



**Environmental
Product
Declaration**

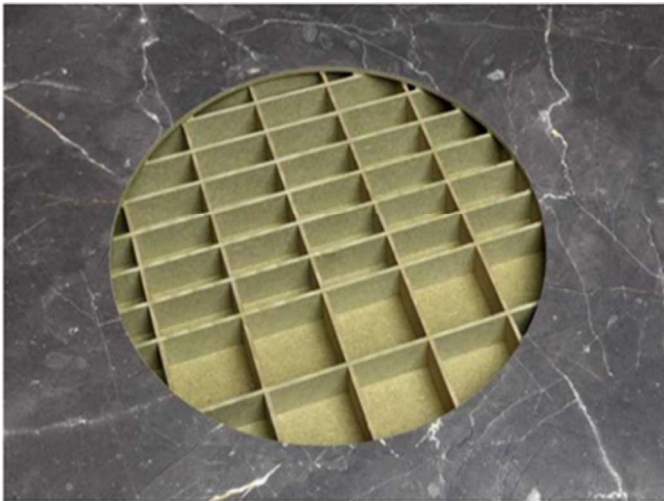
According to EN15804+A2 (+indicators A1)



This declaration is for:
Greengridz

Provided by:
Dekker Zevenhuizen

DEKKER
— SINCE 1930 —



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

MRPI® registration
1.1.00510.2024
date of first issue
11-07-2022
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19-4-2024
expiry date
19-4-2029



COMPANY INFORMATION

DEKKER

— SINCE 1930 —

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MRPI® REGISTRATION

1.1.00510.2024

DATE OF ISSUE

19-4-2024

EXPIRY DATE

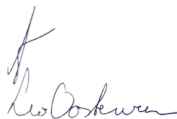
19-4-2029

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Tim Mol, Ecoreview NL BV. De LCA study has been done by Odile Koenders, SGS SearchThe 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.

PROGRAM OPERATOR

Stichting MRPI®
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1043 GR
Amsterdam



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

PRODUCT

Greengridz

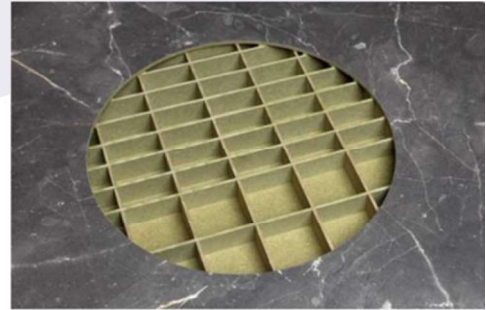
DECLARED UNIT/FUNCTIONAL UNIT

1 meter (38 mm thick and 600 mm wide, including laminate), with a reference service life of 15 years.

DESCRIPTION OF PRODUCT

Greengridz is used, among others, as core material for countertops in kitchens and offices and consist of a grid from 3 mm thick MDF sheets, enclosed with 4 mm MDF sheets on the top and bottom.

VISUAL PRODUCT



MORE INFORMATION

dekkerzevenhuizen.nl/keuken/keukenbladen/greengridz

DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR(a)

Independent verification of the declaration an data according to EN15804+A2 (+indicators A1)
internal: external: x

Third party verifier: Tim Mol, Ecoreview NL BV.



[a] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

Greengridz is used, among others, as core material for countertops in kitchens and offices. The panels can have a variety of laminates as finishing layer. In this declaration a standard 0,6 mm laminate is assumed in combination with a PU adhesive.

Greengridz consist of a grid made from 3 mm thick MDF sheets. The top and bottom of the grids are covered with 4 mm MDF sheets. PVAc D3 adhesive is used to bind the different components..

Component (> 1%)	(kg / %)
MDF	0,87
Laminate	0,11
PVAc D3	0,01
PU-adhesive	0,01

SCOPE AND TYPE

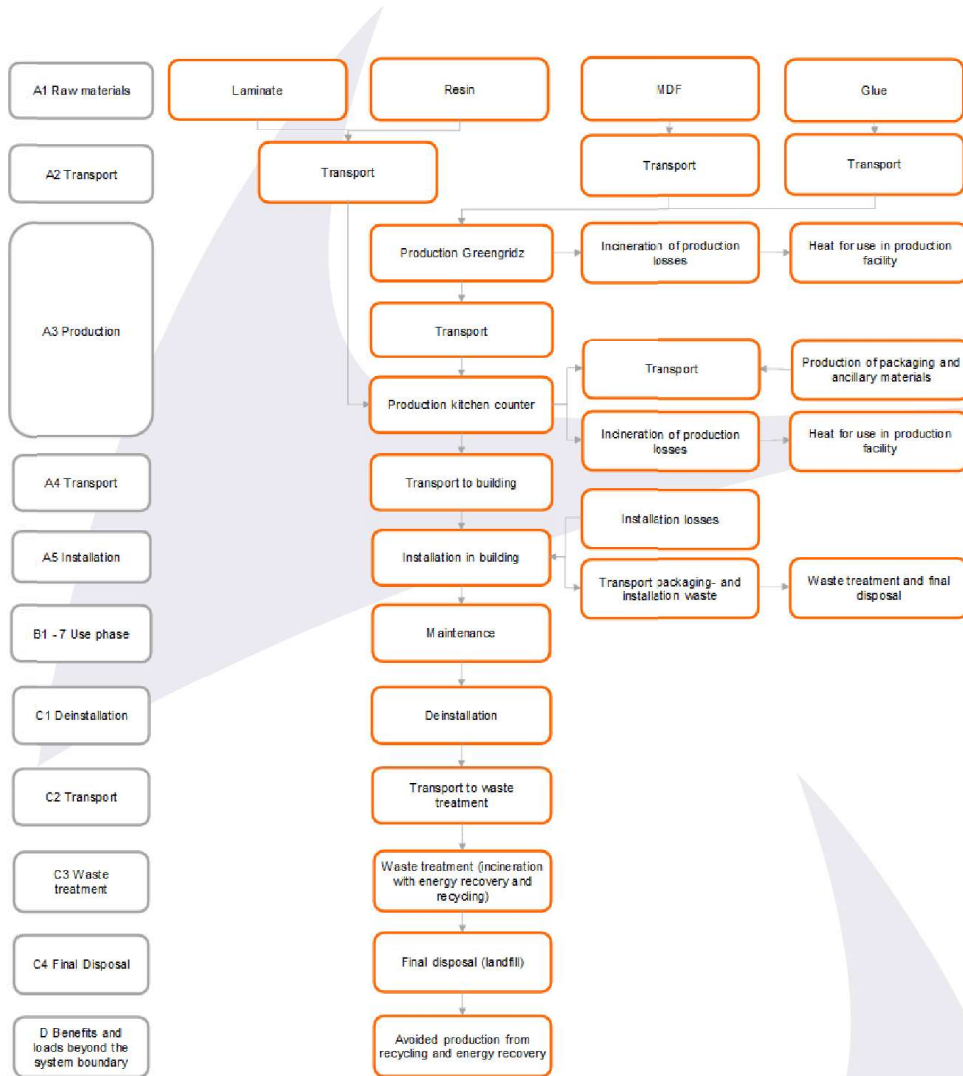
Dekker Zevenhuizen, has commissioned SGS Search to perform a life cycle assessment (LCA) of their Greengridz. The objective of this study is to publish third party verified data about the environmental performance of Greengridz in an ECO-platform EPD. It concerns a cradle-to-grave study. The following standards are followed: NEN EN 15804 [1], ISO14040 [2], ISO 14044 [3] and ISO 14025 [4].

The geographical location is the Netherlands and the product is manufactured in Zevenhuizen, the Netherlands. The product has various potential applications as counter for e.g. kitchens or as worktop.

Background database used for the calculations is Ecoinvent version 3.6 in combination with the SimaPro 9.3 LCA software.

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	X	X	X	X	X	X	X	ND	ND	X	X	X	X	X

X= Modules Assessed
ND= Not Declared



REPRESENTATIVENESS

The maximum size of Greengridz is 520 by 120 cm and thickness range from 20 to 80 mm. For this declaration the standard dimensions of 60 cm wide and 38 mm thick are used.

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.	1,95 E-04	2,15 E-05	2,05 E-05	2,37 E-04	3,33 E-06	3,20 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,27 E-06	1,67 E-06	1,33 E-07	-4,70 E-06
ADPF	MJ	1,10 E+02	1,33 E+01	7,63 E+00	1,31 E+02	1,95 E+00	1,66 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,46 E-01	2,81 E+00	3,15 E-01	-5,94 E+01
GWP	kg CO2 eq.	5,62 E+00	8,80 E-01	6,95 E-01	7,20 E+00	1,28 E-01	1,19 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	4,89 E-02	1,53 E+00	1,33 E-01	-3,21 E+00
ODP	Kg CFC11 eq.	6,41 E-07	1,61 E-07	5,69 E-08	8,58 E-07	2,37 E-08	1,25 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	9,07 E-09	4,35 E-08	2,98 E-09	-1,51 E-07
POCP	Kg ethene eq.	6,83 E-03	5,74 E-04	3,58 E-04	7,76 E-03	7,65 E-05	1,06 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	2,93 E-05	1,40 E-04	3,41 E-05	-1,34 E-03
AP	kg SO2 eq.	3,06 E-02	5,25 E-03	4,05 E-03	3,99 E-02	5,49 E-04	5,33 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	2,10 E-04	1,42 E-03	9,44 E-05	-2,03 E-02
EP	kg (PO4) 3- eq.	5,65 E-03	8,91 E-04	9,82 E-04	7,53 E-03	1,10 E-04	1,09 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	4,20 E-05	2,83 E-04	3,11 E-04	-2,27 E-03

Toxicity indicators for Dutch market

HTP	kg DCB-Eq	2,45 E+00	3,85 E-01	4,34 E-01	3,26 E+00	5,45 E-02	5,93 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	2,09 E-02	2,55 E-01	8,40 E-03	-6,69 E-01
FAETP	kg DCB-Eq	1,17 E-01	1,07 E-02	7,06 E-02	1,98 E-01	1,60 E-03	2,58 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	6,12 E-04	5,24 E-03	1,34 E-03	-1,18 E-02
MAETP	kg DCB-Eq	2,72 E+02	3,91 E+01	2,72 E+01	3,39 E+02	5,71 E+00	6,50 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,19 E+00	1,89 E+01	1,95 E+00	-6,07 E+01
TETP	kg DCB-Eq	2,09 E-02	1,35 E-03	2,33 E-02	4,56 E-02	1,93 E-04	5,14 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	7,41 E-05	6,46 E-04	4,03 E-05	-4,18 E-03
ECI	euro	€ 0,73	€ 0,11	€ 0,11	€ 0,95	€ 0,02	€ 0,02	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,01	€ 0,11	€ 0,01	€ -0,34
ADPF	kg Sb eq.	5,31 E-02	6,37 E-03	3,67 E-03	6,31 E-02	9,36 E-04	7,99 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	3,59 E-04	1,35 E-03	1,52 E-04	-2,86 E-02

- 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.	1,50 E+00	8,88 E-01	9,74 E-01	3,36 E+00	1,29 E-01	2,76 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	4,93 E-02	7,79 E+00	8,15 E-01	-3,09 E+00
GWP-fossil	kg CO2 eq.	6,96 E+00	8,87 E-01	6,84 E-01	8,53 E+00	1,29 E-01	1,30 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	4,93 E-02	1,53 E+00	7,59 E-02	-3,27 E+00
GWP-biogenic	kg CO2 eq.	-5,47 E+00	6,24 E-04	2,81 E-01	-5,19 E+00	7,81 E-05	1,46 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	2,99 E-05	6,26 E+00	7,39 E-01	1,78 E-01
GWP-luluc	kg CO2 eq.	1,18 E-02	3,49 E-04	8,47 E-03	2,06 E-02	4,55 E-05	2,19 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	1,74 E-05	2,53 E-04	1,13 E-05	-2,04 E-03
ODP	kg CFC11 eq.	1,10 E-06	2,01 E-07	6,29 E-08	1,37 E-06	2,96 E-08	1,84 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	1,14 E-08	4,31 E-08	3,68 E-09	-1,58 E-07
AP	mol H+ eq.	5,04 E-02	6,86 E-03	5,20 E-03	6,24 E-02	7,32 E-04	8,06 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	2,81 E-04	1,91 E-03	1,24 E-04	-2,46 E-02
EP-freshwater	kg PO4 eq.	2,78 E-04	7,71 E-06	9,10 E-05	3,77 E-04	1,06 E-06	4,27 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	4,05 E-07	9,61 E-06	3,75 E-07	-2,15 E-04
EP-marine	kg N eq.	1,25 E-02	2,21 E-03	1,34 E-03	1,61 E-02	2,62 E-04	2,34 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	1,00 E-04	6,82 E-04	7,05 E-04	-3,70 E-03
EP-terrestrial	mol N eq.	1,43 E-01	2,44 E-02	1,29 E-02	1,80 E-01	2,89 E-03	2,51 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	1,11 E-03	7,50 E-03	4,37 E-04	-4,62 E-02
POCP	kg NMVOC eq.	4,10 E-02	6,80 E-03	2,76 E-03	5,06 E-02	8,25 E-04	7,22 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	3,16 E-04	1,95 E-03	1,59 E-04	-1,16 E-02
ADP-minerals & metals	kg Sb eq.	1,26 E-04	2,15 E-05	2,01 E-05	1,68 E-04	3,33 E-06	2,50 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,27 E-06	1,67 E-06	1,33 E-07	-4,70 E-06
ADP-fossil	MJ, net calorific value	1,29 E+02	1,35 E+01	7,37 E+03	1,49 E+02	1,97 E+00	1,85 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,56 E-01	2,69 E+00	3,09 E-01	-4,57 E+01
WDP	m3 world eq. Deprived	6,76 E+00	4,15 E-02	4,95 E-01	7,30 E+00	6,06 E-03	7,63 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	2,32 E-03	7,29 E-02	1,19 E-02	-3,30 E-01

- 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 experienced 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	8,90 E-07	7,55 E-08	4,60 E-08	1,01 E-06	1,16 E-08	1,29 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	4,45 E-09	1,21 E-08	2,01 E-09	-2,54 E-07
IRP	kBq U235 eq.	2,96 E-01	5,92 E-02	3,56 E-02	3,91 E-01	8,63 E-03	5,42 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	3,31 E-03	1,21 E-02	1,25 E-03	-7,24 E-02
ETP-fw	CTUe	3,19 E+02	1,08 E+01	2,18 E+01	3,52 E+02	1,60 E+00	4,26 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	6,14 E-01	1,56 E+01	1,49 E+00	-1,19 E+02
HTP-c	CTUh	6,42 E-08	4,07 E-10	8,94 E-10	6,55 E-08	5,70 E-11	6,95 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	2,19 E-11	5,52 E-10	8,83 E-12	-9,02 E-10
HTP-nc	CTUh	4,65 E-07	1,27 E-08	1,86 E-08	4,96 E-07	1,91 E-09	5,79 E-09	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	7,32 E-10	6,72 E-09	3,91 E-10	-4,02 E-08
SQP	---	6,92 E+02	1,09 E+01	2,50 E+01	7,28 E+02	1,69 E+00	7,51 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	6,47 E-01	5,37 E-01	6,51 E-01	-1,34 E+02

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 experienced 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	1,16 E-03	3,27 E-05	1,99 E-05	1,21 E-03	5,05 E-06	1,31 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	1,93 E-06	3,46 E-06	4,31 E-07	-2,25 E-05
NHWD	kg	1,31 E+00	7,74 E-01	2,76 E-01	2,36 E+00	1,22 E-01	4,83 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	4,69 E-02	3,08 E-02	1,09 E+00	-9,50 E-02
RWD	kg	2,31 E-04	9,15 E-05	3,94 E-05	3,62 E-04	1,34 E-05	5,71 E-06	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	5,14 E-06	9,89 E-06	1,75 E-06	-6,90 E-05
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	3,43 E-02	3,43 E-02	0,00 E+00	4,93 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	4,62 E+00	0,00 E+00
MER	kg	0,00 E+00	0,00 E+00	9,56 E+00	9,56 E+00	0,00 E+00	-3,84 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	5,77 E-01	0,00 E+00	0,00 E+00
EEE	MJ	0,00 E+00	0,00 E+00	8,31 E+00	8,31 E+00	0,00 E+00	-9,66 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	1,60 E+00	0,00 E+00	0,00 E+00
ETE	MJ	0,00 E+00	0,00 E+00	2,54 E+00	2,54 E+00	0,00 E+00	-1,66 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,76 E+00	0,00 E+00	0,00 E+00

- HWD = Hazardous Waste Disposed
- RWD = Radioactive Waste Disposed
- MFR = Materials for recycling
- EEE = Exported Electrical Energy
- NHWD = Non Hazardous Waste Disposed
- CRU = Components for reuse
- MER = Materials for energy recovery
- 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	5,23 E+01	2,08 E-01	2,06 E+01	7,32 E+01	3 E-02	1 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	1 E-02	7 E+01	7 E+00	-3 E+01
PERM	MJ	8,13 E+01	0,00 E+00	-2,70 E+00	7,86 E+01	0 E+00	5 E-02	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	-7 E+01	-7 E+00	0 E+00
PERT	MJ	1,34 E+02	2,08 E-01	1,79 E+01	1,52 E+02	3 E-02	2 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	1 E-02	3 E-01	1 E-02	-3 E+01
PENRE	MJ	9,56 E+01	1,43 E+01	9,34 E+00	1,19 E+02	2 E+00	2 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	8 E-01	2 E+01	2 E+00	-5 E+01
PENRM	MJ	1,73 E+01	0,00 E+00	-1,57 E+00	1,57 E+01	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	-1 E+01	-2 E+00	0 E+00
PENRT	MJ	1,13 E+02	1,43 E+01	7,76 E+00	1,35 E+02	2 E+00	2 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	8 E-01	3 E+00	3 E-01	-5 E+01
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00
FW	m3	1,52 E-01	1,58 E-03	1,89 E-02	1,72 E-01	2 E-04	2 E-03	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	9 E-05	3 E-03	3 E-04	-1 E-02

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

BIOGEEEN 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	7,17 E+00	0,00 E+00	-6,58 E-01	6,51 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	-6 E+00	-7 E-01	0 E+00
BCCpa	kg C	0,00 E+00	0,00 E+00	3,98 E-01	3,98 E-01	0 E+00	-4 E-01	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00	0 E+00

BCCpr = Biogenic carbon content in product

BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

All relevant and known processes and materials have been included. The following processes have been excluded from the system boundary:

- Maintenance and operation of support equipment except those included in Ecoinvent background processes;
- Capital goods and infrastructure (except those included in Ecoinvent background processes).

There is no reason to believe that relevant in- or outputs are excluded from this study.

Data collection and quality Data is retrieved from process descriptions and a Bill of Materials (BoM) supplied by Dekker Zevenhuizen. There are no inconsistencies found in the data and there is no reason to believe that data is incomplete or not reliable.

Data about the production of the MDF and the composition of the additives are supplied by the manufacturer. Communication with suppliers went via Dekker Zevenhuizen.

SENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the Greengridz manufacturing process, as well as waste processing of production waste up to the end-of-waste state.

A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road, boat and/or train.

A3. Manufacturing

This module covers the manufacturing process of Greengridz and includes all processes linked to production such as storing, cutting, packing and internal transportation. Use of electricity and fuels production are considered as well as direct emissions from production process.

Packaging-related flows in the production process are included in the manufacturing module.

The manufacturing process takes place at one production site. For the manufacturing of the MDF as used to produce Greengridz, a third party verified LCA according to the EN15804 was available and used for this EPD. For the remaining upstream (raw material processes) and downstream processes (waste processing) generic data is used as no specific data could be obtained.

A4. Transport to customers/ building site

Products are transported to costumers with a small truck. Since customers are located throughout the country (the Netherlands) an average distance of 150 km is assumed.

A5. Construction and installation process

This module includes the production and packaging waste as well as the transport and processing of waste up to the end-of-waste state.

The installation of Greengridz requires only (electric) hand tools and impact as a result of this process is considered negligible.

B1-7. Use phase

The product as assessed for this EPD does not require maintenance during the use phase.

C1. De-construction demolition

In the de-installation process of Greengridz only (electric) hand tools are used and impact as a result of this is considered negligible.

C2. Transport to waste treatment

This module includes transport to the recycling facility. Considering the product is applied in buildings throughout the country, average transport distances of 50, 100 and 150 km are used for recycling, incineration and landfill respectively.

C3. Waste processing

In the end-of-life phase the product can be recycled, incinerated or send to landfill. Dekker Zevenhuizen works on a collection system for MDF. This MDF is then used to produce activated carbon. The following end-of-life scenario is assumed: 80% is recycling and 20% incineration.

C4. Disposal

All materials reach the end-of-waste status after treatment in C3, no processes are declared in this phase.

D. Benefits and loads beyond the system boundaries

Avoided production of material due to recycling as well as avoided electricity and heat production from incineration are included in this module.

In the end-of-life scenario for this product 80% of the material will be recycled. The activated carbon that is output of the recycling process, replaces activated carbon as produced via the conventional process.

For the material that is incinerated the average efficiency of waste incineration plants in the Netherlands is used i.e. 18% electricity and 31% heat. For the avoided energy consumption energy from biomass and fossil resources are distinguished.

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.

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REMARKS

None.