have been included in this study. In the final process step, the fibers are packaged in paper bags. Finally, the bags are stacked on pallets, wrapped with PE stretch film, and covered with a protective hood to prepare the products for shipment. There are no direct emissions. Throughout the entire manufacturing process electricity, natural gas, and water are used during production. The process results in a production loss of 4.88%. For energy purposes the following reference was selected: A grey low voltage market for with 0,244 kg GWP per kWh (Electricity, low voltage {BE}) market for).

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

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3. NEN. 'NEN-EN 15804: Duurzaamheid van bouwwerken - Milieuverklaringen van producten - Basisregels voor de productgroep bouwproducten', NEN-EN 15804+A2:2019. 2019.
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6. CE Delft. Handboek Schaduwrijzen. [Online] 2010. <https://ce.nl/publicaties/handboek-schaduwrijzen-waardering-en-weging-van-emissies-en-milieueffecten/>.
7. TNO. Toxiciteit heeft z'n prijs : schaduwrijzen voor (eco-)toxiciteit en uitputting van abiotische grondstoffen binnen DuboCalc. [Online] https://puc.overheid.nl/rijkswaterstaat/doc/PUC_119145_31/.

REMARKS

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

