Environmental Product Declaration

According to ISO 14025 and EN 15804+A2

Product Declaration
Revetment, South American Hardwood (7x7)

Declared Unit
1 m^2

Declared by:
Centrum Hout

Owner of declaration
Centrum Hout/VVNH

Verifier:
Advieslab V.O.F.

LCA study by:
EcoReview B.V.

Calculation Number:
2024.047.

Issue Date:
29/09/2024

Expiry Date:
29/09/2029

General information

Owner of Declaration

Name	Centrum Hout/VVNH
Street	Westeinde 6-8
Postal Code	1334 BK
City	Almere
Contact	Eric de Munck

Declaration for

Calculation Number	2024.047.
Issue Date	29/09/2024
Expiry Date	29/09/2029
Product	Revetment, South American Hardwood (7x7)
Declared Unit	m^2
Reference Service Life	30 years
Scalable product	No.
Product Description	Revetment, made of hardwood from sustainably managed forests.

Declaration Information

This Self-Declared Environmental Product Declaration is in accordance with ISO 14025:2006 and EN 15804+A2. This certificate is based on an LCA-dossier developed according to ISO14025:2006, ISO14040 and EN15804+A2 and the 7 Assessment Method 1.1. EPD of construction products may not be comparable if they do not comply with EN15804+A2 and the NMD Assessment Method 1.1. Substances of Very High Concern (SVHC) that are listed on the 'Candidate List of Substances of Very High Concern for authorization' are declared when contents exceed the limits for registration with ECHA

This LCA study was conducted by: Roel van Oosterhout, EcoReview B.V.

Proof of Verification

Verifier	External
Name	Anne Kees Jeeninga, Advieslab V.O.F.
Statement	Verification of the claim and data was carried out independently according to EN15804+A2 + NMD Assessment Method 1.1
Signature:	

LCA Information

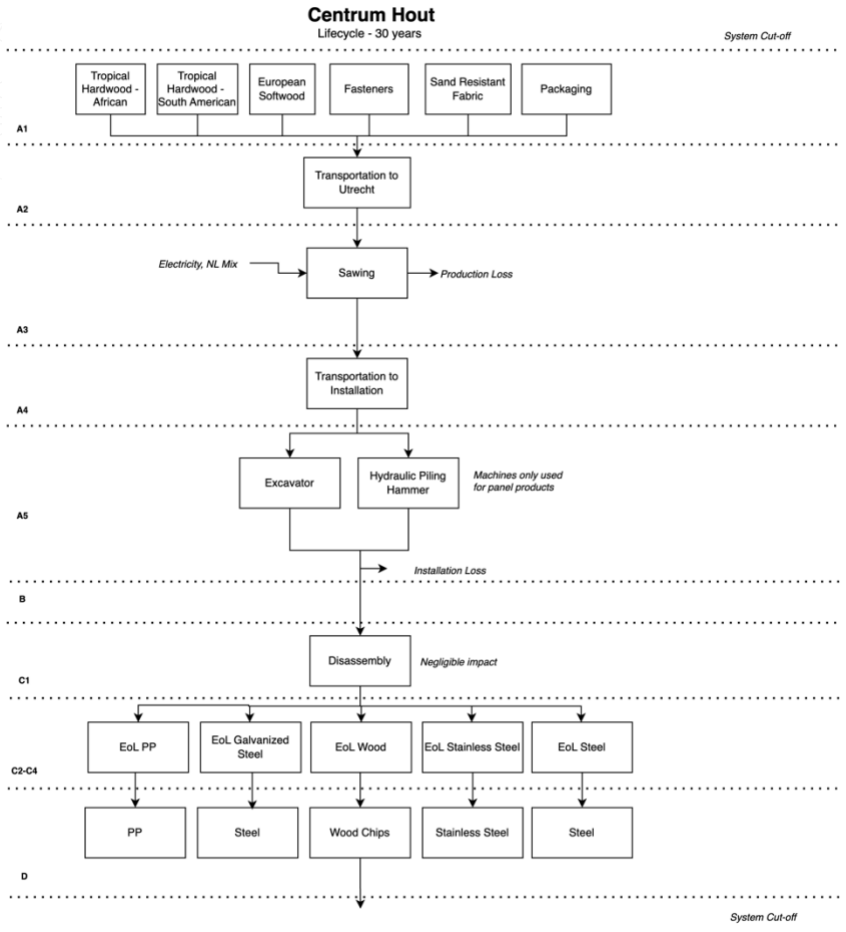
LCA standard	ISO 14040:2006
Product Category Rules (PCR)	EN 15804+A2/NMD Assessment Method 1.1
Additional PCR	Not applicable
Standard database	Ecoinvent 3.6 + NMD 3.9
LCA Software	SimaPro 9.6.0.1
Year of data collection	2024

Scope of Declaration

Production stage	A1	X	Raw Material supply
	A2	X	Transport
	A3	X	Manufacturing
Construction stage	A4	X	Transport
	A4	X	Installation
Use stage	B1	X	Use
	B2	X	Maintenance
	B3	X	Repair
	B4	X	Replacement
	B5	X	Refurbishment
	B6	X	Operational Energy Use
	B7	X	Operational Water Use
End-of-life stage	C1	X	Deconstruction
	C2	X	Transport
	C3	X	Waste Processing
	C4	X	Disposal
Benefits and loads beyond the system boundaries	D	X	Reuse, Recycle, Recycling potential

X = Module Declared
MND = Module Not Declared

Process Diagram



Detailed Product Description

General Product Information

A revetment consisting of horizontal planks that are attached to each other by means of vertical planks (cleats). Together with sand-resistant cloth, this forms a partition that is placed in place by means of poles, for example along waterways to retain the soil. The tropical wood used has a moisture percentage of n=30% (African) to n=35% (South American) and is air-dried. Rug wood and cleats both have a thickness of 20 mm. A post every 0,5 m and a cleat of 100 mm wide at least every meter. Mass is 69,21 kg per m2

Product Example:

Figure: Representation of Wood Product.

Results

Set 1	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	2,68	0,17	0,09	0,00	0,14	0,25	0,03	-1,33	2,04
ECI	euro	2,68E+00	1,67E-01	9,39E-02	0,00E+00	1,37E-01	2,50E-01	3,28E-02	-1,33E+00	2,04E+00
Core Impact Indicators										
ADPE	kg Sb eq	1,53E-03	3,55E-05	4,79E-05	0,00E+00	2,91E-05	3,73E-06	7,42E-07	-5,09E-05	1,59E-03
ADPF	kg Sb eq	1,18E-01	1,02E-02	3,30E-03	0,00E+00	8,38E-03	2,94E-03	7,97E-04	-2,27E-02	1,20E-01
GWP	kg CO2 eq	1,68E+01	1,39E+00	1,38E+00	0,00E+00	1,14E+00	5,41E-01	4,93E-01	-3,84E+00	1,79E+01
ODP	kg CFC-11 eq	2,29E-06	2,46E-07	1,52E-07	0,00E+00	2,02E-07	6,13E-08	1,71E-08	-1,01E-06	1,96E-06
POCP	kg C2H4	1,57E-02	8,38E-04	-6,87E-04	0,00E+00	6,88E-04	2,40E-03	1,54E-04	-1,21E-02	7,03E-03
AP	kg SO2 eq	1,79E-01	6,11E-03	3,60E-03	0,00E+00	5,01E-03	1,25E-02	4,57E-04	-7,27E-02	1,34E-01
EP	kg PO4--- eq	2,37E-02	1,20E-03	-9,60E-05	0,00E+00	9,85E-04	3,25E-03	1,88E-04	-2,38E-02	5,43E-03
Toxicity Indicators for Dutch Market										
HTP	kg 1,4-DB eq	8,76E+00	5,85E-01	6,65E-02	0,00E+00	4,80E-01	1,50E+00	4,28E-02	-6,44E+00	5,00E+00
FAETP	kg 1,4-DB eq	1,88E-01	1,71E-02	1,07E-02	0,00E+00	1,40E-02	1,19E-02	7,06E-04	-1,26E-01	1,16E-01
MAETP	kg 1,4-DB eq	6,08E+02	6,14E+01	4,35E+01	0,00E+00	5,04E+01	3,04E+01	2,86E+00	-1,71E+02	6,25E+02
TETP	kg 1,4-DB eq	4,63E-02	2,07E-03	2,32E-02	0,00E+00	1,70E-03	1,52E-03	1,39E-04	-1,64E-02	5,85E-02

ECI = Environmental Cost Indicator (Milieukosten Indicator (MKI) in Dutch); **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** = Freshwater aquatic ecotoxicity potential; **MAETP** = Marine aquatic ecotoxicity potential; **TETP** = Terrestrial ecotoxicity potential ; **ECI** = Environmental Costs Indicator; **ADPF** = Abiotic depletion potential for fossil resources

Set 2	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	-6,98	0,29	0,59	0,00	0,23	9,55	1,05	-2,38	2,34
ECI	euro	-6,98E+00	2,86E-01	5,87E-01	0,00E+00	2,35E-01	9,55E+00	1,05E+00	-2,38E+00	2,34E+00
GWP-Total	kg CO2 eq	-7,57E+01	1,40E+00	5,24E+00	0,00E+00	1,15E+00	8,05E+01	8,95E+00	-3,96E+00	1,76E+01
GWP-f	kg CO2 eq	1,70E+01	1,40E+00	1,33E+00	0,00E+00	1,15E+00	5,49E-01	7,08E-02	-3,92E+00	1,75E+01
GWP-b	kg CO2 eq	-9,27E+01	6,47E-04	3,91E+00	0,00E+00	5,31E-04	7,99E+01	8,88E+00	0,00E+00	1,23E-02
GWP-luluc	kg CO2 eq	5,14E-02	5,13E-04	-6,41E-04	0,00E+00	4,21E-04	1,51E-04	3,40E-05	-3,92E-02	1,27E-02
ODP	kg CFC11 eq	2,83E-06	3,09E-07	2,10E-07	0,00E+00	2,54E-07	6,77E-08	2,14E-08	-1,02E-06	2,67E-06
AP	mol H+ eq	2,28E-01	8,13E-03	3,60E-03	0,00E+00	6,67E-03	1,85E-02	6,02E-04	-1,14E-01	1,52E-01
EP-fw	kg P eq	3,07E-04	1,41E-05	-2,08E-05	0,00E+00	1,16E-05	1,13E-05	1,45E-06	-3,69E-04	-4,51E-05
EP-m	kg N eq	5,80E-02	2,86E-03	1,40E-03	0,00E+00	2,35E-03	8,58E-03	3,90E-04	-3,31E-02	4,05E-02
EP-t	mol N eq	6,74E-01	3,16E-02	4,81E-03	0,00E+00	2,59E-02	9,84E-02	2,22E-03	-5,43E-01	2,95E-01
POCP	kg NMVOC eq	1,75E-01	9,01E-03	2,80E-03	0,00E+00	7,40E-03	2,57E-02	7,94E-04	-9,70E-02	1,24E-01
ADP-mm	kg Sb eq	1,53E-03	3,55E-05	4,79E-05	0,00E+00	2,91E-05	3,73E-06	7,42E-07	-5,09E-05	1,59E-03
ADP-f	MJ	2,36E+02	2,11E+01	9,71E+00	0,00E+00	1,73E+01	5,49E+00	1,64E+00	-4,48E+01	2,47E+02
WDP	m3 depriv.	2,58E+00	7,56E-02	1,07E-04	0,00E+00	6,20E-02	1,90E-01	7,03E-02	-4,59E-01	2,51E+00
PM	disease inc.	1,40E-06	1,26E-07	-4,48E-08	0,00E+00	1,03E-07	1,50E-07	1,14E-08	-1,54E-06	2,03E-07
IR	kBq U-235 eq	8,41E-01	8,85E-02	8,56E-02	0,00E+00	7,27E-02	1,43E-02	6,42E-03	-1,65E-01	9,43E-01
ETP-fw	CTUe	2,57E+02	1,88E+01	-5,68E+01	0,00E+00	1,55E+01	1,39E+01	1,65E+00	-1,10E+03	-8,54E+02
HTP-c	CTUh	1,96E-08	6,11E-10	2,54E-09	0,00E+00	5,02E-10	1,74E-08	4,53E-11	-1,25E-08	2,81E-08
HTP-nc	CTUh	2,61E-07	2,06E-08	8,62E-08	0,00E+00	1,69E-08	5,57E-08	1,76E-09	-3,62E-07	8,04E-08
SQP	Pt	7,03E+02	1,83E+01	-2,59E+02	0,00E+00	1,50E+01	2,02E+00	3,88E+00	-4,27E+03	-3,79E+03

ECI = Environmental Cost Indicator (Milieukosten Indicator (MKI) in Dutch); **GWP-total** = Climate change; **GWP-f** = Climate change - Fossil; **GWP-b** = Climate change - Biogenic; **GWP-luluc** = Climate change - Land use and LU change; **ODP** = Ozone depletion; **AP** = Acidification; **EP-fw** = Eutrophication, freshwater; **EP-m** = Eutrophication, marine; **EP-T** = Eutrophication, terrestrial; **POCP** = Photochemical ozone formation; **ADP-mm** = Resource use, minerals and metals; **ADP-f** = Resource use, fossils; **WDP** = Water use; **PM** = Particulate matter; **IR** = Ionising radiation; ETP-fw = Ecotoxicity, freshwater; **HTP-c** = Human toxicity, cancer; **HTP-nc** = Human toxicity, non-cancer; **SQP** = Land use;

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
Resource Use										
PERE	MJ	-9,08E+02	0,00E+00	-2,72E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,35E+02
PERM	MJ	9,09E+02	0,00E+00	2,73E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,36E+02
PERT	MJ	9,17E+01	2,65E-01	-5,59E+01	0,00E+00	2,17E-01	2,61E-01	2,88E-02	-8,94E+02	-8,57E+02
PENRE	MJ	1,62E+02	0,00E+00	4,85E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,67E+02
PENRM	MJ	2,61E-01	0,00E+00	7,84E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,69E-01
PENRT	MJ	2,47E+02	2,24E+01	9,99E+00	0,00E+00	1,84E+01	5,91E+00	1,74E+00	-4,75E+01	2,58E+02
PET	MJ	3,39E+02	2,27E+01	-4,59E+01	0,00E+00	1,86E+01	6,17E+00	1,77E+00	-9,41E+02	-5,99E+02
SM	kg	1,41E-04	0,00E+00	4,22E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,45E-04
RSF	MJ	9,09E+01	0,00E+00	2,73E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,36E+01
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,10E-01	2,57E-03	4,46E-03	0,00E+00	2,11E-03	2,86E-02	1,71E-03	-1,27E-02	1,37E-01
Waste Categories										
HWD	kg	7,29E-04	5,35E-05	-8,89E-06	0,00E+00	4,39E-05	1,55E-05	2,52E-06	-2,03E-04	6,32E-04
NHWD	kg	5,41E+00	1,34E+00	6,89E-01	0,00E+00	1,10E+00	3,89E-01	6,56E+00	-1,65E+00	1,38E+01
RWD	kg	1,24E-03	1,39E-04	1,21E-04	0,00E+00	1,14E-04	1,70E-05	9,75E-06	-2,63E-04	1,38E-03
Output Flows										
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	4,81E-04	0,00E+00	1,44E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,95E-04
MER	MJ	7,95E+01	0,00E+00	2,39E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,19E+01
EE-E	MJ	2,66E-03	0,00E+00	7,98E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,74E-03
EE-T	MJ	1,68E-03	0,00E+00	5,04E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total Energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **EIA** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]

References

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